Exploring the motivations behind crafting identities in virtual reality interactions

Yueyao Hu

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Abstract

Virtual social interaction platforms like *VRChat* offer users personalised immersive experiences, making it an important space for investigative virtual identity perception. Avatars, as representations of users on virtual social platforms, showcase their personalities, interests, and styles, enabling users to better express their identity. The primary research question is: What motivates users to design avatars in virtual reality (VR)?

Many studies are dedicated to explaining the construction and expression of users' online identities. However, the rapid development of emerging technologies presents challenges in keeping research findings relevant to current societal contexts. These efforts encounter a shared challenge, which is capturing the subtle differences and fluidity of identity. To address this challenge, the aim of the research is to explore the relationship between users' motivations for choosing virtual avatars and their self-presentation. The research objectives include analysing users' inspirations, exploring the factors that drive users' avatar modifications, investigating the strategies employed by users for impression management in VR, and examining how virtual cultural environments impact users' personal impression management. Erving Goffman's impression management theory was used as a theoretical lens to understand how individuals construct and manage their identities in digital environments, providing a valuable theoretical framework for understanding online identity research and virtual social interaction.

The research methodology used a mixed-methods approach, with a focus on qualitative research. The methods include the use of surveys and interviews, with data analysis conducted through discourse analysis. The methodological framework is primarily rooted in interpretive phenomenology, supplemented by autoethnography as an additional approach. The planned sample size for the surveys was 70 individuals, but the actual number of valid survey responses collected was 77. Additionally,

interviews were conducted with a total of 21 participants.

The research findings indicate a significant relationship between users' motivations, past experiences, and social situation. Moreover, users exhibit a strong motivation to create, shape, and modify avatars in immersive environments where identity selection is freely available, thus exploring dynamic virtual identities. As virtual interaction progresses, users tend to develop and redefine their identities within a context of belonging, security, and inclusive social environments. In such circumstances, the research evidence suggests a fusion and mutually influential relationship between users' virtual and real-life identities.

Overall, the data and analysis of this study support the view that the virtual platforms provide opportunities for the development of and shaping of personal identities. Additionally, it extends the applicability of Erving Goffman's theory to the VR identity field, offering valuable insights into how individuals engage in social interaction in virtual environments.

Key words: Avatar, Virtual reality, Impression management, immersive, Affordance

Declarations and Statements

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed: Yueyao Hu (candidate)

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Acknowledgements

This doctoral journey has been profoundly impactful for me. Coming from a background in Visual Communication, although my focus has always revolved around social media and user identity, studying in the field of digital media was particularly challenging. During my time in Arts and Design, the emphasis was on cultivating artistic creation from lived experiences and seamlessly integrating research theory into our artistic practice. However, upon entering the media field, I felt momentarily unbalanced as the weak foundation in media research theory and methodology hindered my ability to flourish. I am deeply grateful for the patience and guidance provided by Supervisor Dr. Leighton Evans, an expert in digital media theory, who has been instrumental in shaping my research journey. He also nurtured my research skills as a doctoral student, proofreading papers I wrote monthly, recommending books suitable for my research field, and identifying concerns in my research. Undoubtedly, this practice was a crucial factor in my subsequent success. Later, as a part-time Lecture myself, I ensured that my students received the same level of support and attention.

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Chapter 1 Introduction

Virtual reality has attracted many users with its appeal, especially during the period of the pandemic. *VRChat* became a refuge for many people, as the application became more popular during the period of social distancing in 2020. Here, amidst a diverse array of avatars and imaginative virtual landscapes, users could liberate themselves from the confines of physical embodiment at home, shedding the limitations of their real-world identities to revel in the freedom of self-expression and reinvention. *VRChat* also supported users in expressing their ideal identities visually and socially in the virtual realm, fostering diverse and personalised forms of free expression and interaction. This inspired the research question of this study is: How do users construct their identities in virtual social interactions?

To clarify the research question, this study will explore the relationship between users' motivations for avatar selection in virtual reality interactions and their self-presentation. It focuses on the inspirations behind users' avatar choices and the strategies for building virtual identities. By examining scenarios where avatars are changed, the study aims to understand the reasons behind shifts in users' self-perception. Goffman's impression management theory will guide the analysis of strategies for constructing virtual identities, while affordance, popular culture, and subcultural influences within virtual reality will provide insights into users' motivational factors. This research seeks to extend Goffman's theory to virtual social spaces, offering valuable perspectives on user interactions in virtual reality.

1.1 Who am I?

This section will present the researcher's motivations from a first-person perspective, discussing how their past experiences and academic background have influenced their critical thinking about this topic.

This research journey into the virtual realm commenced during my master's studies, ignited by a fascination with the fusion of social media and aesthetics. This captivating topic spurred my curiosity and propelled me onto the path of digital exploration.

While academic circles have extensively discussed how social platforms facilitate the organised presentation of oneself and shape users' self-perception, the allure of idealised personas and lifestyles propagated by social media subtly shapes users' views of their own lives and identities (Taber 2018). Throughout my master's research, I was driven by a passion for using artistic design to unravel and interpret this mainstream yet distorted aesthetic fostered by social media.

Through engaging in various artistic processes like photography, filmmaking, collage painting, and oil painting, I began to discern the intricate nuances of this social media influence as it intertwines with individuals' unique experiences. Fortunately, these nuances manifested themselves through tangible mediums, providing tangible avenues for exploration: avatar and profile. As my journey led me deeper into the digital field, I found myself captivated by the subtleties of how individuals craft their online personas. Avatars, user profiles, and shared photos on the internet serve as vehicles through which users seek validation and visibility. Within the expansive digital landscape, users wield the power to articulate personal experiences and identities through meticulously crafted avatar details. My fascination grew as I observed users skilfully curating their virtual identities, adeptly projecting desired images, and engaging in meaningful digital interactions with others.

Curiosity drew me to *VRChat,* where the boundary between reality and fantasy blurs, and users seem immersed in a world where aesthetics reign supreme. Individuals can freely shape their identities in subtle and profound ways. Stepping into *VRChat* is like entering a vast wardrobe, where avatars in the virtual display case are like new characters waiting to be embraced. Avatars are like works of art, meticulously crafted to reflect the unique essence of their creators. As I immersed myself further in my research, I became increasingly fascinated by the complex array of identities interwoven within digital platforms. What began as a purely academic interest quickly evolved into a strong passion, driving me to unravel the mysteries of virtual identity construction. As a doctoral student with a background in visual communication, aesthetics has always been my guiding light. I am interested in the interaction between form and sharing, as well as how people perceive and present their idealised self. With its immersive landscapes and customisable avatars, virtual reality has become the ultimate amusement park for exploring these concepts.

Beneath the surface of these fantastical creations, my research unlocked a more profound truth: the construction of virtual identities is not merely an aesthetic exercise but also a reflection of the human psyche. What drives us to create these digital selves? What compels us to present ourselves in certain ways online? These questions propelled my research—to explore the underlying motivations behind virtual identity.

In *VRChat*, researchers are not passive observers, but active participants engaged in dialogues of digital self-expression. The methodology of autoethnography encapsulates researchers' social experiences, avatar design, and exploration of self-identity. The methodological approach of interpretive phenomenology captures the complexity and subtle nuances of avatar design phenomena through in-depth interviews and observations. This research focuses on examining human identity's

complex and multifaceted structures. It explores how self-expression transcends traditional boundaries, highlighting the increasingly indistinct divide between reality and virtuality, as evidenced in emerging virtual environments.

1.2 The research background

With the rapid development of network technology, cultural transformations born from internet culture influence everyone using the internet. Cultural historian Warren Susman (1984: 285) suggests that cultural shifts lead to changes in the primary pattern types of character and personality traits that society values and idealises. While his research does not explicitly pinpoint cultural characteristics in the internet age, it underscores the dynamic relationship between culture, personality, and social structure, and how social structures shape individual identity symbols. One manifestation of internet culture in today's digital age is the extensive collection, processing, and analysis of personal online activities, interactions, and behaviours through big data analytics, generating vast amounts of information. There is ample evidence explaining how this data, involving personal attributes, preferences, and behaviours, guides users in shaping and constructing virtual identities (Hearn 2020).

The impact of big data on user identity is mainly reflected in two ubiquitous and highly prevalent ways: personalised recommendations and targeted advertising. Fehér (2023) mentioned a well-known example: using algorithms on social platforms to manage users' news sources based on their interactions and preferences, thus shaping their online experiences and self-perception. This example reflects the underlying reality of capitalist concentration of wealth and influence over the scope of thought. Data collected from sources such as social media, internet access, and call records undergo systematic analysis and are precisely utilised in the lives of specific groups, including influencing their consumption habits and how they perceive their own identity. Klein (2013) and Schwabel (2011) proposed that the measurement systems of social media

influence symbolise the rise of the so-called online "reputation" economy. Using YouTube and Instagram as examples, Hearn (2020) suggests that a common phenomenon on these platforms is that earning money and gaining reputation by actively developing many followers and subscribers seems to have become a legitimate life goal. Moreover, platforms recommend content posted by "high-quality" and "promising" creators to gain more traffic. One of the resulting problems is that the content users see is a carefully orchestrated performance by big data, and users, in their pursuit of "reputation," continuously engage in this performance, which is precisely the intersection of big data and self-identity construction. It is undeniable that emerging technologies and internet culture have an undeniable impact on people's identity cognition.

The focal point of this research lies within the field of emerging technologies, particularly virtual reality, which is considered an important site for examining network identity cognition. In October 2021, Facebook announced its rebranding to Meta, marking a strategic shift. This mainstream media company aims to focus on the shared space of virtual augmentation of physical reality and virtual reality, reshaping how people interact and engage in digital spaces beyond traditional social media platforms. Castells (2023) proposed that one of Meta's visions is to utilise emerging technologies represented by virtual reality for developing the social media ecosystem, allowing users to engage and connect daily through virtual platforms. This integration of emerging technology and social media blurs the boundaries between physical and virtual social interactions, contributing to shaping cultural notions about technology and virtual experiences.

The noun "virtual" originates from the Latin word "Virtus," meaning strength or virtue. In the medieval period, virtues became virtualis, referring to individual qualities. Shields (2005:4) points out that if the virtual has meanings of 'virtue,' of being 'almost-

so' or 'almost-there,' then we don't need to look far to find our surrounding virtual worlds or their historical counterparts. Virtual worlds initially stem from the reproduction of the real world, actual bodies, and circumstances. Jean Baudrillard, a theorist of the ironies of late twentieth-century cultures, has pointed out that they are 'more real than real (O'Reilly 1992). Virtual reality (VR) is a technology that creates immersive, computer-generated environments that users can interact with as if they were real. These virtual worlds maintain a relationship of inheritance and development with our real world.

As Henry Corbin proposed with "mundus imaginalis," the virtual realm exists between the material and spiritual domains, accessible through human imagination (Laughlin, 2015). Human beings' experiences, culture, and social elements from the real world can influence and shape the virtual environments created in VR, while virtual reality has the potential to develop new cultures and subcultures. This potential can be seen in artistic expression and storytelling within virtual realms, the formation of communities gathering around shared interests and identities, and the development of specific norms, customs, and modes of communication. This study will focus on researching identity expression and influence within this virtual network culture.

1.3 History of virtual social interaction

VR and other immersive interactive technologies represent a milestone in the way people conceive of and relate to reality. In the early stages, virtual interaction was heavily used in scientific fields. Rubio-Tamayo (2017) proposed that since the 1990s, VR technology and its expressive capabilities have enabled the expression of abstract and non-abstract ideas and concepts such as data and information. Researchers have designed interactive and immersive scenarios that allow users to engage with abstract scientific ideas and information. The most extensive application of immersive

interaction during this period has been in simulation training and psychology (Blascovich, 2002; Tarr & Warren, 2002; Foreman, 2009), which remains highly popular to this day. Research and development in this area have contributed to the maturity of virtual technology and expanded its range of applications, such as virtual media socialisation.

Social interaction has occupied the majority of people's lives. Mehl and Pennebaker (2003) pointed out that humans spend 32% to 75% of their waking hours in social interaction. Before the advent of the Internet, face-to-face interaction was the primary form of human interaction. Later, the development of digital technology greatly changed the way contemporary people socialise and communicate, with real-time virtual socialising taking centre stage through messaging, voice and video calls, gaming, and social media exchanges (Smith and Anderson, 2018). Poster (1995:81) proposed that the Internet is the "information superhighway" of the 20th century. With the increasing possibilities of high-speed Internet, accompanied by new technologies and computer-mediated communication, various virtual environments emerged (Evans, 2012). In the past decade, VR technology has been widely applied in the social domain, diverse social media providing people with efficient ways of living, allowing remote meetings, collaboration, and sharing (Li, 2009). Nine years ago, Bombari (2015) stated that due to the novelty of virtual technology, research on virtual interpersonal interaction was still in an immature stage. With the rapid development of augmented reality and virtual reality interaction technologies in recent years, the shared virtual environments under the concept of metaverse, virtual world roles, and virtual world interaction have all demonstrated more mature research potential (Wu, 2023).

In virtual social interactions, the self can be represented through visual symbols. From the internet to virtual environments, users increasingly display their personal identities through online usernames, codes, profiles, and avatars. There are three types of selves in virtual reality: the first is virtual humans, defined by Bailenson and Blascovich (2004) as "perceivable digital representations" of humans. In many works, virtual humans are

referred to as VH (Makarov 2017; Li 2014; Deng 2023). The second self-representation is avatars, which are visual displays of users in virtual worlds and can be perceived by users and other users in social applications. Users can observe their avatars from a first-person or third-person perspective (Gorisse at al., 2017). The third type is agents, characterised by more realistic appearance and behaviour. Virtual humans were widely used in early simulations, essentially a hybrid of avatars and agents under insufficient technological conditions (Kyrlitsias 2022). The main difference between agents and avatars is that agents are virtual representations of characters created and controlled by computer programs, while avatars are controlled by on-site participants. Since this research focuses on the motivations behind users' choices of avatars, using avatars as representations of the self in virtual social interactions is wise. Investigating avatars can help explain participants' behavioural patterns.

In the metaverse, a shared virtual network, users can engage in synchronous interaction through avatars (Lam, 2022). Especially in virtual socialising, people get to know each other through avatars, which serve as specific images or representations in the digital space. Their diverse visual symbols repeatedly appear in everyday virtual social contexts. Due to limitations in VR technology, avatars cannot provide detailed facial expressions and behaviours. However, according to Latoschik (2017), the effectiveness of communication in role-playing does not differ. Therefore, this study will analyse the construction of avatar symbols and user behaviour and perceptions in virtual socialising as the main sources of data.

This research focuses on *VRChat* as the study site, where avatars are essential. Avatars play multiple roles in the *VRChat* virtual social platform, including identity expression, social interaction, enhancing user immersion and presence, allowing users to create unique and imaginative designs, and encouraging creativity and self-expression. Avatars help *VRChat* become more accessible and inclusive by providing users with ways to express themselves and engage in the virtual world. Users can choose avatars representing different genders, races, reminders, and abilities, allowing them to

express their identities and integrate into the virtual community. It can be said that the absence of avatars in the virtual community would lose the meaning of social interaction.

1.4 Research on *VRChat*

VRChat is a large-scale virtual environment primarily focused on social interaction and role-playing. Socialisation is integral to this platform. Initially released in 2014 as a beta version on Oculus (now Meta) devices, *VRChat* was fully launched on Steam on February 1, 2017. With a development history of 10 years, according to data from hello.VRChat.com, there are currently over 25,000 worlds created by the community and continuously expanding. Users can create, share, and play here, with easy access to the VR world even from computer devices. It's worth noting that since this research is based on avatar construction in virtual environment socialization, all participants involved are experienced players in the field of virtual social interaction.

There are four main popular features on *VRChat*. Firstly, making friends; users can play and create with people from all over the world on this platform, where the development of the virtual world shortens the physical geographical distance between users. Secondly, any user can create the world they envision on Unity SDK, turning imagination into reality. Most of the scenes here are inspired by anime and everyday life scenarios. Then there's a noteworthy concept of community; *VRChat* is community-driven, where users with similar interests or mutual attraction form their own communities, helping to shape the *VRChat* world. Lastly, and most importantly, avatars can be customized in *VRChat*; users can freely change their appearance, much like role-playing, but in VR.

Almost all investigations concerning *VRChat* emerged after 2020, closely related to the reality of isolation during the pandemic (Rzeszewski 2020; Mao 2021; Kelley 2021; Śliwecki 2021). The COVID-19 global pandemic greatly altered people's lives. National

policies advocate for people to stay at home, and the number of users in social VR has also increased. As a successful example of VR socialising, *VRChat* has provided rich research data for anthropology, geography, psychology, media studies and other disciplinary studies, rapidly becoming a venue for social science researchers' investigations. Rzeszewski and Evans (2020) suggest that immersion in VR and the technology's ability to evoke a sense of presence can potentially alleviate the loss of contact with the outside world. Although the pandemic has limited people's range of activities, VR has social potential, providing space and opportunities for human interaction in an era where physical contracts are restricted. Krell (2023) shares a similar view, suggesting that despite physical distance, virtual reality technology facilitates emotional and bodily interaction, as evidenced by users' practice of synchronous physical intimacy on *VRChat*.

Some studies have used *VRChat* to explore the characteristics and patterns of virtual social interactions. McVeigh-Schultz (2019) discussed how creators of social VR applications, with *VRChat* as a representative, conceptualise the construction, support, shaping, or limitation of social interactions on their platforms. Wang (2020) proposed three new features of social VR: high immersion, diverse interaction modes, and contextualised social content, using *VRChat* as an example to illustrate the current development and potential of social VR applications. Sykownik (2021) discussed the results of an online survey regarding *VRChat* user activities and motivations, affirming that social VR offers superior social experiences compared to traditional digital social spaces such as games or social media, while also emphasizing the need for further improvements in tracking technology, enhanced sensory immersion, and social functionalities. Social activities within virtual communities have also been studied; Porwol (2020) explored virtual community construction in *VRChat* and proposed a comprehensive framework for consensus-building and community development through virtual reality as a medium. Stockselius (2023) conducted research based on semi-structured interviews and ethnographic field studies among *VRChat* users, showcasing and discussing findings on various aspects of social interaction within

VRChat. The research findings include themes and common patterns derived from *VRChat* users' experiences, thoughts, and perceptions of social interactions on *VRChat*, as well as observations within the game environment. Depending on the research focus, *VRChat* is used in academia for comparative studies, obtaining extensive data by comparing the characteristics of multiple virtual social tools. For instance, Wang (2020) applied *VRChat* and *Facebook Horizons* as social VR sites, while McVeigh-Schultz (2018) compared data from *Facebook Spaces, Rec Room, High Fidelity, VRChat*, and *AltspaceVR*.

Research on identity in virtual spaces is a hot topic, especially using methodologies from anthropology, fieldwork, and ethnography. Montemorano (2020) conducted qualitative ethnographic fieldwork in the virtual reality space of *VRChat*, combining anthropological literature on embodiment, sociality, and persona to address identity issues. The study highlights the uniqueness of anthropology in exploring virtual worlds, particularly due to its emphasis on the social construction and performativity of identity, along with its methodological commitment to participant observation. Rasmus (2022) employed ethnographic descriptions to study how avatars and embodiments create identity and a sense of "self" among users in *VRChat* through manifestations and interactions within different contexts. The research identified a non-traditional form of immersion playing a significant role in creating this phenomenon called "illusory."

Furthermore, there are studies specifically discussing the diverse expressions of identity on *VRChat*. Zhang (2023) applied unobtrusive observations and interviews within the *VRChat* platform to explore avatar choices, interactions, and the utilization of full-body tracking (FBT) technology related to user expression and gender cognition. It highlights how users challenge and subvert traditional gender norms, as well as the potential of virtual reality as a tool for experiential learning, fostering cross-cultural understanding, and promoting inclusivity and diverse gender expression.

Järvelä (2023) examined the phenomenon of obsession with virtual identity, attributing it to personal experiences totalling over 4000 hours in *VRChat*. Dudoglo (2022) explored users' desires and motivational patterns in selecting avatars in *VRChat*, considering it akin to a game similar to future virtual worlds. Dudoglo's key findings corroborate the four motivational patterns of avatar creation identified by Lin & Wang (2014) (virtual exploration, social navigation, identity representation, and situational adaptation). While Dudoglo and Lin & Wang's studies share similar scopes with this thesis, their methodologies and theoretical foundations differ. Lin and Wang (2014) conducted a quantitative study using online surveys to identify the primary motivations behind users' avatar creation. They also suggested that future research could benefit from utilizing focus groups to provide deeper insights and analyse content with multiple coders. Dudoglo (2022) further explored Lin and Wang's conclusions, interpreting data using a theoretical pre-study approach. Unlike previous studies, this research is based on observations of current phenomena. while also discussing avatar creation motivations, is based on Erving Goffman's symbolic interactionism and impression management theory, thus yielding different motivational explanations compared to Dudoglo (2022) and Lin & Wang's (2014) findings.

Examples of research conducted in *VRChat* as a research venue are numerous, with some studies emphasizing and calling attention to ethical issues. Nolasco (2022) revealed instances of harassment experienced by *VRChat* users due to the avatars they use and their interactions with other characters. Ortiz (2022) suggested that because *VRChat* shares similarities with virtual universes in its design and functionality, this gaming platform has become a tool for extremist groups to recruit and radicalize vulnerable populations. Novak (2022) highlighted the unique ability of VR to transport us and provide an escape from reality; however, prolonged detachment from the real world may hinder work performance and overall societal contributions, potentially leading to identity dissociation from long-term virtual technology addiction. Maloney

(2021) critically reviewed the current academic achievements in the field, proposing ethical considerations for research in these VR environments and emphasising unexplored areas. Zheng (2022) attempted to understand the differences between user concerns and the design of protecting user safety in social VR applications. The research findings of Maloney (2020) suggest that, overall, users are willing to disclose their emotions, personal experiences, and personal information in social VR. *VRChat*, as an emerging innovative online social space, contributes to existing literature on online self-disclosure and privacy.

In general, since 2020, the significantly increased user base has provided rich research data for studies in anthropology, field surveys, ethnography, quantitative survey questionnaires, and other research areas. Researchers can observe natural behaviours and social interactions in real time in virtual environments, offering insights into how people communicate, establish relationships, and construct identities in immersive settings. Furthermore, the diversity of *VRChat* users from around the world provides researchers with a varied pool of participants to study various social phenomena, behaviours, and interactions. Particularly noteworthy is the phenomenon of identity construction, where the flexibility to change identities and engage in anonymous environments on *VRChat* provides valuable data for researchers. Lastly, *VRChat* offers researchers opportunities to develop and explore innovative methods for studying social phenomena. These include virtual ethnography, immersive interviews, participatory observation, and digital storytelling, all of which rely on the unique features of virtual reality. Overall, *VRChat* serves as a valuable platform for social research, providing a dynamic and immersive environment where researchers can study social interactions, behaviours, and phenomena in ways not feasible in the physical world.

1.5 Research value

This study will involve media studies, psychology, situational interaction, and digital technology theory, and its interdisciplinary nature reflects the complex and multifaceted ways in which technology interacts with individual and collective identities. While significant progress has been made in recent years in understanding the relationship between emerging technologies and identity, with various paradigms explaining the impact of technological development on identity from multiple dimensions, the rapid development of emerging technologies poses a challenge in maintaining the relevance of research findings to current societal contexts. This challenge will persist with technological advancements, as noted by Jiang (2020), who emphasized the importance of monitoring the development of social media and studying emerging social media platforms. The purpose of this study is not to eliminate this challenge but to update the framework of the evolution of digital identity in virtual environments based on the products of current virtual technology production, such as the popular *VRChat* social platform.

Firstly, the research focuses on studying the dynamic relationship between the use of virtual social media and user identity. Identity is a complex and multi-layered structure that cannot be simply classified or measured (Kaplan, 2017). Especially in the rapidly changing digital environment, existing research faces a common challenge: it is unclear how individuals adapt to the challenges posed by information technology to their identities and how they strive to define or redefine themselves in response to the substantial transformations caused by information technology (Bodenhausen, 2010).

Specifically, some studies on user social identities belong to a cross-sectional research type, with a relatively short time span and a certain degree of limitation in the breadth and depth of survey content, For example, Li & Wang (2014) conducted a quantitative study on users' motivations for creating identities, while Merunková (2019) performed

a qualitative analysis of posts respondents had published on their personal Facebook profiles over a month to gain insights into users' self-presentation. The research suggests that to deeply understand the complexity of identity in a doctoral project spanning 3 to 4 years, it is necessary to recognize its multidimensionality and contextuality. The sociologist Erving Goffman (1959:2) suggests that individual activities have a conventional nature in the presence of others, and people express themselves according to social situations. In the planning stage of the research methodology, this study considers the fluidity of identity, primarily employing interpretive phenomenology as the main methodology. This involves acquiring individual experiences, social interactions, and cultural backgrounds through interviews and designing survey questionnaires to account for various factors.

Furthermore, although virtual social media has been developing for several decades, its widespread adoption and importance have significantly increased in recent years. Facebook's investment in Meta not only accelerates the development of virtual social media experiences but also signifies the maturation of virtual reality technology. Social media platforms such as *VRChat*, Rec Room, and AltspaceVR have gained considerable attention during this period, especially during the pandemic when these virtual social media platforms became oases for people unable to engage in face-to-face social interactions. The growth in user base and the prolonged usage of virtual social software provides fertile ground for this research. The study has been fortunate to encounter users with thousands of hours of gaming experience during data collection, experiencing first-hand the changes in online interaction and socialization brought about by virtual social media.

Here, the research value brought by virtual worlds and online games before 2020 is not denied. It is precisely because of the research of predecessors that the research value of virtual network identity has been recognized. However, this study emphasises

the cultural environment brought by immersive virtual technology, a technical feature that games have not possessed since 2000 due to the immaturity of technology development around 2010. The high cost of virtual equipment also limited the consumer base. For example, the emergence of *Second Life* in 2003 nurtured many research topics. Although *Second Life* has a long-term and diverse community, the system requirements are relatively low, accessible on various desktops, laptops, and some mobile devices, and the immersive experience of VR was not the focus of the game in 2003. One fact confirming this gap is that although VR was proposed in the 1960s, virtual reality technology, guided by extreme computing technology, did not mature until about 10 years ago. The release of the Oculus Quest 7 years ago marked an important milestone in the affordable VR era, making head-mounted devices affordable. Affordable head-mounted devices acted as a locomotive, bringing virtual reality into people's daily lives and making virtual socialization popular. VR has become an increasingly popular digital social space where people can meet, interact, and socialize in an immersive way. The virtual social environment has matured enough to conduct immersive virtual research and explore the cultural environment in immersive virtual communities. Taking *VRChat* as an example, there is enough detailed data to explain the dynamic development of user identity in immersive virtual experiences.

1.6 Theoretical position

Erving Goffman's theory of face-to-face impression management helps explain how individuals construct and manage their identities in digital environments, providing a valuable theoretical framework for understanding online identity research and virtual social interaction. His research categorizes helpful strategies people use to manage impressions in different social situations and focuses on how individuals actively shape and manage the impressions they give to others during social interactions. Goffman sees social interactions in society as a dramatic performance of identity transformation and shaping, where factors such as coordination between actors, audience reactions, stage environment, script, and costumes are all considerations for individuals playing

different roles. In real life, these considerations can be interpreted as social attitudes toward social objects, reactions of bystanders, situational environment, audience segregation, interaction rituals, and the attire and appearance of social objects.

Goffman's research is prevalent in the field of online identity. Bullingham (2013) emphasises the value of Goffman's original framework in explaining interaction and self-presentation in the online world, suggesting that online environments also offer opportunities for further development of the Goffman framework. Merunková (2019) applied Goffman's dramaturgical analysis theory to analyse a large number of Facebook user profiles and identified the fundamental forms of identity creation and presentation by users. Ditchfield (2020) similarly used Goffman's theoretical framework to analyse information on the quality of online interactions. Individual performances on social media platforms convey specific impressions to the audience. Guided by Goffman's theory, researchers analyse self-presentation strategies in online environments through methods such as analysing profiles, selecting photos, and writing resumes and personas. This approach provides valuable insights into the complex dynamics of virtual self-presentation, impression management, and social interactions in digital environments.

With the development of emerging technologies, virtual reality socialization is becoming increasingly popular. Users can convey specific impressions to other users by carefully designing their avatars' appearance, editing behaviours, and voices. The identity exploration through avatar customization, as seen in social platform avatars, that provide rich data for self-expression, aligning with Goffman's emphasis on self-identity. This study also aims to understand how individuals construct and manage their virtual identities. Goffman's theory provides a rich foundation for understanding how individuals in the digital age construct, negotiate, and maintain their identities.

1.7 Aim and objectives

The research methodology is primarily a mixed-methods approach with a focus on qualitative research. Specifically, the methods include surveys and interviews, with data analysis employing discourse analysis. The study's methodological framework primarily adopts interpretive phenomenology, supplemented by autoethnography as additional support. The planned number of participants for the survey was 70, but the actual number of valid questionnaires collected was 77, while the actual number of interviewees was 20.

This study aims to explore the relationship between users' motivations for selecting avatars in virtual social interactions and their self-presentation. The research objectives and directions are divided into the following six parts: Goffman's impression management theory and situational analysis provide rich guidance for formulating research objectives.

- Analysing the inspiration behind users' creation and selection of avatars.
- Investigating the criteria for users to modify their avatars and the circumstances under which such modifications occur.
- Identifying the potential motivations that prompt users to explore and customize avatars.
- Exploring the strategies employed by users to manage impressions in virtual reality.
- Examining the influence of the virtual cultural environment on users' personal impression management.
- Discussing the potential consequences of immersive impression management in virtual reality, with particular attention to how social dynamics in virtual spaces shape users' perceptions of their own identities.

To achieve these objectives, the study encountered several challenges. Firstly, there was a need for deep exploration of data regarding users' self-identity in virtual spaces. If users unconsciously construct their identities in virtual spaces, they may not be able to clearly articulate what influences their changes in self-awareness. The study plan employs semi-structured interviews, focusing on the development of avatars and exploring the reasons behind participants' initial identity choices and changes in avatars over different periods of involvement in virtual social interactions. By comparing virtual experiences with real-life experiences, the study aims to investigate the dynamic changes in identity in virtual social interactions and their relationship with perceived identities in real life.

Secondly, the study faces the challenge of capturing users' authentic identity. Participants may provide idealized responses or have difficulty accurately expressing their behaviours and motivations. The study acknowledges these behaviours as patterns that may occur in any research but does not prevent researchers from extracting valuable phenomena and information from dialogue. However, it is a fact that authenticity may not always be captured in any research process of this nature.

Lastly, the study may be influenced by participants' cultural backgrounds and their specific virtual environment. As *VRChat* users in the United States are particularly prominent, the study paid a particular focus on the diversity of participants' backgrounds during data collection to account for cultural or contextual influences.

1.8 Road map

This introduction explains the researcher's motivation, research objectives, and the significance of the study. It also elaborates on the history of virtual socialisation and the value that the virtual social platform VRChat brings to the research. The

subsequent part outlines the structure and approach of the study, summarising the purpose and contributions of each chapter.

Chapter 2: To explain how users construct identity in virtual reality, this chapter explores the foundational concepts of Erving Goffman's impression management theory, which forms a cornerstone of his broader Dramaturgical theory. At its core, impression management revolves around the idea of self-presentation, drawing parallels between human interactions and a theatrical performance. Goffman famously likened the world to a stage where individuals act out various roles, striving to convey a favourable impression to others. The chapter elucidates how individuals meticulously craft their self-presentation through language, behaviour, and appearance to shape the perceptions of those around them. Various scholars have contributed nuanced perspectives on impression management, highlighting its role as an active and goal-directed process aimed at enhancing one's image in different social contexts.

Goffman's theory not only underscores the importance of impression management in everyday interactions but also offers valuable insights into the dynamics of social situations. One of the characteristics of virtual reality space is that it allows users to actively engage in different social spaces within a short period. Users can freely switch identities based on social contexts, highlighting the importance of examining virtual social situations in research. By dissecting the details of face-to-face interactions, Goffman illuminates how individuals navigate social spaces and construct shared meanings within them. The researcher believed that his theory would also provide suitable explanations for understanding virtual social spaces. Of course, the chapter mentioned the applicability of Goffman's theory to virtual environments, particularly within the burgeoning field of virtual reality. In virtual spaces, impression management takes on a new dimension as users curate their digital personas with heightened intentionality, often with limited oversight.

Moreover, the discussion extends to Goffman's exploration of the self, tracing its evolution through various scholarly interpretations over the decades. The chapter posits that users' motivations for designing avatars in virtual reality are influenced by multifaceted factors, including cultural identity, social norms, and technological affordances. The chapter draws on Goffman's theoretical framework to inspect the societal implications of impression management and self-presentation in the digital age. It contends that virtual reality serves as a microcosm of broader societal shifts, reflecting the transition from production-oriented to consumption-oriented paradigms. In summary, Chapter 4 not only unpacks the details of impression management and self-presentation but also delves into their ramifications in virtual environments.

Chapter 3: This chapter explains the methodology employed in the study, aiming to explore the construction of virtual identities within the virtual reality platform *VRChat*. A comprehensive exploration of the methodology entails a thorough examination of its applicability, limitations, ethical considerations, and associated challenges. With avatars as the focal point, the research seeks to understand the inspiration, motivations, and strategies behind users' avatar choices and modifications. Drawing on Goffman's impression management theory, the study aims to critically analyse how users manage their impressions within virtual reality and examine the influence of virtual cultural environments on users' identity construction. The research adopts a qualitatively driven mixed methods design, combining qualitative and quantitative approaches to provide a comprehensive understanding of avatar design and user identities. Interpretative phenomenology is one of the methodologies used in this study. The philosophical position of this study adopts the epistemologically interpretivist paradigm. Another methodological approach combines the researcher's personal experiences and reflections within *VRChat* with broader cultural and social

contexts; through autobiographical narratives, the researcher provides insights into the social landscape of VR social interaction, offering a deeper understanding of users' experiences and identity-related stories.

Two types of data collection methods are employed. First, a survey questionnaire based on gaming experiences is used to identify patterns related to user avatar design. The questionnaire gathers data on the purpose, motivation, and methods of user-designed avatars, shedding light on various aspects such as inspiration behind avatar creation, representation of identity, and correlation between virtual avatars and physical appearance. Second, semi-structured interviews are conducted to explore the dynamic process of identity construction within *VRChat*. These interviews delve into the motivations behind avatar design, the impact of virtual reality technology on identity expression, and the unique features of the virtual reality environment that influence users' avatar choices.

Chapter 4: This chapter delves into the profound impact of avatars on identity in the context of virtual reality, examining existing literature to explain the multifaceted relationships among users, avatars, and online identities. While academic discussions regarding avatar design and online identity reconstruction are expanding, there remains fragmentation in the literature. This review aims to significantly bridge these gaps by synthesizing the potential of avatars identified in previous research.

The literature review introduces research on the concept of avatars, initially introduced through science fiction novels and later gaining widespread attention in Neal Stephenson's 1992 novel "Snow Crash," subsequently becoming an important part of computer science terminology. Nowadays, avatars are not only shaped by various design platforms but also serve as tools for users to actively construct and

project their online identities. The literature discusses the aesthetic experiences brought about by virtual images for users. As a relatively new form of artistic expression born in human-computer interaction, virtual images provide users with a platform for aesthetic exploration and self-expression. Their design is influenced by user aesthetics, computer interfaces, and emerging virtual reality technologies, all of which shape the identities they represent. These pieces of literature have prompted researchers to review users' past aesthetic experiences and the impact of emerging technologies on user identity.

The literature review examines the impact of avatars on user identity, revealing significant effects on communication experiences and emotional connections. Evidence shows that in real life, individuals continuously adjust their appearance and behaviour to adapt to different environments, highlighting the dynamism of identity construction.

The literature review discusses how a sociological perspective further enriches the understanding of dynamic identities, highlighting the fluidity and context-dependency of identity presentation. Scholars such as Erving Goffman and Judith Butler stress the performative aspect of identity, highlighting the role of discourse and social processes in identity construction. Despite advancements in understanding online identities, there still exists a research gap regarding the identity of virtual avatars, particularly in the immersive field of virtual reality. As technology continues to blur the boundaries between physical and digital spaces, exploring the complexity of avatar identities becomes increasingly important. This literature review lays the foundation for such research, emphasizing the urgent need for in-depth exploration in this evolving field.

Chapter 5: This chapter presents the comprehensive findings of the research, including auto-ethnography writing, 28 tables regarding the survey questionnaire results, and interviews.

The chapter findings unfold into the following distinct sections: Cultural Experience of the Virtual World, User's Intention in Avatar Selection, Impact of Self-Experience and Emerging Technologies on User Identity, Characteristics of *VRChat* Virtual Interaction, and Consequences of Virtual Immersive Management. Overall, Chapter 5 synthesizes qualitative and quantitative data to provide a comprehensive understanding of users' experiences in VR environments., painting a vivid picture of the complexities inherent in virtual identity construction and social interaction.

Chapter 6: This chapter encapsulates the culmination of the research findings. This chapter discusses the culmination of the research results, providing a comprehensive explanation of user motivations involving avatars in virtual reality environments through three main thematic discussions.

Firstly, the discussion focuses on the underlying motivation factors driving avatar design, emphasising the symbiotic relationship between motivation, avatar design, and the presentation of virtual identities. Drawing on micro-sociological interaction theory and seminal works by scholars such as Jonathan Turner, the discussion explores four types of motivations: previous encounters, situation fitting, cross-sectional self-presentation, and longitudinal trajectory of identity formation.

Subsequently, attention shifts towards an intricate examination of the cultural experiences shaping virtual immersive impression management. The discussion underscores the substantial influence of popular culture, nostalgia, fan culture, memes,

and personal symbolic culture on users' avatar designs and identity expression within VR environments.

Lastly, the chapter explores the consequences stemming from the practice of virtual immersive impression management. Through observations and investigations, the research confirms that users' understanding of their virtual identities is an ongoing and dynamic process intricately linked to the virtual cultural milieu. It highlights diverse identity exploration experiences, a sense of security and belonging, and an inclusive cultural atmosphere fostered by virtual reality social interactions.

In summary, the chapter offers insights into how users' motivations to create avatars are driven by the desire to manage impressions in social contexts. It underscores the uniqueness of virtual impression management methods within the virtual culture environment and introduces the concept of identity integration to explain the consequences for users under virtual impression management. Ultimately, avatars serve as a medium for users to convey their understanding of self-identity, influencing both their virtual and real-life experiences.

Chapter 7: This chapter reiterates the research methodology and key findings. It also clarifies the contribution of this study, emphasizing its extension of Goffman's theory into the online realm. By examining the relevance of Goffman's face-to-face theory in digital environments, this research enriches theoretical understanding and fosters interdisciplinary dialogue. Furthermore, it offers an optimistic perspective on the transformative potential of digital technologies in shaping personal identity, elucidating how individuals utilize digital platforms for self-presentation and impression formation.

The chapter also discusses the study's limitations, acknowledging potential biases in self-reporting and the influence of cultural or background factors on research outcomes. Despite these limitations, the study provides valuable insights into the complexity of identity construction in virtual social interactions.

Finally, recommendations for future work are presented, advocating for the continued integration of Goffman's theory into studies of digital identity while recognising the unique characteristics of the presentation of self in VR. As research progress, this study emphasises the importance of ongoing exploration and adaptation to better understand these phenomena.

Chapter 2 Theoretical position

The main theoretical framework of this study revolves around explaining the dynamic patterns of identity construction in virtual environments. As a means of presenting virtual identities, virtual avatars hold significant potential in virtual social interactions, prompting research into the influence of virtual social environments and social contexts on users' motivations to design virtual avatars. The next section will discuss Goffman's impression management theory and relevant theories of digital identity construction in this field.

2.1 Erving Goffman's impression management

The image of life as theatre with people acting out their lives on a stage has a long history, where individuals assume roles akin to actors in a theatrical setting, traces its origins to Shakespearean times, and perhaps even before his immortal rhetoric that all the world's a stage and all the people merely players upon it (King 2015). Impression management is an integral part of Goffman's Dramaturgical theory. From the book *The Presentation of Self in Everyday Life,* it can be concluded that impression management is the performance of interacting individuals for a variety of real or imagined others. The performers spend a great deal of time and energy focusing on their bodies through language, behaviour, and the way of dressing to create an ideal body and impression.

Some researchers describe impression management theory from different perspectives: According to Sinha (2009: 104), impression management is an active self-presentation of a person aiming to enhance his image in the eyes of others. Tashmin (2016) stresses impression management is a goal-directed conscious or unconscious process that is highly dependent on the situation. Döring (1999) identified impression management as self-verification, the act of conforming the audience to the person's self-concept.

Goffman (1956: 132) believed that impression management techniques can help actors avoid interruptions during the performance. In essence, Goffman's dramaturgical theory, with its emphasis on impression management, explores how individuals navigate social situations by strategically presenting themselves to others. Understanding this theory involves a detailed examination of the complexities of human interaction at a micro-level. To more clearly describe the value of impression management in this research, the following explanation will be divided into two parts: Situational interaction and Self-identify.

2.2 Situational Interaction and impression management

Like many sociologists, Goffman's work is difficult to label exactly. First, although Goffman studies face-to-face interactions, many see him as a Symbolic interactionalist (Stryker 1987; Fine 1990; Scheff 2005). But this label is controversial. Herbert (1972: 51) argues that Goffman cites the symbolic interactionist views rarely, if at all, in the form of approval. In Goffman's sociological research, he often uses words such as "face-to-face interaction," "strategic interaction," and "interaction ritual" rather than "symbolic interaction." In 1980, an interview revealed Goffman's refusal to be categorized within a specific theoretical sociology approach. Instead, he compared his stance to various sociological theoretical streams (Verhoeven 2000). Norman (1981) and Gonos (1977) are among the academics who have provided analyses of his earlier works from a structuralist perspective. However, Goffman explicitly denies that he has a structuralist orientation (Goffman 1981: 60).

Although Goffman studies the phenomena of everyday life, the unique part of Goffman's work is that he studies the microscopic interactions between individuals and the underlying mechanisms of action. Categorizing Goffman's research proves to be complex, as he himself expressed a preference for being identified as a 'Hughesian urban ethnographer' if a label had to be assigned (Verhoeven 1993: 317). This suggests that Goffman aligned his work closely with the urban ethnographic tradition inspired

by his mentor, Everett C. Hughes, emphasising the study of social interactions and everyday life within urban settings.

To better understand Goffman's theory in studying the motivations of users, this study will refer to Goffman's sociological work as "situational interaction sociology." Firstly, the behaviours and phenomena of face-to-face interaction studied by Goffman all take place in different situations. In other words, his research objects are microscopic situations. Secondly, Goffman's research method is situational, which is different from static, grand, and historical analysis. "Situation analysis" can be seen as the key term and core method in Goffman's work, as well as the entry point for understanding Goffman's ideas. Thirdly, Goffman's sociology of situations encompasses a comprehensive set of systematic languages, methodologies, and theories. These include nuanced approaches to data collection, rigorous data analysis techniques, theoretical frameworks, and practical applications of his insights. By embracing this perspective, we can illuminate users' motivations within virtual environments through a lens that emphasises the situational dynamics and interactions that shape their experiences.

The status of the "situation" In Goffman's sociology is reflected in the following works. First, Goffman (1963: 18) summarised that "situation" refers to such a holistic spatial environment in which an individual becomes or is about to become a member of the presence wherever he enters. Secondly, in *The Neglected Situation*, Goffman's (1964: 136) definition of a situation mainly emphasizes the characteristics of monitoring and accessibility, which is an environment that constantly monitors each other's possibilities; anywhere in it, the individual will find himself accessible to all others "present," and others to him or her as well. Furthermore, Goffman's exploration evolved over time. More than a decade later, in his work *Forms of Talk* (1981: 84), he expanded his definition of a situation, conceiving it in a broader sense. Goffman argued that a social situation transcends mere physical proximity; it encompasses any setting where two or more individuals are within sight and hearing range of each other.

This perspective shifts the understanding of a situation from being solely a communication environment to a dynamic interactive system. Within this system, individuals actively contribute to its maintenance through their actions and perceptions, collectively shaping an ongoing and subjective interaction that holds meaning for them in the moment.

In this view, participants engage in a continuous exchange of information through both verbal language and non-verbal behaviour. These exchanges serve to transform physical spaces into sociologically significant places where the dynamics of social interaction give rise to shared meanings and understandings. Thus, Goffman's conceptualization of situations emphasizes the active role of individuals in constructing and interpreting the social world around them, highlighting the intricate interplay between physical environments and the social interactions they host.

Goffman studies social situations that can be used to explain social behaviour. Maturana and Varela (1987: 163) argued that "behaviour is a description an observer makes of the changes in a system with respect to an environment with which the system interacts." Goffman's supervisors, Lloyd Warner and Everett Hughes, took the positionalist approach to research, believing that occupational positions have an important impact on people's behaviour and consciousness (Bock 1988: 6). This kind of research is a further refinement of social class analysis. Goffman's analysis of situations and behaviours shows that actors could respond quickly to changes in their positions in interactive and social situations in which actors are involved, and producing collaborative behaviours becomes his core focus. Jerolmack (2014: 182) believes that this kind of contextualized face-to-face contact research is an important part of explaining social behaviour. Therefore, Goffman's situation theory can help explain the user's behaviour in virtual social interaction and the motivation for changing the avatar in this topic. In the following content, the practicality of Goffman's impression management theory in the study of virtual reality social interaction will be expounded on situational interaction.

The environments and situations generated by virtual technology are based on real-life simulations and provide people with an extraordinary sense of "presence." Goffman emphasises the characteristics of face-to-face interaction, which requires the physical presence of participants (Goffman 1963; 1981). Virtual Reality, as a computer-generated environment with scenes and objects that appear real, creates a unique sense of immersion, making users feel as though they are physically present within their virtual surroundings. Immersive virtual environments disrupt the deep, everyday connections between the user's sensory experiences, physical location, and social presence. Jo (2017: 2) argues that presence in VR manifests as people responding to the virtual place and events as though they are real, often experiencing their body as part of that environment. Sanchez-Vives (2005: 332) further posits that presence in VR results from the transportation of consciousness into the virtual space, where users engage with stimuli and react both unconsciously and consciously. This phenomenon of presence reshapes users' perception and consciousness, presenting parallels with Goffman's theory of social interaction as it attempts to replicate the shared physicality of real-world interaction in a virtual context.

To further explore this phenomenon, Descartes' dualism provides a valuable framework for understanding users' experiences of the body and perception in immersive virtual environments. Descartes explicitly distinguished between the mind, a non-material entity characterized by consciousness and rational thought, and the body, a material entity governed by physical laws (Deborah, 2020). In VR, users must reconcile their physical presence with their virtual interactions, creating a dualistic experience where their physical body and their virtual embodiment feel distinct (Katan, 2020). This dualistic mindset highlights the separation between mind and body while simultaneously enabling new forms of interaction through the virtual self. However, immersive VR experiences can also blur these boundaries, evoking both external and internal senses of presence and challenging Cartesian dualism. For instance, users may perceive their avatar as "other," reinforcing the mind-body separation, while also

interacting with the virtual world as an extension of their consciousness. These experiences underscore the importance of designing VR environments that account for the complex interplay between users' physical and virtual selves, as highlighted by Lanier (1995).

The role of avatars further enriches this discussion by connecting the concepts of presence, dualism, and identity performance. Goffman (1964: 133) noted that individuals manage their situational presentation through appearance, including dress, makeup, and accessories, a concept directly relevant to avatar design. Avatars enable users to curate their digital appearance and explore facets of their identity, including aspirational or wishful representations. While avatars offer users flexibility and fluidity in presenting their identities, they also introduce ambiguity and limitations. Goffman (1970: 5) suggested that appearance and behaviour can convey information such as gender, age, social class, and intentions. However, the identity portrayed by an avatar often lacks the authenticity of real-life personal appearance and is shaped by the user's intentions and the affordances of the virtual technology. This fluidity fosters new interpretations of identity, where users balance their conscious choices in avatar design with the immersive experience of presence in the virtual environment.

Hence, within VR, impression management assumes an editorial quality, where users craft their virtual personas based on the impressions they wish to convey to others, often with limited exposure to the truth. This aspect does not significantly hinder the progress of research in this field, as the focus of the study is inherently tied to understanding user intentions. Moreover, the concept of "communicating information" serves as a valuable compensatory tool for deciphering virtual impression management. When users utilise language or language-like symbols to transmit information within virtual environments, researchers are provided with additional avenues to analyse their impression management strategies. By examining how users choose to communicate and what information they prioritize in their interactions, insights into their underlying intentions and the construction of their

virtual identities can be gleaned. Thus, while the virtual environment may facilitate a certain level of manipulation and distortion in the presentation of self, the act of communication itself becomes a vital tool for unravelling the complexities of virtual impression management.

Under the face-to-face interaction model, impression management in virtual spaces may be more subjectively intentional. On the one hand, through social software with diverse and independent interacting spaces such as *VRChat*, the interaction of avatars in VR could conform to Goffman's interaction model under the user's intention. The people who operate and interact in the virtual environment could be doing this in the same manner as they do in face-to-face interaction. Face-to-face interaction models can be used to understand how virtual users perform impression management. In Goffman's analytical perspective on the face-to-face interaction system, there are two main roles: the observer and the subject, who are information seekers and information providers (Goffman 1969: 71). In an environment, one side of the interaction participant is considered the observer or searcher, whose task is to obtain valid information. The other side plays a hidden role: managing the expression of information. Whether in real life or a virtual world, the observer-subject model will be much more complex. The most obvious is that more roles will be introduced as the number of participants increases and the amount of information expands.

Compared with Goffman's theory that focuses on face-to-face interaction, the random access, anonymity, and the visitors' flow rate in the virtual social environment may make users' impression management more intentional to a certain extent. Goffman's face-to-face interaction work has proposed that before taking action, the subject imagines the potential consequences of the action to others and how others may react to such consequences (Duncan 2015). This imagined reaction will have an impact on the actors' behaviour planning. In a public virtual space, the interactive subject is virtual, and the user does not have to bear the physical contact. Users' actions are less regulated and freer than in real life, and their identities are mouldable, which may lead

to interactive users being more inclined to follow their real wishes when they act.

The lack of supervision mentioned above refers to legal supervision. Whether in real life or VR, the space of social interaction can be regarded as a place with mutual monitoring. Goffman (1963) emphasised that individuals can continuously sense situations in their daily interactions; they can process situational information and monitor it through observation at any time. When people communicate and interact with others, they use expressions, bodies, and other situational materials to regulate themselves within a larger social framework. Doing so can reveal to others who they are and their current intentions and feelings. This impression management requires interaction participants to pay attention and focus on the interaction of the entire situation. For example, in VR, the user manipulates the avatar's body position during the conversation through the controller so as to face other participants. When a user wants to participate in a conversation or game, they may observe the speakers' language attitude and the number of players first, then to consider whether to involve themselves in the activity. When the user is already in a social situation, they will consciously pay attention to the topic of the speaker and respond with a nod or other micro-movement. This point has been a focus of this project, and when exploring the motivation of designing avatars, attention should be paid to the virtual environment in which the user is located when the action occurs. Goffman (1969) believes that when the listener obtains the basic language of a certain body movement from the speaker, this body movement is related to the micro-ecological position of the speaker himself. To describe the meaning of the movement, researchers need to examine the physical environment in which the action takes place. The physical environment in this Goffman work is seen in the project as a themed virtual social space. In the process of autoethnography and interviews, the virtual environment in which users interact is an important data material.

Goffman’s theories on impression management and interaction are increasingly relevant in the digital context, where users need to navigate multiple layers of self-

presentation and social interaction across different platforms. The rise of VR and digital spaces offers a new medium for understanding Goffman's concepts, as it allows for the exploration of how identity is managed and presented in digital environments. In virtual spaces, individuals must not only manage their impressions but also adapt their identities to fit new forms of social interaction. By examining how users engage with avatars and virtual environments, researchers can gain insights into the persistence of Goffman's theories on self-presentation in the digital age and the ways in which they are adapted to new technologies and contexts.

The cultural identity and social identity of users are also important factors in examining their motivation for designing avatars. Goffman (1983: 4) believes that any producer who enters a social situation carries personal experiences from previous interactions with other people and has many shared cultural assumptions. When discussing social behaviour, examining people's previous cultural backgrounds is necessary. This is illustrated in Goffman's discussion of social situations with linguistic behaviours, which should analyse the effects of social variables such as age, gender, class, race, religion, education, cultural cognition, and bilingualism on people's behaviours. VR users have their own cultural background insights when designing avatars, and on the other hand, the appearance characteristics of group members are conducive to enhancing social identity; user impression management can be influenced by the group identity. Some researchers have highlighted social identity theory in discussions of virtual avatars. Social identity relies on common features shared by the group members and distinguishes them from other relevant groups. Guegan (2017: 140) argued that avatars may provide a means of introducing visually perceptible social cues and increase the motivation of participants to work together and combine their efforts. Following a social identity perspective, in Computer-Mediated Communication, Turner (1987) emphasised that the scarcity of individuating information combined with relevant membership cues may lead to depersonalization. Interlocutors cease to pay attention to individual differences or personal characteristics of individuals, tend to reason on the basis of social categories, and see themselves and others as prototypical

group members. This statement can be understood in VR as users change their appearance to manipulate their impression on others, possibly to integrate themselves into the group members. Therefore, when examining the motivation of users to design avatars, it is necessary to examine their cultural background and the psychological factors of social identity.

In general, situation and interaction are two major themes in Goffman's sociology. It emphasizes self-situation, behaviour situation, and order situation, and emphasizes various exquisite interactive technologies adopted in micro-interpersonal interaction. It provides a good reference for how people realise impression management in the situation.

2.3 Self-identify and impression management

In Goffman's work, the exploration and pursuit of the self has been a critically important theme. Many scholars believe that Goffman focuses on face-to-face interaction and the presentation of self (Giddens 1986) and even consider him an "ethnographer of the self" (Freidson 2019). From the late 1950s, his work *The Presentation of Self in Everyday Life, Stigma*, *Interaction Ritual*, *Strategic Interaction* all the way to *Frame Analysis* in the 1970s, Goffman keeps emphasising self-presentation. In *Asylums*, Goffman even made it clear that his main intention was to propose a "sociological explanation of the structure of the self." (Goffman 1961: XIII) If face-to-face interaction is a bright thread in Goffman's research, then the self is a hidden thread that runs through Goffman's work.

