

Appropriations and Extensions of Cultural Spaces in VR and the Metaverse

Tatjana Crossley¹

¹Chinese University of Hong Kong, Hong Kong SAR
Tatjana.Crossley@cuhk.edu.hk

Abstract. Digital virtual reality (VR) and the metaverse provide opportunities for the creation of cultural extensions that define our contemporary society. This has been the practice for millennia – using different technologies and media; humans have always attempted to convey experience through representational forms. The paper puts forward an initial theoretical examination of metaverse using theories on perception and subjectivity in psychology and philosophy and the implications of these in architecture and space creation, both physical and digital. It considers historical VR spaces to better understand the influence of culture and applies this to the contemporary social VR spheres. Though they offer novel opportunities, digital virtual realities and immersive spaces of today are no different than the lineage of spaces and representations that strove to do this throughout history (Grau, 2003). Using different mediums, they each provide an extension of culture that reflects society and becomes a record of their times and ideals.

Keywords: Virtual Reality, Metaverse, Digital Heritage, Mixed Realities, Identity and Subjectivity

1 Introduction

There is a long lineage of immersive representations that have been produced throughout history (Grau, 2003). Human cultures have used various mediums- whether in art, architecture, literature or otherwise- as a means to depict their society or its aspirations. These representations serve as a reflection of the values and social contexts. Many of them provided immersive encounters that, arguably, contributed to identity formation and subjectivity. The scope of this paper provides an initial application of theories around subjective experience in the context of virtual reality, using cases from history to better understand contemporary developments and their cultural implications.

Psychologists and philosophers like Lacan, Merleau-Ponty, Sartre and Schilder had theorized about subjectivity as it relates to perception and a yet unnamed idea of the virtuality of experience but they were working in a context that had not seen the likes of digital lives and the metaverse. They were however touching upon the fact that reality regularly coincides with virtual reality (a term that can be considered an oxymoron). Human subjectivity is dependent first on a virtual interaction- that is, the identification with the self through the mirror (Lacan, 1999). This was studied from the perspective of 'body image' in previous research, *The Dissolution of the Body Image* (Crossley, 2019) and is here expanded upon using the work of philosophers like Deleuze and Grosz who consider the architectural implications of space creation – the production of an “inside of the outside” (Deleuze, 1988), how that has applied to architecture and how that might be considered in a digital context respectively.

The following sections of this paper will draw upon understandings of perception and the sensorial to provide a reading on the 'virtual.' It will examine the involvement of these spaces, physical and digital, historic and contemporary, in shaping identity and subjectivity. And it will examine how culture extends itself into the virtual space providing a way to expose societal values.

The paper also references current movements in the production of digital assets and the metaverse, drawing from some of the recent literature on these subject matters (incl. NFT Plaza; Ordano et al., 2017; Shamash & Nordnes, 2022), to speculate the impact of new digital spaces and design methodologies on architecture and culture. These spaces, whether seen as Utopic, democratic systems or not, are a record of the respective time and ideals. They are not necessarily a carbon copy of any given reality but rather a reaction to or reflection of it. Therefore, applications of philosophy and theory are examined as they relate to the body in space in order to speculate the implications of contemporary VR and the metaverse on culture and the societal record left behind.

This examination will be carried out in three main parts throughout the paper. First, it will analyze media culture throughout history, focusing predominantly on the visual and the immersion, and how mediums of representation in art and architecture relate to subjectivity and society. Mediums from both history and the contemporary that have produced virtual spaces will be incorporated. It is not intended to be a comprehensive historical overview, as in Grau's *Virtual Art: From Illusion to Immersion*, but rather provide a sampling that places attention on illustrating modes and intentions. Second, philosophical and psychological literature will be reviewed and analyzed. This literature review will specifically focus on aspects of *the body* in space and subjectivity. It will go over crucial and foundational theories that connect the formation and evolution of the subject with perception and the sensorial. Finally, the result of the first two parts will be an application of the theories on media culture today. It will consider how humans develop and

accept new technologies (Mensvoort, n.d.). It will begin an investigation into how culture and societal ideology extends into the virtual space and ultimately acknowledge the impossibility of designing a VR in a vacuum- culture will always inevitably influence the design of space. This will be followed by a reflection on the contribution and relevancy of the work in discourse around the production of the metaverse and subsequent digital assets. The paper is meant to provide an initial reflection on the correlation between culture and virtual space to provoke further discourse and research on the subject.

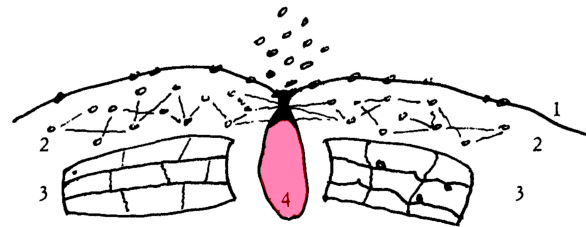
2 Methodology

2.1 Inside the Outside

This research draws upon theoretical discourse on subjectivity in order to better understand the body in virtual space. Because of this theoretical nature, it makes practical and informed conjectures based on available knowledge.