As a student of Goffman, John Lofland (1980) identified three dimensions within Goffman’s theory of the self. The first is the formal self, also referred to as the situational self. This dimension consists of social roles and is defined by the constraints of social situations. It is a performance shaped by the individual, influenced by societal norms, and enacted in response to different social contexts. This formal self aligns with

Mead's concept of the ME, which represents the socialized aspect of the self (Mead 2023: 425). The second dimension is the acting self, characterised by role-playing and impression management. This self is driven by emotion and often seeks to present a particular image to others (Goffman 1959: 56). The third dimension is the sense of self or personal identity, which reflects an individual's spiritual or natural self. Lofland (1980) highlighted the tension between the situational and acting selves, noting that these two must be constantly coordinated and aligned. This coordination underscores the conflict and interplay between personal desires and societal expectations, revealing a dynamic relationship between the id, ego, and superego. The id represents basic drives and desires, the ego mediates between these desires and societal norms, and the superego reflects internalised societal values and morals (Freud, 1923). In the context of Goffman's theory, Lofland's dimensions show how these elements influence the performance of the self in different social settings. This alignment demonstrates the complexity of identity management, as individuals navigate and adjust their roles to fit various social contexts.

Robin Williams (1998: 155) also has three different social interpretations of Goffman's theory of the self. First, Williams believes that in the book of *The Presentation of the Self in Everyday Life* and *Interaction Ritual*, the self contains two parts: the role and the performer. Goffman is primarily concerned with the self as a performer. Second, in the books *Asylums* and *Stigma*, self is a product of interactions with others, as well as a product of the organizational settings and arrangements to which one belongs. From this perspective, the self is the result of the social situation, and the individual will challenge the organizational system's definition of the self. Third, the self is flexible in the social process. This self can constantly change in the process of managing the self, which is mainly reflected in *Frame Analysis*. The self is no longer a fixed set of roles, but an organized "formula" that transcends specific roles and appropriately adjusts the relationship between desires, motivations, and role expectations.

Gregory Smith (2006: 101) summarised the views of several researchers, such as Philip

Manning and Edwin Lemert, and divided Goffman's theory of the self into three stages: The two selves thesis, the countervailing self, and the stance-taking entity's dance of identification. First, the two selves thesis, in "On face-work" and "Presentation," the individual as an interactant is seen in dual terms, as a social product and an agent. Smith (2006: 102) believes that Goffman's self-theory was inspired by Mead and applied Mead's self-theory to the analysis of interactive behaviour. The two-selves thesis adapts Mead's distinction to the conditions of co-presence. The 'I' becomes the performer, the 'harried fabricator of impressions', a self in tension with the self as a socialised character (Smith 2006: 102). Second, the countervailing self is the self's resistance to the total institution. From then on, Goffman's concept of the role of the self and the performer shifted to the organizational environment of the total institution. The institution's influence on the individual self is mainly realized through the obligations, responsibilities, and expectations attached to the role. Finally, Goffman (1981) develops his earlier notion of the self as a 'stance-taking entity' and asks how these stances are manifested in the processes of ordinary conduct. Smith (2006: 107) believes that Goffman's later thought no longer regards the self as a rebel of the social order, and individuals can constantly adjust their positions in the face of different situations.

According to the aforementioned theory, it can be posited that five key factors influence the motivation driving users to design avatars in virtual reality: Firstly, users' motivation is complicatedly linked to the social context they find themselves in, with their chosen avatar identities shaped by the constraints imposed by these social situations. Secondly, avatar design serves as an essential tool for expressing the performative self within virtual environments. Through their avatars, users not only alter their identities in terms of appearance but also facilitate their immersion into specific roles. Thirdly, avatars can serve as a reflection of users' personal preferences and innate perceptions of identity. Fourthly, avatar design is intimately connected to the interactions between users and others within VR. In essence, avatars can be perceived as products generated by users within these interactive settings. Lastly,

given that users often employ multiple avatars in virtual social interactions, the process of changing and updating avatars can provide insights into the ongoing adjustment of users' self-identity, role-playing, and desires. The subsequent section will analyse how users achieve impression management within virtual reality settings, examining the strategies they employ to shape others' perceptions and manage the impressions conveyed through their avatars.

2.4 virtual avatar in identity study

Avatars are a means of impression management in virtual environments. By conveying specific impressions about their abilities, attitudes, motives, status, emotional reactions, and other characteristics, people can influence others to respond to them in a desirable way. In dramatism, individuals use a variety of techniques to create or maintain an impression in front of others and can deal with the contingency in the performance process. In dramatism, individuals use a variety of techniques to create or maintain an impression in front of others and can deal with the contingency in the performance process (Harlow 2018). Goffman (1959) stresses that on stage, the roles played by participants are influenced by self-imagination and self-understanding, as well as by the characters in the script. Individuals use various information to play the role, such as behaviour, appearance, previous experiences and memories, language, copywriting, psychological characteristics, etc. (Goffman 1959: 120). Virtual avatars are also like characters in a script. In recent *VRChat* updates, more and more themed rooms provide users with a variety of avatar choices. On the one hand, these themes impose script restrictions on avatars, such as in a virtual bar room, where the female avatars displayed in the room are dressed in a sexier style. On the other hand, avatars may come from fan cultures or subcultures, such as Marvel and Disney. So, the avatar can be seen as a character that has already been set in the script. In the interaction process, since the avatar selected by the user has specific appearance characteristics, the user can also be regarded as interacting with non-verbal symbols, and other users, namely the audience, will obtain symbolic information from the avatar's appearance.

Based on the user's behaviour, the audience will receive the impression that the performer intends to show, and the audience will try to cooperate with the performer's impression management during the interaction process (Goffman 1959: 2). Goffman (1959: 7) believes that the behaviour of the audience has a conventional structure, and individuals can realise the intention of dominating the behaviour of others through impression management. The uniqueness of avatar appearance in virtual reality will give individuals a satisfactory presentation of a certain expected self to others present.

The study of self is actually a study of the structure of social interaction. While the characters' actions in the theatre are performances, the fictional characters on the stage employ real interactive techniques. It is the same technique users employ to successfully maintain their personas during virtual social interactions. Performers who seek certain ends in their interest must "work to adapt their behaviour in such a way as to give off the correct impression to a particular audience" and "implicitly ask that the audience take their performance seriously" (Browning 2010, 67). Goffman proposed that, among other people, individuals would always strive to control the impression that others form of him or her so as to achieve individual or social goals (Jacobsen 2014: 68). What Goffman really cares about is the structure of social interaction (Heritage 2001). As a sociologist, Goffman studies the self by observing and analysing behaviour, combining roles and situations to discuss. At the same time, the meaning and discourse of social culture are also the resources and materials for self-construction (Randall 1986: 107). On the one hand, social interaction requires people to express themselves, and so does life contact. On the other hand, the self is attached to the social situation; in other words, social interaction constructs the stable self. The social self is the product of face-to-face interactions, and Goffman's primary focus is not the individual's motivations, feelings, or intentions, but rather behaviours, roles, and interactions (Goffman 1961). Goffman uses impression management and self-presentation to study interaction, including concepts such as front, back, and team, where performers cooperate to present situational definitions in front of the audience

and enable various impression management techniques.

The dramatization theory reflects the transition from a production-orientated society to a consumption-oriented society (Alvin 1970: 381). John (1984) proposes that "the presentation of self" is a product of capitalist society, where actors are constantly monitored in the social system, and people use performances to replace life. It is precisely because of the obsession with appearance that an unprecedented emphasis has been placed on impression management. This bureaucratic system and self-presentation in the commodity society gradually moved towards alienation. Impression management was originally a means of protecting the true self, but now it has become the purpose of presenting the self. Actors even maintain the various selves they present at the cost of distorting and suppressing their true selves. Goffman's theory embodies the experiences of individuals in commoditized societies. Here, the commodity is dramatized as a consumable image and symbol (Xavier 2016). People can dress, speak, and act in different ways in daily life to support the illusion of a free choice of identity, but for most people, such change is limited. Now, with the advent of virtual technology, people can finally "justifiably" choose their self-identity and use their ideal identity and appearance to interact socially in a virtual environment, and everyone can become a Superman. Goffman has shown that self-presentation is a kind of simulacrum, and he vividly shows people the process of simulation and performance in social life (Vester 1989). He judged the individualism of society and revealed the inner tensions of modern society. Sociologist Alvin Gouldner, however, considers Goffman's theory a form of metaphysics, arguing that his theory eschews discussion of social stratification and differences in power (Gouldner 1970: 397). Gouldner (1970) believes that performance and impression management are individual debugging methods that actually play the function of maintaining and consolidating social order.

As elucidated by scholars such as Alvin Gouldner and John Xavier, the dramatization theory serves as a lens through which to understand the societal shift from production-

oriented to consumption-oriented paradigms. John (1984) suggests that the concept of "the presentation of self" arises within a capitalist framework, wherein individuals, constantly under societal scrutiny, resort to performative acts as substitutes for authentic living. This obsession with appearance fosters an unprecedented emphasis on impression management, initially conceived as a means of safeguarding one's true self but gradually evolving into the primary objective of self-presentation. Goffman's theory, deeply embedded in experiences within commodified societies, portrays commodities as dramatized consumable symbols, shaping individuals' self-presentation and social interactions. However, sociologist Alvin Gouldner (1970) critiques Goffman's theory, arguing that it overlooks discussions of social stratification and power differentials. Despite this critique, impression management remains a pervasive self-presentation technique, integral to navigating social and cultural contexts. Its implications span social, cultural, and spiritual dimensions, wherein individuals meticulously construct their public personas, drawing upon societal norms and cultural traditions to shape their identities. Thus, impression management operates as a multifaceted process, deeply entrenched in the fabric of society and culture, influencing individuals' perceptions and interactions in both tangible and intangible realms.

Impression management is a self-presentation technique that focuses on improving a person's image in the eyes of others. Since Erving Goffman implemented the term impression management in 1959, sociologists and theorists have been studying additional aspects of the concept. Impression management presents constructive and favourable images to the public and promotes positive results. Impression management is a common underlying process that involves social and cultural implications. In regard to the social implications, impression management allows people to carefully craft and construct their public perception. In some cases, in order to obtain a favourable public or social appearance, a person have to alter and falsify their persona. The social impact of impression management is not always negative, but there is a fine line between positive and negative aspects. Impression

management in relation to culture has a far more positive outcome. The cultural implications of impression management define the significance of cultural traditions, norms, and ways of life. The colour of skin and hair, as well as the clothing people choose to wear, are all a part of the impression management process. The spiritual implications involve both the social and the cultural implications in order to fully complete the impression management process. The social, cultural, and spiritual implications vary from person to person and from culture to culture, but most importantly, they are all deeply rooted in impression management.

2.5 Theoretical framework

According to the above-mentioned Goffman's exploration of drama and the self-theory, his research is essentially a critique of modern society. In the discussion of the situational interaction part, the relevant theories of the situation can help explain the user's motivation for designing avatars in virtual social interaction, but here, it is also necessary to consider that the experience that VR affords users as an emerging technology is special, which can be reflected in the diversified impression management methods it provides. Compared with Goffman's face-to-face interaction, the use of VR blurs the geographical distance of participants, enabling users to use virtual avatars for face-to-face interaction; at the same time, the virtual environment has less supervision than in real life, anonymity, and identity plasticity, which may make users' impression management in the social process more subjective. Whether in real life or VR, individuals are monitored and monitored by others in their interactions. Goffman's research on self-presentation is actually a study of social interaction institutions. From self-presentation, five research directions can be summarized to discuss the motivation of users to design avatars: self in social situations, performative self, the natural self, the self that emerges from the interaction, and the dynamic self in social interaction. Finally, the gradual alienation of self-presentation in a consumption-oriented society will be considered. The new technology suppresses the real self and maintains the distortion of the idealised self.

Situational interaction and self-presentation are the two main themes of the project, and impression management is the research direction of these two themes. Goffman (1959: 16) believes that to create an ideal self-image, individuals spend a lot of time and energy focusing on the body and continuously maintaining the appearance through appearance. Body exploration actually studies the self, and the self in Goffman's drama theory is the product of situational analysis. The final output of self-presentation in this proposal is to answer how users are influenced by themselves when designing avatars and their motivations behind designing avatars; the output of the situational interaction part is to discuss the influence of VR and *VRChat* on users' self-concept in impression management.

According to Goffman and later scholars' understanding of his theory of the self, the research will analyse the motivation of users to design avatars from five perspectives. First, the social situation is formed by the social culture, technology, and aesthetics in a specific environment, and the self could present a diverse formal self. When investigating the situational self, a background check on the user's age, nationality, cultural background, social role, etc., should be involved. Secondly, driven by emotion, the performance self can be presented in the process of impression management. When users attach their identity to their avatar's appearance, their behaviour and language may be performed to suit the avatar's identity. The investigation here is whether the avatar will constrain the user's self-presentation; the third is the natural self. The experience of the self includes a consciousness of one's physicality, as well as one's inner character and emotional life. See the impact of a natural self when choosing an avatar identity by determining whether users choose avatars that are related to personal preferences and previous experiences. Fourthly, the concept of social identity, as elucidated by Tajfel (1979), provides insights into intergroup behaviour. Emotional attachment to the group may influence individuals' self-concepts, particularly within themed teams, potentially altering their identities through group dynamics. This study aims to explore whether users modify their avatars or identities

during interactions to align with group identification. Fifthly, the study delves into the ever-evolving nature of the self. It investigates the process of avatar changes during virtual social interactions, aiming to analyse the dynamic nature of users' self-presentation. The survey's self-presentation section will gather data through questionnaires to further understand these phenomena. At this stage, the hypothesis that can be put forward is that the motivation for designing avatars may be related to the user's cultural background, social role, age, appearance, hobbies, and social identity of a particular avatar.

Situational interaction can explain behaviour through the integration of humans and the environment. The situational interaction will be discussed from two directions. First, the feeling of presence in VR. The sense of presence is the feeling of being there in a virtual environment. Users could feel physically present and accept the reality of it at a subconscious level. Virtual environments could provide a freer space for user interaction. Secondly, the common point between face-to-face interaction and virtual situational interaction is that people enter any situation with their personal experience and cultural assumptions of previous interactions, and individuals have the ability to continuously perceive the situation wherever they are in the social process so as to facilitate monitoring of situational information at any time. The interviews will start with considering presence of VR, the particularity of the virtual environment, social identity in the situation, and situation supervision, and it will discuss the impact of impression management style brought by new technology on self.

VR is an emerging and continuously evolving medium where it is necessary to explore the possibilities for communication and interaction offered by current technology, as well as its power to develop immersive experiences regarding the possibilities of integrating human senses into it. Social VR platforms can foster a strong sense of presence in users, that is, the feeling of being fully embodied and physically located in the virtual environment. Particularly, VR-supported user-tracking, the use of stereoscopic visuals, and wider fields of view enhance presence experiences

(Cummings 2016). Scholars commonly distinguish spatial, social, and self-presence (Lee 2004). In short, spatial presence refers to users' sense of being physically located in and enveloped by the virtual environment, which also implies that displayed objects appear to be physically co-located and existing (Wirth 2007). Social presence refers to users' sensation of being physically co-located and socially connected with others (Biocca 2003). This indirectly enables face-to-face interaction. While less immersive media like smartphones or screen-based social apps also allow access to other people's minds or respond to the "presence of another mind," social VR platforms add to this "presence of body" (Biocca 2003). Self-presence refers to users' perceiving the virtual body as their actual body (Kilteni 2012). In social VR, users can momentarily feel ownership over the virtual body of their avatar and experience their virtual self as their actual self. In summary, social VR platforms are unique due to their offered mix of spatial, social, and self-presence. Therefore, social VR platforms provide a stronger social presence; users perceive others as physically close and like to share the same physical space.

In recent decades, the omnipresence of information and communication technologies and digitization, together with the growing development in our society of biotechnology, Artificial Intelligence, automation robotics, and other innovations, have had a direct impact on self-identity that we still do not know of its scope. Hongladarom (2011) proposed that popular culture, through both "old-school" and the latest media, no longer holds a mirror to reflect people's self-identities. It does not provide feedback about how grounded our self-identities are in the reality of individual lives. Instead, popular culture manufactures "portraits" of who it wants us to be. Tapping into individuals' most basic needs to feel good about themselves, accepted, and attractive, popular culture tells people what they should believe about themselves. The problem is that the self-identity shaped by popular culture serves its best interests rather than what is best for an individual. Additionally, self-identity is no longer self-identity, meaning derived from the self, but rather is an identity projected onto people by popular culture and in no way an accurate reflection of who we really are.

Lange-Faria (2012) argued that the exponential increase in online gaming, virtual social spaces, and the rapid circulation of individual information through social networks are changing the perception of themselves and often an extreme dependence on the responses of others, measuring individual reality with the number of "likes" or positive comments. People come to see their identities as those they would like to have or that they want people to see rather than who they really are. They then feel compelled to promote and market these identities through social media. The line between person and persona, private and public self, becomes blurred or erased completely, and the so-called self-identity becomes a means of individual acceptance and status. Paradoxically, in striving for approval by our social world writ large through technology and in seeking uniqueness that enables us to stand out in the densely populated cyber world, people unwittingly sacrifice their true self-identities and shape their identities to conform to what the digital world views as acceptable identity. And in doing so, individuals relinquish the specialness they hold so dear.

To sum up, the study not only discusses the micro-interaction of users in the virtual world, but also the influence of the macro perspective, such as the technological environment, on self-concept. Herbert (1972: 51) criticized Goffman's research for ignoring the macro world brought into the micro-interaction, but here believes that Goffman's research does not negate or ignore the importance of the outside of the situation. The complex relationship between micro-interactive order and macro-institutional order changes with different social situations and experiential environments. Goffman focuses on the relationship between interactive order and social structure as the problem between micro and macro, and this research will follow in this manner.

Chapter 3 Methodology

Avatars are the representatives of a user's identity in the virtual world. From the mid-1990s into the 20th century, the popularity of the Internet and computers led research to consider the field of online identity. Between the 50s and the early 80s, Erving Goffman worked to describe the structure of face-to-face interaction and to account for how that structure was involved in the interactive tasks of everyday life (Miller, 1995). The impression management theory of Erving Goffman was one of the focal points of understanding identity in virtual spaces. Picone (2015) posits that impression management implies that our actions, appearance, involvement, and so forth all giveaway parts of our intent and purpose. The study will be based on Goffman's impression management theory, employing the virtual reality platform *VRChat* as the primary research setting. The study's overarching goal is to explore **how users construct virtual identities**. The following specific research objectives have been identified to refine the main aim of the research:

- Analyse the **inspiration** for users when creating and choosing avatars.
- Investigate the **basis** on which users modify their avatars and under what circumstances such modifications occur.
- Identify the underlying **motivations** prompting users to explore and customise their avatars.
- Explore the **strategies** employed by users in managing their impressions within virtual reality.
- Examine the influence of **virtual cultural environments** on users' personal impression management.
- Discuss the potential **consequences** of immersive impression management in virtual reality, specifically focusing on how the social dynamics of virtual spaces may shape users' perceptions of their own identity.

The specific objectives of this study are guided by Goffman's theoretical framework, with a critical consideration of the cultural characteristics of virtual interaction environments. Firstly, Goffman's theory emphasises the influence of past experiences on identity construction, and in the theory of impression management, situational factors are key to managing identity. Therefore, the research objectives account for both the inspiration behind avatar design and the contexts in which avatars are modified. Secondly, the cultural environment of virtual reality and its affordances are closely linked to users' identity design. The research explicitly considers the impact of the virtual cultural environment on individual impression management. Lastly, it is inevitable to consider the consequences of immersive impression management in virtual reality, as this can explain the dynamic changes in users' identity perception during virtual interactions.

The study is therefore focused on the inspiration, the basis, and the motivation that underpin the processes of identity formation, expression, and representation in VR. Investigating virtual culture environments requires a comprehension of the influence of cultural factors on users' social interactions and how these factors shape the presentation of identity. The focus of this study is the examination of the consequences of virtual impression management, and how these virtual identities impact users' online and offline self-perception and behaviour.

The overarching aim of this research is to attain a profound comprehension of avatar design and user identities. Given the research objectives outlined above and the central inquiries derived from the subject matter, this research adopts a qualitatively driven mixed methods design. Qualitative research forms the core of the study, complemented by a qualitative-quantitative hybrid approach. The integration of quantitative data aims to enhance and enrich the qualitative study, contributing additional depth, breadth, and complexity to the answers to the research questions. This approach seeks three types of data, providing a full exploration of the topic.

First, using auto-ethnography as a methodological approach, this study combines an autobiographical narrative with a broader cultural and social framework. Through the researcher's personal experiences, the narrative explains the operations and emotional nuances in the *VRChat*, providing readers with an initial insight into the platform. This approach merges personal reflections, emotions, and observations by integrating the researcher's prior social encounters and studying personal identity-related stories in virtual social contexts. This not only serves as a means of comprehending the social landscape under investigation but also offers a way to understand how people are doing in VR social interaction. Of course, researcher should reflect on their own identity and emotions during the investigation, considering how these factors might influence the data and its interpretation. They should disclose their positionally and how prior experiences have shaped the research outcomes. Being influenced by the Chinese cultural environment, the researcher should pay attention to cultural differences when conducting research in the context of virtual reality culture and consider how this work might be interpreted in different cultural settings.

Secondly, the research will obtain patterns related to user avatar design through a survey questionnaire based on the gaming experiences of multiple participants. Einola (2021) suggests that researchers can observe clear patterns over time through survey questionnaires. The study will collect data on the purpose, motivation, and methods of user-designed avatars through the questionnaire. The collected data will provide information on several aspects, including the inspiration and purpose behind users creating and selecting avatars, which parts of avatars can represent users' expectations of identity, the methods users employ in designing avatars, and the correlation between virtual reality avatars and users' physical appearance.

Thirdly, the research method of semi-structured interview is used to explore the dynamic process of changing self-identity in user interaction, as well as the influence of the particularity of the virtual reality environment and the presence of VR on user's

avatar design and identity creation. The deep reasons behind motivations need to be considered, especially some potential, non-obvious, but non-negligible factors when users express identity.

Therefore, this research used the experiences of the researcher as an exploratory lens to interpret and understand cultural phenomena. From these observations, the motivations and intentions behind the design of self-identity were surveyed by questionnaire. Finally, interviews were used to investigate the dynamic process of designing identity and the impact of virtual reality technology.

3.1 Research philosophy – an epistemologically interpretivist paradigm

The philosophical position of this study adopts the epistemologically interpretivist paradigm. Walsham (1995) argued that interpretivism refers to the approaches that emphasise the meaningful nature of people's character and participation in social and cultural life. It has its roots in the philosophical traditions of hermeneutics and phenomenology, and the German sociologist Max Weber is generally credited with being the central influence. Weber is regarded as the proponent of anti-positivism thought and argued that society can be understood by studying social actions through interpretive meaning the actors or individuals attach to their own actions (Ekström, 1992). Whitley (1984) emphasised that interpretivists look for the meanings and motives behind people's actions, such as behaviour and interactions with others in society and culture. The expected goal of this project is to explore the process of identity construction and the meaning behind the self-identity cognition of users in virtual reality by analysing the motivation and behavioural significance of people designing avatars in the *VRChat* social platform.

Interpretivism provides a framework for understanding how individuals construct and express their identities in digital spaces, offering a way to address the limitations of autoethnography in virtual reality identity research. It enhances understanding

through deeper contextual analysis and a broader perspective. While autoethnography focuses on personal viewpoints and narratives, interpretivism allows for the examination of broader social dynamics and interactions in VR, considering how individual identity is shaped by societal norms and environmental influences. Additionally, it fully incorporates cultural differences and meanings that may not be captured through personal narrative alone.

Given the rapidly evolving online social environment and changing research horizons in this field, researchers should also learn to ask different questions and what "things themselves" say will be different. Gadamer (1970) claimed that interpretivist researchers understand and interpret the social world in light of their anticipatory prejudgement and prejudices, which are themselves changing in the course of history. In short, interpretivism is a philosophical approach that helps us understand the social world by meaningful interpretations of the world inhabited by people, while allowing for reflection on change in the world as it is studied.

Scotland (2012) identified that the ontological position of interpretivism is relativism, and interpretive epistemology is one of subjectivism, which is based on real-world phenomena. On the one hand, ontology is a branch of philosophy about how researchers or observers perceive and observe the nature of human beings' existence as individuals, in society, and in the universe (Smith, 2012). The ontological position of interpretivism assumes that reality as we know it is constructed intersubjectively through the meanings and understandings developed socially and experientially (Schwandt, 1994). Reality is the area of its focus. On the other hand, epistemology is the branch of philosophy that studies knowledge or knowing. It is the knowledge to consider the reality, and also about what kind of methods researchers are using to study reality. The focus of the epistemologically interpretivist paradigm study is knowledge (Scotland, 2012). Yanow (2013) calls it the "knowability" of that topic. Grix (2004: 83) points out that the world does not exist independently of our knowledge of it. Knowledge and meaningful reality are constructed in and out of the interaction

between humans and their world and are developed and transmitted in a social context (Crotty, 1998: 42). This project intended to explore the motivation of users to construct multiple personal identities in VR, and assess the influence of culture on those processes. Interpretive epistemology is a workable philosophical perspective for this study.

Interpretivist views have different origins in different disciplines. For example, anti-positivism is also known as interpretivism; in the early 19th century, scientists Wilhelm Dilthey and Heinrich Rickert began to question sociological positivism and sociological naturalism (Brown, 1990), then with other interpretivists; they theorised in detail on the distinction between natural and social science and emphasizes cultural values. In the early 20th century, the Chicago School of Sociology, including George Herbert Mead, Albion Small, and others, argued that insisting that a different type of research was important in the construction of theories about how humans live in their environments. Jackson (2021) describes the relationship between the emergence of interpretivism and post-positivism, arguing that post-positivism lacks the ability to capture nuances and variability in human interaction. Sociologists in these periods seem to prefer to draw lessons from the subjective experiences of individuals involved in social interactions, as this study intended to do with regards to identity in VR.

Sociologist Erving Goffman was also influenced by the Chicago School in his research (Jacobsen, 2014: 9), particularly in the field of the micro-sociology of everyday life. Goffman was a keen proponent of ethnographic field research methods, especially participant observation, and documentary analysis, which are the key research methods in interpretivism. Bullingham (2013) also employs an interpretative approach to understand online identities, gathering user perspectives and opinions within communities in Second Life. This project will take Goffman's impression management as the theoretical position and will likewise follow his path, with interpretivism as a philosophical position.

3.2 Research type-inductive research

Given the background of interpretivist method philosophy, this research will be a form of inductive research. Babbie (2020) identified that the inductive approach begins with a set of empirical observations, seeking patterns in those observations, and then theorising about those patterns. Strauss and Corbin (1998: 12) described the inductive analysis as the researcher begins with an area of study and allows the theory to emerge from the data. As this project used the *VRChat* social platform as a research site to observe user behaviour and avatar design, this initially was an inductive approach. The research obtained data through questionnaires, detailed interviews, and analysis of participants' avatars. Then, in the data analysis process, patterns about how users design their avatars were found through discursive analysis.

This project, as a qualitative study, is a form of inductive analysis. Neeley and Dumas (2016) emphasised that inductive analysis is a recursive process that involves moving back and forth between data analysis and literature to make meaning out of emerging concepts. The literature review shows that there is a considerable discussion of online identity related to social culture, media, contemporary aesthetics, and social platform changes. Now that VR is an emerging medium of concern, an inductive analysis can be used to identify relevant topics and concepts and to derive meaning from the data. Thomas (2006) also proposed that inductive analysis helps to establish clear links between the research objectives and the summary findings derived from the raw data. Also, Thomas (2006) emphasised that the evidence in the text data can develop a model or theory about the underlying structure of experiences or processes. This study will use inductive approach to explore the patterns of identity construction by users in virtual reality. Overall, the key purpose of an inductive approach is to dig into what is happening in the data, understand the themes present in the data, and produce findings to answer the research questions. Finally, researchers can develop new theories in conjunction with research theoretical frameworks. The Table 2-1 below further illustrates the usefulness of inductive research.

Observations	Data sources- The notes from autoethnography, Questionnaires, text from Interviews, Avatar images, and interview videos.
Look for Patterns	For example, the common factors most users are influenced by during the avatar's design.
Research Directions	For example: The motivation to design avatars in VR is related to their understanding of the concept of self-identity, which may be influenced by social situations (background, culture), self-performance, self-preference, and the presence of virtual reality.
Develop Theory	For example: Avatar design in VR is a conscious and subconscious impression management process, and the user's identity may be influenced by five self-concepts: the self of the social situation, the performative self, the natural self, the self in the interaction process and the self in dynamic interaction.

Table 3-1: The usefulness of inductive research

3.3 Academic justification for the methodology and methods

3.3.1 The Digital Autoethnography

Autoethnography involves cultural experience, and this project will take digital autoethnography as a method to study users digitalized and fragmented identities within a culture, and in this case, within both cyberculture and convergence culture. With the rapid development of new media technologies and digital platforms, people live in a media-driven and highly digitalized society. Bell (2001: 2) argues that cyberspace is "something to be understood as it is lived," a "lived culture" composed of people, machines, and "stories in everyday life". People think about who they are, make sense of their identities, and represent themselves on social network sites, dating and hook-up applications, and their web pages. They story themselves in different forms of cyberspaces to represent the aspects of their identities and create their avatars. While these technologies facilitate different modes of communication,

linking people with each other and with information and goods, they also enable people to think about and represent their identities in particular ways. Atay (2020) believes that digital autoethnography could enable researchers to examine themselves in digital platforms and cyberspace. The digital autoethnography in this project will focus on the ways individuals sustain their idealised selves, often shaped by distorted or over-truthful representations under the influence of technology. Distorted selves refer to the curated, exaggerated, or otherwise altered versions of one's identity that are often presented to fit societal, cultural, or platform-specific expectations. In Goffman's theory of impression management, he emphasises that individuals manage their identities based on social context and audience, a process that may result in inconsistencies between the true self and the presented self, leading to a distorted perception of identity (Shulman 2017, 33). For instance, users might idealise their avatars to reflect aspirational traits, such as enhanced physical appearance or exaggerated personality attributes. On the other hand, over-truthful selves represent an unfiltered or hyper-honest portrayal of identity, where users disclose raw or amplified aspects of their true selves that might not typically emerge in face-to-face interactions. These dualities often coexist in virtual spaces, shaped by the affordances of digital platforms and the user's motivations. Convergence culture significantly impacts these identity dynamics by blending media platforms, technological affordances, and cultural practices into an integrated environment. This interconnectedness encourages users to engage with multiple layers of identity performance across platforms, often borrowing and blending identity elements from various sources. This study will investigate how the interplay between cyberculture, convergence culture, and the affordances of VR technology shapes these expressions of self. By analysing user intent and motivation in customising avatars, the project seeks to illuminate the ways digital identities are constructed and maintained, revealing insights into the broader cultural implications of these practices.

Some of the recent scholarship in popular culture and cultural studies aims to bridge the gap between autoethnography and mediated representations. Silverman (2020)

posits that autoethnography has been more visible at the intersections of popular culture and critical theory. However, Atay (2020) points out that autoethnographic research does play a positive role in media research, but at the same time, it also ignores human experiences and cultural identities within mediated cultures, as well as within digital spaces. Dunn (2020) argued that the work of digital autoethnography is situated within and concerned with digital spaces and the lived experiences, interactions, and meaning making within and besides these contexts. Embracing digital autoethnography pushes us to consider and reflect upon the ways we have changed over time with the influx of digital technology. Atay (2020) also contends that cyber or digital autoethnographies would explain our cultural identities and experiences within different cyber or digital cultures. As in the project, the researcher will use a first-person narrative to explain the intent of choosing an avatar identity (Table 2-2).

Autoethnography's Research Objectives	Describe the experience of changing avatars and choosing avatars, social interactions in virtual reality, and cultural dynamics on the *VRChat* platform.
Participant Selection	Participants are users whom the researcher encounters and plans to meet in virtual space.
Data Collection Methods	In *VRChat*, this collection includes recording the researcher's interactions, capturing screenshots, and maintaining a reflective journal. The research also uses audio recordings or video recordings for a more immersive experience.
Autoethnographic Writing	Writing autoethnography by incorporating personal experiences, reflections, and emotions. Use storytelling techniques to convey the richness of the researcher's encounters in *VRChat*. Share details about interactions, the cultural atmosphere, and any significant events.
Thick Description	Offering detailed, context-rich accounts of VR

	experiences. Describe the virtual spaces, avatars, social dynamics, and any cultural elements that play a role in VR social interactions.
Analysis	Consider the impact of the virtual environment on users' identity, the social dynamics researchers observe, and any changes in researcher's perceptions over time.
Visual Elements	The study believed that it would be better to incorporate visual elements into autoethnography writing, such as users' avatar images and virtual world images.

Table 3-2: Research steps of Autoethnography's

The role that digital autoethnography plays in this research is exploratory. The researcher related their own virtual experiences retrospectively and selectively with regards to avatar design to understand the processes involved in this task and to understand how wider culture and the culture of VR had shaped their own choices. This then helped form questions for the research questionnaire.

The researchers' personal experience with *VRChat* is valuable to this thesis in the following ways. Firstly, Ellis (2011) argued that autoethnography is an approach to research and writing that seeks to describe and systematically analyse personal experience in order to understand cultural experience. When researchers use field notes or interviews to describe patterns of cultural experience in VR, researchers are seeking to draw evocative descriptions of personal and interpersonal experiences. In this research, these patterns were described in terms of avatar characters, social situations, variables in interactions with others, and changes in the social environment. Identifying this cultural pattern allowed for more focused questioning and processing of data results in later analyses.

Personal narratives are stories about authors who view themselves as a phenomenon

and write evocative narratives specifically focused on their academic, research, and personal lives (Berry, 2007; Goodall, 2006). This form of research is not accompanied by traditional analysis or academic literature, and it is based on the researcher's interpretation of VR social interaction under the prior social experience. Goffman (1956) believes that the construction of self-identity and the performance of interaction both carry traces of people's previous experiences. In other words, when discussing self-identity, it is necessary to participate in research based on previous experiences.

Ellis (2004: 46) points out that personal narratives propose to understand a self or some aspect of life as it intersects with a cultural context, connect to other participants as co-researchers, and invite readers to enter the author's world and use what they learn there to reflect on, understand, and cope with their own lives. Not only does this personal narrative attempt to make personal VR experiences meaningful and culturally engaging, but by crafting accessible text, researchers and readers can combine their previous experiences of building identities online to understand patterns of virtual socialization and the value of virtual interaction. Also, researchers may be able to reach wider and more diverse mass audiences that traditional research usually disregards. Ellis (1995) argued that such a move could make personal and social change possible for more people. Users on *VRChat* are from all countries, and autoethnography is a good vehicle for this research to reach people from more cultural backgrounds. One additional advantage here is that it makes research more persuasive, especially when discussing the impact of technology on the researchers' identity in a consumption society.

3.3.2 The Questionnaire

Foddy (1993) considers a survey to be a complex communication process whereby the product of the interaction between researchers and respondents leads to the sharing and creation of meaning. The primary function of the questionnaire in this project is

to collect information about the user's self-identity and background. As an increasing amount of communicative activity takes place online, there has likewise been a significant increase in primary research on virtual communities, online relationships, and a variety of other aspects of computer-mediated communication (Wright, 2000). Studies of online populations have led to an increase in the use of online surveys; questionnaires offer an objective means of collecting information about people's knowledge, beliefs, attitudes, and behaviour (Oppenheim, 1992). Yun (2000) believes that Internet-based survey research may save time for researchers. Online surveys allow a researcher to reach potentially thousands of people with common characteristics quickly despite possibly being separated by great geographic distances. Playtracker is a website that tracks game data. As of May 2024, it's estimated that there are approximately 20.5 million players on VRChat (Steam), with around 963,000 being active users (Playtracker 2024). The users are from all over the world – and are all, necessarily, connected to the Internet. Wellman (1997) argued that one advantage of online survey research is that it takes advantage of the ability of the Internet to provide access to groups and individuals who would find it difficult, if not impossible, to reach them through other channels.

In questionnaires about self-identity or cultural identity, regardless of the researcher's purpose, the construction of the questionnaire generally involves several keywords related to the subject. For example, to validate the professional self-identity of medical students, Haruta (2021) used nine items to design a questionnaire that all related to the student work, including "communication," "cultural awareness," "teamwork," etc., to verify that medical school participants identified themselves as members of the professional group. In a questionnaire on Asian cultural identity and its measurement, Bhugra (1999) developed a questionnaire by describing key concepts of cultural identity such as religion, attitudes towards family, diet, language, etc. Van (2014) examines environmental self-identity, which states that a strong environmental self-identity increases the likelihood of a wide range of environmental actions. The questionnaire includes life values, energy consumption, and personal driving style.

Gonzalez-Franco (2018) designed 25 questions to study how different self-avatars produce different attitudinal, social, perceptual, and behavioural effects. The questionnaire is based on aspects of body ownership, appearance, location of the body, and response to external stimuli.

Following these studies, the design of the questionnaire can be composed of several key points in the theme, which can also facilitate later data analysis. The main purpose of the questionnaire is to obtain information about self-identity construction and how the identity is affected in the interaction. The researcher shall centre the questionnaire around the following keywords: user background, user preferences (pop culture and fan culture), interaction situation (room theme), group identity, and reasons for changing avatar identities. The following Table 2-3 outlines the design steps for the questionnaire.

Questionnaire's Objectives	Investigate the user's background, including the user's game duration, age, gender, and avatar gender.
	Explore the user's *VRChat* experience: reasons for joining virtual reality, users' confidence levels in virtual and real-world social interactions, and the relationship between users' chosen avatars and social situations.
	Emphasize avatar design: types of avatars chosen by users, methods of acquiring avatars, reasons for choosing and modifying avatars, the relationship between users' virtual and real-world identities, and the correlation between users' virtual and real-world appearances.
Identify Key Variables	Include avatar design choices, interaction preferences, cultural influences, and social interaction situations within the virtual environment.

Question Structure	Use a mix of question types, including 31 closed-ended and one open-ended question, while open-ended questions allow participants to express their thoughts in more detail.
Pilot Testing	Before finalising the questionnaire, the researcher conducts pilot testing with a small group for two weeks to identify any ambiguities, confusing questions, or issues with response options. Use feedback to refine and improve the questionnaire.
Ethical Considerations	The researcher has informed consent from participants, respects their privacy, and addresses any potential ethical concerns related to virtual interactions. The questionnaire will only be conducted after obtaining users' signatures from the Participant Information Sheet for *VRChat* Users and the Participant Consent Form.
The number of participants	The plan was for 70 participants, but the actual number of valid questionnaires collected was 75.

Table 3-3: Outlines the design steps for the questionnaire

3.3.3 The Interview

Kvale (1983: 174) defined qualitative research interview as "an interview whose purpose is to collect descriptions about the life-world of the interviewees in order to explain the meaning of the described phenomena". While the questionnaire obtains the user's self-identity information, the interview was planned to determine the impact of technology on the user's self-identity in cyberspace and analyses the significance of this impact on consumer society. First, this will involve how users feel presence in VR. In Goffman's theory, face-to-face interaction is one of the basic conditions for interaction, and presence in VR is the key factor in realising virtual face-to-face interaction. Therefore, it is necessary to discuss VR presence. Second, the

experience that virtual technology brings to users is reflected in the interface, space environment, design tools, interaction methods, etc. The interview will involve investigating users' understanding of virtual technology and how virtual technology affects the shaping of their identity. Third, the interview also helps to investigate the underlying reasons why users choose avatars.

A semi-structured interview guide consisted of two levels of questions: main themes and follow-up questions. Gray (2016) stated that semi-structured interviews are designed to gather in-depth information. The main theme of the interview here is the influence of technology on users' self-identity, and the follow-up questions are flexibly edited according to users' experience and virtual experience. A major influence on this interview process was Dean's (2009) research on users of *Second Life.* When Dean (2009) examined the influence of avatars' behaviour in *Second Life* on behaviours in real life, Dean encouraged participants to freely discuss avatars they have used or encountered in the application. This participant-led approach became the substantive research content. Krauss (2009) points out that the order of the main themes could be progressive and logical, but following Dean (2009) these themes can also emerge from the logic of the data itself.

Online interviews already exist in avatar-related research, and semi-structured open-ended questions are suitable for identity-related research. Martey (2015) explores the avatar design and clothing of 206 individuals in a multiplayer game in *Second Life*. Through analysis of gameplay observations and online interviews, the research examined the relationships between avatar appearance and perceptions of individual and group identity. In studying how fashion co-exists with function, Consalvo and Harper (2009) conducted interviews with female players of *World of Warcraft* and *Age of Conan*. They found that for most, the ability to control what an avatar looked like or dressed in was certainly important, but that functionality (almost) always trumped style when trying to advance within the world. The interview style in both of these studies allowed for a natural flow of conversation, starting with simple conversations,

such as asking about the participant's favourite avatar and then touching on the participant's personal history, identity, and appearance.

The reason why the semi-structured interview is a popular data collection method is that it has proved to be both versatile and flexible. Stuckey (2013) proposes that researchers need to prepare topic and question outlines online and provide some topics that reflect the research questions for the research counterpart to explore topics that respondents feel comfortable discussing. For example, Kolesnichenko (2019) interviewed some experts related to virtual social platforms; because these experts are very familiar with the design knowledge related to human-computer interaction, the researcher starts from HCI to obtain information about characterizing avatars and avatar systems in this emerging commercial sector. This research will interview users familiar with *VRChat*, and so this topic should be one that participants are comfortable discussing.

The following Tables 2-4 show the semi-structured questions from the interviews and the kind of research objectives they served.

Research objectives	The questions
Identifying user preferences for avatar	• What features do you like about this avatar? • Have you tried some similar avatars? • When did you learn that you liked this type of avatar?
Gather more details about the relationship between users' virtual and real-world identities, and the correlation between	• Where do you think this avatar is most similar to yourself? • Where does this avatar most close to your idealised appearance? • Can you tell me a little bit about yourself in real life? What do you like? If you can use three

users' virtual and real-world appearances.	words to describe yourself, what is your answer? About your appearance and personality?
Explore users' awareness of avatar identity.	• When you use the avatar to socialise with others, do you consciously feel that the avatar represents yourself? • How do you think your avatar represents you? • How strong is this awareness? Under what social circumstances would you have this strong awareness?
Summarise the reasons why users change avatars	• What would cause you to change your avatar?
Investigating users' self-identity presentation in virtual reality	• How do you use avatars to express your identity? • What elements in your avatar represent who you are?
Explore the dynamic understanding of virtual identity	• When you first started playing *VRChat*, did you specifically look for a type of avatar to represent yourself? • What type of avatar you were looking for? • Since you have been spending more and more time on *VRChat*, do you think you got a clearer idea of what you like, or do you realise that you prefer a certain type of avatar?
Investigate the impact of virtual reality	• At present, virtual reality (*VRChat*) gives you a convenient platform to try different identities

experiences on users' real lives	that can represent yourself. Has the experience in *VRChat* had an impact on you in real life? What impact did it have? Such as your hobby, making friends, and sexual preference.

Table 3-4: Semi-structured questions

3.4 Research strategy and data collection method

A qualitatively driven mixed-method design was the research strategy for this study. Johnson and Onwuegbuzie (2004) stated that the mixed methods approach to research is an extension of the quantitative and qualitative approaches to research. The goal for researchers using the mixed methods approach to research is to draw from the strengths and minimize the weaknesses of the quantitative and qualitative research approaches. Williams (2007) stated that the strengths and weaknesses associated with the various research approaches are not absolute but rather relative to the context and the way researchers aspire to address the phenomenon under study. The mixed methods design in this study aims to capture more accurately the factors influencing the user's motivation to design the avatar and provide an in-depth insight into the relationship between the user's identity and the avatar. From the research of users' self-identity to the impact of virtual technology on identity, overall, it is a process of investigating, predicting, exploring, describing, and understanding phenomena. Johnson (2004) emphasised that the fact that the quantitative and the qualitative research approaches are not only compatible but also complementary underpins calls for additional research studies that use the mixed methods research approach.

Thomas (2006) proposed that interpretive methods yield insight and understanding of behaviour, explain actions from the participant's perspective, and do not dominate the participants. Examples include open-ended interviews, focus groups, open-ended questionnaires, open-ended observations, think-aloud protocol, and role-playing. These methods generally generate qualitative data. The three research strategies to

be used in the project will be discussed in detail:

First, the purpose of the autoethnography study in this project was to allow the researcher to observe and participate in avatar-related experiences in VR and to connect the findings to more formal research about users' experiences. Boylorn (2014) points out that autoethnography focuses on personal experiences, using narratives of personal experiences to fill gaps in existing research. This account was a reflective attempt to understand how the desire for and practice of generalisation in research can mask important nuances of cultural issues; for example, the motivation for avatars' design may be presented under the influence of pop culture and fan culture. Adams (2017) identified that another purpose of autoethnography is to articulate insider knowledge of cultural experience; through the researcher's experience, it was possible to shape the later research on aspects of cultural life that other research may not have yet given insights on. Insider knowledge does not suggest that an autoethnographer can articulate more truthful or more accurate knowledge as compared to outsiders, but rather that as authors we can tell our stories in novel ways when compared to how others may be able to tell them. The strength of the autoethnography strategy here is that it helps to cultivate the VR culture in fieldwork and to build rapport with *VRChat* members.

Second, the research used questionnaires to collect data. Rowley (2014) posits that the questionnaire refers to documents that include a series of open and closed questions to which the respondent is invited to provide answers. It has roughly three main types: descriptive, experimental, and causal comparison. Leedy and Ormrod (2001) proposed a descriptive approach, which is a basic research method that examines the situation as it exists in its current state. Descriptive research involves the identification of attributes of a particular phenomenon based on an observational basis or the exploration of the correlation between two or more phenomena. The essential distinguishing feature of questionnaires is that they are normally designed to be completed without direct interaction with the researcher, either in person or

remotely. Rowley (2014) stresses that questionnaires are typically used in survey situations, where the purpose is to collect data from a relatively large number of people; the people from whom responses are collected are a sample drawn from a wider population and are chosen to 'represent' the wider population. Survey research is one of the distinctive methods that allow researchers to collect a large amount of data in a relatively short time. It can be quickly created and easily administered. Based on the collection of 50 questionnaires, the intention of the questionnaire was to identify the motivation of the user's design avatar and its correlation with the user's social and life background. The expectation here is to analyse several specific phenomena after the data is collected.

Third, what constitutes qualitative research involves the purposeful use of describing, explaining, and interpreting collected data. Adams (2017) points out that there are five areas of qualitative research: case study, ethnography study, phenomenological study, grounded theory study, and content analysis. This study will focus on interpretive phenomenological research and concentrate on the user's perception of the motivations, social situations, and cultural symbols of avatar design. It will also attempt to gain understanding about their experience in VR as they present different identities of their own design. Lester (1999) identified that the phenomenological approach illuminates specific phenomena and identifies them through how they are perceived by the actors in a situation. Much of it is a powerful way to understand the subjective experience and gain insight into people's motivations and actions. Williams (2007) argued that the phenomenological approach is "to understand an experience from the participants." The phenomenological approach was concretised in this research through an interview of about 1 hour, analyse the data to find clusters of meaning, and identify common themes in people's perceptions of their own experiences. In general, in order to collect mixed data, a questionnaire containing close-ended questions will be used to collect quantitative data, and then an interview using open-ended questions will be conducted to collect qualitative data. Rowley (2014) argued that the boundary between questionnaires and interviews is fuzzy since they are both

question-answering research instruments, with unstructured interviews at one end of the spectrum and questionnaires comprising predominantly closed questions at the other end. Because the research question is exploratory in nature, participant answers can guide future research questions and help researchers develop a more robust knowledge base for future research. This study plans to set up the semi-structured interview as a qualitative data collection strategy; there is no plan to set a fixed question or order of questions in the interview. The researcher asks informants a series of predetermined but open-ended questions.

3.5 Methodology Plan

The study will be divided into three parts. The first is that the researcher will put herself in *VRChat* and reflect deeply through the unique experiences of the researchers and their own internal universality. A descriptive record of a particular phenomenon in socialising with other users can be combined with the interpretation and analysis of the researcher's own feelings and experiences. Second, Google Workplace was used to create a questionnaire that included the user's background, Motivation for designing avatars, How much trust users have in virtual social platforms such as *VRChat*, What users are looking for on *VRChat*, how users design avatars, and how well the identity characteristics of avatars match the user's personality. Through the information obtained, the interviewee is purposefully sampled. Finally, contact the interviewee and make an appointment to complete the data collection step.

The study plans to recruit participants in the following ways: First, there are some active *VRChat* pages on Facebook, where players can create recent events for everyone to share photos of their avatar designs, VR experiences, and selfies. From the posts on the page, many people have shown a willingness to make friends. Some information is like updating their VR life. Pages like "*VRChat* community," "Create your Facebook avatar," and "*VRChat* make friends" can be used by researchers to post recruitment information for this project. At the same time, the researcher can also send private

messages to potential participants through these posts, inviting them to participate in the subject.

Second, the study will invite participants directly to diverse *VRChat*-themed rooms. Just as in the autoethnography experience, when the researcher puts themselves in a social situation, they can invite interested users to participate in the study.

Thirdly, there are some other VR communities that share information, such as Discord. It is mainly aimed at gamers, educators, and people who use it to chat and hang out with their communities and friends. For example, in the "*VRChat* society server," the player can choose their age group by clicking the "pick your role" channel or select any other specific roles to create their identity. The channel's chat, video, photo sharing, and other divisions can bring a more accurate target for potential participants. Finally, as mentioned in the sampling selection in Part II, experienced players may have multiple interest-oriented groups in their social friend lists. Snowball sampling is also an important recruiting way. The number of people researchers have access to "snowballs" as they get in contact with more people. The following Table 2-6 pertains to the steps involved in interview.

Preparatory phase	**Step 1**	Get the research **ads** ready to go
	Step 2	The researcher is responsible for generating a link to the **questionnaire** using Google Forms. During the questionnaire design phase, participants are required to review both the Participant Information Sheet for *VRChat* Users and the Participant Consent Form. To confirm their understanding, users are expected to provide a signature indicating that they have read the aforementioned documents before engaging in the questionnaire.
	Step 3	The researcher needs to create a link to the **interview**

		information on Google Forms. The primary objective is to furnish *VRChat* users with the Participant Information Sheet and Participant Consent Form. Participants are required to sign, indicating their acknowledgment of the provided information, before being eligible to partake in the interview.
Confirm participants	**Step 4**	Post ads and private messages on social media
	Step 5	Upon receiving affirmative responses, distribute links to the questionnaire and interview prospective participants. Users have the option to participate in either or both components as per their preference.
	Step 6	The researcher will discreetly verify whether the user has thoroughly reviewed the Participant Information Sheet and Participant Consent Form and ascertained whether they have duly signed and agreed to partake in the research.
		Usually, when the user clicks on the Google Form to confirm that they have read the above content, they can fill out the questionnaire directly.
Interview stage	**Step 7**	When users complete the interview link on the Google Form, researchers assign them a unique identifier to input into the form. This practice ensures that participants' names are not disclosed during the interview process. Additionally, it streamlines the organization of interview materials for researchers when sorting through the data at a later stage.
	Step 8	Arrange interview appointments with participants, considering both the preferred interview times and virtual space locations. It's crucial to be mindful of potential time

		differences across various time zones to ensure seamless coordination.
	Step 9	The researcher arrived at the virtual location and proceeded to conduct the interview via screen recording using PC clients. Given that interviews generally span 30 minutes to an hour, researchers employing headset devices may encounter symptoms such as dizziness and nausea.
Finishing stage	**Step 10**	Organize the interview video by incorporating subtitles using narration software such as Veed, Clideo, or Zubtitle. Subsequently, the subtitles will be compiled into documents for comprehensive documentation and analysis.

Table 3-5: The plan of interview

The expectation for this study is to obtain data from experienced *VRChat* users, preferably those who have been active on *VRChat* for more than three months. This study expects 21 participants, and the interviews will be twenty minutes to an hour. All the interviews will be recorded by video on *VRChat* space. The researcher will share her *VRChat* ID to the participants who are under the purposive sampling after receiving the questionnaire. To make the interviewer feel relaxed, a comfortable environment is essential. Therefore, the virtual location of the interview is not fixed in one place. Users are free to choose their preferred VR room, which helps the study understand more information about what they like. If the participants experience dizziness or discomfort during the interview, they can rest and schedule another time to complete the interview. After the interview, I will connect the VR device to the computer and then transfer the video to iMac through Android file transfer. The audio recording will be used throughout the research.

3.6 Sampling strategy

Choosing a study sample is an essential step in any research project. A suitable sampling approach is to draw a representative sample from the population so that the results of studying the sample can then be generalized back to the population. In this mixed study, the questionnaire will be sampled by opportunity sampling, and the interview will use purposive sampling and snowball sampling from the non-probability sampling method.

Marshall (1996) proposes that in a random sample, all members have an equal chance of selection, which can be represented in defining the nature of the population. Marshall (1996) also argued that sampling for quantitative research helps answer the more mechanized question "what." For example, in the autoethnography research, which involved extensive conversations with users, some motivational notes about the avatar's design will be recorded. In the quantitative study of the questionnaire, these potential motivations will be used as multiple choices for participants to choose from. In the process of analysing the data, combined with the social and life background of the users, some specific phenomena and findings representing the whole will be summarised. Kelley (2003) emphasised that the selection of an appropriate method depends upon the aim of the study, and the optimum sample size depends upon the parameters of the phenomenon under study. According to *VRChat* CEO Graham Gaylor, there were about 20,000 users on *VRChat* during the coronavirus pandemic (Kim 2021), and the study targeted long-term players over three months of age, ages 18 or older, and the sample size for this topic is roughly set at around 70.

The interview sample size is about 21 participants. Marshall (1996) identified qualitative research for the humanities and social sciences mainly to answer the "why" and "how." The motivation of the user to design the avatar may be related to the cultural background and cultural signs in VR. After the questionnaire, the interview aims to obtain detailed knowledge about a particular phenomenon rather than to make statistical inferences. Robinson (2014) argued that an effective purposive sample

should have clear criteria and rationale for inclusion. The research plan sets the sampling criteria as follows: First, a number of users with different motivations for designing avatars are selected purposefully to collect various data on their experiences in designing avatars. Secondly, the selected participants have various needs in virtual social interaction, such as some people wanting to play the game and some hoping to make new friends. So, the correlation between the design avatar and the user's needs, and the relationship between the user's needs and personal experience, is conducive to discovering the connection between the design avatar and the user's background. Finally, participants need to be familiar with the surface function on *VRChat* and have a certain understanding of various social rooms. One of the assumptions in this study is that the user's impression management is related to the change in their avatar identity. Montagliani (1998) proposes that while considering impression management, the social environment is a critical reference object. Virtual social rooms are also a form of the social environment. Information on these three criteria will be obtained from previous questionnaires.

The researcher then began a four-month-long data collection process. In the first two months, the researcher connected with potential participants through private messages on Facebook, Instagram, and Discord, mainly from the members of the *VRChat* community. For example, researchers posted ads about this study in the *VRChat* community on Facebook:

> *Hello everyone! This is a research recruitment. I am a PhD student doing research about AVATAR on Virtual Reality. I am looking for adults 18 years old and older who are willing to share the social experience in VRChat! Anyone who has over three months of VRChat social experience is more than welcome! Here is a link to the Questionnaire: XXXXXXXXX. If you would like to share more stories about your avatar, please contact me! I will schedule a Virtual Interview for us on VRChat.*

Here is my email: 2019197@swansea.ac.uk. My VRChat ID: RitaWho0b80. Hop in and say Hello to me! If you have any questions about the study, please feel free to ask! Looking forward to meeting you in VRChat! (With researcher's avatar picture)

However, possibly due to safety protections, the ads were consistently blocked by Facebook community admins, preventing them from staying posted in the group for long. Later, researcher began sending messages to *VRChat* players within the community, specifically targeting users who were actively posting. The aim was to spark their interest in the study and offer them a channel to share their views. Here is the content of the message sent:

Hello (Player's name), I am a PhD student doing research about AVATAR on Virtual Reality, and looking for some experienced VRChat players to fill out the questionnaire about avatar surveys, I saw your post on VRChat community, love your avatars! I would greatly appreciate if you would be willing to participate! Link to the Questionnaire: https://docs.google.com/forms/d/e/1FAIpQLSes-flTF8I1qybZRAJ6LU-eCF9-cXJG4uVSU2zOyyPq00AZEQ/viewform?usp=sf_link

Unfortunately, after sending around 200 messages, Facebook no longer allowed me to message non-friends. This created a bottleneck in data collection, forcing the research to shift to other promising platforms. However, Instagram proved to be immensely valuable. Its platform encourages users to share photos and videos, making it an important space for users to showcase their virtual lives, share avatar designs, and gather inspiration. The researcher started with the hashtag "#VRChat," selecting long-time players who seemed experienced and eager to share. This could be from the dates and content of their photo posts. Over two months, the researcher sent more than 2,000 private messages and received a substantial number of replies. Those who expressed interest were further invited to participate in research interviews.

Thank you for participating in this study. I really appreciate it. The research has been approved by the Faculty of Humanities and Social Sciences Research and Ethics Committee at Swansea University in the UK. At the request of the department, all participants should understand their rights before participating. Please read the following parts from the link: Participant Information Sheet and Participant Consent Form. (Link: https://docs.google.com/forms/d/e/1FAIpQLSel2Lp23JTMMM2BVr_NLYPD-Po16ZJP5Lb_XPmbGvUVqruE6w/viewform?usp=sf_link)

You need to click on the option that you have read about it and submit the survey. After I receive your survey, I will make an appointment with you for an interview soon.

Following this, the researcher initiated private conversations with the chosen participants, introduce the research theme, and asked for their participation. The study also benefitted from community referrals, which opened the possibility of engaging a more diverse group of participants.

The VR community on Discord also provides potential participants for studies. Researchers directly messaged the group admins on Discord, explaining researcher's intentions, and with the admins' permission, researcher allowed to share information about the study within the community using the platform's announcement channel.

3.7 Ethics

As with all types of research, social media research in virtual reality must consider issues of objectivity, privacy, and public interest. First of all, the participants in the research should be willing to participate and fully understand the associated risks and benefits. Smith (2003) proposed that the federal standard is that the person must have

all of the information that might reasonably influence their willingness to participate in a form that they can understand and comprehend. When conducting informed consent online, the potential concern is the lack of face-to-face contact with participants. Researchers can send participants relevant documents online, including the purpose of the research, expected duration and procedures, participants' rights to decline to participate and to withdraw from the research once it has started, as well as the anticipated consequences of doing so, reasonably foreseeable factors that may influence their willingness to participate, such as potential risks, discomfort or adverse effects, any prospective research benefits, limits of confidentiality, such as data coding, disposal, sharing and archiving, and when confidentiality must be broken; who participants can contact with questions.

Second, upholding individuals' rights to confidentiality and privacy is a central tenet of every researcher's work. Whether it is digital autoethnography, questionnaires and interviews, the researcher will describe the data using pseudonyms or anonymity and discuss the limits of confidentiality with participants before the survey, give participants information about how their data will be used, what will be done with case materials, photos, audios, and video recordings, and secure their consent. Moreno (2013) points out that online data can present increased risks. Researchers should understand the risks and avoid presenting participants' personal information in ways that they could be identified within their schools or communities. The ethical assessment of this study was formally approved by the Swansea University Ethics Committee in July 2022, with Approval No: SU-Ethics-Student-240722/5530.

In conducting autoethnography, it is undeniable that the dual identity of the researcher as both investigator and participant may introduce bias into the study. First, when writing autoethnography, researchers should balance subjectivity with reflexivity, critically examining and acknowledging how their perspectives influence the research. For example, if a researcher experiences cultural shock in the virtual world—such as discomfort caused by the vulgar language of younger groups, leading researcher to

leave that environment, researcher need to consider the reasons behind this cultural shock. The researcher's daily social life is quite different than virtual reality, abusive or extreme behaviours in daily life are not considered normal. However, virtual social interactions have their own languages and styles. Therefore, researchers should critically reflect on the unique characteristics of the virtual environment during their autoethnographic research.

Second, sharing personal stories might expose researchers to emotional stress. Due to the anonymity of virtual social platforms, verbal bullying and violent behaviour are inevitable. In such cases, researchers could share their emotions with friends or seek support from the school's well-being team. To ensure fairness in representing user behaviours in virtual reality, researchers should avoid misrepresentation or perpetuating stereotypes when recounting player stories. Lastly, researchers should be mindful of their language choices during writing, avoiding the disclosure of others' private information in their narratives. They must also consider the potential impact of their writing on the study's participants, themselves, and the broader virtual community.

The survey is conducted online using Google Forms as the tool for data collection. To ensure participant authenticity, participants are required to provide their email addresses and real names. They must complete the "Participant Information Sheet" and sign the "Consent Form" before filling out the survey. The interview process follows a similar structure to the survey. However, before the interviews, participants are assigned unique codes to protect their personal information and privacy during data analysis. For instance, during the interviews, participants are referred to by their codes or other pseudonyms. Interviews are conducted entirely in virtual spaces. Before the interviews, the researcher prepares protocols to address VR-related issues, such as motion sickness.

The research data was stored in two locations. Since the survey was conducted using

the Google Forms platform, the survey data was stored in the researcher's Google account. Accessing the survey data required logging into the Google account and checking the verification code sent to the researcher's email. Both the password and email account were accessible only to the researcher, and this data was never shared with the supervisor or anyone else, eliminating any issues with data transmission. The interview data was archived in the OneDrive account associated with the school email, and similarly, only the researcher had access to the password.

3.8 Data analysis methods

As a mixed research method, descriptive statistics were used as the analysis method for the data plan based on questionnaires, in which Excel was used for auxiliary analysis. The interview text data was analysed using discourse analysis, and NVivo was also used.

Questionnaires are one of the most widely used means of collecting data. After collecting back questionnaires, descriptive statistics are a common way of analysing data in quantitative analysis. Ashok (2021: 28) argued that a summary statistic quantitatively describes or summarizes features from a collection of information. The questionnaire of this study includes these contents: user background; The motivation of the design avatar; The user's understanding and trust of online social interaction; what users are looking for on *VRChat*; which way to design the avatars; the comparison between the avatar identity and the user's personality. From this information, the study is expected to obtain specific phenomena about user management of their own identity in a virtual environment. Descriptive statistics help track the entire study. Kaushik (2014) points out that descriptive statistics provide simple summaries of the sample and the observations made. These summaries may be sufficient for a particular investigation.

Based on univariate analysis in descriptive statistics and summaries of relevant survey

samples, the following information can be expected:

- The description of the avatar in relation to the users' appearance.
- When users choose different avatars, they may also behave differently.
- The avatar's design may be related to the social environment (different theme rooms).
- The relationship between users' motivations for designing avatars and their needs.
- The relationship between different avatar design channels and users' motivation.
- The influence of user background and personal experience on the perception of avatars. (This may need further study in the interview)

Descriptive analysis shows different characteristics of the extracted data. In the analysis process, the value of information can be explored by referring to a single variable, such as mean, median, mode, range, and quartiles. Currently, data analysis software packages are a common tool used by researchers, who input and encode information into the analysis software, which calculates the meaning of statistical data for the study; analyses can be conducted very quickly. When researchers store data information in SPSS because there are some options in the questionnaire text content; for example, the user's motivation to design the avatar has multiple options; when analysing the data, the options in the questionnaire can be marked by numbers according to the requirements of SPSS, after pouring the data, the researcher can run queries on specific subgroups as needed, and finally, obtain valuable key information in intuitive data and charts. In addition, other data visualization tools, such as Microsoft Excel and Google Charts, will also be tried.

Overall, using descriptive statistics in this study can help answer "what happened" when exploring user design avatars. It can use any number of variables or even a single number of variables to conduct descriptive research and provide a broader picture of an event or phenomenon.

Discourse analysis is suitable for analysing interview data. Bryman (2008: 499)

emphasised that discourse analysis is a wide-ranging tool and can be applied to a range of forms of data, including the written and spoken word, such as research interviews . The interviews in this study will be presented in the form of text, and the user as the 'speaking subject' is seen as an effect of discursive practices. Johannes (2015) argued that discourse not only describes but, to a certain degree, also constitutes the social. As we all know, discourse analysis can be divided into two major approaches: language-in-use and socio-political (Gee, 2004). This study is appropriate for language as the focus of the analysis, given the verbal data being collected.

Gee (2004) proposed that situated meanings arise because particular language forms take on specific or situated meanings in different, specific contexts of use. The situated text can be understood as thematic characteristics and culture signs on *VRChat* platforms, or they can be seen as different social activities or when interacting with people of different identities. Goffman (1978: 120) argues that social interaction can be seen as the dramaturgical model of social life, people in everyday life to actors on a stage, each playing a variety of roles. Analysing a user's knowledge of social situational cognition from interviews is valuable because it can be used to understand how users guide their performance from the social situations and personas they learn. Goffman (1978) believed that we use "impression management" to present ourselves to others as we hope to be perceived. When users present themselves as identities through various avatar appearances, they may also use specific avatars in a specific environment. It is important to analyse how users understand these specific environments and avatars. This part of the interview will be in the form of video recording in VR, so the data content includes non-verbal materials such as video, tone and gestures, movements, micro-expressions, and the text part of the interview.

The transcribed text from the interviews was analysed to understand the main themes of identity presentation and formation, examining various elements in the text material, such as words, sentences, paragraphs, and overall structure, and relating them to attributes, themes, and patterns relevant to the research question. NVivo was

used for auxiliary analysis. NVivo is a software program used for qualitative and mixed-methods research. It is used to analyse unstructured text, audio, video, and image data, and can search the keywords across multiple languages. It can also import video files to transcribe interviews. The following Table 2-5 lists the things planned for analysis in this section of Discourse Analysis:

Vocabulary	Identify keywords and phrases in the interview text, such as movie, pop culture, Japanese costume, etc., and analyse the ideological associations, formality, and euphemistic and metaphorical content.
Grammar	Observing the way participants construct sentences, aspects of the expected meaning can be explained through verb tenses, active or passive structures, and the use of imperative and interrogative sentences.
Structure	Understand in interviews how users construct narratives, analysing the content of metaphors through the way they tell stories and answer questions.
Non-verbal communication	Since the interview is conducted on *VRChat*, there will be some nonverbal communication in the recorded video, such as the user's intonation, avatar gestures, and the conversation environment chosen by the user (there are many social spaces in *VRChat*, the researcher follows the participants, and the scope of the user's activities is not limited during the interview), trying to reveal various aspects such as the speaker's intentions, attitudes, and emotions.
Avatar Appearance	The appearance of avatars in virtual reality can be quickly changed through the interface, and the content of the conversation can be asked to show the appearance of the most used avatars in the past or recently. This may help analyse the

	metaphorical motivations of users for choosing avatars.
Conversational codes	During the conversation, the researcher can observe how the user interacts with others in *VRChat*, helping to reveal the user's performance in social interactions and cultural practices.

Table 3-6: The plan of Discourse Analysis

A typical discourse analysis combines the analysis of language use at the micro level and the analysis of situations at the macro level. Teun van Dijk (1988) proposed that Critical Discourse Analysis (CDA) is the single most authoritative line of research regarding the study of media discourse. It is not a completely subjective understanding, but closer to an explanation.

Discourse analysis is a systematic textual analysis argument that is widely recognized as theoretical, methodological, historical, and political in social research (Fairclough 1992). McCarthy (2002) proposed that life is a continuous flow of discourse, and language plays a role in constituting culture among many contexts of discourse. Any ordinary day inevitably involves conversation. Discourse analysis involves analysing discourse using linguistic frameworks, including key technical details of language use, and investigating how these features are used in specific social contexts. One purpose of this study's application of discourse analysis is to examine the relationship between users' design motivations and virtual cultural environments.

Firstly, discourse analysis has brought about affordances to the study of digital media (Jones 2015), enabling the analysis of behavioural patterns in diverse virtual environments. Fairclough (2013) suggests that discourse analysis offers a semiotic approach to interpreting various aspects of the world, including the physical, social, or mental realms. Perspectives and interpretations emerging from virtual interactions can be seen as part of reality, as virtual reality itself is a simulation of the physical world. Therefore, when examining users' motivations for design in virtual environments, the

use of discourse analysis allows researchers to consider unique community cultural styles, community structures, and even the symbolic meanings inherent in avatar design within virtual social interactions.

Secondly, Fairclough (1985) proposes that social structures determine the properties of discourse, and discourse, in turn, can reflect how "social structures" are determined. Discourse analysis fundamentally deals with the relational changes within social structures. Research on virtual interactions will facilitate discourse analysis focusing on virtual cultures, how users associate with different symbols, and the relationship between users' identity awareness and the construction of virtual communities. Finally, discourse analysis also includes linguistic analysis and, where appropriate, analysis of visual images and "body language". These textual features can be seen as embodying their discursive characteristics (Fairclough 2013). Avatar images, behaviours, and voices in interview recordings can all serve as materials for discourse analysis.

The discourse analysis of this study mainly focuses on the interview content. Talja (1999) proposed discourse analysis as a method for analysing qualitative interview data, which not only can explain participants' behaviours and cognitive processes but also strives to understand the cultural regularities within participants' narratives to examine phenomena at the macro level of sociology. In qualitative research, many conversation topics and scopes are predetermined. Researchers conduct open-ended, semi-structured, or structured interviews in the preparatory phase to obtain conversation content, which serves as valuable material for data analysis. There are three main steps to implementing discourse analysis of interview data. Fairclough (1985) introduced a model of critical discourse analysis, which involves three dimensions related to discourse: the objects of analysis (language, visual language, and visual text), the processes of production and reception of these objects, and the historical conditions that govern these processes. Based on Fairclough's theory, the discourse analysis steps in this study can be divided into the following three:

- Data Description: The data includes participants' conversations, behavioural language in the recorded screen, and avatar images.
- Processing Analysis: Explaining the process of users constructing avatars, the influence of virtual cultural environments on identity perception, and the implications of virtual interaction on identity perception.
- Social Analysis: Explaining how emerging technologies represented by virtual reality affect users' perception of identity.

In Morgan (2010:4), a comprehensive critical discussion of the advantages and disadvantages of discourse analysis is presented. Based on the content of the Virtual Interaction Project, discourse analysis can provide the following advantages. On the one hand, researchers in discourse analysis cannot be neutral observers but should incorporate a reflexive stance. Discourse analysis is well-suited to the philosophical foundation of interpretivism. The Interpretive lens of this study is interpretive phenomenology, which requires researchers to deeply understand the experiences of participants from their perspective, attempting to capture the emotions surrounding experiences and how people understand and interpret them. On the other hand, discourse analysis can explain aspects of behaviour that are not acknowledged, bringing to light hidden or dominant discourses, thus maintaining the status of marginal discourses in society. Using an anonymous virtual environment as a research site is risky because researchers cannot guarantee the authenticity of participants' discourse. Discourse analysis can fill this gap by explaining aspects of user behaviour that are not acknowledged, such as through the environment of virtual interviews, avatar images, user behaviour, and user language.

However, the use of discourse analysis in this study is still subject to questioning. Firstly, its interpretations are subjective, and meanings are never fixed; everything can be interpreted and negotiated, and different researchers can provide reasonable

interpretations from different perspectives. Secondly, discourse analysis can be complex, especially as social interactions in virtual environments have unique language characteristics, requiring researchers to be familiar with virtual language environments and have a profound understanding of virtual social community culture. In conclusion, the disadvantages cannot be ignored, but they can draw researchers' attention, such as spending time understanding virtual communities and clearly describing the interpretive perspective and theoretical support when interpreting participant discourse.

Compared with other methods, research suggests that discourse analysis is the most suitable for this topic. Initially, the study considered using thematic analysis because it could identify rich patterns (Clarke 2017). However, with the vast amount of interview data generated, identifying, analysing, and interpreting patterns in qualitative data without directional summaries could reduce the validity of the results. Researchers in discourse analysis need a better understanding of how to conduct the analysis and some theoretical directions to consider during analysis. One reason this project considers discourse analysis more suitable is that it can provide a more comprehensive understanding of how virtual users use language in specific ways by examining individual instances of discourse over time. Thematic analysis may be more suitable for grounded theory, while discourse analysis is more suitable for the interpretative phenomenological approach in this study.

3.9 The Methodological limitations

Interpretive research findings are valid and close to the truth, but the data may be heavily influenced by personal opinions and values. When researchers design questionnaires and interviews based on previous autoethnography experiences, there may also be misunderstandings of a phenomenon. This can be mitigated if the researcher enters the field with some prior insight and sufficient literature research into the study and remains open to new knowledge throughout the study. A potential

risk in Interpretive is that researchers might not develop sufficient interpretation and thus limit the usefulness of the research findings. When exploring the factors and motivations for users to use avatars to present identities in virtual reality social software to obtain valuable data, it is necessary to mine potential, euphemistic, and metaphorical information, and participants' life experiences, social background, and how they think. This makes it difficult to collect information comprehensively. The effectiveness of the study is inevitably affected by individual subjectivity, and participants may not be willing to share private information honestly in interviews. Moreover, in the face of a large amount of text, video, and image material, it is difficult to find appropriate interpretation and abstraction. As Morse (1994: 23) argued, researchers must take risks when creating interpretations of data. If not, research products are less likely to inform and contribute to the advancement of knowledge in a particular field.

When researchers do autoethnography and interview surveys, their knowledge of the participants' situations is limited, and it may be difficult to grasp the margins during the conversation. Bochner and Ellis (1996: 13) proposed that the feelings evoked in readers may be unpleasant since the connections readers make to narratives cannot be predicted. In addition, compared with the real world, VR has a relatively lax set of rules in social situations for personal information protection. Currently, *VRChat* does not set any restrictions on the age of users, and the user's behaviour is also unrestricted in the virtual room; any user with a Facebook account can log in, and sometimes it could bring up some uncomfortable situations, such as unfriendly language and rude behaviour.

A basic limitation of recruiting participants for this project is that they must be over 18 years old, and this project will refuse to accept any responses from participants under the age of 18. Questionnaires are faster and easier to collect data on than other forms of methods, but one challenge posed by random sampling is the limited diversity of cultural backgrounds. Facebook is banned in some Asian countries, and the research

data is likely to be mostly based on U.S. and European user materials, and there may be a lack of material about users with Asian cultural backgrounds. In the autoethnography, even if there is a chance to meet more people from different backgrounds, there may still be some language barriers.

3.10 The challenge of research

After completing the data collection, this section summarises some of the difficulties and challenges encountered during the implementation of the study.

3.10.1 Privacy policy of social platforms

The researcher encountered limitations in the activities when attempting to send private messages and research information on social media platforms. The publication of research-related advertisements was also prohibited, presenting difficulties in recruiting participants. Platforms like Facebook have rigid policies to regulate user conduct and maintain a positive experience. Although certain forms of user engagement are allowed, restrictions are in place to prevent misuse, spam, and intrusive behaviour. Directly sending surveys and private messages about research information to users was considered unsolicited messaging, potentially breaching platform policies.

Efforts to promote research information on Facebook *VRChat* communities and Discord communities face the same rejections. The researcher cannot post ads in any community. Despite these challenges, researchers sought alternative methods, initially filtering potential participants through active user comments under community posts. However, after sending approximately 100 private messages regarding the research, Facebook restricted the researchers from sending direct messages to users. This compelled the researchers to explore new avenues for participant engagement.

After exploring various social platforms, researchers identified Instagram as the most

suitable platform for participant recruitment. Primarily image-based, Instagram's #*VRChat* tag revealed a significant number of users eager to share avatar selfies and virtual reality experiences within the VR community. When users on Instagram post their avatar images, they create a visual representation of themselves, and the connection between these avatars and their identity lies in how users choose to present themselves.

Users consistently showcasing their virtual identities on Instagram emerged as ideal participants. Additionally, Instagram's privacy policy, being less stringent than Facebook's, facilitated outreach. Over three months, researchers sent a total of 3,500 direct messages, yielding 120 responses. Ultimately, 90 users aged 18 or above with over three months of gaming experience contributed 77 survey responses and 21 interview datasets. Some users' privacy settings delayed message visibility, but despite this, positive responses from users continue to be received up to the present day, sustaining the research momentum.

3.10.2 "Personalised" users

During the interview process, two instances emerged where users resorted to vulgar and offensive language, posing challenges to the progression of data collection. *VRChat*, like many online platforms, draws users with a broad behaviour, including those who may show rude or disruptive conduct. Given the absence of offline contact with participants, gaining a profound understanding of their backgrounds proves challenging, leaving much unknown until researchers enter virtual rooms.

As the researchers initiated the interview with the question, "Can you show me the avatar you frequently use?" an uncomfortable atmosphere became perceptible. This discomfort manifested in various ways: firstly, it was evident using rude language, a linguistic tendency not confined to responding to interview questions but also extending to attacks on the researchers. Secondly, participants exhibited high activity

levels, moving around the virtual room. Normally, interview settings involve face-to-face communication (Avatar face-to-face), sitting in a designated space, or standing in front of a mirror to ensure proper avatar information is captured in the recording. However, participants with distinctive personalities made it difficult for researchers to match the speed of their mouse movements as they swiftly navigated the virtual space.

Individualistic users are a prevalent phenomenon in virtual reality for various reasons. Firstly, the anonymity and disinhibition effects within the virtual realm empower users to display a level of courage that may differ from their real-life behaviour. Secondly, the disconnect between one's physical and virtual existence can create a sense of detachment for certain users, fostering the belief that actions in the virtual world carry minimal consequences in the real world. This, in turn, may contribute to inappropriate behaviour. Thirdly, specific online communities cultivate cultures that promote disruptive or aggressive behaviour for entertainment or attention, leading individuals to emulate such conduct and perpetuating a negative cycle.

In response to these situations and to avoid conflicts, researchers adopt an approach. Expressing gratitude for the "Personalised" participants' involvement, then the researcher exits the virtual interview room, maintaining polite and professional behaviour.

3.10.3 Researcher's accent

The researcher's accent attracted some attention during the data collection process—users on *VRChat* often express surprise or curiosity upon encountering someone with this accent. The researcher regularly faced inquiries about her nationality once users identified her accent. While this frequently opened doors for engaging conversations, there were also instances of unpleasant experiences. Some users, for example, insisted that the researcher pronounce specific words or sentences in her accent. Despite the researcher's decision to ignore these requests, certain users persisted unreasonably,

repeatedly making the same demands.

The *VRChat* global community is a melting pot of users with diverse cultural backgrounds. The element of surprise often emerges when encountering individuals from different regions and experiencing the rich tapestry of accents. Notably, the number of Chinese users on *VRChat* is relatively lower than that of American users; this is primarily attributed to regional social media restrictions. Facebook, for instance, is prohibited in China. Unfortunately, stereotypes or misconceptions about language and accents can lead to unexpected reactions. Encountering a Chinese accent that deviates from preconceived expectations may trigger surprise, especially if individuals hold specific assumptions about pronunciation. It's worth noting that researchers did not intentionally set out to address challenges related to accents. As mentioned earlier, accents can act as conversation starters. In navigating potentially uncomfortable social situations, researchers can employ blocking features to disengage from interactions.

Chapter 4 Literature review

The relationship between avatars and user identity has been a widely discussed topic in academia. The rapid development of information technology is gradually transforming the ways users tell their stories and present themselves. This section evaluates the motivations behind identity design and the potential virtual reality environments offer for users to construct their identities. It also focuses on summarising contemporary sociologists' theories on identity construction and how these theories have been applied to explain identity phenomena in online environments within existing research.

4.1 Previous research on avatars and identity

The study of users' motivations for designing avatars places this research project in the identity field, critically exploring the deeper connections between avatars, identities, and users. The academic literature on avatar design is relatively recent but becoming increasingly extensive (Huang, 2021). The potential of avatars in previous work is summarised here in two parts: First, as the avatar is a convenient way for people to present themselves; some scholars have discussed aesthetic activities in the process of avatar design as well as self-expression. Secondly, as the product of network and graphic editing technology development, avatars are a way for users to experience rich identities. Some scholars have discussed the influence of aesthetics and computer structural forces on user design avatars (identities)and how culture influences avatar choice and design.

Before their usage in video games, the use of avatars in science fiction writing first appeared in Neal Stephenson's 1992 novel, *Snow Crash*. Allbeck (1998) suggests that the novel helped popularise (and fix) the "Avatar" within the computer science lexicon. William Gibson, as a central figure in cyberpunk, introduced virtual avatars and digital identities in cyberspace in Neuromancer, portraying avatars as representations of individuals that reflect both user identity and the information of digital media (Islam,

2021). Carr (2013) emphasised the connection between Neuromancer as a literary work and post-humanism and technological identity. Within post-humanism, cyberpunk culture and ideology have been discussed in the context of digital identity. For instance, Cox-Palmer-White (2020) proposed that avatars can be seen as representations of cyberpunk patterns and aesthetics, possessing both cultural relevance and critical significance. The phenomena exhibited by avatars represent a social phenomenon influenced by technological developments.

With the development of network and graphic editing technology, the concept of the avatar has also become more widespread on social platforms, such as online game forum avatars, artificial intelligence online assistance, virtual reality 3D chats, and other similar platforms. Avatars serve as vehicles that enable users to enter the platform, move throughout a variety of virtual worlds and activities, and socialize with others who also rely on a virtual form to interact and communicate. Currently, VR avatar applications include online games, email, 3D chat rooms, online communities, and a range of comprehensive entertainment software. From July 2020, during the COVID-19 pandemic, there was a marked increase in *VRChat* usage, with more than 16,000 users using the reality chat applications (*VRChat*), and the numbers continued to grow steadily (Kato, 2021). As the application of avatars becomes more and more widespread, exploring the relationship between avatars and human beings is a valuable subject.

In real-life, individuals adjust their appearances and behaviours to fit in different situations. Markus and Nurius (1986) proposed that avatars can be supported by the idea that the self is a malleable construct influenced by social roles and cues, given that avatars are highly customizable, allowing for opportunities and experiences otherwise impossible (Morie, 2008). Additionally, avatars can be viewed as a form of computer-mediated communication in which the interpersonal model suggested by Walther (1996) can be applied. That is because avatars provide individuals with a host of communicative advantages over face-to-face communication, such as identity

shifting and impression management through exaggeration or selective representation of self. As Jin (2010) suggested, it is important to study the concept of self in avatar-based media. Indeed, a body of literature examined how individuals' self-views are reflected in their avatars to clarify the above matters (Ducheneaut et al. 2009; Hooi and Cho, 2014; Villani and Riva, 2017). However, the issue is far from being resolved, as the results of the studies were conflicting. For example, some provided evidence that users create avatars that are very similar to their real selves (Cacioli & Mussap, 2014; Kendall, 2002). Then again, other studies concluded that users created idealized avatars (Lin and Wang, 2014; Sibilla & Mancini, 2018; Van Looy et al., 2014).

Avatars are a relatively new art form produced by the interaction of human and high-tech media (O'Riordan, 2011). In the broad definition of art, interactive media is an advanced form of visual art (Kwastek, 2013). Thanks to the unique visual aspects of the medium, VR provides a series of humanized art forms created through digital technology. In digital environments, users can be considered artists who create identities. The emergence of VR technology has seen a transformation of users' design of avatar images from 2D to 3D. Avatar design typically allows a substantial amount of flexibility based on user input. Some avatar creation systems even allow sophisticated fine-tuning of hundreds of characteristics, from eyelash length to the amount of chest hair. Users can not only experience ideal body images visually but also bring themselves into immersive scenes, experiencing the needs of the real world from the first perspective. Castronova (2003) identified that interaction without rules (freedom) with the presentation of a beneficial profile are the primary reasons that 3D worlds gain recognition and become more attractive. Williams (2008) posits that avatars facilitate a virtual aesthetic that is primarily "natural." This aesthetic choice, a product of avatars, shows that people express themselves through their avatar design, and it's a testament to the gradual humanization of our digital identities, conveying the desire for 'ideal' body images (Sandberg, 2013).

The user's personal aesthetic significantly impacts the construction of the avatar.

Scholars have explained the identity construction of the avatar from different perspectives. Joselit (2005) argued that the potential of avatars is to inject a powerful fantasy component into the delineation of identity so that people can have different experiences of identities in an immersive environment. When analysing the relationship between avatars and the self, typical research involves the discussion of online identity and offline self. Morie (2014) points out that an avatar, as our projected self, is what we hope others see in a virtual world. This identity construction comes from the user's understanding of the image of their own body.

In Shelly Turkle's book, *Life on the Screen*, Turkle (2011: 180) describes online spaces as 'laboratories for identity construction'. Turkle further argues that virtual technology is an important tool for establishing an identity. In cyberspace, identities are obtained by changing avatars' appearance, whether it is an ideal avatar or an avatar closer to the user's self-conception. This technology provides users with effective practice materials. Turkle's work critically interprets the complex relationship between identity and technology in contemporary society, emphasizing how environments shape both personal and social identities. Turkle (1997) argues that computers and digital interfaces are not merely tools but also influence how we understand ourselves and our relationships with others. In the context of social media, Turkle's research explains the convenience of online connections as altering emotional dynamics due to the lack of physical contact. Capecchi (2018) suggests that this emotional evolution reflects a cultural trend and phenomenon driven by technology, where identity becomes fluid.

Moreover, Turkle's insights into the concept of the "second self" illustrate how individuals view technology as an extension of themselves. Turkle highlights the blurring boundaries between the self and the external world, leading to the formation of complex identity constructs (Turkle 2005, 2). Social scientists strive to explain the evolution of identity within the context of the information revolution. Turkle (2023) mentions that technology encourages a preference for controlled interaction. People often choose to communicate through text or online platforms because it provides

greater control over the pace and content of conversations. This allows individuals to present an edited version of themselves, resulting in less genuine connections.

Aesthetics in wider computer culture also affect the identities that users design. Avatars composed of different graphic characters allow users to express themselves creatively. These graphics represent a wide variety of props, avatar decorations, and even micro-expressions in the virtual world, and the combination of these symbols increases user satisfaction with the new identity. Bardzell (2008) principally relied on ethnography as a research method, examining the role of artefacts as playing an essential role in the interpretive sign process and development of meaning in a specific virtual community, including interviews and observations on the impact of artefacts on user-built identities. Photiadis (2015) proposed that the final image of the avatar is usually affected by two factors: on the one hand, the perception of external appearance is affected by subjective experiences, a phenomenon that occurs in all kinds of interactions. This leads to the creation of a 3D avatar related to the user's body image and physical appearance. On the other hand, the tools of the design platform shape the user's aesthetics choices. Suppose the avatar design tool is regarded as an aesthetic processing factory; in that case, the final avatar image presented is a new aesthetic, or even a new identity, generated after technology and human interaction.

The aesthetics in VR can be a product of the structural forces associated with computer interfaces themselves (Bardzel, 2007). Bardzell (2008) argued that Human-Computer Interaction (HCI), initially concerned with user performance and efficiency, is increasingly branching out to investigate more subjective dimensions of computing use. Manovich (2002) posits that in the computer age, technology is a way of disseminating cultural information, and we are no longer interfacing with a computer but with culture encoded in digital form. Some scholars regard this high-tech coding culture as an artistic language (Liao, 2008). For example, when a user recreates a satisfactory body image on the avatar design platform, the avatar is shaped in the form of an edited

graphic symbol. The computer is not only a tool for creating art but also a cultural interface that reflects post-digital aesthetics. In virtual reality, post-digital aesthetic experiences are further refined by individual traits and motivations, including enhanced immersion and narrative. The cyberspace shaped by digital media technology provides richer and more diverse influences for users in constructing their identities. Nakamura (2013, 6) discusses how digital culture shapes racial concepts and the relationship between racial identity changes and social media technology. King (2013) points out that while digital technology offers greater fluidity of identity, stereotypes of race and gender continue to be reinforced in the digital world.

On the one hand, virtual avatars provide a space for many people to express themselves and challenge the traditional understanding of identity. On the other hand, this cultural interface has also intensified the ultimate pursuit of human aesthetics. HCI is increasingly concerned with embodied and phenomenological accounts of human action rather than rationalist ones.

4.2 The impact of avatars on user identity

The connection between identity and avatar was mentioned in the previous section, and this section will discuss several ways that avatars can influence user identity. Therefore, it is necessary to consider the influence of popular culture presented by avatars in virtual reality on user identity when investigating user motivation for designing avatars.

Avatars bring significant advantages to the communication experience. The role of the virtual avatar can enhance the user's presence in virtual social interactions. Kolesnichenko (2019) describes avatars as a central aspect of shaping social VR experiences. Cacioli (2014) proposes that avatars will increase users' confidence in communication and reduce anxiety. Bosch-Sijtsema (2013) echoes a similar idea as he argues that avatars can serve as a user's "protective shield" that ensures greater

comfort and safety in social contexts created by multi-user virtual worlds. Avatars can also be used for various purposes in virtual worlds, not only to meet communication needs but also to be a tangible manifestation of the user's identity. For instance, when digital avatars interact in specific scenarios, the tactile feedback, such as vibrations through the controller, can enhance users' sense of immersion in the virtual world. Digital, tangible virtual representations serve as a bridge between the physical and virtual realms. They play a crucial role in shaping user experiences across different environments, as the design and characteristics of virtual avatars may be influenced by the situational context. The micro-expressions, movements, styles, and posture design provided by avatar technology are all in the service of building identity and clear communication for users.

Avatar design relies on various platforms, each offering distinct features and styles that significantly influence the user experience and identity formation. These platforms play a role in shaping how users represent themselves and whether they can create avatars that reflect their envisioned identities. Boberg (2008) argues that the choice of design platform largely determines the extent to which users can embody their imagined selves. Currently, VR social platforms exhibit a range of distinct styles. For example, platforms like *ReadyPlayerMe* allow users to integrate their real-world identity into their avatar using image recognition software. These avatars can then be imported into environments such as Mozilla Hub and *VRChat,* bridging real and virtual identities. On platforms like Rec Room, users engage in shared activities by utilising avatar-based gestures such as a fist bump, adding a layer of interaction to the user experience. Other platforms, *including ReadyPlayerMe, VRoid*, and *Tafi* Avatar, offer cross-platform compatibility, enabling users to design avatars that can function seamlessly in multiple environments like VRChat. These platforms often support custom nonverbal behaviours, providing further opportunities for personalisation. Additionally, software like *Anyland* allows users to create avatars directly within the virtual environment, eliminating the need to remove the VR headset, which enhances the immersion and creative process. Ducheneaut (2009) highlights that different

platforms cater to varied motivations for avatar design. For instance, in popular games like World of Warcraft, players often design avatars with exaggerated physical attributes to help their characters “stand out” and meet the game’s specific demands. In contrast, social platforms typically encourage avatars that either closely mirror the user’s body image or represent an idealised version of themselves. Baylor (2011) notes that such idealised avatars are often a blend of aspiration and personal identity. It is important to distinguish these idealised avatars from the hyper-realistic styles depicted in the movie *Ready Player One*. Instead, the avatars created on platforms like *ReadyPlayerMe*, *VRoid*, and *Tafi* tend to adopt a cartoon-like aesthetic that remains grounded in human features. This balance between realism and stylisation enhances the user’s ability to connect with their virtual identity while maintaining a playful and approachable visual style.

Virtual reality can be seen as “embedded technology” that induces controlled changes in the body’s experience (Spagnolli & Gamberini, 2005). The multi-sensory body dislocation experience brought by virtual reality avatars may affect users’ perception of their own body image, thus changing their perception of themselves and influencing their choice of identity. This idea has been pioneered by body image disorder virtual reality therapy. Oyanagi (2021) proposed that the illusion of virtual body ownership (IVBO) gives us the feeling of perceiving a virtual body as our own. The stimulation of VR helps break users’ negative emotions. In the so-called “body exchange,” a virtual body shape is used to shape the correct understanding of real body weight (Higgins, 1987; Cash& Henry, 1995; Tiggemann & Slater, 2004). VR applies interpersonal multisensory stimulation (IMS) to the avatar to reproduce the participant’s perceptual body from the first perspective (Provenzano, 2020).

The exploration of the Proteus Effect in virtual environments such as virtual reality and online gaming continues to evolve. Research has shown that the appearance of virtual avatars can influence users' behaviour. Yee (2007) introduced a paradigm known as the “Proteus Effect,” which suggests that people’s digital self-representation can affect

their attitudes and behaviours in online and virtual environments. When a user's perception of their body image changes, it may lead to different avatar identity designs. Oyanagi (2022), through investigating the impact of artist avatars on creativity, found that although some participants reported feeling that the appearance of their avatars influenced their behaviour, there was no significant difference in artists' performance during brainstorming in terms of creativity. This highlights individual differences in virtual reality experiences. Kim (2023) confirmed that the similarity between a virtual avatar and its user can enhance the sense of presence and social presence in VR environments, even though it might not impact the overall sense of immersion. In summary, the Proteus Effect is valuable for explaining the relationship between user-created avatars and their behaviour.

The emotional connection between users and avatars reinforces their acceptance of a particular identity. The emotional attachment between the user and the avatar will also affect their interaction. Emotional attachment can be seen as a positive feeling, which can be described as "an emotion-laden, target-specific bond between a person and a specific object" (Thomson, 2005). It is suggested that an emotional attachment between a user and his/her avatar can also be formed. Suh (2011) points out that when the avatar is like the user, the user is more likely to have feelings and connections with the avatar. This positive attitude will affect the user's intention to use the avatar. Parks (2014) traces the history of risk communication through self-representation, exploring the emotional connection between avatars and users from the perspective of risk communication. Parks argues that developing technology has made avatars more personal, allowing users to translate their attitudes and intentions in the real world into avatars' characteristics and behaviours, and to make personally relevant risky choices in a secure virtual environment. During the process, the user will experience the fusion of identity with a sense of presence; that is, the user will feel that they have the risk experience of the avatar as well, and their emotional attachment to the avatar will increase.

4.3 The motivation for online identity design

The rapid development of information technology has provided people with various tools to create their online identities and present themselves. Most research about online has focused on self-presentation (Wynn & Katz, 1997; Papacharissi, 2002; Baym, 2010; Boyd, 2010). Rutyer (2002) defined online identity as the combination of characteristics that help to define a person in cyberspace, thereby making him or her different from other online users. Kim (2011) refers to online identity as "a configuration of the defining characteristics of a person in the online space."

There is growing evidence that people reconstruct an online identity that is somehow different from themselves (Bessière, 2007; Toma & Hancock, 2010; Hu, 2015; Jackson, 2018; Feher, 2021; Bliuc, 2019). The reasons for online identity reconstruction are complicated. People are mainly driven by various needs during online identity reconstruction. Some people were motivated by social needs. Qin (2021) found that some users would choose gender identities online, and Qin concluded that new identities were sometimes built to make transgender communication possible. Qin (2021) also argued that some users also choose different identities to seek a sense of belonging and communicate with like-minded strangers, an online "group identity." Ranzini (2017) found that "hooking up" and self-validation were important motivations for users of online dating sites to present a deceptive self-image. People want to attract sexual partners and gain self-validation on the dating site (Ranzini 2017). Hu (2015) suggested that people may reconstruct their online identity due to vanity, enjoyment, access to new social networks, and escape from old social networks.

Other researchers found that people who presented a different identity online were mainly driven by self-exploration, social compensation, and social facilitation. Michikyan (2020) states that emerging adults experiencing high social anxiety reported presenting the false self on Facebook; they engaged in an extensive self-exploratory and socially desirable online self-presentation. Valkenburg (2005) proposed that some people want to explore the reactions of others, communicate more easily, and meet

new friends. In addition to the above-mentioned social needs, people were also motivated by security needs in online identity reconstruction. For instance, Goodell (2019) and Allison (2005) are both concerned about identity security in the digital society, which may lead to poor user experience.

Cultural differences were salient in the motivations for online identity reconstruction. Huang (2020) found that when compared with Chinese social network users, Malaysian users were more likely to reconstruct their identity due to privacy concerns. Black (2006) argued that the notion of identity is explored as a fluid construct when popular culture and technology converge to provide a context, and the adolescent can be able to develop a powerful, transcultural identity discursively constructed through the different cultural perspectives and literacies. Subrahmanyam (2011) posits that self-presentation is likely to vary depending on cultural and geographic specifics. Smith (2011) emphasised that substantial variations have been found in the ways in which individuals within different cultural groups identify themselves, and variations in self-construal are able to cause effects that are equivalent to cultural differences in social cognition. Manago (2015) believed that customized sociality and self-expression are cultural practices that manifest an emphasis on autonomy during identity development. However, ironically, evidence suggests that social networking sites may also foster reliance on others to validate one's identity claims and self-worth.

Whether approached from the personal or semiotics angle, users are eager to express themselves. Lee (2008) believes that until now, users have a stronger need for self-identification in cyberspace than in the real world. This statement can be regarded as one of the motivations for using avatars. As early as 1918, Woodworth, an American psychologist, put forward the idea that motivation is the internal power that determines behaviour, which will stimulate an individual's certain behaviour and direct the individual's behaviour to a certain goal (Woodworth, 1958).

Positive self-presentation is a strategy used frequently for online identity

reconstruction. People may reconstruct their identity by altering the information they post online. Toma and Hancock (2010) argued that people often enhance their profile photos on online dating sites. Lyn (2006) identified that individuals also edit the photos they post on social network sites. Guadagno (2012) stresses that online daters tend to exaggerate their attractiveness by presenting their personality traits in a more desirable way. Ranzini (2017) posits that online daters build a better identity through deceptive self-presentation to improve their attractiveness to potential partners. Pitcan (2018) argued that people with lower social-economic status try to build a better image online by altering self-presentation in an attempt to gain social mobility to the upper class. Valkenburg (2008) and Jackson (2018) summarised that individuals may also present a false self to deceive others or to explore their identity. Westerman (2015) hypothesised that users in VR might choose different avatar appearances to form impressions of others. Media and platforms are different, and people create identities online in different ways. However, in general, the reasons for why they have created an avatar have something in common.

4.4 The sociological point of view

Sociologists have debated the understanding of identity in terms of culture, context, audience, social construction, gender, and consumer media. Media theorist Sandy Stone (1996: 85) points out that 'a single, essential personality is tied to a body, which remains constant'. From Stone's work, identity seems static, making it possible to group people based on characteristics such as race, class, and gender, whether for demographic or political purposes. However, this model is not how most people experience or express identity. The sociologist Erving Goffman (1959) concluded that people present themselves differently based on context and audience, for example, where they are and who they are with. Cultural studies theorists such as Stuart Hall (1987) and Angela McRobbie (1994) proposed a pluralist subject that was not only socially constructed rather than biologically essential but also flexible and changeable over time. Anthony Giddens (1991) famously referred to identity as a ''project,''

something that can be actively worked on. According to this perspective, people construct their identities through the media they consume, the clothes they wear, how they adorn themselves, and even how they transform their bodies through exercise or plastic surgery. Another aspect of the social construction of identity was pioneered by queer theorist Judith Butler (1990), who maintains that popular understandings of gender and sexuality are constructed entirely through discourse and social processes. In other words, ‘‘race’’ or ‘‘gender’’ operates in society ideologically, both offline and online. Judith Butler's theory is particularly evident in the context of virtual environments and virtual identities. Eklund (2011) conducted a study on the gender and sexual behaviours of female players in World of Warcraft, using Butler's theory of performativity as a framework. The study discussed how the creation of gendered and sexualised identities by female players is shaped by game mechanics and social interactions. In summary, Judith Butler's theory of gender performativity intersects with the use of virtual avatars in virtual worlds, highlighting the fluidity and complexity of identity construction in digital spaces, where players can explore and negotiate their gender experiences.

While computer-mediated communication became common in the mid-1990s, allowing people to meet and talk without exchanging photographs or videos, similar interactions were already possible through earlier technologies such as the telephone and telegraph. Turkle (1995) speculated that communicating without traditional identity cues might enable people to experiment with different identities and personalities, making it evident that categories such as gender were social constructions. More radical theorists posited that cyberspace would liberate people from their bodies, blur the lines between humans and technology, and potentially evolve into a higher type of consciousness, becoming ‘‘post-human’’ (Stone, 1996). In this period, theorists are more likely to believe that new media would fundamentally change the way people think about identity. With the emerging technology of virtual reality, this fantasy is becoming possible. For example, Hartley (2015: 357) argued that

‘the technological affordances of particular types of information and communication technologies constrain and enable different types of self-presentation’. In this sense, avatar interaction in virtual reality can compensate for other media’s lack of gestures and facial expressions.

In recent decades, technology has given people the power to connect and express themselves. In October 2021, Facebook CEO Mark Zuckerberg introduced “Meta” at the virtual Connect conference and shared more about this vision information. Mark Zuckerberg (2021) emphasised that Facebook’s vision of the metaverse will feel like a hybrid of today’s online social experiences, sometimes expanded into three dimensions or projected into the physical world. It will let people share immersive experiences with others even when they can’t be together or do things together that they can’t do in the real world. Most spaces in VR allow an agent to choose what kind of avatar she or he will inhabit, allowing a person with any kind of physical body to inhabit a completely different body in the virtual world. Castronova (2003) argued that a human being experiences these worlds through an avatar, which is the representation of the self in a medium. Harrell (2012) posits that the ability to construct imaginative, computational self-representations such as characters in games and avatars in virtual worlds and social media can impact people’s self-perception in the real world and provide proxies for people to engage in communities as players, learners, and doers. Peña (2017) stresses that the social identity clues in virtual reality are related to the user’s group identification and social presence. When the virtual reality environment is seen as a projection of the physical world, what is the social connection between the avatars and the human being?

Avatar identification has been defined as a temporary merging of characteristics of the avatar with concepts of the self (Klimmt, 2009). In the literature, the keywords of avatar identification are used more in video game experiences. Livingstone (1998) points out that the definition of avatar identification may have its roots in the literature on “identification with media characters,” which has been defined as imagining one is

in the character's shoes and seeing the world through their eyes. Although Cohen (2001: 251) further defines avatars as an 'increasing loss of self-awareness and its temporary replacement with heightened emotional and cognitive connections with a character'. This concept also reflects the importance of virtual users in creating identities. Li (2013) emphasised that avatar identification can be regarded as a construct with four first-order constructs: feeling during play, absorption, a positive attitude toward the avatar, and importance to identity. The four first-order constructs may shed light on further research opportunities for scholars on avatar identification. When researchers explore the identity of people when creating avatars, they apply the following theories.

Social identity is a critical identity process that reflects collective influence, and it is closely tied to social presence, particularly in virtual environments. Social presence, regarded as a central design principle for social computing technologies, explores how digital interfaces in human-computer interactions influence the sense of being with another (Blascovich, 2002). In applications such as mobile and online media, social presence is crucial for understanding user behaviour. For instance, Chui (2008) explains that the intention to use online social networks is strongly determined by social presence, which underpins psychological processes like social orientation, motivations derived from public, family, and friends, and collective intention. Building on this, Shen and Khalifa (2007) examined the appropriateness of multi-dimensional conceptualizations of social presence for virtual communities characterized by non-immersive technologies. They proposed a model with three dimensions: awareness, affective social presence, and cognitive social presence. Shen (2010) later integrated social presence theory with social identity theory, linking system design and social influence to explain their combined effects on knowledge contribution in virtual communities. Shen concluded that these dimensions of social presence significantly shape users' understanding of virtual community membership and identity.

The discussion of social identity naturally extends to the concept of self-discrepancy

theory. Higgins (1987) proposed three domains of the self: the actual self, the ideal self, and the ought self, arguing that people use the latter two as self-guides to regulate their behavior. The gap between the actual self and self-guides, known as self-discrepancy, can cause psychological discomfort such as disappointment and anxiety. Hu (2017) observed that the Internet facilitates online identity reconstruction, enabling individuals to fulfill self-guides and reduce self-discrepancy. Similarly, Bessière (2007) and Dengah (2020) found that people often create game avatars resembling their ideal selves rather than their actual selves. Lyu (2016) identified that individuals dissatisfied with their appearance are more likely to edit their selfies frequently, further underscoring how digital environments allow for identity modification to bridge self-discrepancies.

This line of inquiry is complemented by William James's self-theory, which has significantly influenced identity research in the social sciences. James (1981) proposed that the self-comprises four elements: the material self, the social self, the spiritual self, and the pure ego. The material self encompasses a person's possessions, while the social self refers to self-conceptions derived from external recognition. The spiritual self includes subjective being, states of consciousness, and psychological faculties, and the pure ego represents the essence of individuality. James emphasized the multiplicity of empirical selves, acknowledging their distinct natures, potential for conflict, and capacity for synthesis. Comello (2009) argued that this multiplicity offers valuable insights into identity's dynamic nature and behavioral influences.

Building on James's ideas, Dialogical Self Theory (DST) draws inspiration from both James and Mikhail Bakhtin. DST has been used extensively to examine online identity and provides a methodological lens for studying the self from an internal perspective. Qin (2021) proposed that DST conceptualizes identity as a dynamic unity, recognizing its multiple and evolving aspects. Bargh (2002) highlighted that the notion of possessing multiple selves is well-established in psychology and sociology. Stryker (1980) argued that as society becomes more complex through diverse groups,

organizations, and roles, individuals reflect this complexity by adopting multiple identities. Qin (2021) further noted that the Internet adds layers to this complexity, generating new aspects of self and new identities. Burke (2009) suggested that individuals serve as the nexus of these identities, facilitating their interaction and mutual verification. Akkerman (2011) emphasized the fluid and dynamic nature of identity, which aligns with DST's perspective. Talamo (2001) supported this view through studies on identity construction in virtual environments, concluding that cyber identity construction is "multivocal, positioned, and context dependent." This synthesis of theories highlights the interplay between social presence, self-discrepancy, and dialogical self, offering a comprehensive framework for understanding identity in virtual environments.

The construction of online identity is deeply connected to impression management theory, which forms the theoretical foundation of this proposal. Manning (2005) argues that psychologists typically assume an underlying self that manages impressions, while sociologists view the self as a social construct shaped through interaction. This divergence is reflected in how impression management has been studied across disciplines.

In psychology, Ankit (2021) analyzed the motivations for impression management through the lens of Machiavellianism, suggesting that social astuteness and networking ability—qualities highlighted by Machiavelli—enable individuals to fulfill impression management motives. Building on this, Geary (2021) proposed that the authenticity of self-presentation online is an evaluable dimension, using Machiavellianism to predict the effect of real self-presentation on Instagram. The application of psychological theories like Machiavellianism has primarily been used to assess personality traits and, when applied to social networks, to explore the motivations underlying users' impression management strategies. For example, Rosenberg (2011) examined the relationship between self-monitoring, Machiavellianism, and affinity-seeking to investigate self-presentation tactics

employed by Facebook users. Rosenberg concluded that both personality traits and secondary goals are critical for understanding online impression management.

This understanding of impression management aligns with broader historical practices where individuals have adjusted their behavior and appearance to better connect with others and fit specific circumstances. Goffman's foundational work on self-presentation emphasized the strategic activities individuals use to convey desired impressions to others. He argued that everyday life involves playing multiple roles, with situational factors and social interactions constantly redefining identity (Goffman, 1959, 1967). Extending this idea, Harré and Van Langenhove (1991) developed the concept of positioning, which highlights how individuals strategically choose aspects of their self to present, depending on the social context. This strategic activity reflects people's perceptions of what is relevant and effective in a given situation.

In virtual environments, identities become even more fluid, offering opportunities for novel experiences that are otherwise impossible in real life (Morie, 2008). Research demonstrates diverse self-presentation strategies in these contexts. Vasalou and Joinson (2009) found that avatars created on blogging platforms tend to reflect the owner's physical appearance, lifestyle, and preferences, while avatars on dating and gaming platforms often accentuate specific traits to align with the context. For instance, dating avatars were designed to appear more attractive, whereas gaming avatars emphasized intellectual qualities. These findings suggest that users adapt their self-presentation strategies based on their communication goals and the purposes of the virtual platform (Huffaker & Calvert, 2005; Riegelsberger et al., 2006; Toma et al., 2008). Sociological perspectives further enrich the study of online identity construction. Goffman's theory of impression management has been pivotal in exploring how people control others' perceptions in social interactions (Goffman, 1959). Picone (2015) posits that impression management involves a strategic orchestration of actions, appearances, and behaviours to convey intent and purpose. This concept has been widely applied to online identity research (Lee, 2004; Gee, 2008; Hong, 2012; Strano,

2012; Craik, 2009). However, Goffman's work has faced criticism for presenting a simplified view of the self. Manning (2015) argued that Goffman's focus on publicly observable roles neglects the deeper nature of identity. Similarly, Picone (2015) critiqued the depiction of impression managers as overly Machiavellian, devoid of culture, tradition, or morality. Despite these criticisms, Riggins (1990) recognized Goffman's framework as addressing a crucial gap in sociological theory by emphasizing individual agency within social structures.

In the next section, the application of Goffman's theory to online identity research will be explored in greater detail, demonstrating its relevance and limitations in understanding the dynamics of virtual self-presentation.

4.5 Goffman and self-presentation

In recent years, media technologies that enable people to interact have been constantly updated. Klowait (2019) proposed that contemporary micro-sociologists aim to extend classical micro-sociological frameworks to create a more technological and interconnected world. The micro-sociologists from Goffman's time had to merely point at a physical space to demonstrate the realm of interaction, such as coffee shops, restaurants, and elevators. With the advent of contemporary communicative technologies, the here-and-now and face-to-face social situation came under analytic scrutiny (Knorr, 2009; Rettie, 2005; Rettie, 2009; Sandywell, 2004; Zhao 2006, 2015). Farman (2013) argued that people's attention is no longer restricted to a particular place and time; people's technologies easily connect disparate places and transmit increasingly sophisticated information across them.

Computer-mediated communication (CMC) has meant that non-physical online environments for social interaction have emerged, and it has been debated whether Goffman's interaction order is still applicable to these online environments. Arundale (2009) argues that Goffman's several decades-old works are now outmoded and

should be remodelled to incorporate progress in research and technology. Marabelli (2016) contributes to social media literature more generally by questioning the tout-court applicability of Goffman's impression management theory to social media contexts. He suggested reconsidering tout-court applications of impression management and, more broadly, Goffman's theory in the context of social media use. Therefore, the appropriateness of using Goffman as a theoretical framework needs to be reconsidered.

Many scholars have a positive attitude towards the applicability of Goffman's theory in social networking. Since Hugo Miller first raised the possibility of projecting the ideas of the Canadian sociologist into the digital field in 1995, much research has been done to explore how identity is built and expressed in a technological media environment (Serrano Puche, 2012). Miller (1995) explains that electronic interaction is a natural extension of Goffman's theory of self-representation and social interaction, which many academics follow up on in their studies of social networks. Goffman's theoretical hypothesis has been used in the study of personal websites (Papacharissi, 2002a, 2002b;), Blog (Bortree, 2005), Chat (Moy,a 2009), online dating sites (Gibbs, 2006; Kalinowski, 2011), and social networks such as MySpace (Van Doorn, 2010), YouTube (Wesch, 2009), Twitter (Marwick, 2010; Papacharissi, 2012) or Facebook (Harrell, 2012; Müller, 2021; Turkay, 2015; McLaughlin, 2011). Krämer (2008) argued that self-efficacy regarding impression management from Goffman is strongly related to the number of virtual friends, the level of profile detail, and the style of the personal photo. Erving Goffman's theatrical model is enlightening and ideal for studying how "I" is presented in digital social networks.

Currently, social platforms are an interactive space for the self-presentation of identity. Serrano Puche (2012) argued that in a variety of social networks, where a person presents himself or herself in different ways, one common element between them is that the user has a "profile" that he or she must provide text and visual information to identify them. Luo (2009) claims that completing the information in one way or

another is a clear way for users to express themselves in a controlled manner: the user decides what material to provide to other users. Manago (2008) stresses that in the self-presentation provided by the individual, there is often a potential tension between the real self-image and the idealized self-image. Koles (2012) argued that in virtual reality, in addition to the physical attributes characterizing the avatars, virtual identities also encompass another important element, namely a profile, incorporating further textual and graphical information pertaining to the individuals. The relationship between profile and identity is positive. Some scholars have linked self-presentation and identity on social networks to Goffman's theory.

Vazire (2004) posits that social networking is just like a face-to-face environment; communication becomes "impression management." Goffman (1981: 18) emphasised that sometimes an individual acts on a fully calculated standard and expresses himself in a particular way, the sole purpose of which is to give someone the impression that will no doubt evoke a particular answer of interest to them. Goffman's impression theory has been used in many social studies. Siibak (2009) takes Erving Goffman's (1959) ideas and the self-discrepancy theory of Higgins (1987) as a point of departure in order to introduce the habits of self-presentation of young people in online environments. Siibak believed that visual impression management in social networking sites could be changed according to the expectations of the reference group at hand, as the profile images of the young users are constructed and reconstructed based on the values associated with "the ideal self" or "the ought self."

Goffman's impression management theory is commonly used to explain the establishment of images by users in social interactions. Craik's (2009) work on the establishment of reputation corroborates Goffman's claim by acknowledging that most of our images are also influenced by other people's interactions with us in various social situations. As Mazer (2007) points out, while a Facebook user may meticulously manage their self-presentation through text and images they post for themselves, other users may post images or wall messages that undermine or destroy the image

the user has attempted to cultivate. In contrast, the posts of others may also enhance our image. Walther (2008) finds that the attractiveness of Facebook users is positively impacted by the attractiveness of their friends' photos and the valence of the postings on their walls. Likewise, Hong (2012) argued that a user's social attractiveness and popularity are positively impacted when wall comments are congruent with the user's profile photography, demonstrating that the comments of others have a significant impact on the perception of online identity.

As can be seen from the Facebook-based study, Goffman's theory is often used to explore how a team of Facebook friends collaborate to create each other's online images, which is key to understanding how identity is managed on social networking sites. Before virtual technology devices became popular in the market, the application of Goffman's theory in virtual reality was limited. According to Goffman's study on Facebook, photographs and "profiles" are important when it comes to identity. Strano (2012) emphasised that Facebook photographs act as our virtual bodies in social networking sites environments. Multiple media also have multiple ways of creating identity. Such as Online avatars are usually treated as virtual manifestations of physical bodies. Virtual identities such as social media profiles and avatars have become a common venue for self-expression. Goffman (1959) argues that our self-presentation is made up of those impressions we "give" through explicit verbal communication and implicit expressions "given off" through visual appearance. Avatars as implicit expressions of visual appearance are an appropriate research focus when exploring identity construction in virtual reality social networking sites. In virtual reality, "selves" gain an unexpected degree of freedom, existing as whoever and whatever they wish to be (Khatib, 2007). Online avatars are usually treated as virtual manifestations of physical bodies. Such as Harrell (2012), Müller (2021), Turkay (2015), and McLaughlin (2011) both regard avatars in virtual reality as a form of "implicit" identity construction.

In virtual reality, Goffman's theory is used to discuss the study of self-presence, co-

presence, and the socially present. First, self-presence derives from our experience of ourselves in everyday life (Goffman, 1959). Lee (2004) maintains that self-presence occurs when users do not notice the virtuality of the representation of their own selves. In other words, self-presence is high when users inhabit their avatars and feel no distinction between themselves and their digital representation (Gee, 2008). Second, Goffman's (1959) definition of co-presence is the collocation of embodied others that become available and accessible to each other. Riva (2014: 20) definition of co-presence as "the ability to recognise motor intentions in other individuals". As well as Goel's (2013: 39) description of co-presence as "whether another person is available for interaction based on what her avatar is doing." Ijsselsteijn (2001) argued that if telepresence focuses on being there, and social presence focuses on being in the presence of real or imagined others, then co-presence is the sense of being in a shared virtual setting with remote others. Schultze (2010) posits that the form of virtual presence is made possible by shared virtual environments. Third, Schultze (2019) draws on Goffman's theories concerning involvement in social interaction to explain how human and technological phenomena interact and how the social present is generated by the interaction of different situations. Goffman identifies a social occasion as a typified context of spatially and temporally bounded social activity. Goffman (1963: 18) claims that the range of human perception includes "social affairs, causes, or events," and patterns of social interaction in these social settings often require a specific physical environment, such as a concert hall, a nightclub, or a friend's house. These specific settings are physical objects that are meaningful relative to the social interactions occurring within or around them (Goffman, 1963: 18). Schultze's work contributes a sociological perspective to the construct of social presence. It underscores some of the material and social conditions necessary for users to perceive virtual others as the present.

More specifically, Goffman's contribution to the field of presence was also discussed in conjunction with his other theories. Schultze (2019) used the situational interaction and particularity of the virtual environment in his virtual presence study, and his

theoretical framework draws on Goffman's work on the micro process of social interaction. Schultze (2019) believed that virtual worlds are social environments that rely on interaction among participants for their value. Calleja (2007) studies participation and immersion in digital games by emphasising Goffman's concept of involvement and involvement obligations. Goffman's notion of 'participation framework' is a means of analysing the various interactive roles played by different people in a group in a particular place (Levinson, 1988: 161). Gary Alan Fine (Fine, 2020: 7) also appropriated Goffman's concept in his table-top role-playing game communities research. In general, Goffman's theory has been used extensively to understand space in the field of games and social interaction in virtual reality.

There is a research intersection between Goffman's theory and media communication about affordance. In the context of theatre, the concept of affordances can be explored through the lens of theatrical perspectives. In the theatre, people's behaviours are influenced by the specific setting and its inherent affordances, with the environment playing a significant role in shaping interactions and individuals' self-presentation within these settings. Gibson (1977) proposed that affordances represent the opportunities for action that objects or environments provide to an individual. These opportunities depend on the observer's skills, past experiences, and intentions. In essence, affordances are the ways in which an individual perceives how they can interact with their surroundings based on their unique characteristics and goals. The discussion of affordance is about whether Goffman's theoretical framework is suitable for current social networking research, as well as about the experience of presence in virtual and physical environments. The affordance here refers specifically to the social affordance, that is, how the nature of technology affects the likelihood, opportunity, and limitation of people's choice to connect with others (Bradner, 2001). The social affordance of these technologies has the potential to provide different services and affect people's communication opportunities and limitations. The theory of affordances is said to find a balance 'between subject agency and technological efficacy' (Davis, 2016: 6). Virtual reality is a different way of communication and

interaction under emerging technology. In media research involving Goffman, researchers have always regarded technology-enabled communication products like phones, computers, or virtual reality as mediated interactions (Rettie, 2009; Klowait, 2019), and this interaction has become a feature of everyday life, used routinely to communicate and maintain contacts. Hutchby (2014) compares Goffman's (1981) participation frameworks with the affordance concept. The term participation framework refers to the range of ways that persons within the perceptual range of an utterance are able to position themselves in relation to it. Goffman's original use of the term, which referred largely to spoken utterances, has been extended to incorporate those within the 'perceptual range' of written or otherwise mediated linguistic emissions also (Levinson, 1988, p.161). The affordances refer to the practical uses that anything within that 'perceptual range' makes available for participants (Gibson, 1982; Hutchby, 2001). Hutchby (2014) proposed that language in Goffman's framework, as a means of communication, will have problems affecting language use when cooperating with other forms of technology, and these technological mediations have important effects on language interaction. In general, there is a series of literature discussing the relationship between technical mediation and interactive communication. Rettie (2005) combines Goffman's frame analysis with Gibson's affordance theory and a situated cognition perspective to explore the temporal and spatial characteristics of mobile phone communication, comparing the experience of presence in phone calls and virtual reality environments, and the concept of presence is clarified by an analysis of embodiment. Rettie (2009) argued that Goffman's concept of a gathering is restricted to physically present interactants, but extending the gathering to include interactants in mediated encounters makes sense.

4.6 Research Gap

Early sociologists generally debated the understanding of identity in terms of culture, context, audience, social construction, gender, and consumer media, citing Sandy Stone, Erving Goffman, Stuart Hall, Angela McRobbie, Judith Butler, and Anthony

Giddens. In the mid-1990s, the popularity of networks and computers led later research to give more consideration to the online identity field, especially as media developed; identity theories faced challenges and variables in research. Facebook introduced the “meta” vision of virtual reality to the public at a conference on October 28, 2021. In this project, identity research is focused on the emerging medium of VR. In considering the identity of users and avatars in virtual reality, this literature review has reviewed how the relationship between online identity and users has been understood. Secondly, research on the motivations of people presenting different identities online has been reviewed. Self-exploration, social compensation, social facilitation, and cultural differences are all aspects of the existing literature, with certain studies have carried out multi-dimensional research on the user’s online identity. For example, Li & Wang (2014) used quantitative research to explore users' motivations for creating avatars, while Dudogle (2022) applied a pre-theoretical research approach to explain user motivations from multiple dimensions. After evaluating the existing research directions, this study differs from others by using Goffman's theoretical framework to interpret users' dynamic identity exploration, combined with the impact of affordances in virtual interactions. Avatars, as an alternative to physical bodies, can maximise the ability to create new identities in visual effects and impression management in these environments of global communication.

This review has also assessed some of the identity research theories that have appeared in the existing literature, such as social identity theory, Social present theory, Self-discrepancy theory, William James’s self-theory, Dialogical self-theory, Machiavellianism, Goffman’s impression management. Among them, the literature review has focused on Goffman’s theory, discusses his adaptability to the non-physical field, and positioned this theory as the theoretical lens that will be used to discuss the motivations of people designing avatars in VR in this research. Although researchers from online self-presentation concepts, self-presence, co-presence, and socially present and affordance studies have discussed whether Goffman’s theoretical

framework is suitable for current social networking research, in the study of virtual identity, the applicability of Goffman's theory in virtual interaction and the affordance of virtual environment are worth further development. This is an understandable situation because, with the continuous development of technology and the re-emergence of VR (Evans, 2018). This study will contribute to the discussion of Goffman's theory through research on avatar design VR.

Chapter 5 Findings

In this chapter, the findings of the research are described in detail. Interpretive phenomenology and discourse analysis will serve as a lens for the storytelling of these results, guiding the order and logic of the presented data. First, 5.1 is about the cultural experience of the virtual world recorded by autoethnography research. Section 5.2 presents the findings from the questionnaire regarding the user's intention to choose an avatar in the VR environment and some noteworthy features of users' behaviour. The data from the interviews are systematically presented in 5.3 regarding the impact of self-experience and emerging technologies, such as virtual reality, on user identity. 5.4 summarises the key findings.

Autoethnography is an approach to research and writing that seeks to describe and systematically analyse personal experience in order to understand cultural experience (Ellis, 2011). This data is about what VR social life looks like and how people communicate with each other in VR, and it is presented based on the researcher's perspective and experience. The description of this experience helps researchers understand VR users' "living experience", including their behaviours, feelings, language patterns and thoughts in virtual social interaction. Goffman's research has consistently emphasised the importance of the environment on the user's performance role. Specifically, the surrounding cultural norms determine the appropriateness of nonverbal behaviours (Kamau, 2011). When people interact together in social settings, they are constantly engaged in the process of "impression management" (Semaan, 2017). The "social setting" here refers to the spatial environment, the social situation, the researcher's feelings, and the participant's interaction. The autoethnography writing will mainly describe the cultural experiences in VR from the above four points.

In 5.2, the tendencies of user behaviour, preferences, intentions, attitudes, and

opinions are presented in the form of data measurement, which illustrates the frequency of respondents' thoughts and feelings and digs out more common phenomena about identity issues in virtual reality.

The ideas on impression management are derived from the symbolic interaction theory of micro-sociology area. As discussed in chapter 4, section 4.4, Goffman's theory emphasizes attention to a particular image presented to others (Goffman 1959: 56). This is also in line with the research path of the phenomenological approach to interpretation, which is a detailed examination of an individual's situated and subjective lived experience. The interview data in 5.3 is focused on the users' perspectives, experiences, beliefs and motivations in the virtual environment and how these shape identity in that environment. As this is a study with a mixed methods approach, the questionnaire has a large sample that complements the qualitative research, with fewer participants but with more detailed information.

5.1 Autoethnography

When writing autoethnography, a reflective approach will be used, and writing in the first person allows researchers to directly present their experiences in virtual reality and their perspectives on the virtual cultural environment in the research narrative. As a focus area of this study is the dynamic changes in identity, writing in the first person allows for a critical examination of one’s own biases and how personal experiences influence the interpretation of these dynamic changes in identity.

Playing games is not something I am interested in generally. My first impression of *VRChat* was of a three-dimensional space with an animated tone, like a contemporary video game. Most of the animated films I have watched are 2D films, except for the 3D Minions film in the cinema a few years ago. I was thinking, “so this is the virtual world that everyone was talking about”. However, I felt that it was a bit inappropriate to apply the concept of “world” to *VRChat*, even though there were many aspects of

VRChat that influenced me to think of it as a "world". When I logged into the account for the first time, "Welcome to the world of *VRChat*" appeared on the screen. Then I could only choose the place I wanted to go in the column category "World". When I watched videos about *VRChat* on YouTube, the users also often speak in terms of what happened in which "world". At that time, I believed that the platform developer had deployed the concept too successfully, but after just a little usage, I realised that it was not just the effect of successful marketing of a concept. My perception of VRChat was undergoing a transformation. I have always seen the "world" as encompassing both physical landscapes and mental constructs. Within VRChat, social scenes are crafted by simulators, drawing from the real-life experiences of its users, offering a vast array of themes to explore in this virtual land. Additionally, I have observed a profound sense of community among users, reminiscent of a familial bond, with some finding solace and connection, even describing it as a spiritual sanctuary. After a while, *VRChat* is one hundred percent in line with my understanding of the "world".

I was not in a hurry to throw myself into the unknown virtual world created by the emerging technologies at the beginning, but as a technology expert who was exposed to a new game for the first time, carefully exploring this popular virtual space. After logging into the account, the system took me to a pre-set location. I felt as if I had fallen into a multi-coloured black hole of the universe and did not know where I was or where I was drifting to. All I can do is rely on previous experience to understand where I am and what the system is trying to do. I walked around in the space named "Home", and saw several display screens, mirrors, tables, sofa, pens, erasers, and several portals that looked like Marvel movies. The space was far less realistic than a photo taken with a smartphone camera, but my visual perception had a conscious experience of the objects in this virtual space. Unaccustomed to handle handling, it was difficult to interact with or pick up objects in the room, and I had to rely on the virtual space of images on my retina to find the boundaries of this space. It only took me 10 minutes. I realised that it was a room without an audience. I can do what I like here. The first thing I did was look in the mirror and swap out the avatar I had chosen

at random when designing the account.

5.1.1 Choosing my avatar

I chose my avatar for fun in the first place. I picked the avatar from the system because I did not know there were many avatar worlds to explore. I did not choose an avatar with many rules, except that I would not ignore the colour and body movement of my avatar. As shown in image 5-1-1, I do not like avatars that look too dark, and the colour scheme needs to look bright and lively.

Image 5-1-1: My avatar 1

I would purposely skip the human-shaped avatars, The human avatars appeared to be too interchangeable, and I just did not want to immerse myself too quickly. My non-human avatars look funny, especially the way it talks and walks. Even if I were desperate for an E-boy or E-girl identity, I would not believe I could find one that looked like me that easily, or perhaps I would not want anything that looked like me. I was very concerned about the size of my avatar. I did not want my avatar to be too tall or too short. If I had an odd shape, would I be noticed? I just want to be in a public space. I am not yet familiar with this virtual social environment. If you are thinking that this person was thinking too much about her avatar for the first time, then I have to say it is not much. On the contrary, choosing an avatar is like choosing an outfit, and choosing a VR outfit is much easier than in real life. I am a quite picky person. I would spend no end of time on my outfit. I could use the whole morning to think about today's task,

work location, social situations, how long I may have to sit on a chair today, then try on a different outfit before going out of the house.

I have had different experiences with choosing an avatar for certain periods of time. Picking an avatar is simple, but finding the right one for myself is a long shot as time goes on in the game. When my time in *VRChat* reached about 30 hours, I started changing my avatar frequently. The reason was that I wanted to avoid wearing certain avatars that I had an inherent impression of, and at the same time I did not know what that avatar was to me. Since my way of choosing an avatar was limited to the *VRChat* planform, it is common that I often met users who use the same outfit as me. It would be a comforting lie on my part to say that most users on *VRChat* are friendly and approachable. The truth is, there have been far more social situations that have made me uncomfortable than in my everyday non-VR reality. For example, I am not familiar with the way people socialise in VR. Unlike other social media like Messenger and WhatsApp, I was able to hear all the conversations in the VR room in real time. Especially when I walked into a highly populated place, I was surrounded by cursing, shouting and laughing. This phenomenon is so common that I cannot predict whether the content of this social situation would be argument or normal chatter. When I encounter a user with inappropriate behaviour or language. This negative impression is carried over to their avatar. I would cross that avatar out if I saw it in the system. For nearly 30 hours of *VRChat*, I felt like I was 'dating' the avatar, not knowing if I liked the avatar, but knowing which avatars were not for me.

In my over eighty hours of *VRChat* experience, I have had three regular avatars: Bunny Robot, Furry fox, and Mini duck. The Bunny Robot was the first avatar I interested in. As shown in image 5-1-2, It's a little pink rabbit that controls the robot suit from inside.

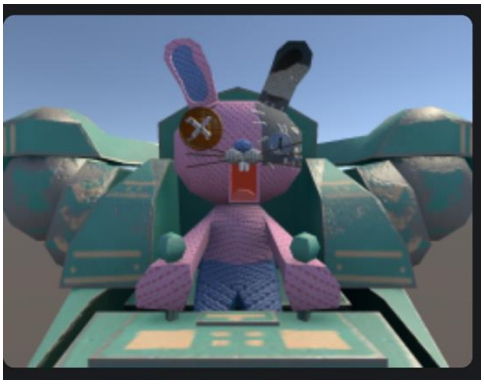


Image 5-1-2: My Avatar 2

In real life, I am a huge fan of Mobile Suit Gundam, with five Gundam model kits on my bookshelf that were sent from Japan last year. Gundam has always been more than just a favourite anime for me; it represents an anti-war story with deep philosophical undertones. As a child, what intrigued me about Gundam was the application of mobile suits in battle—how they balanced technological advantage with human skill and strategy. This dynamic highlighted the interplay between technology and humanity, raising questions about how we define ourselves in a world increasingly dominated by digital experiences.

The Gundam animation series prompted me to rethink the balance between our digital obsessions and face-to-face human interactions. It felt as though technology, embodied in the Gundam suits, communicated with people in ways that transcended simple interaction. With the Oculus controller, I was able to step into a virtual world where I could embody the role of a mobile suit pilot, much like Kira Yamato with the Freedom Gundam. This experience allowed me to explore the virtual universe, confronting my fear of social discomfort and my need for protection—"I am a rabbit who has always been sheltered by my Gundam." This metaphorical 'rabbit' reflects the vulnerable, cautious self that needs reassurance when facing new or uncomfortable social situations.

Autoethnographically, this experience allowed me to explore the influence of past

experiences on digital interactions. By using Gundam as a lens, I can critically examine the connection between my real-life self and myself in the digital environment—how technology complements my desire for genuine connection. The process of entering the virtual space as the ‘Bunny Robot’ character made me reflect on deeper identity issues. As we face technological change, how do we adapt to new ways of storytelling brought about by technology? This is a negotiation between our online and offline selves.

I copied the Furry Fox from a friend who had specially redesigned this avatar. We met on a *VRChat* dance floor. I have never seen a fox with such a glittering colour scheme. Its furry body seemed to hide different colour fireflies, and the smooth movement was glowing in the club room, the tail would follow the body and arc out in the air, like fireworks blooming in the sky full of stars. This avatar dances playfully and cutely, like a naughty elf in the dark forest. The free vibes hooked my attention. I saved the fox avatar and used it for special occasions like virtual drinking night, club dancing, dark gaming room. I enjoy walking in the dark with this Furry Fox. I felt free.

The furry community is often centred around anthropomorphised avatars. In fact, I initially thought that all furry avatars were quite similar—they were all creations based on wolves or dogs, with the most noticeable difference being their colour. Generally, if I hide a user's ID in a game, it's nearly impossible to recognise who are friends. However, as I delved deeper into this group, I realised there were hidden meanings behind furry avatars. First, active players’ furry avatars are not easily replicated by other members; this characteristic establishes the alpha status within the furry community. Secondly, the colour and design of the furry avatar are related to the player’s personality preferences. I once encountered a player who modified their avatar’s head to be very fluffy—this player often liked others to pet his head. Additionally, the age the player is portraying can be sensed through the size and behaviour of the furry avatar—smaller avatars are often referred to as 'cubs' and receive more comfort and attention from the community. Lastly, territoriality is strong

within the furry community; for example, I once forgot to change to a furry avatar when entering the community and was told by members that I was 'naked' and 'didn't belong here, get out'. I believe the furry community is a unique space, especially important for those who feel marginalised or isolated. Members frequently express a sense of loyalty in interactions, and this space provides a sense of belonging and community for those with common interests.

I also have a Mini duck avatar. Its presence seems a little weird and inappropriate in any social situation. A meme and a joke. Sometimes I would imitate the duck sound and walk around the room with this duck avatar. I found that people would be extra friendly to the small avatars. They came up to me and petted my head and crouched down and talked to me. Both Fox and Duck gave me a great deal of social pleasure.

Now I feel like the choice of avatar has hit a plateau. After over 300 hours of *VRChat* experience, the biggest shift in avatar choice was from initially resisting humanoid avatars to now yearning for an E-girl avatar that could present me as I am. I think this is the result of getting used to this virtual world where the imagination has no boundaries. I love this place. There are times when this immersive room can amaze me even 300 hours. When I wanted to find peace somewhere, I would go to Spirits of the sea world, walk on the stone road surrounded by water with calm music from the system, look at the junction of sea and sky in front of me. It was so beautiful. Here, the boundaries of the world are invisible but do exist. When I reach the border of the world, I jump into the sea and automatically return to the starting position. Occasionally I find people here who are in the same mood as I am, and we just walk quietly together. When I want to be alone, I go to Soft Sea World, turn on the rain sound on the menu board and lie in a hammock on the roof. The sky of this world is of a marvellous romantic pink. I could feel the tenderness in the space. When I get fed up with the enclosed space with a roof, I would jump into Hwabon Night world, sit on the floor cushion at the door and enjoy the scenery of nature, and listen to the sound of leaves swaying. It was such a relaxing experience. I sometimes miss the warmth of the house

on snowy days. I switched to Cozy Cabin World, lit a bonfire in the house, opened the balcony door and watched the snow flurries fly across the sky. It would be perfect with hot cocoa in hand and a friend I can talk to in this space. I wanted to have an E-girl body to feel it all.

I tried several E-girl avatars, but none were perfect. I can always pick out what's not working for me. Such as sitting pasture, body shape, hair colour, quality, facial features, fashion style. I was given an avatar called Haley from the one of avatar world. She is a classic example of why I like her, but she cannot present who I am. Haley had large amber eyes, and Japanese make-up made the expression of her face look so gentle and soft. Her slender figure and dark hair are in keeping with her Asian identity. Haley wore cat ears over her head. I discovered a phenomenon that interested me, which is that animal ears are quite common on virtual avatars. I often wear a pair of bear ears as headgear at lift parties, and it just feels right. Haley white sweatshirt is exactly what I like to wear on a daily basis. I rarely wear tight tops. The large baggy tops allow me to easily find comfortable standing and sitting positions, no matter the occasion. While colour clothes give a clean look and it tend to be my colour of choice. The avatar was very good looking in black shorts and leather boots. I can easily find a similar style in my closet.

I have never found the perfect avatar in the virtual world to represent me. Haley wears a lot of accessories on her body and outfit, with punk-style chains hanging from her neck, wrists, ankles and even her waist. I hate all these metal or plastic accessories in my life, and I cannot even accept sequins on my clothes. I observed that some of the chains even swayed as my avatar walked. While I could not physically hear any sound there, I could imagine the sounds of those chains clashing in my head. Her Japanese make-up was a bit too much. Looking at myself (the avatar) in the mirror, I feel that she has no other emotions except gentleness. The last thing that drives me crazy is her sitting position. She can only sit in a half squat. It was such an unpleasant scene to see a girl in a short skirt sitting like a wolf man. I feel embarrassed, especially in a public

place. As with my experience with this avatar, I can always find other avatars that do not fit the impression of my expectations. I believe it might be a good idea to eventually design my own avatar.

I did not know at first what I wanted in an avatar. After nearly 300 hours of *VRChat*, I started to get to the point where I had an impression of the avatar in my head. I wanted to name my avatar Zoe. The pronunciation of Zoe is simple and straightforward. I chose the English name Rita when I was studying in the UK and not knowing what I liked in a name, I just randomly chose a name that looked okay. But I feel l like the name of Zoe more than Rita now. I wish avatar Zoe would have thick black hair, clean skin and soft makeup. The jawline is clearly defined, and the big and warm smile should be her best feature. She has a petticoat with a white crop top and shoes with Gundam stickers. Wings suit her, small pink features with big white wings. She has multiple choices of ears, such as cat ears, huge antelope horns, panda ears. Zoe is a gym girl, under 21 percent body fat.

I have designed Zoe. Is she enough? In *VRChat*, although I had a rough idea of what I wanted my avatar to look like. I felt that Zoe was a dreamy presence, and I wanted to paint her in unrealistic colours. I fear I do not understand what I want to be. If I view Zoe's characteristics as pieces of a jigsaw puzzle, I am playing a jigsaw puzzle. I may have a vague impression of what I want to be, but I do not have the whole picture at the moment. I do not know when the final shape of the jigsaw will be available. In other words, there is no harm in starting to design an avatar to present who I am. It is a process of exploration of identity. I am looking forward to seeing what I get when I play 2,000 hours of *VRChat*. The design of Zoe is a reflection of me finding myself and my constant evolution. In this way, as I have become more at home in *VRChat* my avatar choices have converged with my own changing personal identity. After 2000 hours in *VRChat*, Zoe may well be gone as I change too. The convergence of avatar and identity, for me, has been a function of time spent and feeling at home in *VRChat*.

5.1.2 Changing my avatar

In my opinion, changing avatars in *VRChat* is a common practice that corresponds to the unique style and vibe of each world. Unlike the natural world we inhabit, *VRChat* worlds are human-created structures that embody subjective real-life experiences. To me, each world delivers a distinct experience that can be best described as a vibe. I appreciate the phenomenological approach which emphasizes how the world is directly experienced through individual subjectivity in daily life. Thus, the virtual world experience in *VRChat* highlights the significance of "world" within VR. "Goodnight Sleep (Cabin)" is a perfect example of this concept, providing a calming and relaxing vibe. The modern design, the blue-purple dark light, the star-lit bedside table, and the wooden ceiling all seamlessly blend to create a comfortable atmosphere. The background music further adds to this relaxation, converting a visitor's subjective feelings into a virtual space indicator. That said, choosing an avatar fit with the world's vibe. When the designer expresses their impressions and emotions in the virtual space, visitors also tend to match those impressions through their previous experiences. As the world reminded me of my own room, I would choose an avatar that matched its vibe - E-girl, dark blue avatar, or other laid-back avatars. In previous experiences, I had also changed my avatar to match the world, like using a furry fox avatar in the "Drinking night" world. Therefore, I believe that changing avatars based on the world style is highly relevant to fostering a deep sense of immersive experience in the virtual world.

This increases the frequency of my avatar changes as I explore more new worlds based on my interests. In addition to some worlds that I often go to, I also spend a lot of time visiting unknown areas. There are usually two ways to do this, one is to find themes of interest in the Discover world, and the second is to use keywords to search. For example, on the Discovery page I have been to Chinese Bar, The Cabin Life, Drinking Night, Dream Train, Cosy Boat, Undo Bird Sanctuary, Chess, Artistic Point of View by Reverie, Lad Area CCR, Kobas Hideout, The Cove, Disney Avatars, Gigabit’s Gundam, Batcave, Tony’s Bizarre Avatars and so on. I realized that most of my choices had in common that the worlds I was interested in were often places or situations I had been

or seen in real life. For example, in the world “Undo bird Sanctuary”, I seem to be an outsider. Those ducks are not afraid of people at all, and chasing me around everywhere, the arrogant geese look like the host in the park. It reminds me of that chilling afternoon in Regent's Park, the beautiful views, the ungrateful birds. I prefer to use the avatar with artificial cage crinoline from Victorian fashion in this word. I feel like it fits the royal park. “Lad Area CCR” is very close to the scene in Resident Evil 4, but instead of using Alice to play, I would use characters that do not fit in this environment. I have never seen an adorable kodak duck wadding in the “Resident Evil” show. It makes my gaming experience a lot more enjoyable. “Disney avatars” is my playground. I could be the Cinderella with the blue star dress, the pretty princess of Agrabah from Aladdin, the spirited and determined young woman Rapunzel with her long bright gold hair. I love trying out different roles there. There's also a third way to explore worlds and avatars, through the invitation of friends, which usually leads to more surprises for me.

In my VR social experience, friends have been a boost to my experimentation with more avatars and worlds. When I get invites from my friends, I would hesitate a little before I jump into their world. I found out that when I went to an unknown world and socialise with a group of unfamiliar friends, it was stressful. Once I was in a social situation, I usually would stay in a corner of the group, observing other users' social behaviour, the way they talk, what kind of topic they are interested in. Avatars often give a lot of rich information, such as I would be aware of if this were a small-sized group of avatars. The first impression of this group would be established at the beginning, then I would know how to fit in this social situation. Sometimes I would deliberately use the same avatar in the group, because I felt that this avatar represented the impression I was making on others in the group. From time to time, I've also changed avatars based on recommendations from others, and I've been amazed at how patient people have been in helping me choose an avatar. For example, once in a furry club, I proposed changing to a mini size furry with a pink colour body. Finding this avatar is difficult as this type of fur is often made from a single model, pink

can be easily found, but the mini size must be found in other furry avatar worlds. People in this community started to help me connect with friends from other worlds to see if there were similar avatars. They would ask me these questions: ‘is this what you are looking for? 'How do you feel about this one?’ ‘Does it feel like your avatar? It was like I was in a fitting room at a mall, I was given VIP service and suddenly I was the centre of conversation. I have to say that my friends have been very helpful in my journey of exploring my virtual identity. Of course, there were times when I felt that I was being forced to change my avatar based on the enthusiasm of my friend. It's hard to say I dislike the avatars they've devised or found. I had to wear an avatar that did not fit who I am. By the end, I could take no more and was so uncomfortable that I told my friends the avatar was really not for me. They are usually very understanding, and I think socialising in VR has made me know more about my personality that’s often overlooked.

In daily life, everyone has had a similar experience of sitting in a room doing nothing and letting their thoughts flow. I would love to open up my *VRChat* on Steam and site on my virtual home’s sofa, looking at myself in the mirror and just relax. I realised that emotions are powerful, the emotions I had in the real world, and emotional shifts in virtual social interaction would change my choice of avatar. *VRChat* is fun, but for me the most common moods when I play are bored, a little lonely, and sometimes I just want to escape reality for a while. I have had moments of irritation at work that have made it difficult to communicate with my colleagues. It has happened whether I like it or not, and there is no time machine to use. However, I have *VRChat* to help me get through that awkward feeling. What I did after logging in to *VRChat*, I chose an avatar with a cosy hoodie and sat in the virtual home listening to music. My favourite thing is that the hood can be selected on, it made me feel safe. It is like when I was angry as a kid, I would bury my head under the duvet, as if everything that happened in the world had nothing to do with me. Then I would spend time in other worlds with the hood on, chat with random people. Eventually, I took the hood off when I felt better.

From my auto-ethnographic field notes, on January 15, 2022, I went to a world called “soft sea”. As I mentioned before, the pink atmospheric design is such a dreamy style. I was sitting on the couch dressed as a punk E-girl avatar, then a user came up and said, “Fuck you, you are sitting on my coach, you are not welcome here”. It was an offending moment, a bit overwhelming, and I left the world as quickly as I could and changed my avatar to the hooded one. Again, the hood helps me hide myself from the public. I guess there was another reason for changing avatars, which was that I just wanted to get out of an awkward situation, and it seemed like changing avatars could feel like switching to a different timeline to live. This happens a lot, and sometimes I come to the virtual world in a bad mood and choose a particular avatar to live in. Sometimes it is something that happens in a sudden social situation in the virtual world that makes me change avatars. Sometimes I change avatars because the style of the world affects how I feel. Anyway, one of the things I am glad about with so many changes is that on *VRChat*, even though I do not have the superpowers to control most of what happens around me, I can be who I want to be and deal with difficult situations.

Overall, the exploration of avatars reflects the process of exploring for the self. Initially, I only wanted to choose brightly coloured avatars. Later, I started selecting avatars that suited specific situation. After some time, I gravitated towards avatars related to my interests and hobbies. Eventually, I needed to customise avatars to fulfil my idealised vision of “myself”. Over time, changing my avatar also became closely tied to my past experiences. Unlike real life, the virtual world allows me to navigate social situations more flexibly. The anonymity and ease of changing identities provide a sense of security, enabling players to freely create in the virtual space and express themselves in ways that are impossible in the physical world. The active maintenance of virtual communities by players fosters a sense of connection and belonging, encouraging many to remain in these communities long-term. Virtual environments support players in using creativity to explore complex identity issues.

5.2 Findings from Questionnaires

From auto-ethnography, it can be seen that the process of users exploring their identity is a lengthy one. There is a difference between the initial choice of an avatar and the avatar that is used in the long term. There is a close connection between virtual avatars and the user's real identity. At the same time, through the observation of researchers, it is found that users editing their avatars based on different social environments and scenes. In other words, virtual social environments may be related to users' cognitive understanding of their virtual identities. In the questionnaires, the research will focus on exploring the process of users choosing avatars, changes in social confidence levels, the influence of virtual environments, and the relationship between real and virtual identities.

The results of the questionnaire are presented in four main sections. The first section examines the impact of users' life experiences on their choice of avatars. The information gathered includes the users' perception of their appearance, ideal appearance, personality, personal identity, social identity, gender identity, and how different social situations and places influence their avatar decisions. The second section focuses on the general phenomena of avatar design and choice. The study identifies patterns in user avatar selection and creation, including how users acquire their avatars and their motivations for designing them. The third section highlights the significant role of friends in user social interaction, with this point repeatedly reflected in multiple data sets. The study also explores the relationship between friendship and avatar choice. Lastly, section four summarises unexpected results that do not align with the study's initial expectations or contradict established facts. These findings are also crucial in contributing to the study's overall conclusions.

This study utilised two approaches for measuring information. The first method involved leveraging the summary function in Google Sheets, presenting data as a clear and intuitive pie chart or list of answers based on the type of question and the response. The second technique entailed descriptive analysis in SPSS, focusing

specifically on frequencies and crosstabs. Crosstabs, in particular, proved highly informative, shedding light on the complex interplay between the relevant variables. Overall, the combined use of these approaches provided a comprehensive and detailed data assessment.

Seventy-six participants were invited to participate in the study, which was conducted from September to November 2021. One participant was excluded as he or she did not have three months of game experience on *VRChat*. Seventy-five participants were finally included in the findings section.

5.2.1 Effect of the life experience on the avatar

Life experience encompasses knowledge and wisdom gained through lived experiences, which can shape the user's mindset and influence their choices in interpreting their life. Figure 5-2-1 illustrates how closely the user's avatar corresponds to their real-life appearance, revealing that they did not select avatars resembling their physical self. Specifically, 22.7% of users perceived their avatar to be 50% similar, 9.3% only 25% alike, while only 16% considered their avatar highly (75%) like their appearance. A mere 1 in 75 participants believed their avatar was a precise match with their actual self. Impressions can endure in the user's mind for many years, but the data show that 82.7% of avatars bear little correlation to their users' appearances or impressions. This trend is further supported by other findings. For instance, Figure 5-2-2 shows that only 24% of users chose avatars based on their appearance, and a mere 8% created their avatars through the customisation site, *Ready Player Me* (Figure 5-2-3). These unexpected results reveal that users are not primarily motivated by their appearance when selecting their avatar.

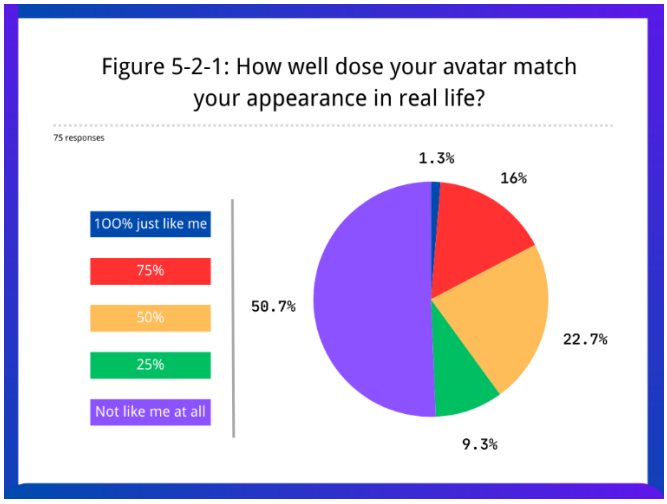


Figure: 5-2-1

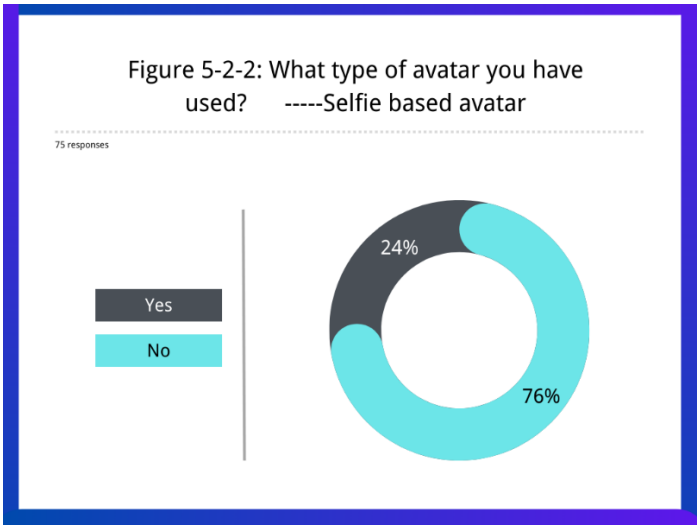


Figure: 5-2-2

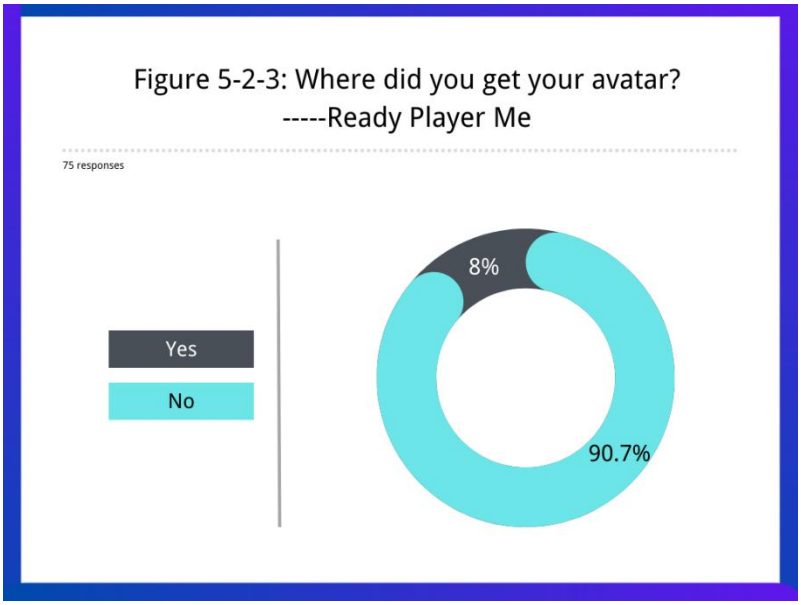


Figure: 5-2-3

Appearance ideals refer to the aesthetic standards that individuals develop over time in the context of their country, region, and culture. Figure 5-2-4 examines how closely the user's avatar aligns with their ideal appearance, shedding light on the impact of cultural background on avatar selection. Interestingly, 42.7% of users reported their avatar's appearance was very close to their ideal, with 17.3% indicating a perfect match. Additionally, 18.7% of respondents felt their avatar was at least 50% like their ideal appearance—only a minority of users disagree. Overall, 78.8% of users' avatar choices were influenced by their ideal appearance. This finding supports the study's prediction that the user's avatar design motivation reflects their cultural aesthetic standards.

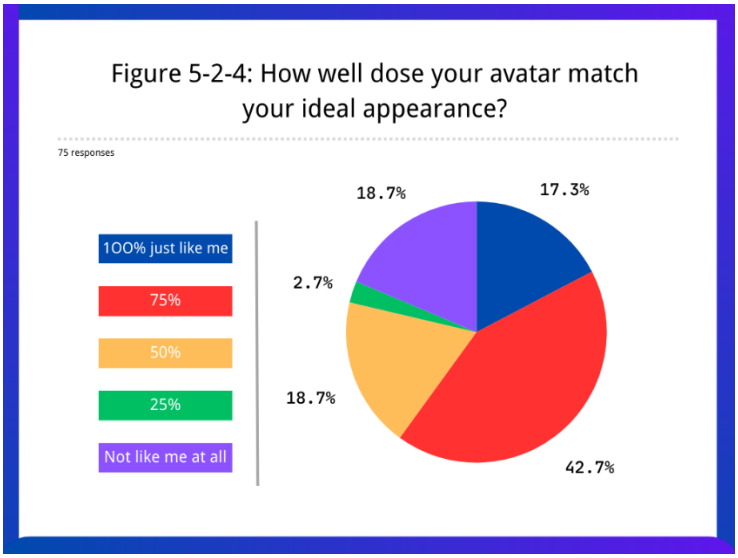


Figure: 5-2-4

Personality is a complex construct encompassing interests, motivations, values, self-perception, talents, and emotional tendencies. It is possible that users are drawn to avatars whose traits and characteristics align with their own. For instance, the character of Tom from the famous TV show *Tom and Jerry* is often depicted as witty, likeable, and mischievous, traits that some people may identify with. To explore further, Figure 5-2-5 examines the extent to which avatars reflect the user's personality. The results show that 40% of participants believe their avatar represents their personality 100%, while 33.3% see a 75% resemblance. Similarly, 18.7% feel that their avatar matches 50% of their personality, with only 10% reporting no personality overlap. Overall, 90% of respondents agree their avatar embodies over half of their personality, highlighting personality relevance as a key driver in avatar selection.

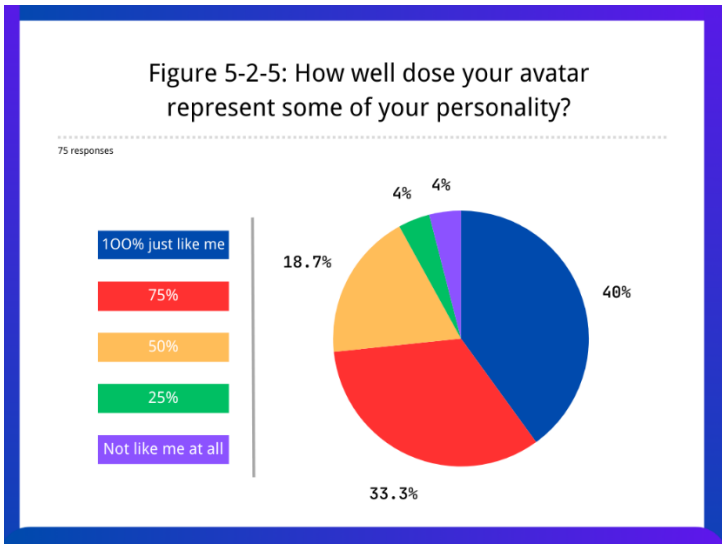


Figure: 5-2-5

Personal identity refers to the unique characteristics and traits that define an individual. This includes their distinct personality and self-perceptions, which remain consistent over time. In this study, personal identity was assessed through six facets: personality traits, ability, beliefs, physical attributes, aspirations, and interests. Participants were asked to respond to multiple-choice questions regarding the relevance of avatars to their personal identity. Figure 5-2-6 demonstrates that personality and interests were the driving factors in avatar selection, with 66.7% of users believe that their avatar is related to their interests, and 76% linking their avatar choice to their personality, while just 6.7 % felt their avatar was not linked to their identity. Although abilities, beliefs, physical attributes, and aspirations did factor into avatar selection, they were of secondary importance, with fewer participants citing them as relevant.

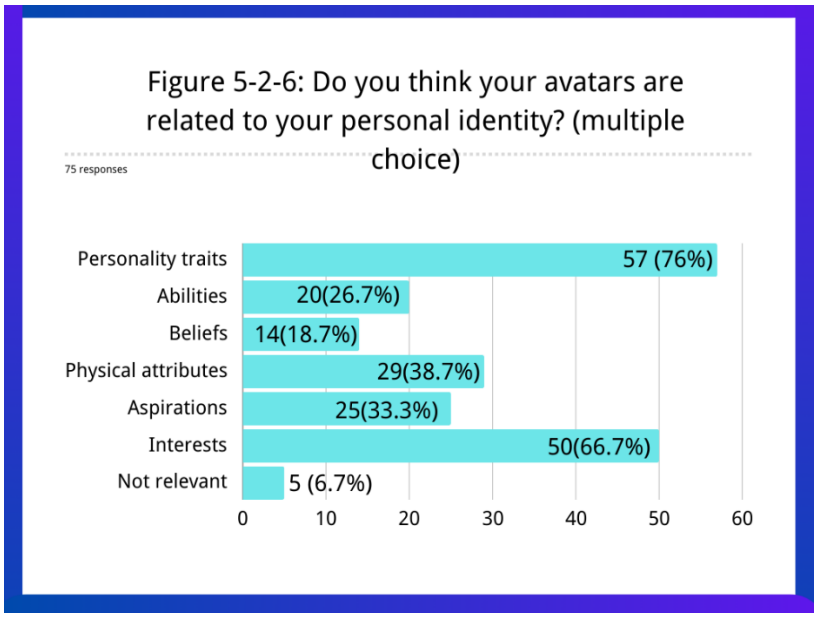


Figure: 5-2-6

Social identity involves how individuals define themselves based on their membership in social groups, and it is closely linked to their real-life environment and the society they live in. The research investigates the social identity of *VRChat* users from seven aspects: gender, religion, ethnicity, age, profession, family role, and nationality. Figure 5-2-7 shows that gender has the most significant influence on avatar choice, accounting for 46.7% of responses from participants. Ethnicity and age identity also played a role in avatar selection, with 32% and 30.7% of users choosing them as factors. Interestingly, 37.3% of participants felt that social identity had no impact on their choice of avatars. Only one participant agreed that religious identity influenced their avatar selection. Additionally, the probability of selecting professional experience, family role, and nationality as factors affecting avatar choice was relatively low. The results suggest that gender is the primary driver of avatar choice within social identity. It is noteworthy that one-third of participants did not believe social identity affects their avatar choice or were unaware of its influence.

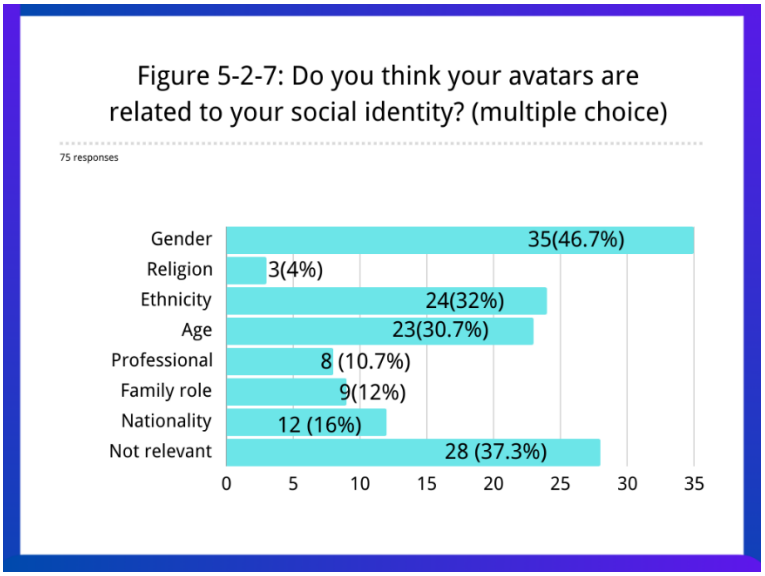


Figure: 5-2-7

Gender identity refers to an individual's personal sense of their gender, which may correlate with their assigned sex or differ from it. Figure 5-2-8 was created through a Crosstab analysis using Descriptive analysis on SPSS to explore the similarities and differences between users' gender and their avatars' gender. Several patterns can be observed from our analysis. Firstly, 19 of the 31 female participants exclusively chose female avatars, while 12 of the 31 male participants exclusively chose male avatars. This suggests that the gender of the avatar users is related to the real-life gender of the users, and most female avatars are consistent with the users' gender. Secondly, 30 participants experimented with both male and female avatars, indicating that experiencing different gender avatars could be one of the motivations behind users' avatar choices. Thirdly, 13 participants had different gender identities, like non-binary, gender fluid, transgender, and gender neutral, eight of whom tried both male and female avatars. This suggests that the majority of users with different gender identities are interested in experiencing both male and female avatars. Overall, this study's findings suggest that the users' gender identity in real life can affect their avatar gender selection in VR, and virtual avatars offer users the opportunity to explore different gender experiences.

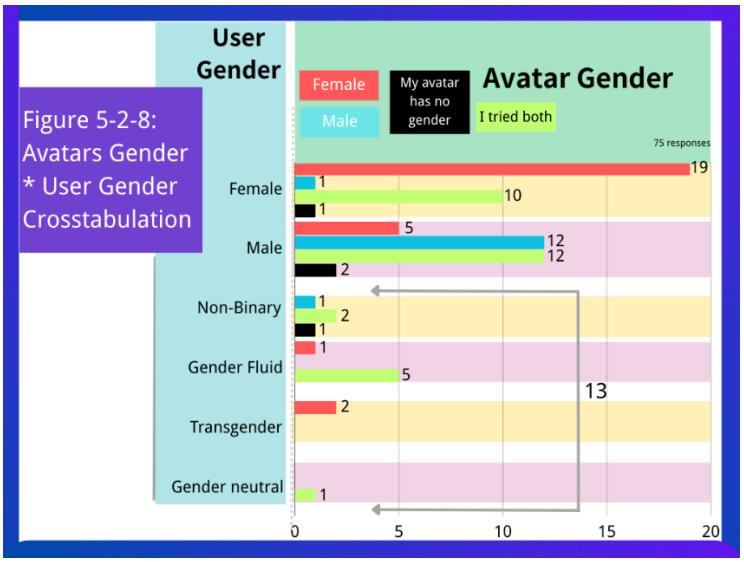


Figure: 5-2-8

Another study's findings, as shown in Figure 5-2-9, corroborate this idea, revealing that virtual places that users visit are related to their real-life experiences. Among the 75 participants, 65 stated that they frequently visit a *VRChat* room. Additionally, 39 of them acknowledged that the places they frequented were linked to their real-life circumstances and interests. This suggests that the virtual places experienced by users in *VRChat* have a connection to real-life spaces, indicating an overlap between the physical and virtual work.

Figure 5-2-9: Do you have a VRChat room that you frequently visit?

75 responses

		If you do, does the room relate to places or social situation you want to be or have been in real life?			
		Yes	No	I do not have a VRChat room that I frequently visit	Total
Do you have a VRChat room that you frequently visit?	Yes	39	26	0	65
	No	0	1	9	10
Total		39	27	9	75

Figure: 5-2-9

These results suggest that avatar design is influenced by the elements that users care

about in their daily lives. The various components that makeup avatar design include factors like body movement, gestures, micro-expressions, facial features, height, eye colour, skin colour, tattoos, fashion style, hairstyle, good appearance, and body shape. However, as shown in Figure 5-2-10, when participants were asked whether they care about these same elements in their real life, 55.4% of users disagreed (40 participants), while 44.6% mentioned that they cared (35 participants). The two values of number were quite close to each other, which is not enough to provide support for the study. To investigate this further, the study employed descriptive analysis crosstabulation in SPSS to examine which physical elements were particularly important to the 35 participants from Figure 5-2-10. Figure 5-2-11 outlines the appearance elements that matter in real life and if these match the elements of avatar design. The results showed that 18 users cared about body movement, 20 users cared about facial features, 21 users cared about skin colour, style and hairstyle, 29 people cared about good appearance, and 22 people cared about body shape. However, values for gesture micro-expressions, height, eye colour, and tattoos were lower than half the number of participants, indicating that these details mattered less to users in their real lives. Overall, our findings suggest that users tend to project the details they care about in real life into their avatar design, especially when it comes to body movement, facial features, skin colour, fashion style, good appearance, and body shape.

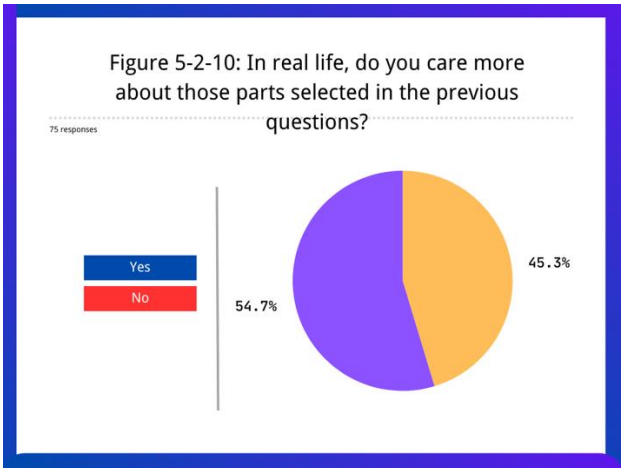


Figure: 5-2-10

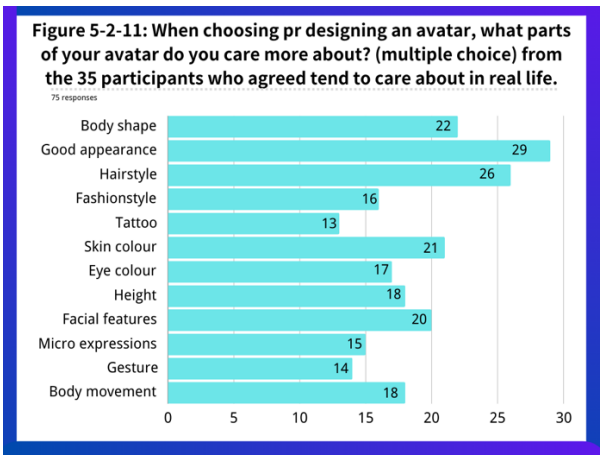


Figure: 5-2-11

The creation of avatars is often influenced by elements from real life, including popular characters from films, the internet, and novels, as well as real-life creatures. For instance, some individuals may be drawn to a particular villain in a movie, while others may prefer a romantic character portrayed in a novel. People have their own unique interpretations of the characters they encounter. According to Figure 5-2-12, 85.3% of users select their avatar based on their affinity towards the character. From the results, it can be seen that users' experience choosing avatars is derived from the impression in real life.

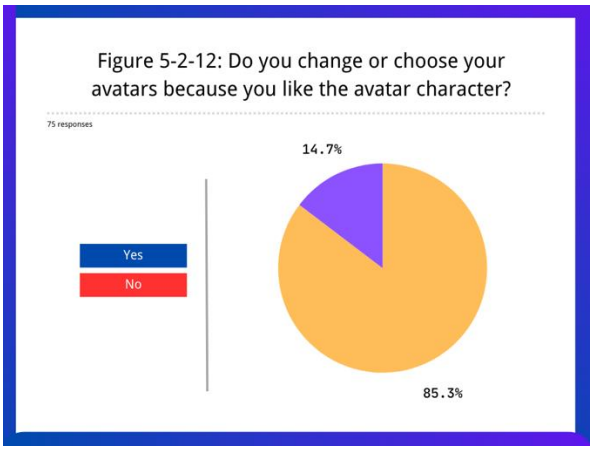


Figure: 5-2-12

In addition to the influence of real-life experiences on the choice of avatars, there are interesting phenomena to note about how social experiences in VR can affect users' choices. Figure 5-2-13 and Figure 5-2-14 display information on the confidence levels

of users before and after using *VRChat* to interact with others respectively. Participants were asked to rate their confidence levels on a scale of 1 to 5, with 1 indicating feeling very awkward, 2 as somewhat awkward, 3 as neutral, 4 as somewhat confident, and 5 as very confident. Three noteworthy phenomena emerge from the data. Firstly, Figure 5-2-13 reveals that the largest proportion of users (37.3%) reported feeling somewhat awkward in real-life conversations before joining *VRChat*, while 14.7% rated their confidence level as very strange. Only 13.3% of respondents noted feeling somewhat confident. Overall, the graph suggests that most users rated their confidence levels somewhere between neutral and very awkward.

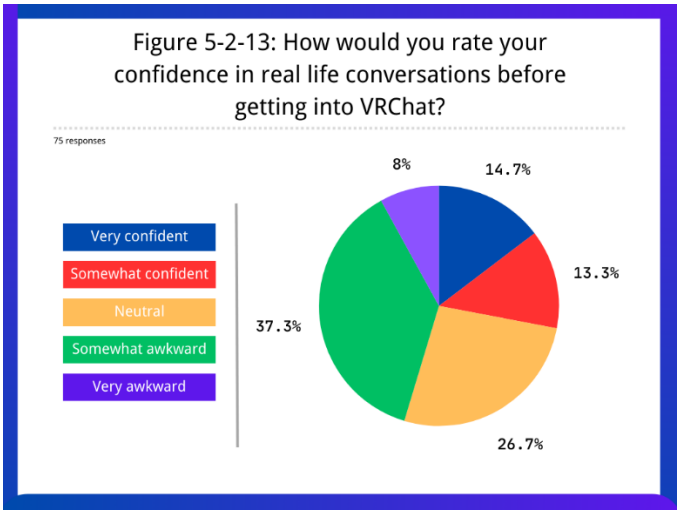


Figure: 5-2-13

Secondly, Figure 5-2-14 shows that the largest proportion of users (46.7%) who participated in the study felt somewhat confident in social conversations after joining *VRChat*, with none of the users rating their confidence as very awkward. Notably, 32% reported feeling very confident in their social interactions while using *VRChat*. Overall, the data suggests that most users rated their confidence levels in socialising on *VRChat* somewhere between neutral and very confident. Compared to Figure 5-2-13, the results indicate that users' confidence levels in socialising on VR are higher than in real-life conversations.

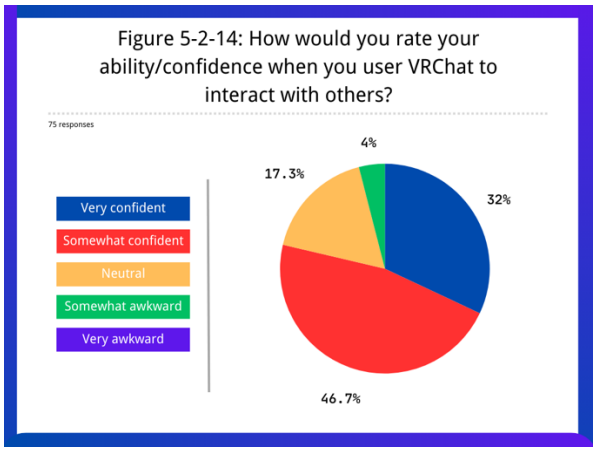


Figure: 5-2-14

Lastly, Figure5-2-15 is a crosstab between Figure5-2-13 and Figure5-2-14, providing significant insights into the relationship between real-life and VR social interactions. The yellow part of the graph reveals that out of the 29 users who reported feeling somewhat awkward in real-life conversations, 7 of them felt very confident in socialising on *VRChat*. Additionally, 18 participants in the group reported feeling somewhat confident, while 3 individuals found their self-esteem became natural. Only one user reported feeling somewhat awkward on *VRChat* even after gaining experience. Overall, 18 out of the 29 users experienced a boost in their social confidence after interacting on *VRChat*, highlighting the platform's potential to improve social confidence in users.

Figure 5-2-15: Confidence level in IRL * Confidence level in VRChat Crosstabulation

75 responses

		Confidence level in VRChat					
		Very awkward	Somewhat awkward	Neutral	Somewhat confident	Very confident	Total
Confidence level in IRL	Very awkward	0	0	1	2	2	5
	Somewhat awkward	0	1	3	18	7	29
	Neutral	0	1	5	7	6	19
	Somewhat confident	1	1	3	5	1	11
	Very confident	0	0	1	2	8	11
Total		1	3	13	34	24	75

5.2.2 Identity, avatar design and choice

VRChat is a social platform that offers users the opportunity to experience diverse identities through an array of avatars. This feature is explored in three questions within the survey, revealing that one of the main reasons users join *VRChat* is to explore and immerse themselves in these identities. Furthermore, the study found that most users have multiple avatars that they frequently use, indicating a willingness to try out numerous identities in the virtual environment. However, despite this trend, there is insufficient evidence to suggest that users change avatars to try out new identities. Figures 5-2-16 and 5-2-17 highlight that out of the 75 participants, 48 users joined *VRChat* due to the diverse identities on offer, and 63 (84%) have multiple avatars they use regularly. In Figure 5-2-18, a crosstabulation of the 63 users revealed that only 30 admitted to changing their avatars to try out new identities, while the rest denied doing so. Ultimately, though diverse identity experiences are used to support users' reasons for joining *VRChat*, it remains unclear whether they directly drive users to change their avatars for the same purpose.

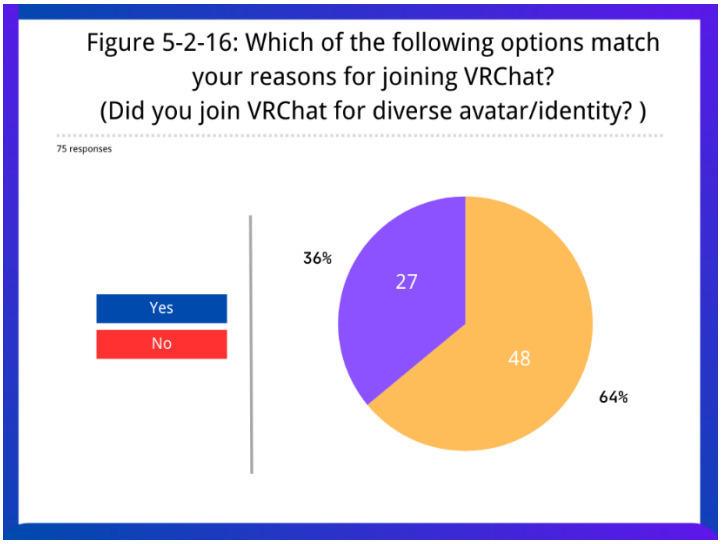


Figure: 5-2-16

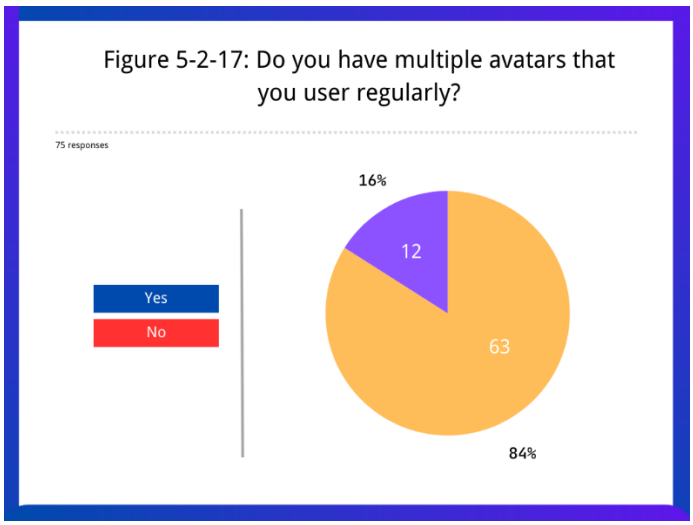
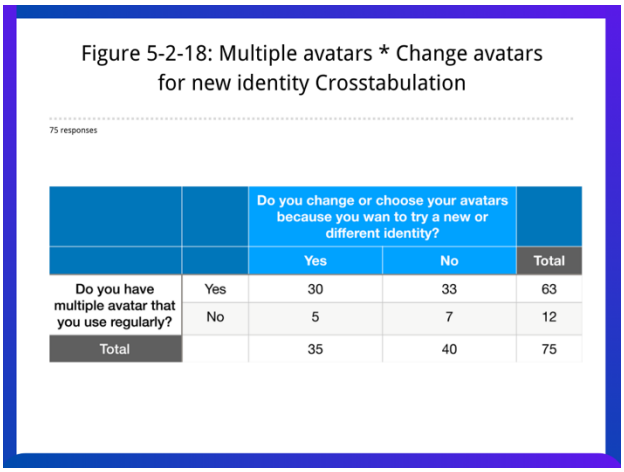


Figure: 5-2-17



		Do you change or choose your avatars because you wan to try a new or different identity?		
		Yes	No	Total
Do you have multiple avatar that you use regularly?	Yes	30	33	63
	No	5	7	12
Total		35	40	75

Figure: 5-2-18

When examining the types of avatars utilised by users, it was revealed that the most frequently selected avatars were e-girl avatars. As demonstrated in Figure 5-2-19, e-girl avatars accounted for 61.3% of the avatars utilised, with male avatars comprising only 38.7%. This result suggests that e-girl avatars are more popular than male avatars. This phenomenon may be attributed to two potential causes. First, there may be more female users on *VRChat* than male users. Alternatively, male users may have a preference for utilising female avatars. Figure 5-2-8 (Page 141) indicates that 17 out of the 31 male participants used a female avatar, although this was only half of the male participants. Thus, it is accurate to conclude that some males prefer using female

avatars, but it cannot be assumed to be a widespread trend.

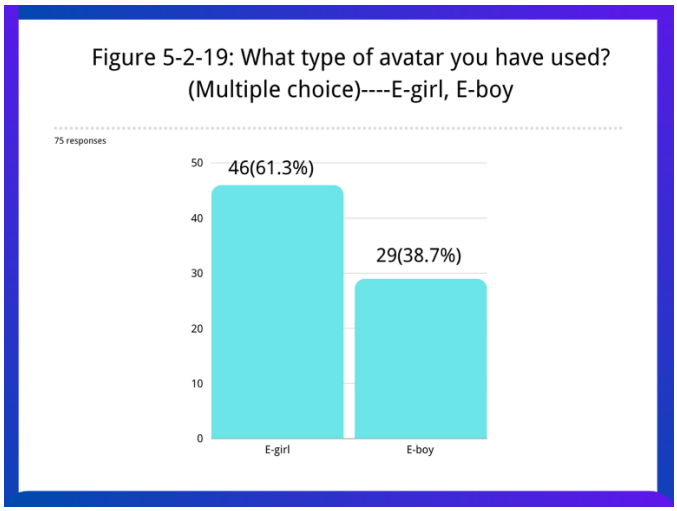


Figure: 5-2-19

Anime avatars are popular among *VRChat* users due to their attractive appearance, easy availability, and ease of importation into the *VRChat* program. Furthermore, the world style of *VRChat* aligns with the culture of ACGN (Anime, comic, game, novel). As expected, the results in Figure 5-2-20 reveal that 58.7% of the participants utilised anime avatars, making them the second most popular genre after e-girl avatars.

In terms of random public avatars, 45.3% of users made use of them, which is reasonable given that diverse worlds and identities may pique users' interest and avatar selection from public worlds is a quick and straightforward method. Additionally, based on Figure 5-2-20, the percentage of furry avatars used by participants was 40, which is indicative of the sizable furry community present in VR.

While *VRChat* is renowned for its range of game worlds, the percentage of game avatars used is merely 29.3, which was not in line with expectations. However, this is a valid result as not all game worlds require players to use specific avatars, and users may choose avatars that align with their identity rather than game characters.

Overall, the user's avatar preferences in *VRChat* are dominated by anime and e-girl

avatars, with random public, furry, and game avatars also being popular choices. Conversely, the selection of novels, GIFs, movies, robots, cartoons, and comic characters all have less than 20% percentages.

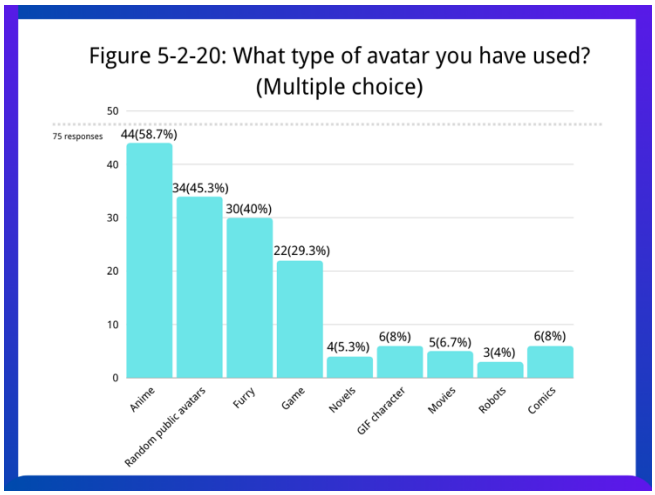


Figure: 5-2-20

The survey also found that there are three main ways for users to have an avatar. For clarity, the question in Figure 5-2-21 was a multiple-choice question that asked users where they obtained their avatars from. Out of the 75 participants (multiple choice), 57 users obtained their avatars from *VRChat*, 32 users customised their own avatars, and 22 users made purchases from external websites. The results indicate that most users prefer the most convenient method of obtaining an avatar. However, it's important to note that a significant portion of users in virtual reality opt for customisation or purchasing avatars to find more suitable options.

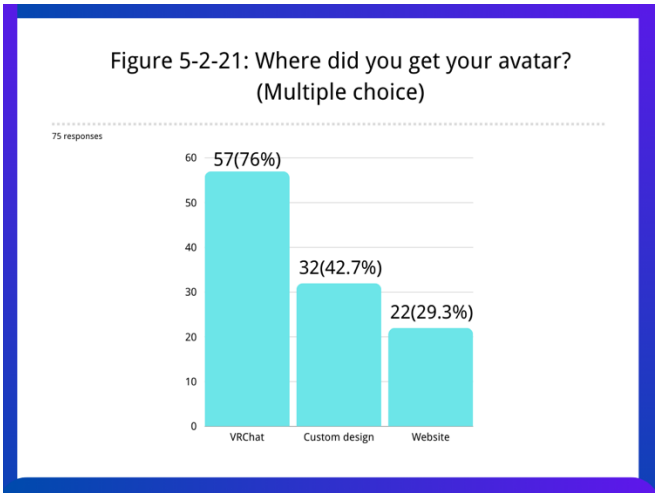


Figure: 5-2-21

Based on the survey results, it is evident that the attractiveness of an avatar's body shape is a significant factor for users. The left pie chart in Figure 5-2-22 indicates that 81.1% of users choose an avatar based on liking its body shape. This suggests that users are motivated to select avatars that they find appealing and attractive. Additionally, the right chart indicates that 56% of users use avatars to manage their first impressions. In the crosstab of Figure 5-2-23, 38 of the 61 users who would change their avatars for body shape admitted that they did care about the first impression on others. When these results are considered together, it becomes apparent that body shape is one of the elements that users consider in managing their first impressions of others through their avatars.

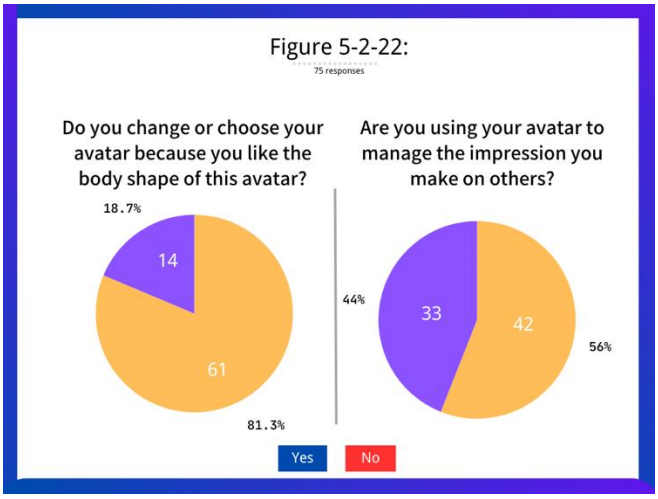
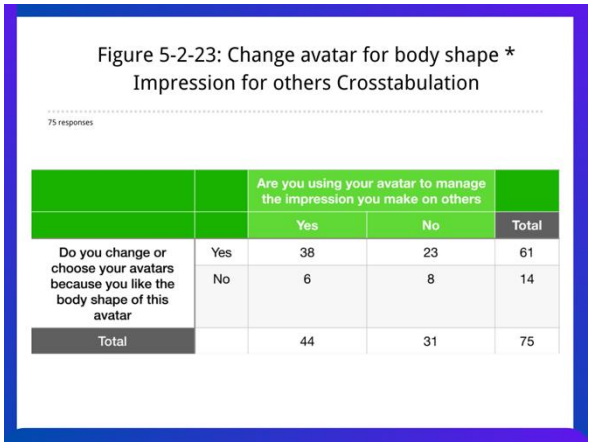


Figure: 5-2-22



		Are you using your avatar to manage the impression you make on others		
		Yes	No	Total
Do you change or choose your avatars because you like the body shape of this avatar	Yes	38	23	61
	No	6	8	14
Total		44	31	75

Figure: 5-2-23

5.2.3 Friends are important in VRChat

From the survey, it can be concluded that friends play a significant role in users' decision to stay in *VRChat*. The left chart in Figure5-2-24 shows that a vast majority of users (94.7%) have one or more close friends in *VRChat*. Furthermore, the right chart in Figure5-2-24 shows that 84% of users joined *VRChat* to make friends, and 58.7% joined to get in touch with friends. This suggests that making friends and building relationships with others are the primary motivating factors for users to engage with *VRChat*. Overall, the results highlight the importance of social interaction and building connections with others in the *VRChat* community.

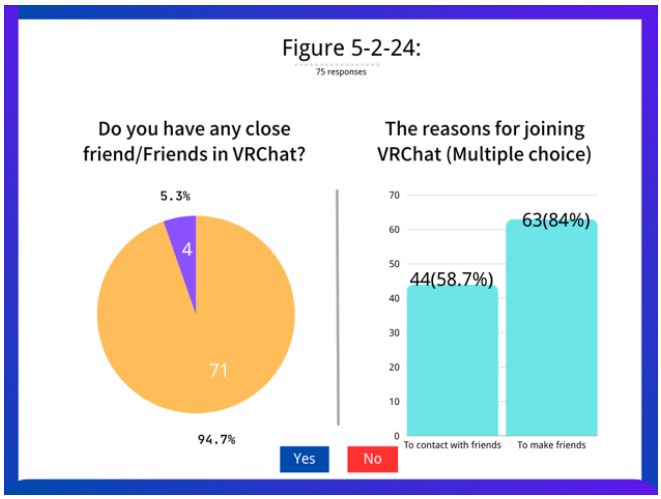


Figure: 5-2-24

However, it is important to note that while making friends is a primary motivation for users, there is not enough evidence to suggest that the user's choice of avatar (identity) is relevant to their friends in *VRChat*. The left chart in Figure5-2-25 shows that only 46.7% of users believe they would use an avatar similar to their friend's, while the remaining 53.3% disagree. This suggests that users value their personal identity and preferences when selecting avatars rather than conforming to their friends' choices. Furthermore, the right chart shows that only 32% of users believed that they would change their avatars to fit in with a group, while the remaining 68% of users stated that they would not do so. This suggests that users value individuality and personal expression in *VRChat*, regardless of the social dynamics at play.

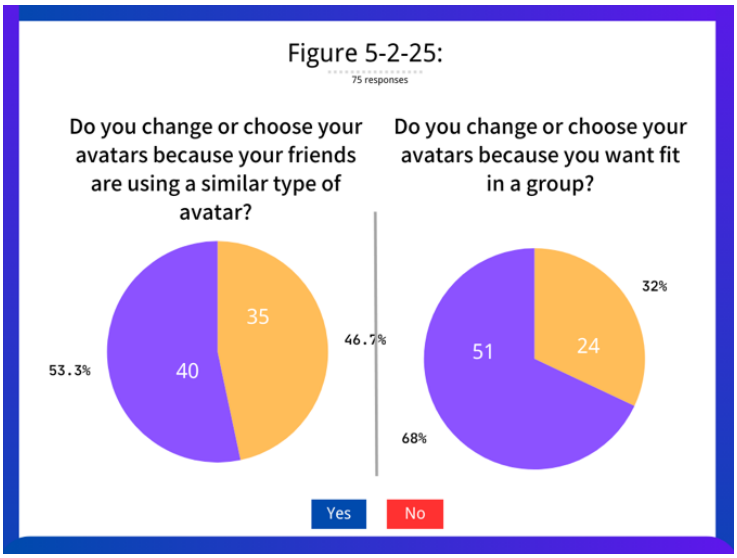


Figure: 5-2-25

5.2.4 An unexpected result

One unexpected result shown in the survey is the discrepancy between the number of users who joined *VRChat* for the diversity of avatars and the number of users who admitted to wanting to try a new or different identity. Figure 5-2-26 shows that 50 users joined *VRChat* because of the diversity of avatars and identities, but only 35 users answered 'yes' when asked if they changed or chose their avatar to try a new or different identity. The remaining 40 users denied wanting to try a new identity. This discrepancy in the data suggests that users' motivations for joining *VRChat* and their actual behaviour within the platform may not always align. One possible explanation could be that users are attracted by the idea of exploring different identities, but they may feel more comfortable sticking to their established identities once they enter *VRChat*. This unexpected result highlights the need for further research on user behaviour within *VRChat* and their motivations for engaging with different avatars and identities.

Figure 5-2-26: Change avatar for diverse identities * Change avatars for new identity Crosstabulation

75 responses

		Do you change or choose your avatars because you want to try a new or different identity?		
		Yes	No	Total
Choose avatar for diverse avatars/ identities	Yes	25	25	50
	No	10	15	25
Total		35	40	75

Figure: 5-2-26

An unexpected result emerged from Figure 5-2-27, which revealed that 60 out of the surveyed users agreed that they would change their avatars for different social situations or theme rooms. However, when asked whether they felt like they were role-playing while using their avatar, 50 of the users denied engaging in any role-playing activities. Surprisingly, only 21 out of the 60 users who agreed to change their avatars admitted to role-playing. This discrepancy suggests that the majority of users who acknowledged changing avatars for different social situations or theme rooms in *VRChat* did not feel like they were role-playing, suggesting that users may not perceive avatar changing as a form of role-playing.

Figure 5-2-27: Change avatar for different social situation * User role playing Crosstabulation

75 responses

		Do you feel like you are role-playing when you use your avatar?		
		Yes	No	Total
Change avatar for different social situation	Yes	21	39	60
	No	4	11	15
Total		25	50	75

Figure: 5-2-27

Figure 5-2-28 revealed a final surprising result, in which 62.7% of users did not believe that changing their avatars affected how they behaved and spoke in *VRChat*. However, this finding contradicts the observations made during the study. The researchers noted that many users changed their behaviour and speaking patterns when using certain avatars, particularly those that differed in gender or even species. This suggests that while some users may not consciously perceive how their avatar affects their behaviour and speech, there may still be an underlying influence. This discrepancy highlights the need for further investigation into how avatar customisation impacts user behaviour and communication in virtual environments.

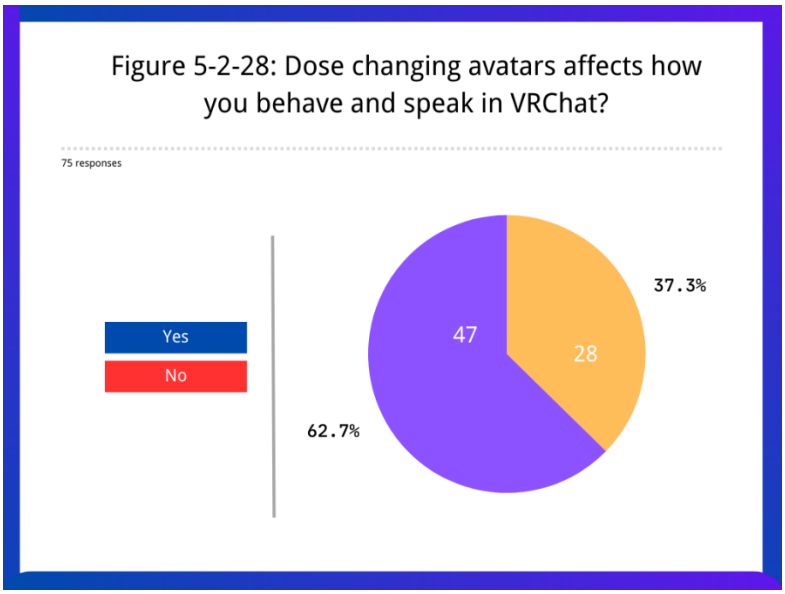


Figure: 5-2-28

Chapter 5.3 The finding from interviews

The interview data in this chapter will be displayed from three aspects. The first is to focus on demonstrating the user's motivation for choosing and designing an avatar. The researcher linked the participants' personal experiences with their avatar design ideas, bringing more benefits for later study of how users present their identities online. The important data source in this part is the user's self-identity description, including their background and social roles. Through the user's subjective

understanding and interpretation of their own and external world experience, it would help the study to understand the embodiment of their self-identity in the avatar.

The second part of the data is from the phenomenon of how and why users change avatars for impression management during social interactions. Goffman (Goffman, 1959: 1) argues that individuals manage impressions in order to create a particular image of themselves to maintain social norms and relationships. To apply this theory within the virtual environment, avatars provide a convenient medium for exploration and study. Online impression management in virtual reality can be symbolised by diverse identity information because of avatars' modification and replacement functions. Gathering information about the avatar being changed and in what social situation, explain the user motivation part of the research question.

The third part is about the consequences of virtual immersive management. George Herbert Mead's (Mead, 2015: 135) theory of symbolic interactionism posits that the self is not a fixed or static entity but rather a product of social interaction and communication. Erving Goffman (Goffman, 1959: 107) points out that self-identity is a dynamic and ongoing process that is constantly evolving throughout our lives. Under the immersive virtual reality experience, the user's self-awareness continues to develop and change over time. The research collected related content about the impact of virtual reality social experience on users' self-perception in real life.

In summary, the main themes of interview data are Avatar selection and design under self-identity, changing avatars for impression management and the consequences after virtual immersive management. Here is the relevant coding Table 5-3-1:

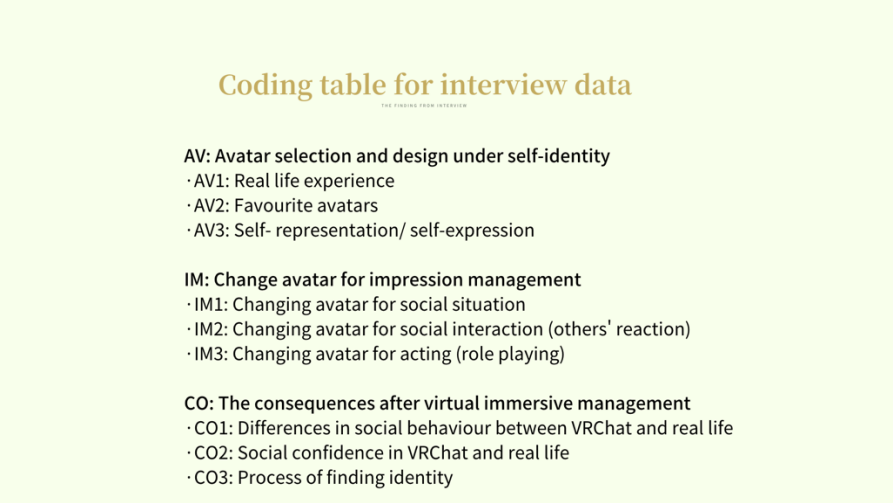


Table: 5-3-1 Coding table for interview data

To safeguard participants' privacy and mitigate any potential risks associated with disclosing personal information, the research will assign each participant a pseudonym when presenting the data.

5.3.1 AV: Avatar selection and design under self-identity

AV1: real-life experience

VRChat offers users the opportunity to create avatars that closely resemble their real-life appearance; User Polly, for instance, opted for an avatar that accurately represented their body size, stating, "*The proportion (of this avatar) is pretty accurate compared to my size.*" User Eva further reinforced the connection between their virtual and real selves through the makeup applied to the avatar, noting, "*I did the texture for the face to match my IRL makeup.*" Additionally, this user's avatar fashion style was customised to align with their actual lifestyle, as they mentioned, "*I own some of the clothing that this one wears, like this top, for instance.*" Similarity user Gloria also possessed clothing items in real life that matched those of their avatar. When asked about their favourite aspect of their avatar, the user responded with...

"I like the clothes on it. These clothes are a lot easier to find in real life because I like

to go thrifting as it's cheaper for me and my family, and sometimes it's cheaper to go thrifting, and it's just a lot easier to find clothes."

Within Table 5-3-2, two visual illustrations are presented to showcase the profound correlation between the real-life experiences of user Ben and their selection of a multi-coloured avatar, as well as user Chole's emphasis on attaining a finely sculpted body shape in their avatar representation. These examples underscore the significant intertwining between users' actual lived experiences and their avatar style, serving as compelling evidence of the intricate relationship between their virtual identities and their real-world identities.

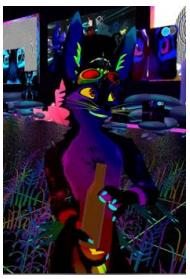
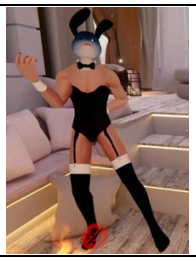
Participant's name	User descriptions of their own	The picture about their avatar
Ben	*"When I wear like, psychedelic clothing in real life, I'm kind of a bit of a hippie, so I've got like a lot of brightly coloured clothes. I've got like factors and things on them as well. So I kind of incorporate in those in real life as well."*	
Chole	*"I am very muscular. I do bodybuilding, calisthenics."*	

Table 5-3-2: The relationship between life experience and avatar choice

Several users exhibit a preference for selecting or creating avatars that closely resemble their real-life skin tone, as this serves as a means for them to express their identity and establish a stronger bond with their virtual representations. For instance, User Edwin describes himself as a relaxed, vibrant, and laid-back African American male who actively seeks out darker skin tone avatars. He explains, "*Usually most of the*

avatars that I have saved or any avatar I make is of a darker skin tone cuz it's so hard to find suitable avatars that also have darker skin tones." In addition, he highlights the significance of one's identity being intrinsically linked to their skin tone, representing who they are and what they embody on a daily basis. "*Your identity is your, you know, your skin, who you are, what you wear every single day.*"

These sentiments are echoed by other users as well. User Julie emphasises the importance of aligning the avatar's skin tone with their own, stating, *"I try to select avatars that closely match my own skin tone. Therefore, Roxy, my avatar's name, is probably the closest representation to my actual skin tone—mid-tan in real life."* The collective perspective of these users supports the notion that choosing avatars with similar skin tones contributes to a more authentic and personally meaningful virtual experience.

AV2: Favourite avatar

The AV2 dataset has been categorised into four distinct themes. Firstly, a notable observation derived from the interviews is the prevalence of users maintaining multiple frequently utilised avatars. This finding is substantiated by the data presented in *Appendix A--The number of frequently used avatars*, which reveals that out of the 21 participants, merely three users consistently utilised a single avatar throughout their engagement in the virtual environment. Most players use multiple avatars in virtual social interactions, and there is a high demand for customised avatars.

The second noteworthy phenomenon pertains to the acquisition of avatars by the 15 participants, all of whom either customised their avatars or procured them through online purchases. In contrast, only six users relied on the pre-existing avatars provided by the *VRChat* platform. Notably, most users exhibited a preference for obtaining their ideal avatars through specific means. For example, User Betty expressed admiration upon witnessing someone using a well-designed Final Fantasy model, prompting her to inquire, "*I was wondering, who did that? How can I get that same look?*". She

continued, "*And then after that is when I found somebody who was able to do a more updated, better-looking version of the other Final Fantasy avatar…I saw an opportunity where I could design, like, almost have full control over the design of what I wanted, and they were able to bring it to life. And that's what I'm able to do with this one here*."

Third, through observation, it can be concluded that the user has a tendency to choose an avatar. Appendix B--The type of avatars users prefer summarises the type of avatars users prefer and related responses in interviews. Participants' choices reveal a diverse range of reasons, including mirroring real-life aesthetics (e.g., goth, furry), reflecting personal identities, and appreciating specific artistic styles (e.g., anime, cyberpunk). Some prioritised realistic human representations, while others favoured non-human or androgynous avatars.

Some participants, like Ben and Eric, are drawn to furry avatars. Ben's preference is evident in his statement, *"I like flow toys*. *This is like my avatar I use all the time*." Eric, on the other hand, simply states, "*Well, this avatar my favourite is because, well, honestly, I'm a furry.*"

Image 5-3-3-Left is Ben’s avatar, right side is Eric’s avatar

Carol's affinity lies with demon avatars, particularly a commissioned one that holds sentimental value. She expresses her fondness, saying,

> "*This one's my main one. I got it commissioned for me. My friend made it for me. I love this because I've always wanted like, a kind of demon.*" Her inclination towards demons is further emphasised by her remark, "*Demons are kind of my thing."*

Image 5-3-4- Carol's avatar

Others, like Clive and Duke, prefer avatars that resemble humans. Clive Favors E-boy avatars, finding them "more like humans". Duke, meanwhile, prioritises aesthetic coherence in his avatar choices, stating, "*I kind of like avatars that are more aesthetically and some they look like coherently made*." He also appreciates avatars with interactive elements, believing they enhance realism.

Image 5-3-5- Left is Clive’s avatar, right side is Duke’s avatar

Eva's preference leans towards avatars inspired by the colour schemes of Japanese anime, particularly the pastel colours. She elaborates on her choice, saying, "*I think it's like the colour scheme and just how much effort I put in it to reflect how much I care about that made over there. It's neat colours as well.*" She adds, "*Oh, the pastel colours. I think they really pop sometimes.*"

Image 5-3-6- Eva’s avatar

Gavin, on the other hand, seeks avatars that reflect female gender, envisioning his avatar as himself if he were female. He states, "*The only avatar I use is this one*" and "*I imagine my avatar as me if I was born a female.”*

Image 5-3-7- Gavin’s avatar

Alex's preference lies with cyberpunk avatars that resonate with their personal interests. They state, "*It's very cyber punk...this is my favourite avatar because it represents what I love. And also purple is cool.*" He/she further specify his/her desired avatar features: "*It needs to be a robot, and preferably I need to have a good feeling about it.*" Molly, like Carol, seeks avatars that reflect her real-life style, specifically goth girl avatars. She explains, "*I specifically had been trying to find a good, like goth girl avatar, cuz I dress pretty goth in real life and I like that look.*"

Image 5-3-8- Left is Alex’s avatar, right side is Molly’s avatar

Luke, unlike Gavin, prefers avatars that transcend gender norms. His chosen avatar, Yuki from an anime, exemplifies this preference as its gender is ambiguous. He explains, "*You cannot tell if it's a male or a female, so it's kind of good for every occasion.*" Lastly, Vince is drawn to spooky, non-human avatars, finding them aesthetically pleasing. He states, "*My favourite avatar just because it's kind of, spooky and I like spooky avatars.*" He further elaborates on his design choices: "*All my designs are non-human, sort of weird characters.*"

Image 5-3-9- Left is Luke's avatar, right side is Vince's avatar

In general, the quotes highlight the significance of both visual appeal and personal connection to chosen avatars. The data showcases the wide spectrum of individual expression facilitated by avatar selection. It is worth noting that a large number of man players choose female avatars, which also matches the results of the survey.

Furthermore, another noteworthy aspect highlighted by certain users pertains to the functional attributes of their avatars, particularly in relation to sitting postures. This specific concern was recurrently emphasised throughout the interviews. The ability to assume appropriate sitting positions within the virtual environment contributes to users' overall sense of presence and immersion. User Duke expressed satisfaction

with their avatar's versatility in this regard, stating, *"It's also equipped with multiple sit-down features. We refer to these as 'go'. So, I have the option to choose how I want to sit. I can adopt various sitting positions, such as this or that"* (as the user's avatar demonstrates different sitting positions). The user further elaborated that they even have the option to select a female-specific sitting posture, highlighting the level of customisation and attention to detail that contributes to their virtual experience. He continued to point out: *So, I can move around like this... it's so realistic.*

Having a comfortable posture allows users to socialise and better interact with virtual objects. User Edwin said: "*The practical use of sitting down is just amazing. And I can keep, I can keep my speed. I'm good. It's just sometimes things fall, and I have to grab them… It makes it easier for me to reach and grab and, and I can, um, I can do this. I love this, by the way.*"

AV3: Self-representation

This section will present the research findings encompassing three distinct aspects: the relationship between avatars and users, how users employ avatars to manifest their identity, and the connection between a user's avatar and their emotional state.

Participants convey aspects of their personality, interests, and identity to others by choosing specific features and characteristics for their avatar. The interview data reveals that certain users exhibit a strong attachment to their chosen avatars. User Gavin remarked, *"My avatar is basically how I am in real life…Well, my avatar acts almost the exact same way as me, has the same feelings, emotions, and all that as me."* It is worth noticing that user Gavin presents himself in the way he likes: *"Like the way I design my avatar is the way I like seeing me.*"

The profound association between the user and their avatar is further exemplified through the transmission of their ideas and beliefs into the avatar's design. Such as

user Alex incorporates their belief in transhumanism, the notion of humans integrating with technology, into the design of their avatars. "*Me being a transhumanist, believing that we should be cyborgs, so to speak, is very shown in most my avatars...And I think it fits me well.*" In the accompanying interview image 1, the user's avatar is characterised by a purple shell and futuristic form, aligning with their transhumanist beliefs and evoking a mechanistic aesthetic.

Some well-playing users have the ability and technical skill to customise their avatar, which is a good way to essentially have their virtual representation in the *VRChat* platform. Some users with art practice backgrounds in real life agreed that design avatar helps them present who they are in real life. User Carol points out that:

I like drawing because it's a way I can express myself, especially with my abbey (her avatar's name). Because, like I said, my abbey is like me if you smack me into a virtual reality.

User Eric has a similar idea: "*Yeah, I'm artistic, so I portray how I just portray the avatar that I am." He also mentioned, "I consciously feel that avatar represents myself.*"

Users are inclined to select avatars that possess personality traits similar to their own real-life experiences. As part of the interview process, participants were requested to utilise words to depict their personality characteristics in their everyday lives. The study's findings revealed a significant correlation between the users' descriptions of their personalities and the avatars they opted for. The relevant data pertaining to this correlation are presented in Table 5-3-10 below.

Participant's name	User descriptions of their own personalities	Quote
Betty	Learning, patient, Humble	*"I kind of slowed down once I started getting into virtual reality, started moving into helping out with some of the groups in the communities*

		and just new users here in VR chat."
Edwin	Chill	*"I think I'd emulate something more along the lines of a Snorlax Pokémon, because I'm just so chill."*
Julie	Energetic, artistic, absentminded."	*"That energetic side definitely comes out a lot in those avatars."*
Clive	Loving, protective	*"The avatar looks like the protective self-side."*

Table 5-3-10: The relationship between the user's personality and avatar choice

Avatars not only reveal the user's personality, beliefs, and interests but also have the functionality to explore users' identities. In addition, user Chole pointed out that *VRChat* social interaction has strengthened his or her personality exploration: *"So the VRChat was very beneficial in a way that it reinforced my personality exploration habits."* User Betty also agreed with this idea:

> *"Because you choose how you want to represent yourself. So if you choose a certain way to go out in public out there in the VR chat worlds, then it is kind of an extension of your own personality, I suppose."*

Sometimes users would choose an avatar that represents who they truly are or shows the side that they are not fully able to express their identity in real life. User Chole mentioned that:

> *"The simplicity of trying out many appearances and many identities in many different worlds gives you a lot of opportunities to discover, perhaps even on the surface, your identity… I feel like it's fascinating. I mean, there are so many parts of myself that I have discovered using simply a simulation, a visual medium, a visual simulation of real life… I feel like it represents some sort of fragility that I don't usually show in real life because I don't really wear thrilled dresses as much*

at all. I don't wear dresses much at all. So, if you're like in this moment, I feel free to express as part of myself where I'm actually fragile, I can't see anything."

Another area of interest pertains to how users employ avatars as a means to depict the individuals they aspire to be. The study discerned that users frequently mentioned specific attributes, such as wings, clothing, ears, and tails when deliberating upon the design and selection of their avatars. These elements can be perceived as forms of personal expression and style, allowing users to distinguish themselves within the virtual realm and showcase their distinct personality traits and creativity. Crucially, these elements serve as conduits for conveying the desired identity that users wish to project. The Appendix C--*The symbolic meaning of Avatar design elements* presents excerpts from a study exploring the symbolic meaning of avatar design choices within the virtual reality platform, VRChat. Participants describe how their avatars reflect aspects of their identities, including self-expression, community belonging, and the exploration of different personas. Clothing styles, gender presentation, and even seemingly minor details like wings or ears all hold significant meaning, allowing users to express themselves in ways that might not be possible in their offline lives. The findings highlight the powerful role of avatars in shaping online identity and social interaction.

Betty, for example, chose wings for her avatar to symbolise freedom and coming out. She feels this way in the virtual world, but not as much in real life because she is surrounded by less tolerant people. Clive chose ears and a tail to reflect his personality and match with his friends, creating a sense of belonging and cosiness. Julie emphasises the importance of clothing style because she's a dancer and needs her avatar to match the style of dance she is performing. A female user, Chole, chose a male avatar to express a different energy than her real-life female identity, highlighting the potential of VR to explore different identities. Lastly, Jerry, a male user, chose a female avatar because he feels more feminine in VR. This form demonstrates how participants use their avatars to express their identities and explore different ways of

being.

The last topic in this part is about the emotional relationship between the avatar and the user. The study found that one of the motivations for users to change or choose avatars is because avatars can reflect the user's emotional value and can help users express emotional changes at a certain moment. User Eva said, "*So it's kind of like my avatar just kind of reflects what I'm feeling at that time*". Same as user Duke: "*If I was sad and I wanted to go on VR, I would dress up as my penguin out, even though it's obviously not a sad avatar, it's just an avatar that I go to when I'm like feeling a bit.*" User Kate also agrees with this idea: "*It's kind of just a question of what am I feeling right now.*"

5.3.2 IM: Changing avatar for impression management

IM1: Changing avatar for social situations

In *VRChat*, social situations can vary greatly. The study found that users would like to opt for a different avatar to fit in the social environment, such as attending virtual events. For themed events or virtual parties, users can customise their avatar to match the event's theme or atmosphere. User Alex mentioned that:

> *"Except if it's gonna be a certain holiday. In this case, for October, I've decided to come on to be a little spider for the month of October, and that's about it for Christmas."*

One of the great features of VR social is that the systems allow users to personalise their appearance in different social situations. This versatility gives users opportunities to change avatars that fit their individual preferences and desired social contexts. User Julie said that:

"It's the environment that I'm in. That's normally what I'm changing…If I'm gonna be giving someone a dance, I swap to a new avatar or Kasumi, or one of my other dance hobbies; If I'm gonna be going up on stage at my club to go and do hip hop there, I'll swap into Roxy or Electra, which is an avatar."

A similar comment reiterates the prevalence of this changing avatar behaviour.

"At that certain moment in time, yes. That can change based on what room I'm in… Let's say I go into like a club avatar, a club world; sorry, I might dress up as this avatar or another avatar, most likely this one… based on those sorts of circumstances." (From user Duke)

"I mostly use the skeleton avatar that I was showing you before just because it's a very, relatively simple one that works for many different situations. But some, I do have other avatars that I swap into, depending on the event or the friend group." (From User
Vince*)*

IM2: Changing avatar for social interaction

The above social situation section focuses on the environment, atmosphere or theme. What makes social connections different is that this part focuses on the responses of others in the social process.

The most common phenomenon found here is that users often behave differently based on their friends' group or the social circle they are interacting with. The reason some users do this is to protect themselves from verbal harm. User Gloria said, "Sometimes I change the way I make friends becaus*e I have two different friend groups on here*". He further explains why his social behaviour is different:

"I have one (group) that I can joke with about, like being gay, being trans, like harsh jokes about our own sexuality or like making fun of each other. And there are other people who, uh, I can't make those jokes with because they say that it's rude. Even if it's like they know I'm the way I am, like as a trans gay man, they are still weird about, uh, me making jokes about my own sexuality and that. Well, that's if they feel weird."

From above, users would like to be able to change their behaviour to protect themselves and maintain a certain image in the group. The study found that changing avatars would help users strengthen the image they desire to display in their friend groups, creating a sense of identity, belonging and camaraderie. In this way, changing avatars to fit in a group creates a virtually agreeable presence that enhances their shared experience in the virtual world. The interview asked the respondent what inspired you to change your avatar. User Jerry said, "*When I am with some friends who are always using an E-boy uh, muscular type of avatar, I'm always changing to E-boy avatar just for them*." He continued, "*When I was with some friends who were young, uh, I changed to a cute avatar. And if I'm with people in Quest, I can change avatars too.*" User Kate gave a detailed example of why he changed his avatar for a furry group:

"Um, Mostly, it's kind of with the people that I hang out with; I have, I have a furry group, which obviously it's kind of a joke that when I walk around in an avatar like this, they'll be like, they'll say, oh, you're naked, put some fur on, and then I'll go into a furry avatar. So, to kind of match the theme of the group that I'm currently with."

In addition to maintaining a specific image in front of different groups, another obvious phenomenon found in the study is that most users attach great importance

to the reactions of others. They want to get specific responses from others by changing avatars. For example, user Molly mentioned that:

> *"Like if I want people to talk to me more. And like see me as more cute. Maybe I'll put on a slightly cuter avatar, or if I want people to come up and talk to me and assume that I'm like an adult, which I am, but then I'll put on a more adult-looking avatar."*

Take the small size of the avatar as another example. Appendix D- *Small size avatar and treatment from other users* presents a study exploring how avatar size affects user interactions in a virtual environment. Participants' quotes reveal a consistent theme: choosing a smaller avatar often elicits friendlier and gentler treatment from other users. Some users select smaller avatars to encourage more comfortable interactions, while others aim to receive preferential treatment or a more positive attitude from fellow participants. The findings suggest a correlation between avatar size and the type of social interactions experienced within the virtual world.

Participants noted that using a smaller avatar often resulted in more friendly and gentle treatment from other users. For example, Julie mentioned that even a slightly shorter avatar can result in different treatment, with friends being more physically affectionate and others being more "touchy-feely." She said,

> "*But even if you're just like a little shorter, you get treated like different. Either that's like your friends, like leaning their arms on you or just people like being more like touchy-feely, wanting to head pads and all that kind of stuff.*"

Kate observed that people tend to be "softer" and more nurturing towards smaller avatars, suggesting that avatar size can influence how users want to be treated. She said,

"*If you have this avatar, uh, people kind of see towards you, like look at towards you in the same kind of way. If I walk around and I'm having my smaller avatars on, then they will more or less kind of baby you or be softer towards you. So, it's kind of just a question of, uh, what am I feeling right now. Like, how, how would I want to be treated? And that kind of goes into the decision making with what avatar*."

Luke stated that using a small avatar, particularly as a male user, often attracts attention and cuddling from female users. He said,

"*You saw the tiny one… As soon as you go there, every woman, real woman in a room will turn on your head and come to cuddle you. Happens every time*" .

Gavin explained that choosing a smaller avatar allows others to feel more at ease around him. He said,

"*The vibe that you see from me right now is what I want to give off, you know, and being smaller Let others feel comfortable stay around also allows people to feel more comfortable around me because the, you know, I'm not intimidating*."

Gloria found that a smaller avatar made it easier to navigate certain virtual worlds, as people were generally nicer. She said,

"*I like this one because it's easier to run around in, in certain worlds. Cause people are a lot nicer if you're like a smaller avatar*."

Jerry preferred using a smaller avatar because it often resulted in more lenient treatment from other users. He said,

"*I usually want to be small cause usually people are just playing like that and giving you a pass. So yeah, that's really a reason why I'm, I like to be small.*"

These quotes highlight the perception that smaller avatars evoke feelings of protectiveness and friendliness from others, leading to a more positive and less intimidating social experience.

IM3: Changing avatar for acting or role-playing purposes

Changing avatars for acting or role-playing purposes allows users to take on different virtual personas and engage in interactive storytelling or improvisation with other users. User Molly points out that:

"There are certain avatars that just feel like they deserve, like a certain posture, a certain way of acting. Like if I've got on like this avatar, I feel a little bit more like I should be a little hunched over and creeping around. But if I've got a different one on, sometimes I'll feel like I need to stand up a bit straighter and put my hands on my hips, which just kind of gives me a new way of acting."

Users design props for specific avatars to make the role-playing experience more immersive and enhance the attractiveness of the characters during the social process.

"Well, I like that it comes fully equipped with weapons of all kinds that let me express myself and do some role-play. I really enjoy doing role play with random strangers or friends, and most of the time, you need weapons and utter gadgets to fit the story or whatever's happening." (From User Alex)

To make the acting more engaging, performance forms include behaviour, appearance modification, and user voice. Some users would like to match the avatar with a different sound because *VRChat* provides the ability to change the voice, further

enhancing the performance. User Kate used voice as a way of performance: "*When I'm hanging out with younger people, um, that I have a voice that's a lot deeper for when I'm in male characters, like the, the other one that I just showed you. and yeah, just it's kind of, it fluctuates*."

Changing avatar and voice allows users to fully immerse themselves in their role. User Alex points out, "*I believe one should sound like what they look like or look like what they sound like. It puts a different perspective on things. It adds flare to the character.*" Then he continued:

> "*Only in the game, but yes, it does. As I said, I've made voices for avatars and with those avatars and voices comes a little bit of a personality. Depending on which avatar I am, I'll be more playful, or I'll be more emotionless kind of, more stern, and a little different with each avatar, but the voice will go with it. And obviously the. The movement of the mimicry will go as well. I like to see my avatars as characters. Every single one of them has its own personal lo and behaviour and voices."*

5.3.3 CO: The consequences after virtual immersive impression management

CO1: Differences in social behaviours between VRChat and real life

From Appendix E (VR social interaction rules and pattens), VRChat offers a unique social environment compared to real life. One of the key differences is the ease with which users can express themselves authentically. Because there are fewer real-life consequences for their actions in the virtual world, users feel less inhibited and more able to be themselves. This is reflected in participant observations about feeling more "true to how they feel" and experiencing less stage fright. Betty mentioned that

> *"They definitely feel like you get more of a sense of who they truly are in face to face, because there would be more real-life consequences that might come from that interaction. So, when people are interacting in VRChat, there is less of that consequence for them. So, they can be more*

true to how they feel."

Avatars play a crucial role in shaping these dynamics. They act as a protective layer between the user and their interactions, allowing a sense of disassociation. This contributes to the feeling that people are not being judged based on their physical appearance but rather on their communication. Edwin said that "*We have eye contact right now because our avatars have eye contact, but I don't actually have to have eye contact with you… I think people have that disassociation."*

The customisable nature of VRChat also fosters different social dynamics. Users can quickly find like-minded individuals through their choice of avatar, room themes and the information shared in their profiles. This allows for connections based on shared interests, moods and vibes, facilitating a sense of belonging and understanding. Duke mentioned that

> *"Socialising with people on VR Chat, it's a lot different compared to how you'd socialise with people in real life because you don't know these people…you mess around and have a joke stuff, but like, if you're in a specific room and you're feeling a specific mood and people in that room are also feeling a specific mood, you tend to open up a lot more, I've opened up to strangers on here than I have like therapist… you'll always meet a demographic who feel the same way, or you will vibe the same way you do compared to real life where it's circumstantial. I can go to a sad world and find people who are sad. I can go to a club and find people who want to drink vibe…"*

VRChat is perceived as a more inclusive and less judgmental space than real life. Participants, particularly those who have experienced prejudice in real life, found that interactions in VR were more focused on personality and communication. The anonymity provided by avatars and the lack of visual cues that can lead to prejudice in the real world contribute to this perception. This is also in line with Gavin's words

> *"I feel like the way I make friends now is different than the way I make friends in IRL. In VR chat, it's just easier to, you can walk up, As I said, you can just walk up to people and say hello. Most of the, most of the time people give off like a cool kind vibe depending on where you go, what works you visit. But most of the time people just seem cool from even before you've even interacted with them, you know? So it's, it's a lot easier to make friends in VRChat, because as I said, IRL. Weird"*

The data also suggest that initiating conversations feels easier, and there's a general sense of openness and acceptance. The ability to easily exit uncomfortable situations by respawning or leaving further reduces social barriers.

In summarise, participants' interviews reveal that VR fosters authentic self-expression due to reduced real-world consequences. Users leverage avatars for identity representation and protection, finding it easier to initiate and maintain social interactions within the platform's stylised environments. The study highlights the role of user profiles and avatar customisation in facilitating connection, showcasing a less judgmental and more inclusive social experience compared to real-life interactions. Finally, the advantages and disadvantages of VR socialising are discussed, particularly concerning the implications for virtual dating and the ease of escaping uncomfortable social situations.

CO2: Social confidence in VRChat and real life

From the interview data, many participants reported increased confidence in social situations, attributing this to the platform's enabling of self-expression and the discovery of new aspects of themselves. Appendix F (The reason why the user feels more confident than before) shows that Several users specifically highlighted overcoming shyness and improving social skills within VRChat, leading to positive real-

world effects. Some participants found comfort in exploring their identities, facilitated by the virtual environment's freedom from real-world pressures. However, one user reported no change in social confidence.

One reason why participants felt more confident was because they found their own group within VRChat. Ben, one participant, stated,

> "*Generally, it helped my confidence a lot and I find it so much easier to just talk to people. I'm generally quite introverted and generally find it quite hard to have conversations and say hello. Especially people like I just don't know. And I find that so much easier now. Like so much easier. It can come in time. Like I say, I used to roleplay the doom guy and not talk to anybody."*

Ben continues, "*It's easier when you find the right crowd… It's helped me to be more confident and be more comfortable and accepting myself as well because I never really consider myself like a furry or I kind of do now. So, I kind of feel like I discovered a part of myself, I guess, throughout VRChat*."

Another reason why participants felt more confident was because virtual reality provided users with the freedom to express who they are, which fostered a sense of self-assurance. Carol, a participant, said, "*If I'm going to be honest, I'm not really a person off this headset. I do talk to people, it's not something I like to do*". Carol continues,

> "*It just feels more comfortable if I start talking to people because it feels like in this world. Yes. There's obviously going to be some trolls and whatever. But I feel like in this virtual reality world. I feel like*

most people have the comfort to be themselves and they can express their emotions."

Duke, another participant, said, "*I've got multiple avatars that look very different. Um, so like as you are, as you become more confident, you spend more time in VRChat, I would say you get a more under better understanding of the avatars that you'd like to dress up in.*"

A final reason why participants felt more confident was VR social facilitated the development and public display of users' hobbies. hole said, "*The amount of confidence that dancing gave me, well, I started dancing in VRChat, and then I started trying it without my headset on and recording myself and building it up*." Molly, another participant, said, "*I've always loved to sing. But I don't like going out to karaoke places a lot, so finding worlds in here where I can do karaoke and escape rooms and stuff has really helped my confidence in like, makes me feel more like I'm actually getting out and doing things rather than just sitting on the couch*".

CO3: Process of finding identity

An additional noteworthy discovery of this study pertains to the users' evolving perception of their virtual identities, which becomes increasingly distinct as their duration of engagement with the virtual environment extends. Sometimes, the rationales behind users' avatar selection have undergone notable transformations. During the interviews, a total of 16 participants explicitly highlighted the disparity between the identity they initially adopted at the beginning of the *VRChat* game and the identity they later assumed after a period of time. These 16 respondents shared a common experience characterised by challenges encountered in searching for a suitable identity, the gratification of discovering a fitting identity, or the motivation driving their quest for an appropriate identity. The data indicates a clear correlation between the user's pursuit of identity and the functionality of the virtual world

(Appendix G-The user’s pursuit of identity and the functionality of virtual world.). These findings will facilitate an in-depth analysis of the intricate relationship between the user's process of identity exploration and the social model and avatar system inherent within the virtual reality environment, which will be elaborated upon in the ensuing discussion chapter.

Participants' initial avatar choices often reflected pre-existing interests or suggestions from friends, but many expressed difficulty finding an avatar that truly represented themselves. Over time, users experimented with different styles and aesthetics, often refining their virtual appearance to better reflect their evolving self-perception. Some commissioned custom avatars to achieve a more accurate representation, highlighting the importance of self-expression within the platform. Ultimately, the study shows the iterative and personal nature of identity formation in virtual spaces.

Appendix G-(The user’s pursuit of identity and the functionality of virtual world) presented above illustrates that out of the 21 participants, 16 users, as indicated by their interviews, confirmed a deeper recognition of virtual identities with prolonged game duration. Notably, an important finding emerged from the data collected from these 16 users, 10 of whom revealed that dynamically changing virtual identities subtly influence user's perception of their real-life identities. The game frequently facilitates the integration of virtual and real identities, giving rise to three primary forms of identity fusion: Firstly, avatars employed in virtual reality social interactions impact users' body image preferences in their actual lives. Secondly, the experience of interacting with avatars of different genders influences users' awareness of their own gender identity. Lastly, an inclusive virtual culture allows users to gradually embrace aspects they may dislike or ignore in their real lives, thereby enabling them to confront their identities more comfortably. The ensuing Appendix H (Identity fusion) presents the relevant data pertaining to this aspect:

Notably, The game frequently facilitates the integration of virtual and real identities,

giving rise to three primary forms of identity fusion: Firstly, avatars employed in virtual reality social interactions impact users' body image preferences in their actual lives. Secondly, the experience of interacting with avatars of different genders influences users' awareness of their own gender identity. Lastly, an inclusive virtual culture allows users to gradually embrace aspects they may dislike or ignore in their real lives, thereby enabling them to confront their identities more comfortably. The ensuing Appendix H (Identity fusion) presents the relevant data pertaining to this aspect.

Participants described positive changes in their real lives stemming from their virtual experiences, including increased self-acceptance, improved self-esteem, and the development of new hobbies. Many found their avatars helped them explore and express aspects of their identity (gender, appearance, personality) that they felt unable to fully express in the real world. The virtual environment fostered self-discovery and increased confidence, enabling users to experiment with different facets of themselves and ultimately feel more comfortable in their own skin. The overall findings suggest that virtual reality can be a powerful tool for self-exploration and personal growth.

5.4 Conclusions

Drawing upon a combination of autoethnographic data, questionnaires, and interviews, this study distils its findings into five distinct parts, which are succinctly summarised in the subsequent paragraphs:

1) **The selection of users' virtual identity in virtual reality is intricately linked to their real-life identity.**

In *VRChat*, users have the opportunity to craft avatars that closely resemble their actual appearance, encompassing aspects such as makeup, clothing style, body proportions, and skin tone. The findings derived from the AV1 segment of the

interview data strongly support this notion. Additionally, Figure5-2-1, 5-2-2, 5-2-3, 5-2-4, 5-2-5, 5-2-6, 5-2-7, 5-2-8, 5-2-9, 5-2-10, 5-2-11 and 5-2-12 in the questionnaire corroborate the insights obtained from the AV1 interview, highlighting users' motivation to design avatars based on their personality traits, interests, social identity, personal identity, and cultural aesthetics derived from their real-life experiences. Furthermore, the autoethnographic component of the study reveals that researchers have observed a significant influence of real-life emotions, preferences, and circumstances on users' avatar selection.

2) **The common phenomenon of users selecting avatars can be summarised as follows:**

Firstly, users commonly exhibit a preference for multiple avatars, as revealed in the AV2 interview. This desire to experience different identities is further supported by Figures 5-2-16, 5-2-17, 5-2-18 and 5-2-26 in the questionnaire, highlighting one advantage of virtual socialisation—the ability to assume various avatar personas.

The second prevailing phenomenon is the propensity of users to acquire customised avatars. Strong evidence of this can be found in users who possess basic drawing skills, as they often hand-paint their avatars and subsequently create 3D designs to obtain the most suitable representation of themselves. Figure 5-2-21 in the questionnaire corroborates this finding, with a majority of users acknowledging their preference for obtaining suitable avatars through customisation or purchase. Additionally, questionnaire Figure 5-2-22 demonstrates that the specific shape of an avatar significantly impacts users' initial impressions of others. The AV3 interview segment also emphasises that users tend to customise certain items or symbolic elements to project their identity, as customised avatars more effectively reflect users' emotional values.

The third noteworthy phenomenon relates to users exhibiting specific tendencies

when choosing avatars, as observed in the AV2 data. The questionnaire data further supports this trend, with Figures 5-2- 8, 5-2-19, and 5-2-20 illustrating the popularity of anime-style and female avatars in virtual social networking. These preferences, including anime, female avatars, public random furry avatars, and game avatars, are prominent among *VRChat* users.

The fourth phenomenon, derived from interviews, reveals that users pay special attention to the functional attributes of avatars, such as sitting postures, to enhance overall presence, immersion, and interactivity.

The fifth phenomenon, also gleaned from interviews, underscores that users employ avatars to convey pertinent information about their personalities, interests, identities, behaviours, moods, and beliefs. Users often choose avatars with personality traits that align with their real-life experiences and encounters.

The sixth phenomenon indicates that users tend to select avatars that align with their own identities rather than opting for game characters, highlighting the significance of user identity in avatar selection.

The seventh and most crucial finding, as evidenced by the CO3 interview, asserts that as users spend more time engaging with the virtual environment, their perception of virtual identities becomes increasingly prominent.

3) **The phenomenon of users changing avatars for impression management can be outlined as follows:**

Firstly, insights derived from the IM1 interviews reveal that users alter their avatars to align with social contexts, moods, and themes. The researcher's autoethnography further supports this notion, highlighting the fact that changing avatars is based on the virtual environment or overall ambience.

Secondly, the IM2 data demonstrates that users change avatars based on different social circles, a finding also substantiated by the researcher's autoethnography. The third indicates that users attach significant importance to others' reactions. For example, users may modify the size of their avatars to elicit desired interactive responses.

Although some users mentioned in interviews that avatar changes are motivated by a desire to adopt different virtual roles for storytelling or improvisation purposes, the questionnaire data in Figure 5-2-27 reveals that most users deny engaging in role-playing. However, it is essential to note that researchers question this denial based on their virtual reality experience, observing that users exhibit different behaviours and interactions with various avatars representing different identities in diverse scenarios.

Fifthly, the IM3 interview findings indicate that users modify avatar appearance and voice to achieve character immersion and enhance performance. However, in Figure 5-2-28 of the questionnaire, the majority of users deny that changing avatars affects their behaviour and speech in *VRChat*. It is important to acknowledge the researchers' reservations about this denial, as their virtual reality experience suggests that users behave differently in varying scenarios with different avatars representing distinct identities.

4) **The study uncovers several noteworthy characteristics of *VRChat* virtual interaction:**

Firstly, the presence of friends within the virtual social network is deemed highly significant. Interviews reveal that friends play a crucial role in helping users explore their identities. This is supported by data presented in Figure 5-2-24 of the questionnaire. Establishing and maintaining friendships is a primary motivation for prolonged engagement with *VRChat*. Despite the importance of friendships, Figures 5-

2-25 do not provide substantial evidence to suggest that friends significantly impact users' identities. Instead, virtual reality users prioritise their own personality and personal expression.

Secondly, the research findings from the CO1 interview indicate a culture of inclusivity within the virtual reality space. Users perceive social interactions here to be less judgmental compared to real-life scenarios, enabling them to express themselves more authentically. The avatar serves as a protective barrier, reinforcing this sense of safety. This aligns with the researcher's own observations, as described in their autoethnography.

Thirdly, the study highlights that both the researchers and interviewed users experienced the initial impact of virtual reality social culture. Young users, constituting the largest demographic on *VRChat*, are particularly influenced by anonymity and subculture. Additionally, users have distinct modes of communication, with some noting variations in language and culture between PC and headset devices.

Fourthly, the topic of virtual dating emerges, with some users discussing the advantages and disadvantages of VR social interaction in terms of reducing physical distance and space between individuals.

Lastly, users perceive socialising with others in virtual reality as more accessible and relaxed compared to real-world interactions. *VRChat* provides an escape from uncomfortable social situations, offering users a more comfortable social environment.

5) The consequences of virtual immersive management

The consequences following prolonged virtual immersive management in *VRChat* have been observed to impact users' self-identity awareness and their self-confidence in real-life social interactions. Notably, a trend towards integration between users' virtual

images and their real identities has been identified, presenting two key points for discussion.

Firstly, substantial data obtained from the interview with CO2 and the questionnaire data presented in Figures 5-2-13, 5-2-14 and 5-2-15 illustrate that users tend to exhibit increased self-confidence in virtual social networking, which subsequently influences their self-assurance in real-life social situations.

Secondly, the insights garnered from CO3's interview suggest that, over an extended period of gaming time, virtual identities and real identities tend to converge. This identity fusion phenomenon is primarily evidenced through interviews. The central manifestation of identity fusion lies in the fact that virtual experiences facilitate users in embracing various aspects of themselves, fostering a greater sense of comfort with their real-life identities.

Chapter 6 Discussion

This chapter discusses the research findings, delineating five key conclusions derived from the data summarised in the previous chapter. These conclusions will be explained in the context of three distinct thematic trajectories. Firstly, an in-depth exploration of the underlying motivation factors driving avatar design will be conducted. Subsequently, the focus will shift towards an intricate examination of the stylistic dimensions encompassing virtual immersive impression management. Lastly, the consequences stemming from the practice of virtual immersive impression management will be considered. Through an investigation of these three interconnected dimensions, this chapter will present a multifaced matrix that explains the underpinning factors in user motivations in avatar design. Figure 6 summarises the discussion section.

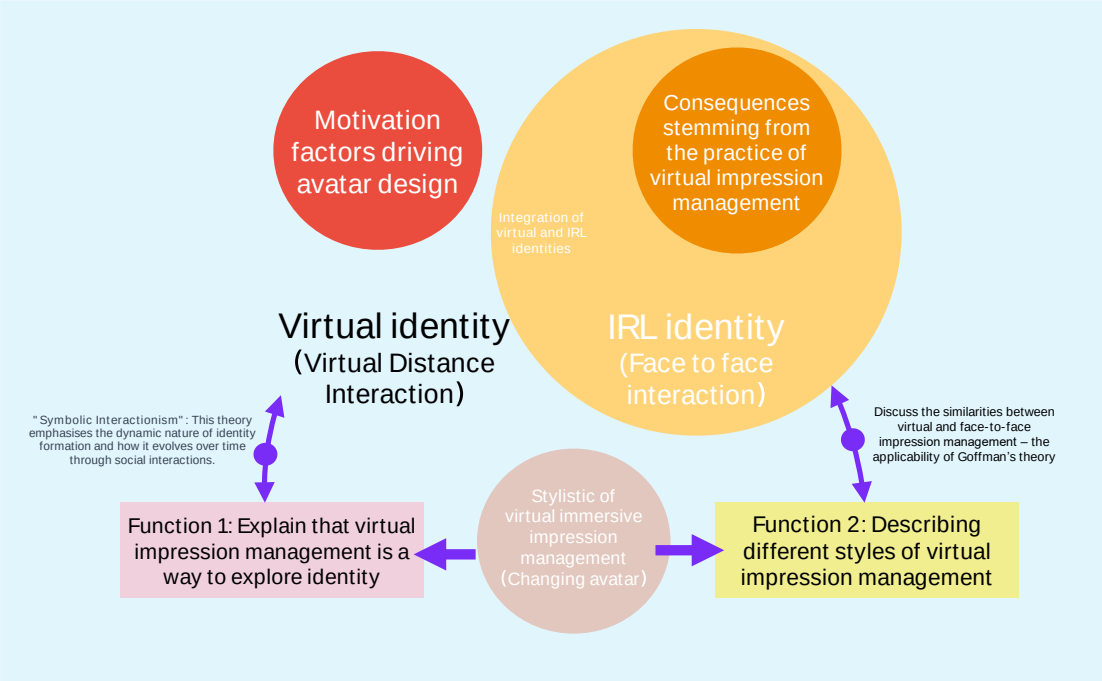


Figure 6-1 Summarises the discussion section

This study was centred on a comprehensive exploration of the motivations underpinning the choice of avatars in *VRChat*. The motivational spectrum identified encompasses a range of significant issues, including the intricate interplay between

users' real-life experiences, the role of friendship within social contexts, the mechanisms of self-presentation, and the evolutionary trajectory of identity development. These issues are substantiated by the empirical evidence gleaned from the amassed data, and exemplified by instances of users choosing varied personas within specific virtual domains and social clusters.

Given the process of avatar design inherently involves users crafting their own virtual personas, this investigation also explored the dynamic evolution of users' cognitive engagement with their virtual identities. Rooted in the theoretical framework of symbolic interactionism, George Herbert Mead (2015) proposed that individuals develop their self-concept through their interaction with others and the symbols they use to interpret and respond to these interactions (Mead, 2015: 45). The emergence of VR technology has engendered a distinctive sociocultural milieu, replete with novel avenues for social interaction and cultural expression. Accordingly, a thorough examination of the idiosyncrasies characterising the VR environment forms an intrinsic component of the discourse on avatars that this research has identified.

Furthermore, a compelling narrative has emerged from the thorough examination of virtual immersive impression management. This is twofold in its significance. In explaining the dynamics of virtual impression management, this research contends that invaluable insights can be gleaned into the intricate processes through which users engage in identity exploration. By delineating overarching trends and recurring patterns characterising the modifications users effectuate in their avatars, the discourses of users offers a substantiated framework for comprehending the execution of user identity management within the virtual reality milieu.

Additionally, the investigation has added contours to the efficacy of applying Goffman's impression management theory within VR. This has emerged from contrasting the modality of virtual impression management with Goffman's conventional face-to-face impression management paradigm. This juxtaposition

serves to elucidate the nuances that distinguish the practical instantiation of impression management strategies in VR settings as opposed to traditional interpersonal contexts while retaining the key insights of Goffman's paradigm.

Ultimately, the examination of the ramifications arising from the practice of virtual immersive impression management is indicative of an in-depth analysis of the convergence between users' virtual personas and their tangible identities. Central to this investigation will be a meticulous dissection of the principal findings in the context of the key literature.

In the holistic depiction, as illustrated in Figure 6-1, the tripartite framework is symbolised by three interconnected circles, each delineating distinct avenues of research inquiry. The discourse with these delineated trajectories will be substantiated by an exploration of the findings of the research. Firstly, the focus will be on an analysis of the overarching phenomenon characterising users' avatar selection. Complementary to this, an examination of the established principles and recurrent behavioural patterns guiding users' avatar modifications will be undertaken. Additionally, there is an analysis of the inherent systemic attributes intrinsic to the VR environment, as well as the defining characteristics of virtual social interaction. These integrated components coalesce to underpin the comprehensive elucidation of the research findings encapsulated by the three circles.

6.1 Avatar design motivation for virtual identity

The symbiotic relationship that exists among motivation, avatar design, and the presentation of virtual identities is intricately interwoven. An inherent nexus emerges, underscored by a pivotal point of convergence: interaction. As expounded by Dwivedi et al. (2022), this juncture is of paramount significance, serving as the very bedrock upon which the metaverse ecosystem thrives. From this investigation, a fundamental assertion is made: the entirety of avatars' manifestations on virtual social platforms is

inexorably rooted in interaction. This study applies Goffman's face-to-face interaction theory to virtual reality settings, integrating affordance theory to explore the detailed application of Goffman's concepts in virtual digital environments. Specifically, it focuses on the functionality of virtual interactions, the social patterns of users, and the relationship between virtual environments and identity construction. Interaction, in this context, is characterised by a duality of forms. The first facet pertains to social interaction, a dynamic process wherein users continually adapt their avatars and corresponding behaviours within the dataset, strategically moulding their virtual personas to align with varying social contexts. This resonates with Goffman's seminal impression management theory (Goffman, 2002: 37), wherein individuals engage in conscious and subconscious endeavours to shape their perceived image within diverse social milieus.

The second facet encompasses human-computer interaction, where avatars serve as conduits for users to manifest their virtual presence and effectuate communication through interface gestures. This dimension epitomises the synergy between human agency and the technological interface, underscoring the profound implications of avatars as mediators of virtual engagement. Indeed, the overarching implications of this extend to encompass the broader realms of virtual environments and technological integration, signifying the integral role they play within this intricate tapestry of interaction.

Notably, Jonathan Turner, a prominent figure in micro-sociological theory, has underscored the cardinal role of motivation within the social interaction theory, a foundational cornerstone of his theoretical edifice. Turner (1998) asserts that motivation processes are those that energise and mobilise actors to interact. This study posits that this motivational process serves as a driving force, impelling users towards the exploration of their identities, thereby informing their engagement in avatar design and influencing their ensuing interactive behaviours within the avatar's VR environment.

Within the analytical scope of the micro-sociological interaction theory, complemented by a contemplation of the overarching significance of user-designed avatars, four types of motivations will be discussed. This elucidation shall be grounded upon an examination of pertinent data from the research.

6.1.1 Motivation1: Previous encounters

Previous encounters influence conscious and unconscious processes in shaping a person's identity; the same applies here to shaping virtual identities. Freud's psychodynamic theory can support this point of view from an unconscious perspective, and Goffman's impression management and foreground and background theories can provide more detailed explanations for conscious behaviour here.

In his seminal work *The Interpretation of Dreams*, Freud offered an explanation of the intricate interplay of unconscious processes in the intricate formation of behaviour and personality, while also contemplating the profound influence of early life experiences on individuals' desires, cognitions, and actions (Balick, 2018: xxvii). The theoretical perspectives of Fairbairn's "object-seeking" theory (Mitchell, 1995) and John Bowlby's exploration of "attachment" (Bowlby, 2013) complement Freud's framework by meticulously scrutinising the role of the unconscious as a potent motivator. Compounding these theoretical foundations, this empirical inquiry has shown intriguing dynamics within the realm of VR interaction. For example, in the questionnaire study most participants denied any significant impact of avatar modifications on their behaviour and discourse within *VRChat* - in spite of such modifications being a feature of use of and interaction in *VRChat.*

The empirical observations and interviews conducted by the researchers provide evidence that contradicts this data from the questionnaires. Some users exhibit adaptability by modifying their voice, avatar size, and speech style to align with their

chosen avatar's identity, as well as to meet the expectations of their interaction partners. This adaptive behaviour is rooted in users' inclination to anticipate social processes based on their prior life experience, all in pursuit of optimising their social interactions. From the interviews in particular, it was clear that the ability of users to anticipate forthcoming interactions is contingent upon their cumulative life experiences, thereby equipping them with the requisite knowledge to adeptly adapt their social behaviours within virtual social environments.

This underscores that users' antecedent experiences, which could lie dormant within the recesses of the subconscious, profoundly influence their assimilation of identities and ensuing performances. Hart (1910) proposed that individuals' past experiences exist within personal consciousness, amalgamated within the "personality." Priya (2021) suggests that the subconscious and phenomena can be considered significant sources for understanding the hidden forces behind human perception. People believe they know what they are doing, but they are unaware of how they are guided by the "subconscious."
In virtual reality, for example, when user Jerry prefers to embody a female avatar, it becomes evident, particularly during interviews, from his sitting and lying postures that he is assuming the role of a female character. Similarly, the selection of an avatar with a hat by an individual with autism attests to the subconscious operation of a protective mechanism. These intricate interplays between past experiences, subliminal influences, and the fluid adoption of avatars coalesce to underscore the nuanced relationship between identity, behaviour, and virtual environments.

The integration of Freud's concepts of unconscious processes with Goffman's theories on conscious initiatives serves to substantiate the fundamental role of past experiences in discussions concerning user-designed identities. Within this context, Goffman's theories, particularly his impression management framework and staging talk theory, emerge as pivotal components bolstering this perspective. Goffman's concept of impression management intricately examines the strategic presentation individuals adopt during social interactions. In his book *The Presentation of Self in*

Everyday Life, Goffman (1959) posits that individuals draw upon past experiences as a mechanism to anticipate their current and prospective behaviours, consequently shaping their self-evaluations (1959:1). Just as users proactively use past experiences as material for impression management, predicting others' reactions when they see avatars. The research findings indicate that users who use large avatars expect to gain authority in social interactions, while users who use small avatars believe they will be treated more kindly. When users use inappropriate avatars in a previous social setting, they will try to avoid the same problem in similar social situations in the future.

Likewise, the spectrum of gratifying and disconcerting social encounters from the past invariably influences individuals' self-perceptions and the strategic navigation of their identities in forthcoming scenarios. Notably, a recurrent phenomenon that surfaces in interview data pertains to users' proclivity for altering avatars in consonance with distinct social contexts, atmospheres, and thematic requisites. Significantly, even within the confines of dataset IM2, users expressly affirm their proclivity to switch avatars to elicit varied reactions from their interlocutors. This recurrent pattern underscores the indispensability of past experiences as a foundational premise for users to anticipate and tailor the identity facets that necessitate projection. Collectively, this convergence of Freudian notions and Goffman's theoretical constructs lends credence to the premise that past experiences serve as a motivation in shaping users' cognition of their own virtual identities.

6.1.2 Motivation2: Situation fitting and role fitting

The assertion that individuals modify their avatars to conform to their surroundings has been substantiated through the empirical investigation. In the autoethnography, a discernible finding emerged wherein alterations to one's avatar were predominantly attributed to environmental and contextual factors, as well as the behaviours exhibited by other users. Through observation, it becomes evident that regardless of whether individuals aim to assimilate into a situation or seek solitude, their primary focus often

revolves around securing support and information. In situations where the need for support and information is heightened, the motivation to fit in and establish social connections tends to become more pronounced. Goffman's (1959) proposition that the behaviours of others in the situation affect people's perception of the situation, the individual will act in a thoroughly calculating manner, a strategy for their behavioural, enabling them to effectively manifest their ideas in a manner that aligns with the situational context (1959:3). The behavioural patterns exhibited by *VRChat* users align closely with Erving Goffman's situational theory. In the interview dataset labelled 'IM2,' participants revealed a strategy for self-preservation and group adaptation. Overall, the participants shared that, following an evaluation of the social situation and social group, they would opt to adopt a more appealing avatar as a means of both facilitating social interaction and safeguarding their social presence.

Situational fitting often intertwines with role fitting, forming a closely linked dynamic within situational interactions. Goffman(1959: 6) mentioned that a person's behaviour will influence their definition of the environment. When users aspire to create an idealised impression in their interactions, role fitting emerges as an intrinsically motivated and intrinsically rewarding phenomenon. It is not uncommon for users to employ various avatars in distinct social circles, relishing the opportunity to revel in different identities, each offering a unique source of pleasure. Within the context of this pleasurable adaptation, users find themselves seamlessly integrating into their virtual environments. Virtual technology, acting as a catalyst in this process, has been shown to facilitate persuasion and behaviour change, particularly in gaming environments, as demonstrated by Hamari (2015). *VRChat*'s system features immerse users in character-driven experiences and gameplay pleasures, which can be construed as intrinsic motivators for user engagement. In the context of gaming systems, the intrinsic pleasure derived from system usage has been recognized as a pivotal factor influencing users' intent to continue using the platform (Hamari, 2015; Mäntymäki, 2014).

In ‘IM3’ interview data, participants reported that their immersive character experiences hinged on various forms of performance adaptation, encompassing behaviour, avatar appearance modifications, and sound-based performances. These adaptations allow users to fully immerse themselves in their chosen characters, adding depth and richness to their virtual interactions.

Users frequently tailor their avatars as a means to an end. When their motivation to achieve both situational fitting and role fitting reaches a pinnacle of positive correlation, it leads to a remarkable outcome. This alignment not only allows users to achieve idealized effects but also facilitates more convenient and mutually beneficial communication during interactions. Erving Goffman (1959) mentioned the concept of a ‘gentleman’s agreement,’ wherein individuals maintain their respective roles within a given situation (1959: 107). This unspoken understanding among members in a situation often involves a concerted effort to uphold their roles within a team, serving as an inconspicuous current of communication that enhances the efficiency of inter-team communication while preserving the desired impressions they aim to create. Users' endeavours to blend seamlessly into both the situation and their designated roles, often realized through avatar modifications, are geared towards facilitating improved communication. This perspective finds further support in Howard Giles' Accommodation Theory (2007), which underscores the importance of individuals adapting their communication styles to align with their interaction partners' preferences, language, and communication norms. During online interactions, users prioritize shaping their identity to match their communication counterparts' language, style, and preferences, with the overarching goal of establishing rapport and fostering effective communication.

It is worth noting that situation and role-fitting can be akin to variables within the storytelling context. When individuals engage in vivid storytelling, they adapt their voices, demeanour, and movements to create the most immersive atmosphere. Similarly, users in virtual environments can be likened to storytellers, as they finely

tune their identities through narrative elements. McAdam's theory of narrative identity underscores the pivotal role of storytelling in the construction of one's sense of self. According to McAdam (2018), a person's internal life story unfolds, weaving together a reconstructed past with an envisioned future. Within the VR context, the components of this narrative encompass the virtual environment, the thematic context of the virtual space, and the avatars that populate it—all of which serve as dynamic variables. Users deftly manipulate these variables, drawing upon their past social experiences, to craft a comprehensive and compelling narrative within the virtual realm. This is also confirmed in interview data IM3, users change their avatars for the purpose of performance or role-playing. For example, user Alex designs props specifically for social variables to enhance the attractiveness of the role in the social interaction process, making the role-playing experience more immersive.

6.1.3 Motivation3: Cross-sectional self-presentation

In this section, it's essential to clarify the concept of Cross-sectional self-presentation. Cross-sectional self-presentation places significant emphasis on the information available in the present moment. Users rely on real-time information to craft an ideal impression for a specific point in time or scenario. When individuals are present in a situation, their understanding of the context informs their actions to elicit the desired response. In IM2, a common phenomenon was discovered: users' behaviour varies depending on their different social circles, used to protect themselves and maintain a certain image within the group. Adapting one's persona to fit the group creates a sense of pleasant security. Within the data, numerous examples reveal that respondents adjust their avatar identities based on real-time information, and a substantial number of participants admitted to choosing different avatars depending on various social situations, social groups, and the specific individuals present.

In his research on face-to-face interaction and social behaviour, Erving Goffman delves into the mechanisms by which individuals acquire information about others' existence

and attributes in social settings. Appendix I (Goffman's theory applied to virtual reality), referred to as *Goffman's theory applied to virtual reality*, draws inspiration from Goffman's seminal 1959 book, "The Presentation of Self in Everyday Life." It not only elucidates how individuals attain real-world access to information but also explores the ways in which virtual reality conveys information, substantiated by empirical evidence related to participants' avatar customization based on virtual information. The dataset encompasses the methods through which users communicate information about themselves and how they adapt their avatars based on the type of information they receive, shedding light on the dynamic relationship between self-presentation and information exchange in virtual environments.

This part compares how individuals gather information during face-to-face interactions versus virtual interactions in VRChat, based on Goffman's theory of social interaction.

The first point focuses on appearance. In face-to-face interactions, an individual's appearance, including clothing, body language, and other visual cues, serves as primary information about their social identity and attributes. Goffman (1959: 15) stated that an individual's outward appearance can serve as primary information about their social identity and social attributes. People tend to make judgments about others based on their clothing, appearance, body language, and other visual cues. In VRChat, this translates to **avatar fashion**, including elements like clothing, accessories, skin tone, and age. a quote from a user named Vince, who highlights the importance of avatar clothing and its connection to self-expression and style.

> "*I like the clothing, like the outfit…I feel like French are like stylish and stuff and it'll be like, an outfit I would go to like, uh, something prestigious or something and I feel like it, it hit me because I like fashion and I like, uh, luxurious stuff*"

The second point delves into nonverbal interaction, which is crucial in both physical and virtual settings because it provides insights into a person's emotional state and

intentions. Goffman (1959: 160) mentioned that because the personal realities individuals care about are currently imperceptible, reliance on appearances is crucial. For instance, non-verbal cues such as facial expressions, gestures, posture, and eye contact serve as significant channels for perceiving information about a person's emotional state and intentions. VRChat users rely on similar cues expressed through their avatars, such as facial expressions, gestures, and body language. Player Gavin emphasises the significance of avatar customisation and gesture toggles in enhancing nonverbal communication

> "*Like I've recently added, uh, textures to my avatar. So, like the textures you see on my hoodie and stuff like those were recently added…I have these gesture toggles that I recently reworked to, so now I can, I can have like a blush and like a sad face or question mark or whatever. Like, I've been working on a lot of things for this avatar.*"

The third point examines verbal interaction, highlighting the role of language in conveying information about a person's background, attitudes, and personality. In traditional interactions, speech patterns, accents, and tone of voice contribute to this understanding. Similarly, in VRChat, users rely on elements like speech synthesis, text chat, and tone of voice to gather information about others. User Clive, who describes the impact of another user's deep, soothing voice.

> "*And he has a really deep voice. It's a really harsh accent, so it's like soothing. All he has to do is like, walk in my ear and you can almost literally like flatline me on the ground. Like I'll be sitting the next couple seconds. It's, it's weird, but it's awesome at the same time*"

Fourth is about interaction patterns, emphasising that observing how individuals interact provides insights into their social roles, relationships, and affiliations. Goffman (1959: 1) stated that observing how individuals interact with others allows for a deeper understanding of their social roles, relationships, and affiliations. People often form impressions based on who someone interacts with and how they engage in

conversation. In VRChat, user observation in social situations serves a similar purpose. a user named Jerry, who describes changing his avatar to match the style of his friends in different social contexts within VRChat.

> "*When I am with some friends who are always using an E-boy uh, muscular type of avatar, I'm always changing to E-boy avatar just for them.*" He continued, "*When I was with some friends who were young, uh, I changed to a cute avatar. And if I'm with people in Quest, I can change avatars too*"

The fifth point discusses setting and context, acknowledging that the physical or virtual environment influences how individuals present themselves and how others perceive them. Goffman (1959: 13) believed that props, settings, and the overall environment impact social interaction. virtual worlds, avatar diversity, and the gaming context all contribute to the information gathered by users. A quote from a user named Duke illustrates how the choice of avatar can change based on the specific virtual environment, such as a club world. "*At that certain moment in time, yes. That can change based on what room I'm in…Let's say if I go into like a club avatar, a club world, sorry, I might dress up as this avatar or another avatar, most likely this one… based on those sorts of circumstances.*"

The sixth point highlights props and artifacts and how individuals adjust their behaviour based on them. Goffman(1959: 143) noted that performers modify their actions according to the characteristics of props and the task at hand. In VRChat, avatar accessories, world-building elements, room decorations, and interaction objects all function as props that influence user behaviour. Player Alex said that

> "*Well, I like that it comes fully equipped with weapons of all kinds that lets me express myself and do a little bit of role play. I really enjoy doing role play with random strangers or friends, and most of the time you need weapons and utter gadgets to fit the story or whatever's happening.*"

The seventh point addresses social norms and expectations, emphasising the role of etiquette and social rules in guiding behaviour. Goffman (1959:152) stated that individuals can rely on social norms and etiquette rules to guide their behaviour. There is a general understanding among people of how individuals should conduct themselves in specific roles or situations. In VRChat, similar norms exist, including respect for others, consent and boundaries, and cultural sensitivity. A user named Kate, who describes changing her avatar based on the expectations of her furry group within VRChat.

> "*Um, Mostly, it's kind of with the people that I hang out with, I have, I have a furry group, which obviously it's kind of a joke that when I walk around in an avatar like this, they'll like, they'll say, Oh, you're naked, put some fur on, and then I'll go into a furry avatar. So, so to kind of match the theme of the group that I'm currently with.*"

Finally, the eighth point examines social network and reputation. An individual's reputation within their social network significantly influences how others perceive them. Goffman (1959: 106) emphasised that a person's good reputation depends on the good behaviour of others. In VRChat, group affiliations and friend groups shape users' reputations and how they are perceived. user Jerry, highlighting how he changes his avatar to fit in with different groups within VRChat, demonstrating the importance of social networks and reputation in the virtual world.

It is evident that users adapt their avatars based on the information available in their virtual social environment. In the context of face-to-face interaction, Goffman outlined at least nine ways to acquire presence information. Remarkably, this study has found that users in virtual reality environments largely adhere to these social principles. It's worth highlighting that *VRChat* possesses unique characteristics that make the acquisition of information in virtual reality social interactions more intuitive and straightforward. For instance, users employ a distinctive virtual language to convey

information, use thumbs-up gestures on the interface to signify approval, and some even craft custom gesture symbols within their social groups to express affectionate sentiments. As Goffman noted, people communicate using a familiar social language regardless of the spoken language (Goffman, 1959: 102). Although the means of conveying information in virtual reality differ from traditional face-to-face interactions, users seamlessly incorporate conventional gestures, expressions, and actions to compensate for information access.

In summary, much like in face-to-face social interactions, users adeptly navigate the technical language of virtual reality to gather pertinent information and select identities that align with their interests. The user's motivation to adjust their avatar is influenced by their assessment of the current virtual environment and the presence that the avatar conveys. The study also takes into account the possibility that users may provide inaccurate information. In fact, researchers have often observed inconsistencies between respondents' behaviour during interviews and outside of them. However, this also validates the theory and rationale of impression management. The interview process itself becomes a means of observing how users implement impression management. As outlined in Goffman's dramaturgical theory, this study treats users' actions and language as performances to be analysed, with the aim of interpreting how respondents manage impressions in a virtual reality environment.

6.1.4 Motivation 4: Longitudinal trajectory of identity formation

Unlike cross-sectional self-presentation research, which focuses on individuals' presentation at a specific point in time, the concept of a longitudinal trajectory of identity formation pertains to how users' understanding of their virtual identities evolves over an extended period. This study underscores the idea that this dynamic trajectory illuminates the malleability and adaptability of individuals' identities during social interactions in VR. Users can understand what they want and what suits them in

terms of obtaining this by adjusting their virtual identities. Even if users have a clear understanding of their identity before engaging in virtual reality social interactions, their experiences in virtual social settings may lead them to develop new perspectives on their identity.

An analysis of the database labelled as CO3 (Page 189) reveals that, with increasing game duration, avatars' identities undergo continuous transformations. These changes are consistently and accurately modified in accordance with the avatars' original characteristics. Notably, even when it appears that certain users' identities have undergone significant shifts, such as in the case of participant Ben, who initially favoured robotic avatars but later embraced a furry avatar, a closer examination of their personal attributes and interests indicates that their identity changes can still be traced. Furthermore, in this process, the user's furry identity helped them find their own community, and they made numerous customized modifications to this furry identity to make it more comfortable for themselves when using it. When users realize which avatar they desire, it motivates them to make changes and explore their virtual identity in that direction.

In the furry community, players place particular emphasis on comfort with their self-identity, constantly modifying their furry avatars to fully immerse in the fursona concept during interactions. Ben, as mentioned earlier, is a typical example; he added hats, changed colours, and improved the fluidity of movements in his avatar’s customisation, enhancing his social experience. Zaman (2024) found through research that interacting with fursonas allows users to process trauma and express their sexuality in a comfortable environment, making creative release not just an escape from reality but an important practice for maintaining identity and presence when facing societal challenges. Fursonas serve as a medium for self-expression, emotional exchange, and exploring gender and queer identities. Players in the game can custom-create a unique self-presentation through anthropomorphic animal roles to reflect personal identity. Hsu (2019) suggests that fursonas are not only a form of identity

expression but also a space for exploring complex gender identities.

While Goffman's research did not explicitly centre on the evolving development of self-identity, it effectively elucidated how individuals navigate and showcase their identities in various social settings. This understanding underpins his theories of symbolic interactionism and dramaturgical analysis, both of which revolve around the dynamic nature of self-identity within the social realm—building upon Goffman's framework. This study will apply Goffman's theory to virtual reality and explain the dynamic cognitive identity trajectories experienced by users.

Goffman's concept of impression management highlights the notion that an individual's self-identity is malleable, influenced by the context and the audience in various social interactions. In his view, self-identity is adaptable and context-dependent. People actively craft and exert control over the impression they convey to others during social interactions (Goffman, 1959: 2). This process is akin to how users customize their avatars in response to the virtual environment, including factors like the theme of the room, background music, and the presence of other individuals. When users engage with a virtual interface and traverse a multitude of virtual worlds, the continuous adjustment of their avatars becomes essential for achieving an immersive and harmonious social experience. This dynamic avatar customization allows individuals to express and actualize themselves within a given situation.

Furthermore, Goffman's concept of the "front stage" and "back stage" adds depth to understanding the dynamic nature of identity presentation. In his dramaturgical theory, which metaphorically portrays social interactions as theatrical performances (Goffman 1959: 19), the "front stage" represents the domain where individuals project their public self-identities, adhering to societal norms and expectations. In contrast, the "back stage" serves as a more authentic and relaxed setting, akin to interactions among actors when not in the spotlight. If the audience went backstage, it would ruin their enjoyment of the show, as it reveals different sides of the actors' identities. This notion

finds resonance in the world of *VRChat*, where a peculiar phenomenon unfolds. Users spend extended periods sitting motionless in front of mirrors, seemingly lost from the outside world. Through interviews and observation, research has illuminated that this behaviour of quietly gazing at their avatars in the mirror is a form of relaxation for these users. It allows them to deeply immerse themselves in the experience, forging a profound connection with their avatars. However, when they eventually stand up to go out to engage with others, research often notice the difference between their previously silent and interactive roles.

Thirdly, Goffman introduced the concept of "face" to illuminate how individuals adapt their self-identity to preserve a positive social standing (Goffman, 1959). In his perspective, "face" represents the social value or image that an individual upholds during interpersonal interactions. People engage in "face work" to manage their faces, employing strategies such as face-saving, face-giving, or face-threatening behaviours. In the context of *VRChat*, social value and status translate to a user's position within the community. During questionnaires and interviews, participants frequently emphasized the significance of the *VRChat* community and their circle of friends as compelling reasons for their continued engagement. Notably, Participants Ben, Julie, and Jerry all described their virtual social circles as "drama," citing numerous dramatic stories within their *VRChat* community. Ben said: "*I try to avoid it(relationship) inside VRChat, but there's drama that comes along with it*". Julie believes that VRChat is just like any other social sphere, "*there's going to be drama and there's going to be, you know, negative things that happen. People are going to be people, and people are jerks. But I've also seen the immense positive effect it can have on people*". Jerry proposed that it was precisely because there was too much drama in his social circle that he couldn't trust people on virtual social platforms. It's not uncommon for users to resort to exaggerated behaviours in anonymous virtual social networks to safeguard their own status and preserve their faces.

Finally, Goffman delves into the concept of stigma, underscoring how self-identity can

adapt in response to societal judgments, especially when an individual possesses a characteristic or identity that is devalued within that society (Goffman, 1959). Those with stigmatized identities often employ various strategies to manage their identity within social interactions. In *VRChat*, bully issue is particularly pertinent due to its unique characteristics, including a predominantly young user base, the prevalence of anonymous identities, and the presence of a tangible social community. *VRChat's* distinct virtual language and cultural environment further compound the situation. Within this virtual environment, the experience of having a devalued identity can be unpredictable. Users could be vulnerable to random verbal attacks and instances of bullying in public spaces. These negative behaviours can significantly impact users' ways of managing their virtual identities.

While Goffman's primary focus lies in the presentation and management of self in everyday life, it underscores the dynamic and context-dependent nature of self-knowledge construction. In the world of virtual reality, users engage in a continual process of tailoring their self-presented identities to align with various social roles, contexts, and expectations. This ongoing adaptation significantly contributes to the fluidity of self-identity within the realm of social interactions.

6.2 The cultural environment for virtual immersive impression management

In exploring the motivations behind designing avatars for VR users, it becomes evident that avatar design is closely connected to a user's sense of self. Goffman's theory of self-presentation and impression management in everyday life indirectly highlights the dynamic nature of self-identity, which is heavily influenced by the surrounding environment. This environment encompasses both the physical and social aspects of the context in which social interactions occur. It includes various elements such as the frontstage where individuals perform, private moments behind the scenes, the sets and props they interact with, the presence of an audience, and various tools for managing the impressions they make. Understanding the role of the environment is

pivotal in comprehending how individuals navigate social settings and effectively manage their self-presentation.

Whether through past experiences or within various social contexts, a user's self-concept is in a constant state of evolution. This research indicates that their immediate environment and the cultural norms of their community significantly impact how they manage their impressions of others. In contrast to Goffman's analysis of face-to-face interactions, this study focuses on virtual reality, a realm shaped by entirely new forms of cultural expression and interaction brought about by the digital age. Therefore, any discussion on impression management in virtual interactions cannot be divorced from a consideration of the virtual cultural milieu. As Stuart Hall (1989) argued, culture encompasses the interpretation of meaning within the realms of people, objects, and events. In the virtual reality environment, cultural studies can be a valuable lens through which to examine how popular culture influences user behaviour, identity, and interactions. Moreover, discussions surrounding virtual culture are instrumental in comprehending the development of user self-identity and the formation of their virtual personas.

Virtual cultural phenomena, exemplified by the rise of platforms like *VRChat*, represent a burgeoning trend in the digital age, encompassing the creation and propagation of culture within virtual realms. *VRChat*, in particular, stands out as a prominent social virtual reality platform celebrated for its extensive array of avatar customization options. Users have the ability to craft avatars that are uniquely tailored to reflect their individual personalities, giving rise to a distinct culture centred around avatar customization. Research has illuminated the significant role played by cultural trends dominated by elements of pop culture, subcultures, and memes within the virtual cultural sphere. These cultural currents subtly influence not only users' avatar designs but also their online identities.

John Storey (2010) asserts that popular culture is rooted in the collective experiences

of the people, embodying the cultural preferences widely embraced within a particular societal context. It encompasses diverse facets of contemporary existence, encompassing beloved elements such as popular films, television shows, music genres, celebrities, and fashion trends. In *VRChat*, this popular culture finds vibrant expression through avatars, virtual environments, conversations, and interactive cultural activities, among other mediums. Foremost among these manifestations is the realm of avatar design, which holds a central role. Here, users draw inspiration from iconic characters within popular culture, spanning realms such as movies, TV series, video games, anime, and other forms of media. *VRChat* boasts a rich and meticulously organized collection of avatars, each representing distinct thematic styles drawn from the tapestry of popular culture. Users can encounter avatars from Marvel's expansive universe, beloved characters from *The Simpsons*, iconic figures like *Tom and Jerry*, and even avatars crafted in the likeness of celebrities, enabling users to immerse themselves in character and engage in interactions as these celebrated personas.

Furthermore, *VRChat* users actively participate in crafting and sharing virtual landscapes that faithfully replicate iconic settings from popular culture. These imaginative constructs include virtual renditions of renowned locales like the Mos Eisley Cantina from *Star Wars* and immersive worlds inspired by the Gundam series. Beyond these immersive landscapes, *VRChat* functions as an expansive playground for role-playing, where popular culture enjoys a prominent role. Users frequently engage in role-play scenarios deeply rooted in their favourite series, whether it be a magical adventure inspired by *Harry Potter* or other captivating narratives. Lastly, the platform showcases a trend of themed events, where participants are treated to a plethora of theme-based gatherings hosted in diverse virtual realms. These events feature a wide array of activities, from DJ performances to movie screenings and trivia games, all connected to internet culture and trends. In summation, popular culture permeates the very essence of *VRChat*, leaving an indelible mark on its visual aesthetics, dialogues, temporal dynamics, and the myriad ways in which users express themselves within this dynamic virtual world.

As popular culture seamlessly integrates into the dynamic landscape of contemporary virtual communities and social experiences, it wields a substantial influence over users' avatar designs and their sense of identity within the *VRChat* platform. As previously mentioned, one of the most palpable effects on identity lies in the inspiration behind avatar designs. Apart from user-generated creations, a vast majority of avatars in *VRChat* draw inspiration from iconic characters. Survey Figure 5-2-20 (Page 149), which delved into user avatar preferences in *VRChat*, underscored that favoured choices encompass avatars from diverse domains, including anime, esports, furry characters, and gaming icons. Another revealing insight emerged from Survey Figure 5-2-12 (Page 143), where a striking 83% of users disclosed that their avatar selections were driven by a deep affection for specific characters. From the very moment users step foot into the virtual world, their choices and decisions are undeniably swayed by the pervasive influence of popular culture.

Popular culture serves as a catalyst for users to explore multifaceted identities within *VRChat*. A prevalent phenomenon within the *VRChat* community is the adoption of multiple avatars over extended periods. These popular culture-inspired avatars grant users the opportunity to venture into different personas and roles. Users can temporarily inhabit their beloved characters, delving into aspects of themselves that they might not express in their everyday lives. One noteworthy advantage of popular culture is its capacity to enable users to gradually embrace concealed facets of their real-life selves through diverse experimentation. For example, Survey Figure 5-2-8 (Page 141) highlights how virtual avatars offer users a platform for exploring various gender experiences, particularly when adopting anime gender characters as their virtual alter egos.

For some individuals, avatars inspired by popular culture act as a means of temporary escape from reality, providing a respite from their real-life identities. Interviewee Gavin, who experiences autism, shared that when confronted with real-life bullies, he sought

refuge in the virtual realm, where his custom-designed anime avatar offered an unparalleled sense of security. From this vantage point, it becomes evident that popular culture broadens users' horizons when it comes to identity exploration.

Nostalgia and fan culture serve as avenues for users to express their personal interests and sense of belonging within *VRChat*, enabling them to showcase their individuality through familiar references. In the realm of virtual cultures, communities often form around common interests or shared experiences, allowing individuals to connect with like-minded people. This sense of belonging holds particular significance for those who might feel isolated or marginalized in their offline lives.

Survey Figure 5-2-6 (Page 139) has highlighted that personality and interests play pivotal roles in users' selection of avatars. Notably, avatars stemming from one's favourite franchises or fan communities become a means of signalling shared interests and passions to others. This resonates with the primary motivation for users to stay engaged on virtual social platforms: forging friendships. Shared interests provide users with a swift entry into their own social circles within the virtual landscape.

Additionally, certain genres and subcultures, such as anime enthusiasts, science fiction aficionados, and gamers, often adopt avatars closely tied to their interests as a means to connect with kindred spirits. As illuminated in interview CO1 (Page 176), rooms and avatars with distinct thematic elements make it easier for users to discover friends who share their specific interests.

Memes can be regarded as a cultural phenomenon within the realm of popular culture. They take various forms, such as images, videos, catchphrases, jokes, symbols, or concepts, and are employed to humorously, satirically, or critically comment on diverse aspects of life, culture, or current events. The reason for mentioning memes here is their role as a cultural adhesive in *VRChat*, serving as a means of shared cultural reference within online communities.

In interviews, Users Eva, Duke, Lucy suggested that many people design avatars because they like to use jokes and memes, notably emphasized the use of meme-inspired avatars. Duke said"So now I also have multiple meme avatars as well that are meant to be joked." For most, these avatars serve as a vehicle for expressing humour or irony. Memes often evolve into inside jokes within online communities. Users who draw inspiration from memes often find themselves belonging to subcultures or communities characterized by specific brands of humour. For instance, User Duke mentioned that he and his friends occasionally use meme-monkey to playfully disrupt others. Interestingly, others in the vicinity will sometimes adopt similar meme-monkey, joining in the meme-inspired shenanigans. Memetic avatars frequently function as conversation starters. When users recognize avatars based on memes, it often leads to engaging conversations or references to the meme, fostering a sense of camaraderie.

Through the shared language of humour and references, memes facilitate community bonds and inject creativity and enjoyment into virtual interactions. In contrast to more enduring forms of cultural references, it is important to note that meme-inspired avatars may experience relatively brief moments of popularity. In conclusion, popular culture profoundly impacts *VRChat* users' choices in avatar design and their journey of self-discovery within the virtual realm. These avatars often serve as expressive outlets and bridges to connect with like-minded individuals who share similar interests. Participation in virtual culture can be viewed as a form of personal growth and self-exploration, enabling users to gain a deeper insight into their passions, values, and beliefs through interactive engagement within virtual communities.

In addition to popular culture, it is essential to consider the role of "symbolic culture" within the virtual cultural environment. Lee (1988) cites Clifford Geertz with regards to the symbolic nature of human culture, highlighting that culture consists of meanings that individuals discover. These meanings imbue life with significance and serve as

guides for their actions. Micro sociological studies (Ritzer 1985, Goffman 1959) primarily delve into the individual perspective of symbolic culture, underscoring the personalized and subjective aspects of meaning that hold profound importance for individuals. This perspective underscores the agency of individuals in constructing their cultural worlds and expressing their identities through unique symbols and cultural elements.

In *VRChat*, users craft avatars that incorporate symbols, images, and elements rich in personal significance. These avatars often serve as profound expressions of individuality, reflecting unique beliefs, life experiences, or interests. According to AV2 (Page 158) data, most users lean toward using custom-made or purchased avatars. Some artists even begin with hand-drawn sketches to create avatars that deeply resonate with their identities. These avatars establish a sense of connection with the virtual world, enabling users to share personal narratives and milestones. In *VRChat*, the choice of avatars that represent these personal stories fosters deeper and more meaningful connections with others.

For example, user Clive shared that the tattoos and facial scars he designed for his avatar symbolised real-life conflicts with his father, making the avatar a deeply personal representation of his lived experiences. These visual elements, far from being mere decorations, carry emotional weight and are capable of evoking strong personal feelings, memories, and associations tied to specific events or relationships. In this way, avatars become a canvas for self-expression, allowing users to externalise inner struggles and identity narratives in a digital space.

Avatars endowed with personal symbolic significance often hold profound emotional value for users, becoming extensions of their inner selves. This practice of imbuing avatars with personal meaning also highlights the therapeutic potential of virtual environments, where users can process and articulate emotions that may be difficult to express in the physical world. Additionally, the digital medium allows for creative

reinterpretation, enabling users to reshape or reframe their personal stories in ways that may provide empowerment or closure.

Moreover, given the diverse cultural backgrounds of VRChat users, the sharing of symbols laden with personal information can facilitate meaningful cross-cultural exchanges. For instance, symbols that may be universally understood—such as scars representing struggle or tattoos symbolising identity—can resonate across cultural boundaries, fostering empathy and dialogue among users. At the same time, culturally specific symbols shared within the VRChat community can serve as a bridge for understanding, offering insights into the unique perspectives and traditions of others. This dynamic interplay between personal storytelling and collective engagement enriches the social fabric of virtual environments, making them not just spaces for entertainment but also for human connection.

Personal symbolic culture is crucial in helping users explore and express their identities. George Herbert Mead's (2004) belief that our thoughts, self-concept, and the communities we inhabit are constructed through symbolic interactions underscores this idea. In AV3, affirms that most users employ specific items, details, or symbols—such as wings, clothing, ears, tattoos, and tails—to convey their unique identities. These symbols serve as a means of self-expression for users. Custom avatars serve as a versatile platform for users to delve into various facets of their identity or project-specific aspects they wish to highlight within the virtual realm. It essentially provides a canvas for self-discovery and self-expression. Users can channel their creativity into designing avatars that seamlessly blend artistic elements with personal symbolic meanings, resulting in visually captivating and significant representations. Personal symbolic culture empowers *VRChat* users to craft avatars that transcend mere visual aesthetics, becoming potent mediums for self-expression, identity exploration, and forging connections with others who share similar beliefs, values, or experiences.

In summary, the journey of exploring users' virtual identities is intricately intertwined

with the exploration of virtual culture. Research into both popular culture and personal symbolic culture is instrumental in comprehending how individuals in the digital age shape and articulate their identities. Such research provides invaluable insights into human adaptation to the digital era, the evolution of culture within virtual spaces, and the profound influence of these virtual cultures on various facets of users' identities and lives.

6.3 The Consequences of Virtual Immersive Impression Management

After delving into the motivations behind user-avatar design and the impact of virtual culture on virtual identities, this research essentially confirms that users' understanding of their virtual identities is an ongoing and dynamic process intricately linked to the virtual cultural milieu. Through observations and investigations, it becomes evident that within this dynamic self-awareness journey, many users have attested to the transformative effects of virtual reality social interactions on their real-life experiences, a phenomenon notably prevalent in data CO3 (Page 189).

Therefore, this section warrants a dedicated exploration and explanation of how prolonged immersion in virtual social interactions influences users' real-life identities. This explanation unfolds in four key segments. Firstly, the research delves into identity management in the realm of virtual reality, shedding light on the versatile tools virtual impression management provides users to control and present their identities. Next, the research will discuss the impact of these virtual impression management strategies on users and explain the phenomenon of the fusion of users' virtual identities and real identities. Finally, this study aims to explore and discuss the "self-realization" opportunities that virtual reality social interactions offer users, all of which stem from the identity fusion phenomenon.

Erving Goffman's face-to-face impression management focuses on how individuals present themselves in real-life social interactions, with specific presentation methods described in Table 6-2. In contrast, virtual reality identity management pertains to how

people strategize and present their identities in digital environments. Both concepts share a common underlying theme: the conscious management of how others perceive oneself. However, they differ in terms of tools, contexts, and dynamics involved.

The following part will provide a detailed description of virtual impression management, covering aspects such as background, digital avatars, digital roles versus real selves, information control, anonymity and pseudonymity, and the enduring nature of digital identities. Appendix J (Virtual impression management) shows related data.

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There are several ways for users to achieve impression management in virtual reality. First, Users can construct their online personas through features like avatars and virtual worlds, influencing how others perceive them. This includes choosing when to engage publicly ("front stage") and when to retreat to private settings (“backstage”). Secondly, Avatars are crucial for virtual impression management in VRChat, with extensive customisation options available, including importing 3D models. Users often experiment with various avatars before settling on one that aligns with their desired online identity, a process similar to Goffman's concept of "face work," where individuals manage their social identity during interactions. VRChat also enables non-verbal communication through body language and gestures, further enhancing impression management.

Third, social norms play a significant role in shaping user behaviour and impressions in

VRChat. These norms are established through a combination of community guidelines, developer-implemented features, and creative methods like displaying rules on in-world blackboards. Users are encouraged to provide feedback and create content, shaping the platform's development and influencing the impression management experience.

Forth, Social connections are vital in VRChat, with many users forming close-knit groups and "VR families". These groups often gather in specific virtual spaces, acting as social stages where members collaborate to present a shared front, aligning with Goffman's concept of "dramaturgical teams". Role-playing is another significant aspect of VRChat, ranging from family roles to game characters and even adult performances. Finally, VRChat's global and diverse user base presents unique challenges and opportunities for impression management. Interacting with people from various cultures and backgrounds requires adapting self-presentation strategies beyond Goffman's original framework, which focused primarily on face-to-face interactions within specific social contexts.

In summarise, the research examines the role of "dramaturgical teams" and "impression management" such as friend groups and virtual families, in shaping online interactions. It also highlights how VRChat's technology facilitates unique self-presentation strategies exceeding those possible in face-to-face interactions.

Above part presented above illustrates how users employ virtual immersive impression management to shape their self-presentation in the virtual environment. This research highlights five key areas of interest.

- **Virtual impression management provides users with a wealth of digital resources to explore identity.**

To begin, users actively engage in impression management through the use of avatars,

the construction of virtual environments, non-verbal communication, and language. These strategies closely parallel those found in face-to-face interactions.

Avatars serve as representations of users' physical appearance and attire, while the virtual world acts as the backdrop for their social interactions. For instance, individuals can meticulously decorate a virtual living room to convey a comfortable and inviting atmosphere. Thoughtful design in virtual reality environments contributes to users' overall sense of ease. While linguistic and non-verbal expressions may exhibit slight variations from the real world due to constraints in avatar movements and the influence of the virtual cultural environment, users generally enjoy a greater degree of diversity and freedom in impression management within the virtual environment. This is primarily attributed to the anonymity inherent in this environment and the abundance of digital resources available for users to select from.

- **Virtual social norms encourage users to engage in behaviours that align with the interests of the group and community when managing their self-presentation.**

Moreover, social norms, codes of conduct, and established conventions within VR communities significantly shape users' behaviour, subtly influencing the outcomes of their impression management endeavours. The anonymity inherent in virtual social interactions can instil a sense of security but also carries the potential for negative conduct. At present, no legal regulations exist to constrain users in this context. Nonetheless, VR communities rely on community guidelines and reporting systems to uphold a congenial social environment and actively deter improper conduct in public spaces.

The cultural ambience cultivated by these community guidelines fosters a heightened awareness among users, encouraging them to align their behaviours with the interests of the collective and the community when curating their self-presentation.

Consequently, this contributes to the maintenance of a positive and harmonious social atmosphere.

- **Virtual technology provides users with an anonymous performance environment where they need not worry about their constructed impressions being disrupted.**

Thirdly, users possess the capability to actively and precisely manage their audience's exposure to their impression management efforts through system features. In line with Goffman's frontstage and backstage theory, the audience is shielded from the actors in the backstage to prevent disruptions to the roles the actors are crafting for the audience on the frontstage. However, in real-life scenarios, individuals can encounter awkward situations that may interrupt their frontstage performances unexpectedly. While virtual reality technology cannot entirely eliminate such occurrences, it can significantly mitigate them and furnish users with a comfortable social environment conducive to their frontstage presentations.

For example, within social VR, users typically inhabit multiple social circles. The functionalities highlighted in the table, including blocking, reporting, and muting, empower users to effectively uphold their roles within these social circles. They can employ these features to prevent unintentional intrusions or interactions with individuals they prefer not to engage with, thereby safeguarding the integrity of their performances within their respective social circles. Upon concluding their performances, users can then unblock the previously restricted audience members. The notable aspect of this feature lies in the fact that the blocked individuals remain unaware of the actions taken, and the users employing these measures need not encounter individuals they would rather avoid in social settings, even if both parties and their virtual avatars coexist within the same virtual world. Virtual technology furnishes users with a secure presentation environment, alleviating concerns about potential disruptions to their carefully cultivated impressions.

- **Role plays in virtual impression management foster a sense of belonging within the team.**

Furthermore, within the realm of virtual impression management, role-playing not only serves as an enjoyable pastime but also acts as a reinforcing agent for users' roles within social groups, ultimately nurturing a profound sense of belonging. Individuals who partake in role-playing games within the same virtual environment often share common interests or are on quests to discover new ones. The phenomenon of users coalescing into groups based on shared hobbies within virtual social settings is a prevalent occurrence. This phenomenon enables users to swiftly discover a community that resonates with their preferences amid a backdrop of avatars exhibiting distinct characteristics.

As underscored throughout this research, the significance of friends and social groups in the realm of virtual social interactions is underscored by empirical data derived from surveys and interviews. Communities that pivot around shared interests serve as conduits for users to unearth a sense of belonging and cultivate their passions. For instance, some users take up pole dancing within VR, a pursuit that contributes to heightened self-assurance in their real life.

- **The diverse cultural background of users fosters an inclusive social environment.**

Additionally, the VR landscape comprises users hailing from diverse cultural backgrounds. While this diversity may pose challenges in the realm of impression management, it simultaneously cultivates an environment of inclusivity. VR platforms possess the unique capability to unite individuals from different cultural backgrounds and geographical locations, affording users exposure to diverse perspectives and cultures, consequently fostering a culture of inclusivity.

An exemplary illustration of this inclusivity can be found in *VRChat*, where a multitude of immersive activities are thoughtfully crafted with inclusivity as a paramount consideration. For instance, it facilitates the creation of multiplayer games equipped with accessibility features tailored to accommodate individuals with varying abilities. Such inclusive experiences contribute to a sense of being valued and embraced and promote a more equitable virtual community.

The above five points discuss the impact of impression management methods on users in virtual reality. Next part will discuss that how dynamic virtual experiences influence the perception of real-life identity. This visual representation helps illustrate the research perspective, which suggests that the methods of impression management in VR promote the development of users' virtual identities. As users spend more time in the virtual environment, this subtle dynamic shift in virtual identity affects their perception of their real-life identity. This fusion of identities can be explained through the process and methods of virtual impression management. (Appendix K- *Fusion of identities)*

Users can explore and express their identities through avatars and digital resources, leading to greater comfort with themselves. users, such as Ben, Chloe, and Eva, have used VR to experiment with different identities and find acceptance in their real lives. Alex, another user, discusses how avatars have influenced their hobbies and self-perception of gender identity, leading them to explore creative pursuits like video making.

Anonymity in VR is another significant theme. The appendix examines how users like Lucy and Polly utilise features like blocking to avoid social embarrassment and create safer experiences. This control over social interactions empowers them to engage more comfortably in both virtual and real-life settings.

Finally, the appendix emphasises the role of community and shared experiences in VR. Alex describes how VR fostered their hobbies and connected them with others. Users like Molly and Gavin highlight the inclusive nature of VR communities, allowing them to connect with diverse individuals without fear of judgment. Jamie echoes this sentiment, expressing the freedom to be themselves in VR, a feeling not always present in the real world.

The virtual environment provides a space for self-expression without the same social pressures of the real world, enabling users to experiment with different personas and social interactions. Participants highlight the platform's role in overcoming social anxiety and developing confidence, with some reporting positive impacts on their real-world hobbies and social lives. The reduced risk of judgment within VRChat fosters inclusivity and self-discovery.

It's worth noting that this study doesn't provide direct evidence of the influence of virtual impression management on users' lives. As depicted in the table above, the research can indirectly discern the relationship between users' virtual and real identities. Specifically, these two identities appear to merge over an extended period of gameplay. This indirect validation method involves an exploration in Table 6-3 of how users engage in impression management within virtual reality, using it as a lens to comprehend how users shape their virtual identities. Subsequently, in Table 6-4, the study delves into the impact of this virtual impression management on users' self-identity perception and how it affects their real identities during prolonged gameplay. The subsequent Table 6-5 outlines the research mind map.

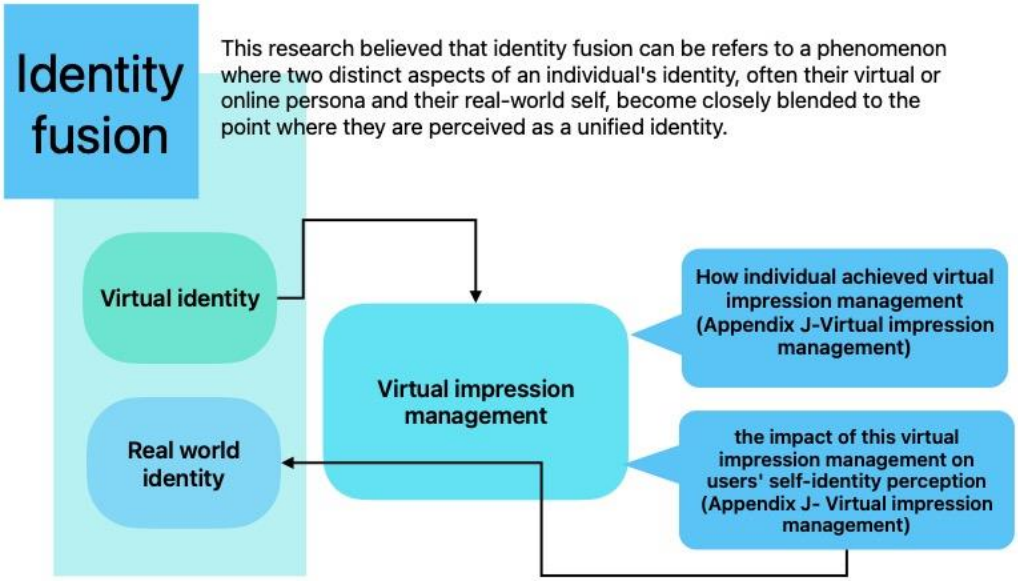

Table 6-2 research mind map

In the first part of the discussion, the motivation for users to design avatars is explained from four perspectives: "Previous encounter," with "Situation fitting and role fitting," "Cross-sectional self-presentation," and "Longitudinal trajectory of identity formation," mainly discussing motivation based on users' virtual impression management methods. The second part mainly discusses virtual reality's social environment and culture, understanding the impact of this new cultural expression and interaction method brought by the digital age on users' self-identity.

The third part discusses the consequences of users in virtual impression management, namely identity fusion. The study provides a detailed description of the ways virtual impression management is carried out and uses interview data from participants to explain the impact of virtual social experiences on users' real lives. Summarising the information from the third part, it can be revealed that the fusion of virtual and real identities depends on several conditions: the experience of exploring multiple identities, a sense of security, a sense of belonging, and an inclusive cultural atmosphere.

The experience of exploring identity in VR can help users accept their 'real' selves. *VRChat* offers a unique opportunity for users to explore and express their identities in various ways, ultimately contributing to self-acceptance, which allows users to create and customise avatars that represent themselves in the virtual world. This customisation can range from realistic human avatars to fantastical creatures, giving users the freedom to experiment with their appearance and express their identity in ways that may not be possible in the physical world. For example, in Survey Figure 5-2-8 (Page 141), it was revealed that 42%of users in virtual reality have experimented with both male and female avatars. Among them, participant Betty, who lived as a woman in virtual social interactions, was motivated to undergo certain feminising surgeries in real life. She achieved a transformation from 417 pounds to 230 pounds through weight loss in preparation for gender-affirming surgery. When discussing the impact of virtual reality social interaction on her, she mentioned that the experience has made her more determined to take better care of herself in order to achieve her transition to a female identity, and to embrace her authentic self.

Secondly, the social VR environment can provide users with a sense of security in showing themselves. As users know, VR environment can offer a level of anonymity that allows users to participate without revealing their real-world identities. Users are aware that interactions can occur in a virtual space, which can reduce the pressure associated with face-to-face interactions. This perceived distance can lead to a greater sense of security when revealing oneself. Another way to foster a sense of security in sharing their true self with others is that VR environment can facilitate a strong sense of presence and immersion, allowing users to form emotional connections with others. This emotional connection can lead to greater empathy and understanding. Users increasingly have great control over how they present themselves in VR environments, such as choosing avatars, altering their appearance and customising their virtual surroundings. This control allows for self-expression without the limitations of physical appearance or social norms. User Julie mentioned:

"If you're like me and you don't, I know sometimes you're not that confident. In real life, doing certain things, you can hop into VR and put on that mask and still be expressive and show your personality, but be secure in the fact that you're not there in person and you're just in your own house."

Later, she said：

"I've met people in VRChat, and I talk with them now in real life. I'm more confident in real life now. I feel like I've become a better dancer now. I feel like I'm just a more confident and outgoing person than when I first started playing VR chat two years ago."

Thirdly, role-playing in VR, as well as groups with similar interests, provides users with a sense of belonging. The communities and events in *VRChat* shared interests, hobbies, or identities; VR planforms often support group activities, including games, creative projects, or collaborative workspaces. Users can join these communities or attend events related to their passions, helping them find like-minded individuals and fostering a sense of belonging within these communities. For Julie, she found virtual communities with a dancing club and brought that friend to real life, enriching her social life and making her more confident.

Finally, an inclusive culture in social VR can significantly impact pushing users to pursue their true identity. When users experience acceptance and support in an inclusive environment, they are more likely to accept themselves for who they are; this self-acceptance can be a crucial step in pursuing and embracing one's identity. In the interviewed data, 6 participants mentioned the word "Judge" (Edwin, Gavin, Alex, Polly, Luke, Jamie), and they suggested that users on *VRChat* do not judge others harshly. Users are less likely to fear discrimination or negative judgment based on their identity. This reduced fear can make individuals more comfortable expressing themselves

authentically.

A particular phenomenon in the study was mentioned in CO2 (Page 185), and that was virtual socialisation, which helped participants build confidence in real life. This statement is also supported by Survey Data Figure 5-2-15 (Page 145), with a large percentage of users reporting increased social confidence after engaging with *VRChat* interactions, highlighting the platform's potential to improve users' social confidence. Inclusive communities empower users to be themselves and express their identity without fear of rejection. This empowerment can boost users' self-confidence, enabling them to confidently pursue their identity.

In summary, discussions regarding user motivation, virtual reality's social culture and environment, and identity integration are all viewed through the lens of "virtual impression management." Research suggests that users' motivation to create avatars is to manage impressions in social contexts. Discussing the virtual culture environment addresses the uniqueness of virtual impression management methods. The study introduces the concept of identity integration to explain the consequences for users under virtual impression management. Diverse identity exploration experiences, a sense of security, a sense of belonging, and an inclusive cultural atmosphere all encourage users to realise and pursue their self-identity in online virtual reality social interactions. Avatars serve as a medium to convey users' understanding of their self-identity into the cognitive understanding of the host, thereby influencing the user's self in real life.

Chapter 7 Conclusion

This chapter begins by reviewing the research objectives and explaining how they were achieved through the research methods and theoretical framework employed in this study. It then highlights the core findings of the research and discusses their contributions to the current academic field. Finally, it addresses the limitations of the study and provides recommendations for future work.

7.1 Research objectives

The main approach of this study was aims to address the research question of how users construct their identities in VR social spaces. The research did not seek to provide a strict definition for this, but rather aimed to elucidate the phenomenon of identity construction in VR by employing a mixed research approach driven by qualitative research. The following section will specifically explain how the study interprets the research question through six research objectives.

- **Analyse the inspiration for users when creating and choosing avatars.**

The research aimed to explore the initial motivations and influences that have driven users to select and design their avatars. By understanding the inspiration behind avatar creation, a key contribution of this research is the insights into the factors contributing to the formation of virtual identities. The research findings indicate that the formation of virtual identities is closely tied to users' past experiences. Additionally, users' pre-understanding of virtual social environments influences their choice of avatar style.

The research used three methods to collect data in this area. First, in the autoethnography, used as an initial exploration into creating avatars in virtual cultural environments. For example, the avatars initially chosen by the researchers were based on real-life habits and understanding of avatar identity fluctuated with increasing game time. Secondly, in the questionnaire, the research discovered the importance of

the impact of users' past life experiences on avatar creation. One discovery was that while users may not choose avatars that closely resemble them, their choices are influenced by appearance ideals. The findings suggests that users' avatar designs draw inspiration from the aesthetics they constructed in their past lives. Finally, in the interviews, the importance of users' understanding of self-identity and personality was shown, uncovering the relationship between this information and avatar creation. Through these three methods, it is clear that users' inspiration for creating avatars is influenced by their past experiences, living environment, and social values.

- **Investigate the basis on which users modify their avatars and under what circumstances such modifications occur.**

The research explored the dynamic aspect of avatar construction by examining how and why users have modified their avatars. By identifying the circumstances that have prompted avatar modifications, the project has uncovered patterns that reveal users' evolving perceptions of themselves and their virtual identities. The research found that users tend to change avatars based on the current social environment, atmosphere, theme, and, most importantly, social interactions with others. In other words, users gather real-time information in the environment to manage their impression on others.

To investigate this further, the primary source of data was interviews. The interviews asked participants the following questions: In what situations do you change avatars? What are the usual reasons for changing avatars? Do you change avatars to leave a specific impression on interacting users? Can you provide an example? Many participants gave examples related to the size of avatars; users transform themselves into small or large avatars to attract idealised attention. The autoethnography also supports this finding, as it was found that the pattern of changing virtual identities is related to social situations and virtual environments.

- **Identify the underlying motivations prompting users to explore and customise their avatars.**

This objective sought to uncover the deeper motivations that have driven users to not only create but also customise their avatars. Understanding these motivations can provide insights into the psychological and social factors influencing identity construction within the virtual environment. The study identified two motivations related to user identity: on the one hand, users create and change avatars to adapt to situations and roles, and on the other hand, users are motivated to explore their dynamic identity, figuring out what identity suits them. The data for this aspect primarily came from interviews, where participants repeatedly emphasised the immersion in virtual social interactions. Participants expressed a willingness to change avatars to fit into social environments, atmospheres, and themes. Some participants stated that they had already found their identity through exploration in the virtual world, while others expressed an expectation to discover who they truly are in the process of exploring their identity. This exploration of underlying motivations clarifies the complex relationship between users, avatars, and virtual social interactions. Virtual social spaces provide a platform for users to explore their identities, while users also adjust their avatars to better fit the social environment and specific contexts.

- **Explore the strategies employed by users in managing their impressions within virtual reality.**

The research focused on the strategies users have employed to shape how others have perceived them in the virtual space. Goffman's theory provides a solid theoretical basis for this project. While his theory mainly applied to face-to-face interactions, however, the scenarios simulated in virtual environments are rooted in real-life settings. The immersive technology and users' sense of presence make Goffman's theory applicable to research in virtual reality. To clarify how users manage impressions in these virtual spaces, this study focused on exploring the applicability of Goffman's impression

management theory within virtual reality settings.

Examining impression management strategies has provided a detailed understanding of how users have actively constructed and presented their identities in *VRChat*. The research identified various ways of managing virtual impressions through interviews and autoethnographic research. These include world design, avatar design, emotion emojis built into the virtual platform's system, and controller gestures. Additionally, special operations management provided by digital technology (voice modification, blocking features), social circles, role-playing, social norms, behavioural guidelines, and expectations within virtual communities also influence users' impression management.

- **Examine the influence of virtual cultural environments on users' personal impression management.**

In this context, the research has extended beyond individual behaviours to investigate how the broader the virtual cultural context has affected users' impression management. Virtual cultural environments have played a role in shaping social norms and expectations, influencing how users have presented themselves and interacted with others in the virtual space. The study explained the participants' experiences in virtual reality, discovering the influence of popular culture, subcultures, meme culture, and personal symbolic culture on users' identity management in VR.

- **Discuss the potential consequences of immersive impression management in virtual reality, specifically focusing on how the social dynamics of virtual spaces may shape users' perceptions of their own identity.**

This objective was proposed to explore the broader implications of immersive impression management. By considering the social dynamics of virtual spaces, the research can shed light on how users' interactions and experiences within *VRChat* may

have impacted their own perceptions of identity, contributing to a deeper understanding of the consequences of virtual identity construction. Based on discussions with participants regarding the intersection of virtual experiences and real-world identity, the study explained the phenomenon of users merging virtual and real identities in three steps. The first part of the research focused on how users achieve impression management. Through exploring methods of impression management, researchers arrived at the second research finding, which pertains to the impact of virtual impression management on users' identity perception. The third research step involved deriving factors influencing users to achieve identity integration based on these effects.

In summary, the study employed six sub-objectives to clearly explain the research question: how users construct virtual identities. The research utilised mixed methods, primarily driven by qualitative research, to achieve these six sub-objectives. Each sub-objective accomplishment involved one or even a combination of two research methods and one methodology: autoethnography, surveys, and interviews. Researchers gained a comprehensive understanding of how users build virtual identities by explaining and giving meaning to the participants' experiences.

7.2 The key findings of the study

This research primarily revolves around users' motivations, inspirations, and foundations for creating avatars. **Research finding 1 revealed that users' past experiences can significantly shape their virtual identity or their desire for a certain virtual identity.** Users' capacity to freely explore identities within the anonymous VR environment facilitates their experimentation with diverse character roles. While the selection of avatars that represent identity may seem random, this process was actually influenced by both conscious and unconscious factors based on users' past experiences.

Motivation, inspiration, and foundation were key elements for explaining the research question, which was how users constructed virtual identities. A succinct summary of the research findings 1, 2, 3, and 4 is presented in Table 7-1. The study drew its theoretical framework and perspective on motivation, inspiration, and bases from Erving Goffman's impression management theory, specifically focusing on virtual environments and social contexts.

Research finding 1 explained the initial sources of inspiration for users in creating avatars. **Research finding 2 indicated that users created and adjusted avatars based on immediate feedback from their current surroundings, which was labelled as "cross-sectional self-presentation."** This result encompassed the social context, social groups, and the specific individuals they were engaging with. To interpret this finding, Chapter 6 referenced Goffman's nine methods of acquiring information in face-to-face social interactions and described how users gathered interaction information in virtual reality social settings. With its technological advancements, virtual reality offered a more direct and intuitive means for users to acquire information compared to traditional face-to-face social interactions. For instance, an anime-style female avatar decorated with pink colouring, flying wings, and a furry tail could convey distinctive personal characteristics. Observers could swiftly distinguish multiple symbolic cues, such as the "colour," "wings," "tail," and "the anime-style portrayal," to gather relevant social information at a glance. However, it was worth noting that virtual reality might not provide as rich informational context as face-to-face interactions, but it compensated for this communication gap by developing its own distinct virtual language to facilitate information exchange.

Finding 1	The inspiration for users to create avatars	Comes from past life experiences and preferences
Finding 2	The basis for users to change and create avatars *Cross-sectional self-presentation*	Based on the information acquired in the present situation in virtual reality
Finding 3	The motivation for users to change and create avatars	Fit in the environment and roles by managing their personal impression
Finding4	The motivation for users to change and create avatars *Longitudinal trajectory of identity formation*	To explore dynamic virtual identities, gain a better understanding of what suits them, and discover what they desire

Table 7-1: Findings 1-4

Research findings 3 and 4 were centred around user motivation. **Research finding 3 illustrated that one of the key motivations driving users to create and change avatars was to adapt to their personal impression management.** Drawing from Goffman's situational theory, this progression of users adjusting their roles to suit their surroundings could be seen as role matching, an intrinsically motivating and rewarding phenomenon. As the study highlighted, users developed pleasure and enjoyment from using avatars, finding happiness in exploring diverse identities. When situation and role alignment reached its zenith with a positive correlation, users' identity experiences also attained their ideal outcome. This also enhanced the convenience and benefit of communicating with each other.

Research finding 4 revealed that users were motivated to create and modify avatars to explore dynamic virtual identities, gaining a clearer understanding of what suited them and the type of identity they desired. The finding was termed the "longitudinal trajectory of identity formation". As users immersed themselves in VR, they continually adapted their virtual identities to better comprehend their own aspirations. This dynamic trajectory underscored the adaptability and flexibility of personal identities within the realm of virtual reality social interactions.

To explain the dynamic phenomenon of users continuously changing their identities, this study drew inspiration from Goffman's symbolic interactionism and dramaturgical analysis theories. These frameworks were used to analyse the various possibilities and methods by which users maintained a fluid identity. For instance, impression management was identified as one of the reasons for users' ongoing identity changes, with the concepts of "front stage" and "back stage" signifying changes in identity while performing on the public stage versus relaxing in private spaces; Goffman's concept of "Facework" revealed how users engaged in exaggerated behaviours to maintain their status and reputation in anonymous virtual social interactions; the concept of "stigma" in Goffman's work highlighted how users adapted their self-identity in response to social judgment.

In summary, the research suggested that the fundamental drivers behind users' avatar changes and creation could be better understood through the earlier findings related to motivation, inspiration, and the foundations for altering and creating avatars.

Finding 5	The culture environment for virtual immersive impression management	In a virtual social cultural environment dominated by popular culture, nostalgia culture, and meme culture, it has brought more ideas to users to experiment with various identities.
Finding 6	The culture environment for virtual immersive impression management	Personal symbol culture is reflected in users using symbols and elements more intuitively to express their identity in virtual social interactions

Table 7-2: Findings 5 & 6

Comprehending how users constructed their virtual identity was inseparable from a discussion of the virtual cultural environment. **Research finding 5 underscored the predominant influence of pop culture, subculture, and meme culture within the virtual social landscape. These cultural currents provided users with a wealth of**

inspiration and opportunities for experimenting with diverse identities. Pop culture, in particular, shaped the platform's overall style and trends in avatar design, leaving its imprint on virtual environments, themes, and room decorations in *VRChat*. The study posited that the integration of pop culture into virtual reality not only stirred users' curiosity to explore their identities but also offered them respite from their real-life personas. Subculture empowered users to express their individuality through familiar references, fostering a sense of belonging and building friendships with other users. On the other hand, meme culture promoted communal bonding through humour and shared linguistic references, infusing creativity and enjoyment into virtual social interactions.

The importance of personal symbol culture in virtual social interaction was the reason for a separate discussion here. **Research finding 6 revealed that personal symbol culture could help explain users' virtual identity management, encompassing avatar creation, themed social environments, social groups, conversations, and behaviour patterns.** This discovery was intimately linked to "Research Finding 2," where users gathered real-time social information by interpreting the personal symbols of others. At the same time, users also communicated their personalities, life experiences, or interests through unique symbols, imagery, and personally significant elements.

Finding 7	Consequences of virtual immersive impression management	The consequence of users managing their self-impression over an extended period on virtual reality social platforms is the integration of virtual and real identities

Table 7-3: Finding 7

The research was fortuitous in interview data collection, as the participants had an average gaming time of approximately 1000 hours on the *VRChat* platform, indicating that the research data was founded on experienced, long-term players. **Research finding 7 revealed that the consequence of users managing their self-impression**

over an extended period on social VR platforms was the convergence of virtual and real identities. This conclusion was reached through three pivotal studies, as detailed in Table 7-4.

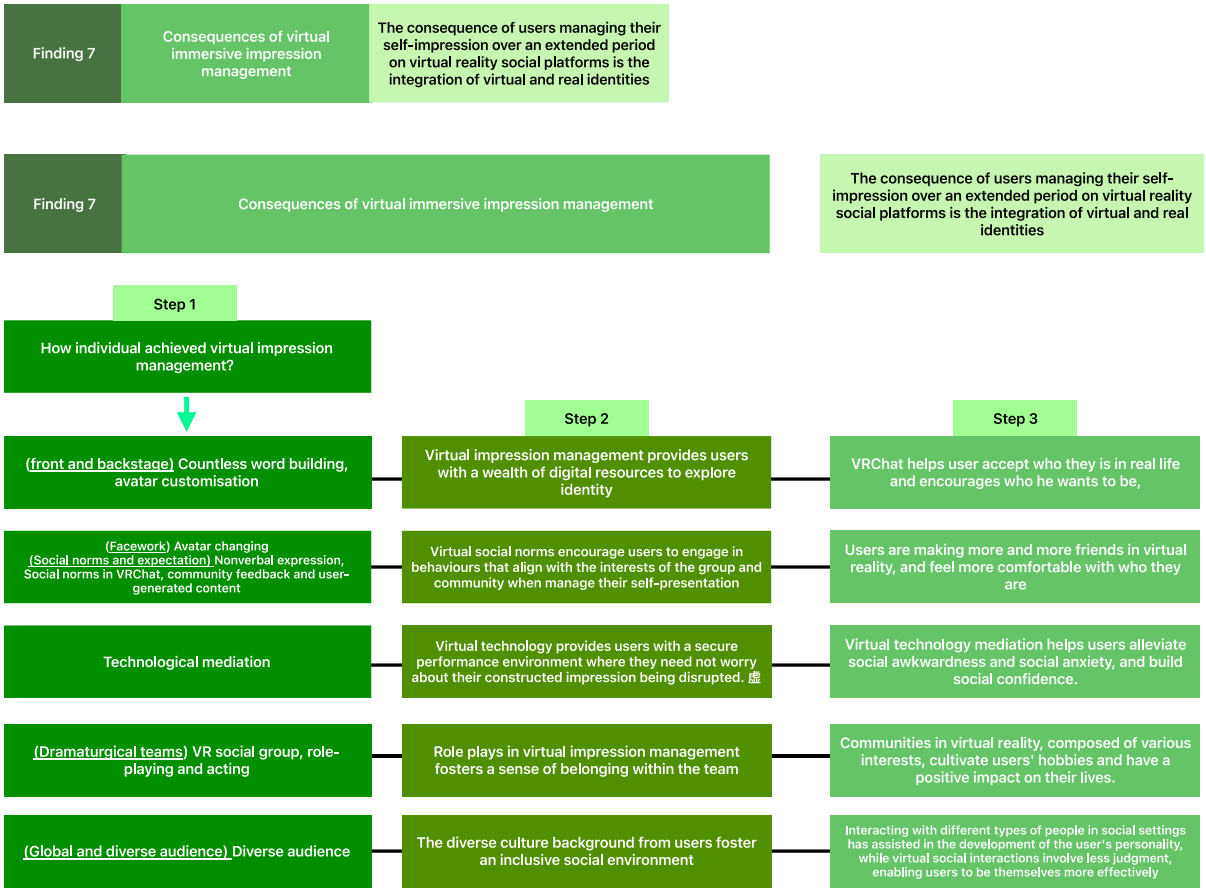

Table 7-4: Convergence of virtual and real identities

These findings were summarised as follows: first, the research outlined how users achieved immersive impression management in virtual reality. Secondly, the study categorized the virtual impression management method according to participants' experiences and systematically summarized the effects of virtual impression management on users, including the phenomenon of identity fusion from first-hand data. Finally, the research compiled these effects to identify the factors leading to users achieving identity fusion.

Table 7-5 indicated that users achieved identity fusion based on extensive identity

exploration in VR, finding a sense of belonging, making more friends, and discovering communities that resonated with their interests. This process often involved trying on different avatars, interacting with diverse groups, and experimenting with various social dynamics, which enabled users to better understand their preferences, values, and aspirations. Technological mediation provided users with a sense of security during virtual social interactions, reducing the fear of judgment or rejection and enhancing their social confidence. This confidence thrived within an inclusive virtual cultural environment where users could express themselves freely without the constraints or prejudices often encountered in the physical world.

Moreover, the ability to customise avatars and interact anonymously allowed users to explore dimensions of their identity that they might feel hesitant or unable to express in real-life contexts. Virtual social techniques, environments, and communities offered users a creative and flexible space for self-exploration, providing tools to construct and deconstruct their identities. This extended beyond mere experimentation; for many users, the virtual world became a sanctuary where they could align their virtual self with their ideal self, often achieving a deeper understanding of who they wanted to be.

Additionally, these virtual interactions often facilitated meaningful connections with like-minded individuals, fostering a sense of camaraderie and emotional support that might have been lacking in users' real-life social networks. The communities within VR often functioned as safe havens for marginalised individuals or those seeking to overcome social anxiety, enabling them to build relationships and develop a stronger sense of self. Through these mechanisms, VR not only supported identity exploration but also provided a framework for self-actualisation that might not have been achievable in the constraints of the physical world.

VRChat helps user accept who he is in real life and encourages who he wants to be,	Exploring multiple identities
Users are making more and more friends in virtual reality, and feel more comfortable with who they are	A sense of belonging
Virtual technology mediation helps users alleviate social awkwardness and social anxiety, and build social confidence.	A sense of security
Communities in virtual reality, composed of various interests, cultivate users' hobbies and have a positive impact on their lives.	A sense of belonging A sense of security
Interacting with different types of people in social settings has assisted in the development of the user's personality, while virtual social interactions involve less judgment, enabling users to be themselves more effectively	An inclusive cultural atmosphere

Table 7-5: The reason for the Convergence of virtual and real identities

As the virtual interaction process unfolded, users progressively gravitated towards the development and redefinition of their identities within a backdrop of belonging, security, and an inclusive social environment. Two distinct forms of identity fusion were observed:

The first form transpired when virtual social experiences prompted users to gain fresh insights into their self-identity, resembling a process of exploration—a fusion of the newfound identity with their pre-existing one. The second form of fusion emerged when virtual social experiences empowered users to confront identities that may have remained elusive in real life, thus facilitating a profound encounter with their perception of their own authentic selves.

7.3 The theoretical contribution of this study

This study made significant contributions in two key areas, each shedding light on crucial aspects of human behaviour in virtual spaces.

Firstly, it extended the applicability of Goffman's theory into social VR, presenting valuable insights into how individuals navigated social interactions in virtual

environments. Goffman's face-to-face theory has long been revered in sociology for its nuanced understanding of social performance and interaction rituals. By examining its relevance in digital contexts, this study not only enriches our theoretical understanding but also fosters interdisciplinary dialogue between sociology and virtual environment research. This extension of Goffman's theory provides a robust framework for analysing the complexities of online social dynamics, offering researchers a deeper understanding of how individuals manage self-presentation and impression formation in digital spaces.

Notably, James Gibson's theory of affordances (1997) and Sherry Turkle's insights (2005, 2) into online identity cognition provide a bridge for this research, linking Goffman's theories with virtual social interaction. On one hand, the concept of affordances views the dynamic relationship between users and virtual avatars as a reciprocal interaction. Virtual avatars influence users, and identity is not merely a product of user agency but also an outcome of the interactive capacities afforded by the virtual environment. This perspective guides the study to fully consider the characteristics and functionality of virtual environments when applying Goffman's theories to virtual social interactions.

On the other hand, Sherry Turkle (2023) emphasis on identity fluidity and digital culture encourages the study to examine how subcultures and popular culture within virtual reality impact identity construction. By integrating these frameworks, the research bridges the gap between traditional theories of identity and the unique affordances and cultural dynamics of virtual spaces, offering a more understanding of identity in virtual social contexts.

Secondly, the study offered an optimistic perspective on the transformative potential of digital technology in shaping personal identities. Through an exploration of virtual impression management, it illuminates the ways in which individuals utilise digital platforms to craft and refine their "second selves." In an era characterised by the

increasing integration of digital technologies into daily life, understanding the implications of virtual identity construction is paramount. By focusing on user virtual identity issues within the *VRChat* platform, this research not only fills a notable gap in the literature but also underscores the significance of virtual reality as a unique space for identity exploration.

Furthermore, by situating these contributions within the broader context of digital media spaces, this study enriches our understanding of contemporary human behaviour in VR. In an age where online interactions play an increasingly central role in social, cultural, and economic spheres, it is imperative to grasp the intricacies of digital communication and identity formation. By elucidating the dynamics of social platforms in VR, this research not only contributed to academic discourse but also offered practical insights for individuals, policymakers, and technology developers navigating the complex terrain of digital media.

Goffman's theoretical framework, which emerged predominantly from the 1950s to the early 1980s, greatly enriched our understanding of face-to-face interactions. Through his research, he introduced a series of conceptual tools that illuminate the structures underlying human interaction, showcasing the regularities observed in everyday social exchanges. His inquiries into face-to-face interactions delved deep, offering valuable insights into the dynamics of interpersonal communication. As technology advances, introducing novel modes of communication and interaction, there's a growing interest in evaluating the applicability of Goffman's theories within online environments. This exploration isn't new, as evidenced by studies like Kalinowski's (2011), which examined the relevance of Goffman's self-presentation theory within online dating platforms. Rutter's (2000) comparative analysis highlighted the differences in information gathering between face-to-face encounters, as described in Goffman's theory, and those mediated by computer-mediated communication environments. Furthermore, Schultze (2014) proposed intriguing connections between Goffman's dramaturgical and impression management theories,

suggesting parallels with performative and representational identities in virtual online environments. Numerous scholars have extensively discussed Goffman's theory's applicability in computer-mediated communication settings, particularly concerning online identity exploration within virtual worlds, as evidenced by studies by Salimkhan (2010), Miller (1995), Kilvington (2021), Garcés-Conejos (2013), and Freeman (2021).

By evaluating the development of Goffman's theoretical framework in existing literature, the researcher found sufficient data in traditional social media and gaming platforms to explain users' identity construction. However, due to the immersive and affordance-driven attributes of virtual reality (VR) environments, the ways users socialise and interact in VR differ from traditional media. This necessitates a new perspective to interpret users' self-expression in non-face-to-face interactions. This study addresses and supplements the limitations in the current field of research. The most direct evidence is that the emergence of VR media has transformed the way users tell stories. In traditional media, researchers would study data such as social media profile, images, and posted content. Similarly, Goffman's theoretical framework has been applied to explain user behaviour patterns cantered around the platform attributes of traditional media. In VR, however, users primarily represent themselves through avatars, virtual world environments, gestures, and processed voices, which lead to distinct social interaction patterns.

This study identifies the unique characteristics of VR and critically evaluates the social elements within virtual worlds. It explores how users tell stories and their interaction patterns, providing a nuanced understanding of socialisation in immersive environments. This research project not only built upon the advancements of prior studies but also significantly contributed to solidifying Goffman's prominence in the realm of virtual identity research. It delved into numerous common phenomena and patterns concerning the construction of identities by virtual users. For instance, “Goffman's theory applied to VR” in Chapter 6 demonstrated the correlation between the methods used by users to gather information in virtual social interactions and the

relevant theories posited by Goffman.

In this study, Goffman's theories were extended to virtual worlds in several ways. First, Goffman's dramaturgical theory and impression management were adapted to account for the characteristics of virtual environments. Goffman's dramaturgical theory, which uses metaphor to discuss people's behaviours in daily life, distinguishes between the "front stage" (roles performed for an audience) and the "backstage" (spaces where individuals drop their roles). In this research, his dramaturgical theory is linked to virtual avatars. In virtual worlds, players must use an avatar as a proxy to represent their existence. Thus, the roles users play in virtual environments can be seen as their daily performances. To achieve immersive performances, users often design their avatars with symbolic elements that represent their identities. The process of modifying and adding these symbols is analysed in this study as a crucial resource for exploring how users construct and seek their self-identity. This approach helps identify patterns in how users explore their identities in virtual reality. Wang (2023) indicates that Goffman's dramaturgical theory is dynamically reflected in the way users extend their identities. Research on "fit-for-purpose" interactions in the metaverse highlights how individuals replicate and idealise themselves, expanding their identities. Goffman's dramaturgical theory also emphasises the presentation of self across various social contexts, illustrating that users navigate their identities in a manner akin to theatrical performance.

Moreover, this research elucidated the fundamental linkage between Goffman's investigations and research in computer communication (VR), centred around symbols. The avatars generated through computer communication acted as embodiments of identity, crafted from symbols meticulously selected and designed by users. Essentially, these symbols were shaped by social and cultural contexts, with a profusion of them coming from the societal milieu. Consequently, this study underlined the importance of social and cultural environments, alongside individuals' lived experiences, in the realm of digital identity research. In Appendix C--The symbolic meaning of Avatar

design elements and the ensuing discourse in Chapter 6, the research focuses on the relationship between avatar symbols and users' cognitive perception of identity. The insight offered by George Herbert Mead (1934: 140), steers empirical investigations towards the notion that the self, capable of reflecting upon itself, fundamentally emerges as a social construct nurtured by collective experiences.

Kalinowski (2011) proposed that despite Goffman's works predating technological innovations, he viewed the self as a multifaceted entity. This multifaceted identity is shaped by social situations, cultural backgrounds, and life experiences. Virtual worlds provide users with opportunities to experiment with different identities. Turkle (1995) noted that computers and the internet have led to the conceptualisation of multiple selves. When discussing the consequences of virtual impression management, both the data and discussions support the notion that virtual digital spaces serve as significant environments for personal identity development. Virtual spaces are seen as identity laboratories, with relevant data indicating that users continuously explore their identities in everyday virtual life. The application experiences of avatars influence their perceptions of self-identity in real life.

Virtual social spaces should transcend mere role-playing games. By concentrating on identity management within social groups, researcher gain insight into the dynamic evolution of human identities. These virtual environments provide abundant data, facilitating the analysis and comprehension of patterns and prevalent phenomena in human behaviour. This study posits that virtual platforms will emerge as a prominent trend in future research.

7.4 Research limitations

Firstly, this research focused on discussing the consequences of virtual impression management and studied the dynamic changes of identity in virtual social interactions

and how they related to the perception of real-life identity. Many studies have been expected to explore identities in virtual spaces (Turkle, 1995; Thomas, 2007). However, it is difficult to determine how self-identity changes in these spaces. However, there was data supporting the claim that users' perceptions of real-life identity change after long-term virtual social experiences; it was challenging to determine if interactions in virtual spaces are the main reasons affecting users' identity integration. Even users themselves cannot provide clear answers about what influences their self-awareness changes. Kalinowski (2011) also suggests that evaluating oneself in virtual spaces is complex because role-playing and interactions in virtual spaces have elements of fantasy and fiction. Moreover, while users were using virtual reality, their real-life experiences are also influencing them, and it was difficult to extract detailed life information about users in recent years from interviews lasting from 30 minutes to 1 hour.

Additionally, interviews may fail to accurately capture users' genuine behaviour within virtual environments, resulting in self-report biases. Participants might offer idealised responses or struggle to articulate their actions and motivations accurately, potentially compromising the validity of research findings, particularly in studies addressing sensitive topics like identity. An intriguing observation emerged from the study: the infrequency of swear words or derogatory language during interviews, coupled with unremarkable behaviours. However, upon observing daily virtual interactions, researchers noted disparities in participants' behaviours and language use across different contexts. While acknowledging this phenomenon, the study did not view it as a flaw requiring correction. Rather, it illustrates users' adaptive role-playing in various scenarios indicative of impression management. Furthermore, qualitative research interviews already pose challenges in discerning the veracity of interviewees' accounts. Nonetheless, this does not impede the extraction of valuable phenomena and patterns from these dialogues.

Thirdly, it's important to acknowledge that research outcomes can be significantly

influenced by participants' cultural or contextual backgrounds and the specific virtual environments they inhabit. Through observation, it becomes evident that different virtual communities adhere to unique sets of social norms, etiquettes, and behavioural expectations. For instance, within furry communities, there exists a customary practice of greeting with head pats, alongside the necessity of utilising furry avatars to avoid being perceived as unclothed. While furry communities tend to uphold established norms, other VR communities may actively encourage identity exploration. It's worth noting the inclusivity of this study, which encompassed users from diverse virtual environment backgrounds such as furry, robotics, VR households, and mute communities. However, a notable limitation lies in the lack of representation from varied geographical backgrounds. The majority of participants, obtained through snowball sampling and other methods, hail from the United States, where the *VRChat* user base is notably prominent. Though there was a brief encounter with a Japanese individual, language barriers led to the premature termination of the interview. It's essential to recognise that VR users from diverse cultural backgrounds may interpret avatar choices, gestures, and communication cues differently, consequently influencing the depth and quality of social interactions within virtual environments.

Fourthly, this study most focuses is about positive impacts of the convergence of real and virtual identities on users, while lacking discussion about potential negative effects. For instance, what kind of psychological impact might virtual experiences have on users when they affect their real lives? Upon reviewing the interview data, most respondents mentioned the helpful and beneficial aspects of the VRChat virtual community, which is precisely why they spend thousands of hours engaging in virtual social interactions. Few users discussed negative effects. For example, Lucy mentioned that virtual social interactions sometimes made her feel anxious: “Where they were in a public server and someone came up to them and said something really raunchy and rude, um, but they didn’t want to block them because they felt bad for blocking them.” However, this does not necessarily indicate a direct connection to her identity integration. In future research, it may be valuable for researchers to explore the

relationship between the negative impacts of identity integration and users' mental health.

Lastly, the findings of this study on digital identity may be influenced by the passage of time. One key assertion of this research is that user behaviour and identity can undergo changes over time. Engaging in longitudinal studies that track VR users' evolving behaviours and identities can provide invaluable insights into how identity construction and evolution unfold in virtual environments over time. Understanding how user identities adapt, persist, or transform over time can uncover patterns, trajectories, and underlying mechanisms that shape dynamic virtual identities.

While interviews were utilised to gather dynamic information about identity changes, this method, though viable, may not be the most optimal. Given sufficient duration, studies could consider employing diary methods spanning one or two years. This would allow participants to regularly document changes in their avatars and perceptions of self-identity, potentially offering a more suitable approach for investigating dynamic identities.

Initiated amidst the COVID-19 pandemic in 2020, this study was conducted during a period marked by significant global events such as pandemics, economic downturns, geopolitical tensions, or cultural shifts. These external factors may also impact users' behaviours and attitudes towards virtual reality, thereby altering the dynamics of identity exploration, social interactions, and participation in virtual communities. Indeed, during the interview process, several participants spontaneously discussed the influence of the pandemic on their social behaviours.

7.5 Recommendations for future work

Goffman's theory holds an unshakable position in future digital identity work.

Although his work predates the digital age, especially his dramaturgical approach to social interaction and his concepts of impression management and self-presentation can indeed be applied to the study of digital identity. As researchers forge ahead, it is essential to incorporate his theories while remaining cognizant of the unique characteristics and dynamics of the digital age.

This study regards Goffman's research as an investigation into situational identity. Whether it's impression management, front stage/backstage behaviour, or identity performance, Goffman emphasises the impact of social environments and situations on individuals, as well as how individuals gather information to alter impressions within these contexts. Goffman (1959: xi) indicates his consideration of how individuals present themselves to others and conduct themselves in everyday work environments, guiding and controlling the impressions formed of them and delineating the types of actions they can and cannot undertake while maintaining their roles. At the core of his research are the universal impression maintenance patterns and identity construction within situational interactive environments.

Furthermore, this study suggests that future work should not only reference Goffman’s theories but also consider Sherry Turkle’s research. Turkle, a witness to the digital potential of her era, certainly did not overlook Goffman’s contributions. Instead, she interpreted digital identity from a different perspective. In recent years, Turkle’s research has shifted from the initial focus on identity expression to examining the quality of relationships facilitated by social networks. Turkle (2023) argues that constant connectivity fosters a sense of superficial relationships and hinders the development of genuine empathy and self-reflection. She investigates how technology affects our sense of self, as well as our capacity for solitude and deep thinking. While Goffman concentrated on situational identity studies, Turkle’s work emphasizes the impact of technology on the self and its relationships.

In this study, while leveraging Goffman's theory of identity, we also give significant

consideration to the dynamic evolution of identity within the realm of digital technology. This part of the research discussed the "Longitudinal trajectory of identity formation" and explored the "Consequences of virtual immersive impression management," focusing particularly on the dynamic identity development of *VRChat* users. It explores users' history of changing virtual avatars and the corresponding shifts in self-awareness at different stages. Notably, the research findings suggest that users who are keenly aware of how their virtual social experiences influence their self-identity typically invest between 500 and 2000 hours in the game. To enhance the study of digital identity, we propose an initial observation period of 2 to 5 years through interviews, diaries, or longitudinal studies, providing more precise data insights. While a doctoral project typically spans 3 to 4 years, conducting observations and research exceeding this duration becomes challenging. Presently, research faces limitations in accurately discerning the fluctuations in self-identity within these spaces, identifying factors influencing both virtual and real identities, and understanding changes in user self-awareness. However, an extended research period would undoubtedly enrich this investigation.

For example, future researchers may consider employing diary studies, a method commonly used in social sciences, psychology, market research, and other fields, to gather qualitative data about participants' daily lives, experiences, and behaviours. These studies can provide insights into patterns, trends, and subtle differences that other research methods may overlook. Diary studies also offer participants the flexibility to record information in real time using their own words. *VRChat* users commonly engage in recording virtual conversations via video, which serves as a potentially rich form of diary documentation. Participants could chronicle their reflections on avatar changes or design decisions based on chronological events or emotional states. In summary, longitudinal research holds promise for gaining deeper insights into users' evolving life experiences and behaviours over time.

This research delves into the interplay between identity, digital technology, and virtual

environments, emphasising how these domains shape and reflect human experiences in the digital age. It bridges foundational sociological concepts with contemporary understandings of virtual identity construction and social interaction. By employing autoethnography, interviews, and surveys, this study highlights the profound ways in which users navigate, express, and negotiate their identities within immersive virtual spaces such as VRChat. The findings demonstrate that avatars serve as both a medium for self-expression and a tool for exploring the fluidity of identity. Users imbue avatars with personal symbols that convey cultural, emotional, and autobiographical narratives, enabling cross-cultural exchanges and fostering a sense of belonging.

Moreover, the research underscores the duality of virtual interactions: while they offer a safe space for creativity and self-exploration, they also challenge traditional understandings of identity by enabling users to oscillate between physical and virtual selves. This dynamic is enriched by Goffman's situational identity theory, which finds resonance in the avatar-mediated interactions of virtual environments, and Turkle's critique of digital connectivity, which interrogates the depth and quality of online relationships. Ultimately, this study reveals that virtual environments not only mirror but also extend human identity, fostering new forms of storytelling, social connection, and cultural negotiation. It calls for further exploration of how digital technologies shape and redefine the self in increasingly immersive and interconnected spaces, urging designers and researchers to consider the ethical and emotional implications of these evolving landscapes.

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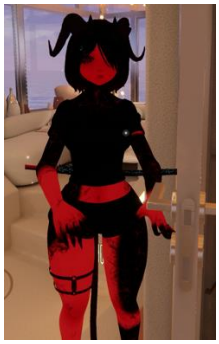
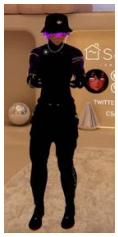
Appendix

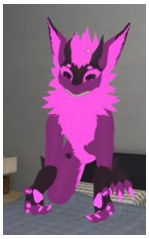
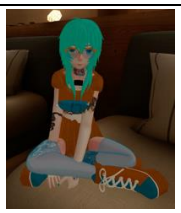
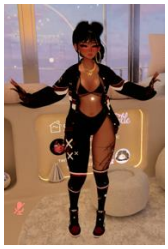
Appendix A--The number of frequently used avatars

Participant's name r	The number of frequently used avatars	Avatar acquisition
Ben	1	Customise
Betty	7	Customise
Carol	2	Customise
Chole	3	Online purchase
Clive	5	Customise
Eva	6	Customise
Duke	6	*VRChat* avatar world
Edwin	3	Customise
Eric	3	*VRChat* avatar world
Gavin	1	Customise
Gloria	12	*VRChat* avatar world
Julie	4	Online purchase
Jerry	5	Customise and Online purchase
Alex	3	Online purchase
Kate	4	Customise
Lucy	4	Customise and Online purchase
Molly	1	*VRChat* avatar world
Polly	4	*VRChat* avatar world
Luke	4	Online purchase
Jamie	2	*VRChat* avatar world
Vince	2	Customise

Appendix B--The type of avatars users prefer

Participant's name	Avatar preferences	Quote	Avatar look
Ben	Furry	"*I like flow toys." "This is like my avatar I use all the time."*	
Carol	Demon	*"This one's my main one. I got it commissioned for me. My friend made it for me. I love this because I've always wanted like, a kind of demon."* *"And then here's another one. This one is more complicated, this one is a public one, it is a cute little kitty, this one has a little red fork."* *"Demons are kind of my thing."*	

Clive	E-boy	*"I like mainly E-boys. Cause they're more like humans."*	
Eva	The colour scheme of Japanese anime	*“I think it's like the colour scheme and just how much effort I put in it to reflect how much I care about that made over there. It's neat colours as well."* *“I was more into it (Japanese anime) when I was younger, but I think it's very interesting. Yeah. Oh, the pastel colours. I think they really pop sometimes."*	
Duke	Aesthetic pursuit	*"I kind of like avatars that are more aesthetically and some they look like coherently made."* *"I tend to choose avatars that have these sort of interactable things with them because it looks cooler and creates a more like real life sort of thing."*	

Eric	Furry	*"Well, this avatar my favourite is because, well, honestly, I'm a furry."*	
Gavin	Female gender	*"The only avatar I use is this one"* *"I imagine my avatar as me if I was born a female"*	
Gloria	Humankind	*"I look for [human] kind, like hyper-realistic sometimes. Colour, like hair colour and dressing style."*	
Julie	Anime style	*"I was looking for avatars that had that like anime style"*	
Jerry	Nice facial animations	*"I really like the face of it...it's still virtuality"* *"For most of my avatars that were face, but I, I feel like it's the most important. Cuz I don't like my face in real life."*	

Alex	Cyber punk	*"It's very cyber punk...this is my favourite avatar because it represents what I love. And also purple is cool."* *"I want curves. It needs to be a robot, and preferably I need to have a good feeling about it."*	
Molly	Goth girl	*"I specifically had been trying to find a good, like goth girl avatar, cuz I dress pretty goth in real life and I like that look."*	
Luke	No gender avatar	*"It's Yuki...It's from, um, an anime."* *"You cannot tell if it's a male or a female, so it's kind of good for every occasion."*	
Vince	Spooky non-human avatar	*“My favourite avatar just because it's kind of, spooky and I like spooky avatars."* *"All my designs are non-human, sort of weird characters."*	

Appendix C--The symbolic meaning of Avatar design elements

Participant's name	The symbol of the avatar	Quote
Betty	Wings	"*The wings were soft, kind of again, kind of essentially a kind of a coming out, being set free, in a sense. But at least here I feel that way when in real life, it's not so much like that. I'm surrounded with people who are a little less tolerant of certain lifestyles and ideas."*
Clive	Ear and tail	*"In VRChat it's more like an identity in a way with, especially with me and my friends. We all wear ones that match our personalities. Similar. For me, it's ears and tail and some kind like cosiness."*
Julie	Cloth style	*"I, as a dancer, it's very important that I present myself a very specific way. To match what I'm doing. So if I'm goanna be doing hip-hop, like I need a hip hop style… so like what the clothing style is. It's very important."*
Chole	Gender Male	(Female user) "*And ever since then I was like, well, I want to trade in the male. I was able to express that energy better because VR idea like provide you this unique experience of being able to take on different identities regardless of what you want in real life*."
Jerry	Gender Female	"*In real life I'm a male, just normal male,*

		but in VR Chat I'm more like female…I am gender free, but I feel more female in VR."

Appendix D- Small size avatar and treatment from other users

Participant's name	Quote about small size avatar	Users' intention	Summarise user intent
Julie	*"But even if you're just like a little shorter, you get treated like different. Either that's like your friends, like leaning their arms on you or just people like being more like touchy-feely, wanting to head pads and all that kind of stuff."*	Friendly interaction from others	Get friendly treatment from other users
Kate	*"If you have this avatar, uh, people kind of see towards you, like look at towards you in the same kind of way. If I walk around and I'm having my smaller avatars on, then they will more or less kind of baby you or be softer towards you. So, it's kind of just a question of, uh, what am I feeling right now. Like, how, how would I want to be treated? And that kind of goes into the decision making with what avatar I."*	Gentle treatment from others	

Luke	*"You saw the tiny one… As soon as you go there, every woman, real woman in a room will turn on your head and come to cuddle you. Happens every time"*	Friendly reaction from female	
Gavin	*"The vibe that you see from me right now is what I want to give off, you know, and being smaller also allows people to feel more comfortable around me because the, you know, I'm not intimidating."*	Let others feel comfortable stay around	
Gloria	*"I like this one because it's easier to run around in, in certain worlds. Cause people are a lot nicer if you're like a smaller avatar."*	For a nicer attitude	
Jerry	*"I usually want to be small cause usually people are just playing like that and giving you a pass. So yeah, that's really a reason why I'm, I like to be small."*	Friendly attitude	

Appendix E- VR social interaction rules and pattens

Coding number	Details of information	Participant's name	Quote
CO11	Virtual reality allows users to be less affected by the consequences and more likely to express themselves authentically.	Betty	*"They definitely feel like you get more of a sense of who they truly are in face to face, because there would be more real-life consequences that might come from that interaction. So, when people are interacting in VRChat, there is less of that consequence for them. So, they can be more true to how they feel."*
CO12	The avatar is not only a representative of identity, but also a protective film that users use to protect who are they.	Eva	*"I would also say that it's a little easier to talk to people, um, in virtual reality. Cause I feel like they're not really saying me."*
		Edwin	*"We have eye contact right now because our avatars have eye contact, but I don't actually have to have eye contact with you… I think people have that disassociation."*
		Julie	*"I like dancing in VR a lot more. I feel like I'm able to express myself a lot more because I don't get as much stage fright in person. I got so much stage fright when I would dance by myself, like to the point where I stopped doing studio because I got so anxious. But in VR, I*

			found that it takes a lot the weight off because people aren't staring at me, you know. Like they're not looking at my actual body, not seeing. real self, they're seeing an avatar, and my avatar could be whatever I want it to be. I feel like I can be more exaggerated."
CO13	In VR, the deep stylisation of room theme and avatar style, and functionality of transforming space make it easier for users to find others with same interests, moods and vibes as them. This makes users more willing and easier to make friends in VR.	Duke	*"Socializing with people on VR Chat, it's a lot different compared to how you'd socialize with people in real life because you don't know these people…you mess around and have a joke stuff, but like, if you're in a specific room and you're feeling a specific mood and people in that room are also feeling a specific mood, you tend to open up a lot more, I've opened up to strangers on here than I have like therapist… you'll always meet a demographic who feel the same way, or you will vibe the same way you do compared to real life where it's circumstantial. I can go to a sad world and find people who are sad. I can go to a club and find people who want to drink vibe..."*
CO14	The profile (Bios) function and avatars	Duke	*"Obviously if you go to a pub, you'll meet people who want to drink, but*

	detail and style in virtual social allow users to quickly obtain some information about others through before they started a conversation.		*it's not as easy. It's so much more convenient in VR to make friends based on the vibe that you are feeling at that any at that given".*
		Edwin	*"Like there was someone I met yesterday, literally. I met them yesterday and I saw them, they were sitting in front of the mirror, and I just opened up the menu. You can click on them (profile) just to see like a little bit about them, because some people have like different things they have in their bio. Open up your menu, click them. I look at their bio and I said, I'm shy and I just looked at them and just started talking to them, hello, how you are doing today?"*
		Gavin	*"I feel like if someone has, has an avatar, custom made for them in the way they want it, then that embodies that person. I like to look for other people is like this in VRChat. But IRL, it's different.*
		Gloria	*I like to read people's bios before I speak to them, and their bios can give away what kind of person they are. Oh. Cause like in real life you can't click a button and see a bio about."*

CO15	Virtual culture phenomenon: Users in virtual reality are quite inclusive, users perceive the social process to be less judgmental than real life.	Edwin	*"In VR chat, people don't see you a certain way. It's weird to say, as an African American male, I've gone through a lot of things first-hand where people will not talk to you strictly because you are of a certain colour… I think that when you're in a virtual space like this one here, at least for me, because I can't speak for anybody else, it's easier for me to judge or not, or take you as you are based on how you're speaking to me."*
		Gavin	*"But the difference between IRL and VR is probably the only difference is probably the fact that, in IRL, I wouldn't end up in this scenario where I get to actually socialise with people that I know nothing about. It's harder, because in IRL, you get more worried about being judged… but in VR, it's easy to be my full self. People don't judge that harshly."*
		Luke	*"I played before playing using this, I played the massive multiply on- line game, like all the Warcraft. I learned that yeah, you can be like an elf, but at the end it's you. A human*

			dynamics interaction will be the same. The only thing that's changed is that you don't judge me. I look, that is poor dude, this homeless dude, this fat dude, this slim, high short dude. It's what I'm saying that matters. That's the only difference."
		Jamie	*"I guess to answer your question, I've made so many memories off here and I can actually like be myself without being judged in the real world. I've had been judged a lot in the real world and whenever I'm on here, on VRChat, I could be myself and I could do a lot of things that I can't do in the real."*
CO16	Virtual culture phenomenon: young users, as the largest group on *VRChat*, have their own communication way which can see as a part of VR culture. However, this language culture also differs in PC and headsets devices.	Betty	*"You go into the public lobbies and you end up running into a lot of rude people and screaming children, things like that. that's one thing that I actually work on is I try to go into the public lobby and reach out to people whose experience the newer users don't know that there is a lot more to VR chat than just what you see out in the public lobby."*
		Edwin	*"You will find, I think that people are less likely to spark a conversation with somebody in real life than they*

			are to do it in VRChat. Even in that same light, you'll find that people talk way more reckless in VR chat than they would in real life."
		Molly	*"I've definitely found if there's any world with kids in it, they're just goanna be rude. But if you find worlds where you can only get in with like a PC or something, usually the people are a little more mature sometimes."*
		Gloria	*"I feel like there's a huge difference when I conversate with people from like desktop PC to desktop to just like Quest two, because a good majority of people on Quest two are children whose parents just gave them a headset for Christmas and it's like just a bunch of screaming children. Some desktop VR players are like that."*
CO17	The advantages and disadvantages of VR social shrinking the physical distance and space between users were specifically discussed in the topic of virtual dating theme.	Gavin	*"If I was to be in a relationship with someone who lived quite far away, but still in the same country where I could drive there and meet them…With VRChat, the difference through the relationship is that, hey, wherever I am in the world, I can still be with her wherever she is in*

			the world, you know, in VR. So, I guess the difference is I can be there whenever she needs me, if she's able to get on."
		Jerry	*"I feel more close (with others) …when I was with someone, we usually slept together every day in VR. Spent like six hours pay per days in VR together. So right at the beginning of a relationship, uh, I feel like it's more like if we were already together in a, in a house. But I think it is different in real life relationship."*
		Kate	*"I guess what it has taught me so far is to value space, um, because now it's a lot easier to meet up with, uh, your partner, uh, when you just open the game and hop in. Um, but it also opens this problem. Um, sometimes people just need space from each other… Hey, we've like, literally talked every day since two weeks ago. I need like some alone time and VR makes that a lot harder."*
CO18	User believed that social with others in VR is simpler, interactivity	Gavin	*"I feel like the way I make friends now is different than the way I make friends in IRL. In VR chat, it's just*

	and more relaxed, and it can even help them escape from uncomfortable social situation.		*easier to, you can walk up, As I said, you can just walk up to people and say hello. Most of the, most of the time people give off like a cool kind vibe depending on where you go, what works you visit. But most of the time people just seem cool from even before you've even interacted with them, you know? So it's, it's a lot easier to make friends in VRChat, because as I said, IRL. Weird."*
		Alex	*"(In real life) It's based on what's happening in real life. Someone will just be looking on their phone, talking about music or talking about something."* *"(In VRChat) While in VR you can have a little bit more say crazy event. Someone could be check out swords and just tapping things left and right, looking at their avatars, there would be different opportunities…Which is not something I would do in real life."*
CO19		Kate	*"It's a lot easier for me to be myself in VR. Um, then in real life, because in real life it kind of feels like there's no way you can, you know, escape from a situation that gets*

			uncomfortable. While in VR chat, all I need to do is open up my menu and click respawn and then leave, and it's like sinking down into the ground like this."
		Molly	*"I definitely feel like socializing in VR chat is a lot easier than real life. in VR chat, if you're getting along with someone, you can send them a friend request and like, if they want to hang out, they don't have to have your phone number or anything."* *"And if you accidentally say something awkward, you could just kind of move along because usually there's other people and everyone's used to being interrupt- ed. Whereas in real life, if you're having a conversation with someone, you can't just be like, Oh, hey, here's a new person. Let's go talk to them too. It just feels a little more loose in the virtual world,"*
		Vince	*"I guess I'm more, more inclined to push myself to go to social situations in VR because I know that it's easy to get out if I don't like it*

			kind of thing. Whereas in real life, I might be a bit more reserved in my decision. What social events I'll attend… if there's someone that you don't like in VR, you can just mute them, and you don't have to listen to them at all. Or you could just like instantly leave and go to a different location, which you again can't do in real life."

Appendix F- The reason why the user feels more confident than before

Coding number	The reason why the user feels more confident than before	Participant's name	*Quote*
CO21	Participants have found their own group in *VRChat*.	Ben	*"Generally, it helped my confidence a lot and I find it so much easier to just talk to people. I'm generally quite introverted and generally find it quite hard to have conversations and say hello. Especially people like I just don't know. And I find that so much easier now. Like so much easier. It can come in time. Like I say, I used to roleplay the doom guy and not talk to anybody."* *"It's easier when you find the right crowd… It's helped me to be more confident and be more comfortable and accepting myself as well because I never really consider myself like a furry or I kind of do now. So, I kind of feel like I discovered a part of myself, I guess, throughout VRChat."*
CO22	Virtual reality provided users with the freedom to express who are they, which consequently fostered a sense of	Carol	*"If I'm going to be honest, I'm not really a person off this headset. I do talk to people, it's not something I like to do".* *"It just feels more comfortable if I start talking to people because it feels like in*

	self-assurance.		*this world. Yes. There's obviously going to be some trolls and whatever. But I feel like in this virtual reality world. I feel like most people have the comfort to be themselves and they can express their emotions."*
		Duke	*"I've got multiple avatars that look very different. Um, so like as you are, as you become more confident, you spend more time in VRChat, I would say you get a more under better understanding of the avatars that you'd like to dress up in."*
		Kate	*"It started with the way that I just felt more comfortable about myself because, um, I mean, non-binary is really hard sometimes… I don't want to be female, I don't want to be male, don't want to be anything right now. I just like, I wish I was just a potato floating in space. Um, but VR. Kind of more comfortable for me to walk around the way that I am. So self-acceptance has been a part of that."*
		Vince	*"It definitely has affected me in real life in that sense as well as, yeah, like my sort of identity and confidence in social situations via chat has helped a lot with it… If people don't like my personality, then I don't really want to be around them anyway, so might as well be myself."*

CO23	VR social facilitated the development and public display of users' hobbies	*Chole*	*"The amount of confidence that dancing gave me, well, I started dancing in VRChat, and then I started trying it without my headset on and recording myself and building it up."*
		Molly	*"I've always loved to sing. But I don't like going out to karaoke places a lot, so finding worlds in here where I can do karaoke and escape rooms and stuff has really helped my confidence in like, makes me feel more like I'm actually getting out and doing things rather than just sitting on the couch".*
Three other users mentioned that virtual reality boosted their self-confidence but without further discussing why.		Edwin	*"I think for me, in terms of VR chat, it's allowed me to be, I think 10 times more social than real life. I am a very social person, but how do I say this In VRChat, if I see somebody, I'll go, oh, hey, what's going on? How are you doing today in vi chat? I just do that, you know, and now I realize, I become more social in real life."*
		Gavin	*"Yeah, like now I feel a lot more confident about going out and stuff like that, and I feel a lot more confident in my ability to talk to people and just be myself because of VRChat. "*
		Jerry	*"It made me less shy that main steps, but we are improving because now I can talk in front of, uh, my full class without*

		being stressed, like 80 people. I can, I can talk to 80 people with, before I couldn't for sure. "
One user felt that her social confidence had not changed, and she did not give a specific reason	Polly	*"Oh, I'm still very shy and I don't really go out that much, I do. see myself, like have put myself in more situations of being, going out to more social places. But I mean, social gathering, gathering, I say like, uh, maybe like a bar or a festival or something like that. the social aspect. Talking to somebody that feels very complicated."*

Appendix G-The user's pursuit of identity and the functionality of virtual world

Participant's name	The identity they initially adopted at the beginning	The challenge of finding identity	The identity they later assumed after a period time
Ben	*"When I first started VRChat…I used to like Robots and Doom Guy as my favourite."*	*"Poor avatar rated. Not suit anymore Cannot be adjusted"*	*"I am generally more happy talking to other people who are furry avatars. I'll generally be more comfortable being your friends and saying hello and just having a general chat."*
Betty	*"From DC Universe."*	Detailed character editor. Character editing	*"I'm using my main look right now. The most part of it I usually go for would be the short blue hair. It's just something that I kind of started doing back in other online games."*
Carol	*"When I first started, obviously my friends were playing VR chat way before I did, so obviously they knew what I liked, so they had some avatar saved for me that were red and black.*	*"None of them were bad, it's just none of them felt like me. "*	*"It was different trying to find something that represented me without me knowing until I got further into the arch. I'm like, oh, okay, this is what I want to see in an avatar. And then I paid someone to make it for*

	And I like them."		*me."*
Chole	*"Yeah, in a way I was still consciously looking for it. I was looking for fun to present myself."*	*"I can't explain why I can't just feel that way, but I tried on different Avatars that didn't really put up with me really well."*	*"I feel like I've gotten a lot clearer about body accessories, like overall style and face even. I would say the simplicity of trying out many appearances and many identities in many different worlds gives you a lot of opportunities to discover, perhaps even on the surface, your identity."*
Clive	*"I kind of came across it over time. I played with like a fallback character for a while"*		*"Now like mainly E-boys. Cause they're more like humans. And then I like wolf like avatars as well. "*
Eva	*"The black and white one you saw was pretty much what I was looking for at the time…And I was really into that at the time and I just loved the whole black and white."*	*Character editing*	*"Clear idea of what I'm looking for I've dabbled a bit here and there in Blender trying to, uh, create 3D models, just simple things so far."*

Duke	*"When you first start VR chat, you don't really know what kind of avatar you're after because you are not really aware."*	*"that's sort of how you get your avatar taste. It's very much just, you know, whoever you run into and however your taste develops."*	*"I sort of like took an interest to that I now have multiple female avatars."*
Edwin	*"I did look for avatars that had black skin, 100%. I did and I didn't find any. I had to make my own."*		*"If they know who Beris is from Dragon Ball Super. That was who I was and that was just my avatar the whole time. That was my main avatar now. "*
Gloria	*"Not at first the time"*		*"Like a month after I joined, I started looking for avatars. That kind of represented me a bit more as it's more of anime wines"*
Jerry	*"I was just, uh, in public lobbies, uh, trying to find random."*		*"I would say have two different type of avatars. Uh, just normal avatar like this, like, uh, plastic, uh, female…And I have another type of*

			art eyewear, one for dancing because I'm dancing for clubs, lab, dance clubs."
Alex	*"Yes, Robots, it was the very first thing that I looked for, and I'm still using it well now."*	*Character editing*	*"Now, I am very specific about what I want in my avatars, and if I can't find it, I'll just make it…So here's what I need when I'm looking for an avatar, I want curves. It needs to be a robot, and preferably I need to have a good feeling about it."*
Kate	*"When I first started playing, um, I kind of just picked whatever I felt was cute"*		*"After 500 hours I was thinking about the identity stuff."*
Lucy	*"I think when I first joined VR Chat, I didn't understand how. Uh, avatars worked."*		*"Honestly, the avatar that I'm looking for to buy basically looks the same as…I guess it's just the aesthetic of the avatars. Like the emo kind of scenic aesthetic…I don't look like that anymore cuz*

			I'm 27 and can't wear those kinds of clothes to work and that kind of thing. So it's like the embodiment of what I still want to be"
Molly	*"At first I started looking for avatars that like from games that I knew or some-thing like that."*		*"But for now I've been kind of just looking for things that give off. , you know, a more adult vibe, but still kind of not basic, if that makes sense."*
Polly	*"Uh, when I started, I personally didn't really know what to expect"*		*"I found out that I kind of like a little bit of a darker avatars. Uh, like a weird dark, but not, but still human because this can be for a reason."*
Vince	*"I was just going into it to see if I could find any funny things."*		*"I'm sort of in a constant state of exploring and I'm always wanting to try new things. I'm not sort of happy to, to settle on one thing and stick, stick with it. I want to*

			constantly see the new."

Appendix H-Identity fusion

Participant's name	The example of identity fusion	Summary
Ben	*"Well, my real life is with the top hat and goggles which I want like festivals and things, and I wear furry things and since I started micro dosing in shrooms."*	The avatar's attire affects how the user looks in real life
Betty	*"I've been pretty heavy all my life too. So back in 2020, I was about 417 pounds. That's extremely overweight when I came to certain realisations about some things that helped me break out of depression, like coming to that realisation of being transgender and whatnot. I decided to start making goals for myself and get in better shape. And now this year, right now, I'm at 230 pounds. I'm still trying to get better… Of course, I really want blue hair. That's, like, one thing. And then again, trying to go for thinner look, trying to be more of the feminine variety… Well, yeah, I'd start trying to take better care of myself because if I want to reach what I feel like is a goal for me, and I had to be healthier."*	(The user is using a thin female avatar with blue hair at this time.) The avatar experience gives the user a positive life impact and motivates the user to take better care of her selves.
Chole	*"In VRChat helped me accept my identity in IRL and all these things I want to be and all these things I am. Because*	*VRChat* helps user accept who he is in real life and

	obviously there's a big barrier between physical things that I am and the VR chat things that I am. But they're still a part of me. They're still my ways to express myself and my needs. And it helped me understand all of it."	encourages who he wants to be。
Clive	*"The body, the hair, and then the size of him. In IRL, I'm about here to this, this character. there's some worlds that help calibrate, help calibrate your avatar to the IRL, I calibrated this avatar to my IRL self and I'm short compared to this avatar."*	The user refers to the body shape of the avatar.
Eva	*"I've always had very extreme looks in the real world…But in VR, you can be whatever you want to be, so it takes away the limitations of feeling uncomfortable in your own skin. I think that can also be a good thing for people to cope with to some degree…I'm always fluctuating on my style, so mine's all over the place, but ultimately, I think it's important that people just be themselves. On this platform, it really gives you the ability to do that."*	Avatars help users accept diversity and their individualized selves.
Jerry	*"I feel more female in VR now…when I was in the VR in the beginning, I was just straight. But now, uh, I feel like I'm bisexual, so now I don't mind to date with*	Avatars play a significant role in shaping users' self-perception of their

	a guy or a female."	gender identity.
Alex	*"So, this avatar has changed my, my hobbies in real life because when I saw this, I had many ideas and I really wanted to express them in some form or way. I wanted to do that with friends, but I couldn't really fit or force my way into my friends or anything. I just couldn't really do it with people. So I figured I'd start making videos."*	Virtual reality helps to develop user's hobbies, which positively affects the user's life.
Kate	*"Actually there's a lot of things that have changed after I've really come into VR Chat and literally made, uh, over 1,800 hours in here in the past few months. Um, it's. Start, it started with the way that I just felt more comfortable about myself because, um, I mean, non-binary is really hard sometimes with, Oh, I don't want to look the way that I look right now."*	Users feel more comfortable with their gender identity
Molly	*"I feel like you'll never get like a 100% exactly what you want to be. I feel like it's kind of in real life where you'll go through phases of, right now I like to explore pretty worlds, or right now I think I want to go hang out with people, or right now I just want to play games. I feel like it's just kind of like developing your own personal."*	Virtual reality experience develops user's character
Vince	*"I used to be very sort of, I'd hide my*	Users feel more

	personality in order to not sort of annoy people or not to stand out too much, but you to sort of help me just get more confident with just being myself because I now know that, you know, people. If people don't like my personality, then I don't really want to be around them anyway, so might as well be myself."	comfortable with their identity

Appendix I-Goffman's theory applied to virtual reality

	How individuals gather information in face-to-face interaction by Goffman's theory	How individuals gather information in virtual interaction in *VRChat*	Related data
Appearance	An individual's outward appearance can serve as primary information about their social identity and social attributes. People tend to make judgments about others based on their clothing, appearance, body language, and other visual cues (Goffman, 1959: 15).	Avatar fashion, face, hair, body size, closing, accessories, skin tone, age, gender,	*"I like the clothing, like the outfit…I feel like French are like stylish and stuff and it'll be like, an outfit I would go to like, uh, something prestigious or something and I feel like it, it hit me because I like fashion and I like, uh, luxurious stuff"—From User Vince*
Nonverbal interaction	Because the personal realities individuals care about are currently imperceptible, reliance on appearances is crucial. For instance,	Facial expressions, gestures, body language, lip syncing, emoji	*Like I've recently added, uh, textures to my avatar. So, like the textures you see on my hoodie and stuff like those were recently added…I have these gesture toggles that I*

	non-verbal cues such as facial expressions, gestures, posture, and eye contact serve as significant channels for perceiving information about a person's emotional state and intentions (Goffman, 1959: 160).		*recently reworked to, so now I can, I can have like a blush and like a sad face or question mark or whatever. Like, I've been working on a lot of things for this avatar."— From User Gavin*
Verbal interaction	A person's language communication, including speech patterns, accents, word choices, and tone, provides valuable information about others' backgrounds, attitudes, and personalities (Goffman, 1959: 15).	Speech synthesis, text chat, tone of voice	"And he has a really deep voice. It's a really harsh accent, so it's like soothing. All he has to do is like, walk in my ear and you can almost literally like flatline me on the ground. Like I'll be sitting the next couple seconds. It's, it's weird, but it's awesome at the same time"--- From User Clive
Interaction patterns	Observing how individuals interact with others allows for	User observation in social situation	"*When I am with some friends who are always using an E-boy uh,*

	a deeper understanding of their social roles, relationships, and affiliations. People often form impressions based on who someone interacts with and how they engage in conversation (Goffman, 1959: 1).		*muscular type of avatar, I'm always changing to E-boy avatar just for them*." He continued, "*When I was with some friends who were young, uh, I changed to a cute avatar. And if I'm with people in Quest, I can change avatars too.*" – From User Jerry
Setting and context	The physical environment and social context in which interactions occur can provide essential information. Goffman believed that the environment, including props and settings, can influence how individuals present themselves and how others perceive them (Goffman, 1959: 13).	Virtual worlds and environment, avatar diversity, gaming context, entertainment and events, community and subcultures	"At that certain moment in time, yes. That can change based on what room I'm in…Let's say if I go into like a club avatar, a club world, sorry, I might dress up as this avatar or another avatar, most likely this one… based on those sorts of circumstances."--- From user Duke

Props and artifacts	Attentive performers will adjust their performance based on the characteristics of props and the task they must undertake in their act (Goffman, 1959: 143).	Avatar accessories, world building, Room decoration, interaction object	"Well, I like that it comes fully equipped with weapons of all kinds that lets me express myself and do a little bit of role play. I really enjoy doing role play with random strangers or friends, and most of the time you need weapons and utter gadgets to fit the story or whatever's happening." ---From user Alex
Social Norms and expectations	Individuals can rely on social norms and etiquette rules to guide their behaviour. There is a general understanding among people of how individuals should conduct themselves in specific roles or situations (Goffman, 1959:152).	Respect for others, consent and boundaries, identity expression, custom world rules, role-playing and consent, muting and blocking, age restrictions, cultural sensitivity	"Um, Mostly, it's kind of with the people that I hang out with, I have, I have a furry group, which obviously it's kind of a joke that when I walk around in an avatar like this, they'll like, they'll say, Oh, you're naked, put some fur on, and then I'll go into a furry avatar. So, so to kind of match the theme of

			the group that I'm currently with."---From user Kate
Social network and reputation	An individual's reputation and social network play a significant role in how others perceive them. A practitioner's good reputation depends on the good behaviour of others (Goffman, 1959: 106). People often gather information about a person's character and reliability from mutual acquaintances or recommendations.	Group and friends' group	"Yeah, for example, when I, uh, when I am with some friends who are always using a E-boy uh, muscular type of avatar, I'm always changing to E-boy avatar just for them. when I with some friends who is young, uh, I, I changed to cute avatar. And if I'm with people in Quest, I can change avatars too. Yeah"-- From user Jerry
Culture and subculture codes	Cultural norms encompass fashion, customs, etiquettes, values, and interests, influencing how people interpret and assess the presence	Culture events, role playing	"Well, yeah. You saw the tiny one. Go to a room where people are chatting. As soon as you go there, every woman, real woman in a room will turn on

	of others (Goffman, 1959: 154). Different cultures and subcultures may have unique guidelines for understanding social behaviour.		your head and come to cuddle you. Happens every time.”—From User Luke

Appendix J- Virtual impression management

Theme		How individuals achieved virtual impression management
Front and backstage	World budling	Users are allowed to design and upload worlds themselves, including social worlds and their virtual home. In *VRChat*, users have the ability to craft their front-stage personas through avatars and virtual worlds, carefully managing the impressions they convey to others. They can also choose when to engage with the public (front stage) and when to retreat to a private setting (backstage).
	Avatar customisation	Avatars are the most commonly used to assist users in virtual impression management. *VRChat* allows users to create and customise their avatars extensively. Users can choose from a wide range of avatar options, modify appearances, and even import their own 3D models. This study found that most users will have tried many other avatars before designing their own
Facework	Avatar changing	Goffman's concept of face refers to the social identity that a person claims during an interaction. *VRChat* users actively engage in facework by selecting avatars and adopting virtual personas that align with their desired image or identity. They may also use face-saving strategies to protect their self-esteem in the face of potential embarrassment or social missteps.
Social norms and	Nonverbal	As users know, virtual socialization cannot capture facial expressions as face-to-face social

expectation	expression	interactions. However, the platform allows for nonverbal expression through body language, gestures, and facial expressions via users' VR equipment or controllers. This enhances users' ability to convey emotions and intentions, increasing the way they implement impression management.
	Social norms in *VRChat*	Users adhere to specific social norms, codes of conduct, and expectations within these communities, helping to shape and manage their impressions in alignment with community values. In *VRChat*, community norms are established through the collaboration of both users and developers. When a user becomes part of the *VRChat* Discords community, they are greeted with automated messages that outline essential guidelines, including the importance of mutual respect and the prohibition of discrimination. Furthermore, as users enter different *VRChat* worlds, creators frequently employ a creative and effective method to communicate these norms: they inscribe them on a blackboard near the entrance. This approach has become a widely adopted means of disseminating important information within the *VRChat* universe. In certain instances, world creators may even require users to acknowledge these norms by clicking on them before allowing them to explore the virtual realm further.
	Community feedback and user-generated	*VRChat* encourages user feedback and the creation of user-generated content. This collaborative environment allows users to shape the platform's development and features, enhancing the

	content	impression management experience.
Technological Mediation	Technological Mediation	*VRChat* relies on technology to facilitate interactions, which introduces unique elements to impression management. Users can manipulate their appearance, voice, and surroundings in ways that go beyond what is possible in physical interactions. This can lead to more complex and creative forms of self-presentation. For example, *VRChat* provides users with tools to report problematic behaviour and mute or block users who are causing issues. Once the user blocks the vulgar, the user will not see the vulgar in any world, even if the vulgar person is in the same world as the user.
Dramaturgical teams	VR social group	Goffman's concept of "dramaturgical teams" refers to groups of individuals collaborating to present a shared front in social interactions. According to the survey results, friends are a significant reason why most users continue to use *VRChat* over the long term. The majority of users have multiple friends, which make up their social circle. Interview data also indicate a strong connection between users and their social circles, primarily related to social spaces. Users with similar interests tend to gather and socialize in fixed spaces. The research suggests that these "fixed spaces" can be considered as the users' social stages.
	Role-playing and acting	Just as in a performance on stage, actors practice their roles to ensure they leave a genuine impression on the audience.

		In virtual reality, there are two major trends in role-playing. On one hand, researchers have observed the concept of a "VR family" in *VRChat*. Users have their virtual families, with roles such as fathers, mothers, sons, uncles, and others. The concept of virtual weddings in virtual reality has also contributed to this family concept. In the game, everyone plays roles that align with the group's expectations. On the other hand, role-playing in virtual reality is a form of entertainment for users, such as playing game characters or engaging in adult performances, among other activities.
Global and diverse audience	Diverse audience	*VRChat* users can interact with people worldwide, representing diverse cultures, backgrounds, and perspectives. Managing impressions in such a global and diverse context presents unique challenges and opportunities that go beyond Goffman's original framework, which was primarily concerned with face-to-face interactions within specific social contexts.

Appendix K- Fusion of identities

Summarise the impact of virtual impression management on users	Users' name	Interview findings
Virtual impression management provides users with a wealth of digital resources to explore identity. Users feel more comfortable with who they are.	Ben	After experimenting with multiple identities in VR, the user often used avatars ranging from robot to furry, and he began wearing furry-like clothing in real life. "Well, my real life is with the top hat and goggles which I want like festivals and things, and I wear furry things and since I started micro dosing in shrooms."
	Chole	*VRChat* helps user accept who he is in real life and encourages who he wants to be: "In *VRChat* helped me accept my identity in IRL and all these things I want to be and all these things I am. Because obviously there's a big barrier between physical things that I am and the VR chat things that I am. But they're still a part of me. They're still my ways to express myself and my needs. And it helped me understand all of it."

	Eva	Avatars help users accept diversity and their individualised selves. “I’ve always had very extreme looks in the real world…But in VR, you can be whatever you want to be, so it takes away the limitations of feeling uncomfortable in your own skin. I think that can also be a good thing for people to cope with to some degree…I’m always fluctuating on my style, so mine’s all over the place, but ultimately, I think it’s important that people just be themselves. On this platform, it really gives you the ability to do that.”
	Alex	Avatars play a significant role in shaping users' self-perception of their gender identity. “So, this avatar has changed my, my hobbies in real life because when I saw this, I had many ideas and I really wanted to express them in some form or way. I wanted to do that with friends, but I couldn’t really fit or force my way into my friends or anything. I just couldn’t really do it with people. So I figured I’d start making videos.”

Virtual social norms encourage users to engage in behaviours that align with the interests of the group and community when manging their self-presentation.	Vince	Users feel more comfortable with their identity: "It just could, depends on what situation. Um, I guess if it's a more social situation and it's a group that I'm with group of people I haven't met before. I tend to use smaller avatars like smaller and height, because I stick out less. Um, if it's with a group of people that I already know, I don't know. I just use whatever I feel like at the time, usually whatever my most recent creation is." "I used to be very sort of, I'd hide my personality in order to not sort of annoy people or not to stand out too much, but you to sort of help me just get more confident with just being myself because I now know that, you know, people. If people don't like my personality, then I don't really want to be around them anyway, so might as well be myself."

Virtual technology provides users with an anonymous performance environment where they need not worry about their constructed impressions being disrupted	Lucy	The user can avoid social embarrassment by blocking and this helps the user to deal with her social anxiety： “Where they were in a public server and someone came up to them and said something really raunchy and rude, um, but they didn’t want to block them because they felt bad for blocking them.” “But we have a block button for a reason because it’s going to happen in real life. Even on the internet. We’re females. Its just goanna happens everywhere and. Have to be aware of our surroundings and if someone is going to say something, just immediately report and block them.” “I think being able to get past my anxiety sometimes and then meet really good people, um, to then bring

		into my real life while I'm not on VR chat."
	Polly	The user has control in the virtual social situation, and although she is still shy, she is now more willing to socialise in real life: "So, for me that the fact that you can just block a person, that's just something that offends you. It's just very different from reality. But at the same time, you can kind of like create your experience here." "I'm still very shy and I don't really go out, um, that much. Uh, so I mean, I do. see myself, like have put myself in more situations of being, going out to more social places. But I mean, social gathering, gathering, I say like, uh, maybe like a bar or a festival or something like that."

Role plays in virtual impression management fosters a sense of belonging within the team. Friends and community play an important role in virtual socializing	Alex	VR helps to develop user's hobbies, which positively affects the user's life: “So, this avatar has changed my, my hobbies in real life because when I saw this, I had many ideas and I really wanted to express them in some form or way. I wanted to do that with friends, but I couldn’t really fit or force my way into my friends or anything. I just couldn’t really do it with people. So I figured I’d start making videos.”
The diverse cultural background from users fosters an inclusive social environment，*VRChat* users don’t judge that harshly.	Molly	The user believes that reaching out to different types of people and exploring the virtual world helps him develop personally： “I like to explore new communities, like to hang out with different kinds of people and, and it helps me to kind of see more people in the world without having to actually run the risk of seeing people in real life.”

		“I feel like you’ll never get like a 100% exactly what you want to be. I feel like it’s kind of in real life where you’ll go through phases of, right now I like to explore pretty worlds, or right now I think I want to go hang out with people, or right now I just want to play games. I feel like it’s just kind of like developing your own personal.”
	Gavin	*VRChat* user don’t judge that harshly “I’m basically an open book. I don’t tell lies and I’m always honest with people, but in VR, it’s easy to be my, my full self. People don’t judge that harshly. ”
	Jamie	*VRChat* user don’t judge that harshly “Uh, yes. I’ve, I’ve had been judged a lot in the real world and whenever I’m on here, on *VRChat*, I could be

		myself and I could do a lot of things that I can’t do in the real.”

Appendix L- Project Ethics Assessment Confirmation

Outlook

Project Ethics Assessment Confirmation|Cadarnhad o Asesiad Moeseg Prosiect

From coahresearchethics@swansea.ac.uk <coahresearchethics@swansea.ac.uk>
Date Sun 24/07/2022 09:54
To HU Y. (2019197) <2019197@Swansea.ac.uk>
Cc Leighton Evans <L.Evans@Swansea.ac.uk>

This is an automated confirmation email for the following project. The Ethics Assessment status of this project is: APPROVED

Applicant Name: Yueyao Hu
Project Title: The Motivations of users to design avatars in virtual reality
Project Start Date: 01.10.2020
Project Duration: 30.09.2023
Approval No: SU-Ethics-Student-240722/5530

NOTE: This notice of ethical approval does not cover aspects relating to Health and Safety. Please complete any relevant risk assessments prior to commencing with your project.

Neges awtomataidd yw hon ar gyfer y prosiect canlynol. Statws Asesiad Moeseg y prosiect hwn yw: APPROVED

Enw'r Ymgeisydd: Yueyao Hu
Teitl y Prosiect: The Motivations of users to design avatars in virtual reality
Dyddiad Dechrau'r Prosiect: 01.10.2020
Hyd y Prosiect: 30.09.2023
Rhif y Gymeradwyaeth: SU-Ethics-Student-240722/5530

SYLWER: Nid yw'r hysbysiad hwn o gymeradwyaeth foesegol yn cynnwys agweddau sy'n ymwneud ag lechyd a Diogelwch. Dylech gwblhau unrhyw asesiadau risg perthnasol cyn dechrau eich prosiect.

Appendix M- Auto ethnographic field notes

11. 01. 2022

今天跟着一个朋友去了VR的酒吧，太吵了，我完全不适应，都不知道怎么沟通。大家好像也不是很在意沟通问题，他们就像是在酒吧里一样（玩家）但我还是感到有些奇怪，明明我在房间里，但视觉上在酒吧，那我岂不是像个傻子一样一个人在房间里扭动？

☹ 这种环境不适合我，下次不去了。

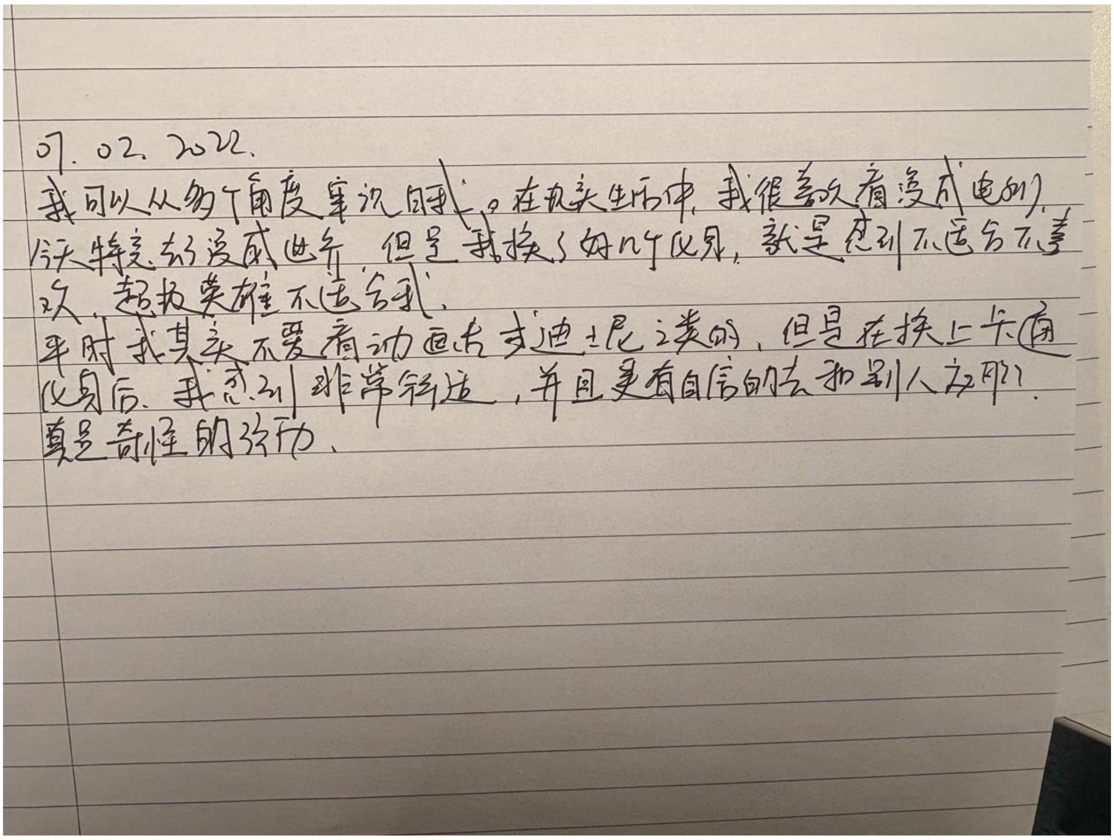
不过，我朋友解释到，如果我用了那种全身的穿戴设备会有不一样的体验。只是头戴式的会有些无聊。

全身穿戴设备 VS 头戴式设备

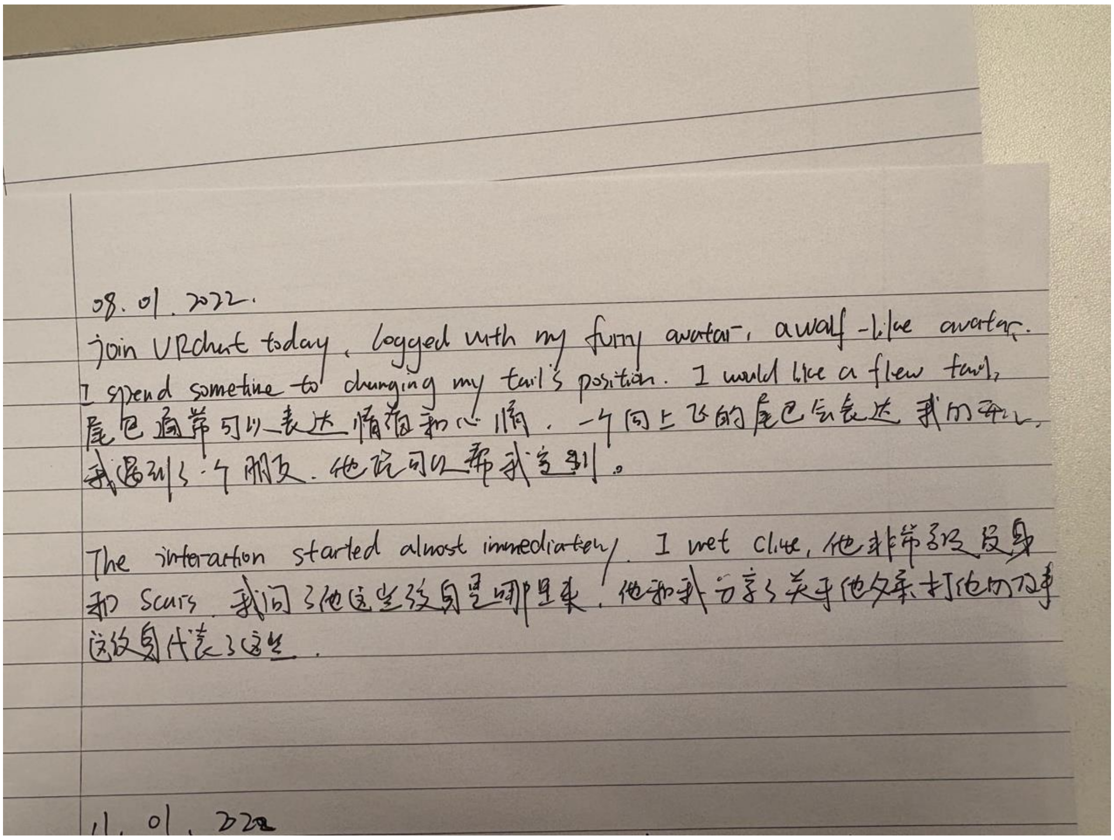
15. 01. 2022

今天我本来是一个人在VR中闲逛，去了好几个房间，但是我都没跟别人说上话，也不敢去跟别人讲话。后来我找个角落，呆在那里像个木头人。有个人物化身的男生过来问我过的怎么样，可能是我的口音吸引到了他，他对交朋友很有兴趣，并介绍了几个化身给我。

我换了好几个化身，但是都不太满意，他又把我介绍给了其他的朋友，我们在VR上玩了扔沙包的游戏，我找到了一个很适合这个游戏的avatar，头像颜色很鲜艳，我还可以自己添加配饰。



07.02.2022.
我可以从多个角度审视自我。在现实生活中，我很喜欢看漫威电影，今天特意选的漫威出品，但是我换了好几个化身，就是感到不适合不喜欢，超级英雄不适合我。
平时我其实不爱看动画片或迪士尼之类的，但是在换上卡通化身后，我感到非常舒适，并且更有自信的去和别人交朋友。
真是奇怪的经历。



08.01.2022.
join VRchat today, logged with my furry avatar, a wolf-like avatar.
I spend sometime to changing my tail's position. I would like a flew tail,
尾巴通常可以表达情绪和心情。一个向上飞的尾巴会表达我的开心。
我遇到了一个朋友。他说可以帮我定制。

The interaction started almost immediately. I met Clive, 他非常多纹身和 scars. 我问了他这些纹身是哪里来，他和我分享了关于他父亲打他的故事，这纹身代表了这些。

11.01.202

Appendix N- Sample interview questions— Semi-structured interview

First part:

- Can you show me your favourite avatar and why you like it.
- What features do you like about this avatar?
- Have you tired some similar avatars?
- When did you learn that you liked this type of avatars?
- Can you tell me a little bit about yourself in real life? What you like? If you can use three words to describe yourself, what is your answer? About your appearance and personality?
- What is your favorite tv show? Any hobby?
- Do you like to use social media?
- Where do you think this avatar is most similar to yourself
- Where does this avatars most close to your idealised appearance?

Second part:

- When you use the avatar to socialise with others, do you consciously feel that the avatar represents yourself? How do you think your avatar represents you?
- How strong is this awareness?
- Under what social circumstances would you have this strong awareness?
- How you feel when you use avatar to social with others?

Third part:

- When you first started playing VRChat, did you specifically looking for a type of avatar to represent yourself?
- What type of avatar you were looking for?

- Since you have been spend more and more time on VRChat. do you think you got a clearer idea that what you like or you realise that you prefer a certain type of avatar?
- At present, virtual reality (VRChat) gives you a convenient platform to try different identities that can represent yourself. Has the experience in VRChat had an impact on you in real life? What impact did it have? Such as your hobby, making friends, sexual preference,

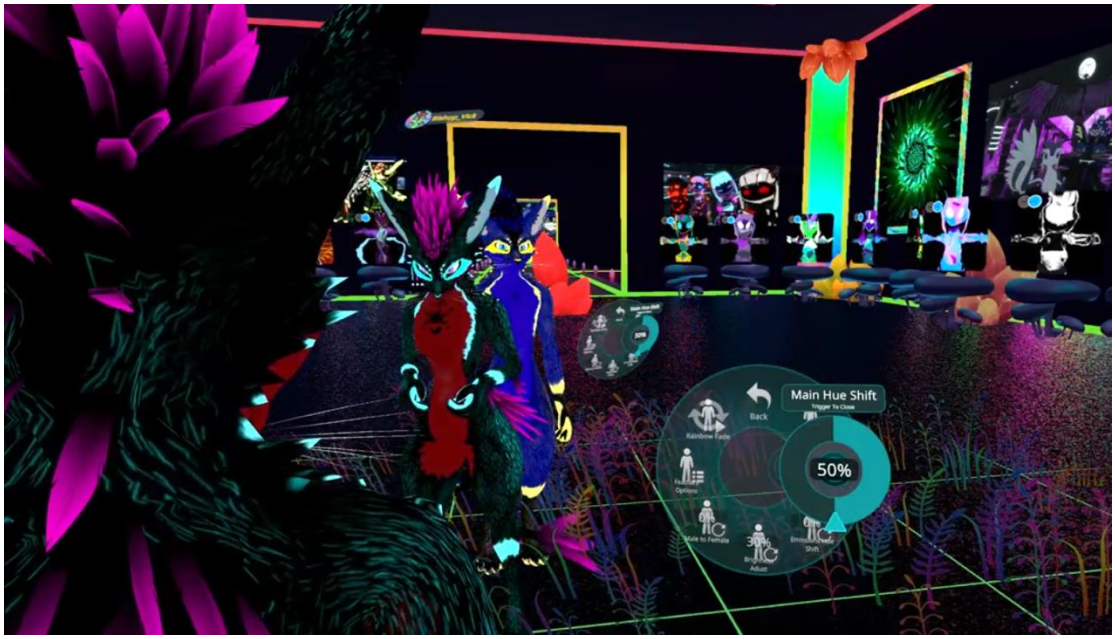
Fourth part:

How do you feel about socialising in VRChat? Confident and more comfortable? Is this different from how you usually socialise?

Appendix O- Relevant VRChat environment


Sam x Camille
TWITTER.COM/SAMVRC
SAMVRC.CARRD.CO


Use this Tablet to use avatars!
6% / 56 MB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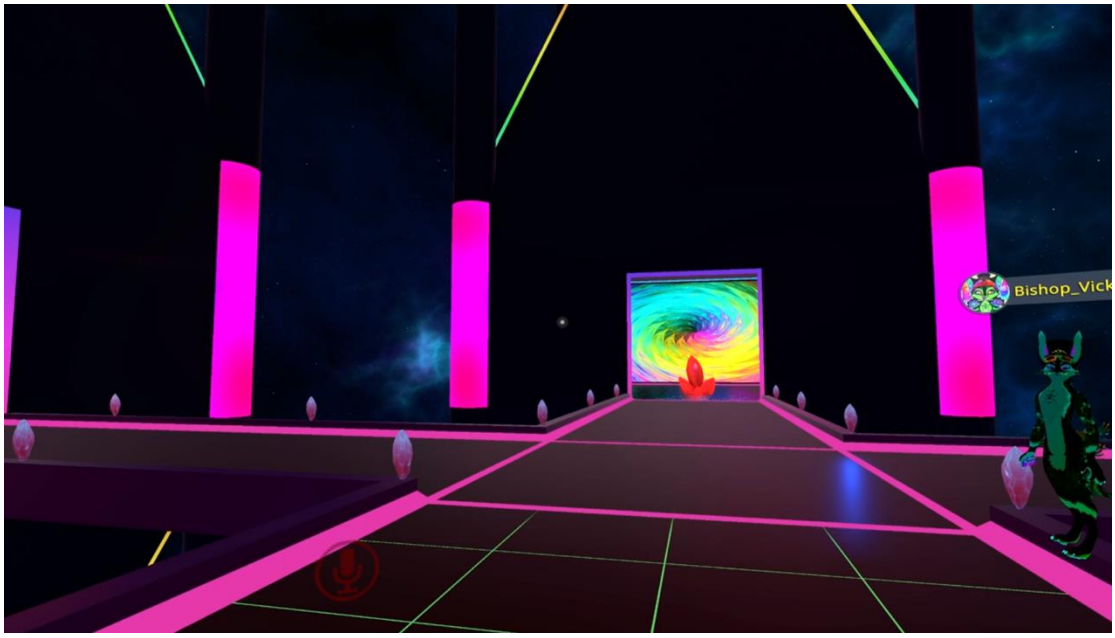
Bishop_Vick