The body and its biological processes allow for the sensation of experience. What one sees and experiences is as a result of what the brain believes is there (Smythies, 2009). What is perceived as the senses responding to external objects (whether 'natural' or synthetic) comes as a result of neurological processes (Aguilera, 2012). These processes can be set off by alternative stimuli and, in psychology, this is studied through cases of psychosis. Paul Schilder writes a text where he analyzes this in relation to perception. However, it is a universal experience- human sense can be easily stimulated or 'tricked' which has become the motivation for many a successful illusion in architectural and art history. We can think of examples like Borromini's Palazzo Spada to find spaces that were designed to trick the senses and immerse their viewer into an alternate reality. Many philosophers and psychologists have explored issues of the sensorial, perception and the body and these theories serve to better understand the impact of space on the body.

So why apply these theories to virtual reality and architecture? Architecture has the power to shape space. It is a tool that produces a virtuality of experience that creates an inside and an outside. Examining this from a Deleuzian perspective, the inside- the architecture or VR- becomes a fold (figure 1) that is simply an extension of the outside. This means that they are inevitably connected, since they are created by the same line. Rather than the space being considered something 'other,' it is just "the inside *of* the outside" (Deleuze, 1988). It is a condition that arises from what is a relative understanding of space. Deleuze describes this using Foucault's *Order of Things*, specifically the main idea that all thoughts arise from an outside. Subjectivity is inherently linked to the environment. Virtual spaces can also be thought of like this, read in relation to what is referred to as 'real' space.



1. Line of the outside
2. Strategic zone
3. Strata
4. Fold (zone of subjectivation)

Figure 1. 'Fold' Diagram. Modified from Original Source: Deleuze, *Foucault*, 1988.

Arguably, architecture produces its own virtual spaces using a set of materials, which can be dissected, on two levels.

On the first level, architecture produces a set of environmental conditions that are presumably different from the outside. From a primitive perspective, it creates shelter from weather events and predators. From an architectural historic perspective, it creates private and public space and in doing so provides a manifestation of environments that act as an extension of identity (Popkin, 2016). In other words, whether public or private space, architectural aesthetic, detail and organization provide a means to understand the social and cultural values of any given society. This paper will use the example of Ancient Rome. The predominant feature of the urban plan in this context was the piazza, a public space intended to immerse its users into politics that were meant to be perceived as democratic (Russell, 2015). One of the most significant of these, the Roman Forum, is the site where the Triumphal marches would close after various military conquests. It was a space of power and, more importantly, shows of power, immersing people into the political apparatus (Popkin, 2016). The private space of the villa also served political purposes, producing a space for discourse, political debate, knowledge creation and serving in many cases as a memory palace (Bergmann, 1994). It is important to acknowledge that memory was an important tool in ancient times (Yates, 2014), since printed text was not available, and facilitated a unique relationship between virtual reality, the image, and narrative. This is where the second level comes in.

Grau argues that the pursuit of immersion and virtual reality can be traced back to cave paintings and that there is a long lineage of representational spaces in art and architectural history that constitute as predecessors to contemporary VR technology (Grau, 2003). Each of these historical precedents becomes a way to represent experience and a way of being. What distinguishes the various virtual realities as different from one another throughout history and the contemporary are the particular mediums utilized

and the ideology being represented. Architecture and the image become a means of representing narrative.

The representation of narrative is common throughout architectural history. In Ancient Rome, this was seen in both civic and private spaces. A significant space of visual representation was found in the Ancient Roman villa (figure 2) (Bergmann et al, 2010). The frescos that covered the walls of the villas served as memory palaces as described in Yate's *The Art of Memory* text. They contained frescos in a mixture of the four styles defined by August Mau and created a spatio-temporal way to remember narrative. Stories or memories could be associated with the images and these could be read in different ways depending on how the person navigated the physical space. This is significant since it offered a non-linear narrative model, something that is lost in written text. Additionally, the three-dimensional spaces depicted in the images produced a planar complexity that linked the virtual spaces of the frescos with the physical spaces of the villa (Plat and Squire, 2017). These frescos were intended to be immersive and many of them were meant to be viewed as virtual realities that expanded the space of the room and ultimately refocused attention to the center and onto its occupants. They used theatrical techniques that drew the gaze out and back into the space of the room (Dietrich, 2019). While the frescos provided virtual space, these rooms functioned in what would be termed today as a hybrid or augmented reality model allowing for the frescos to support the action within the space of the room.



Figure 2. Room 5 Ancient Roman Fresco at the Villa Dei Misteri, Pompeii. Source: Author, 2017.

The historical lineage of immersive spaces, which include examples like the ancient fresco rooms, the 18th and 19th century panorama rotundas and more contemporary pre-digital VR devices, provide two readings of architecture's role in producing virtual realities. One is based on the physical materiality of the architecture and its creation of an 'inside,' the other is based on the cultural signifiers and embedded narratives that architectural space

was used to represent. The next section will continue this discourse, examining representation from the perspective of the image and subjectivity.

2.2 What Comes First, Culture or Subjectivity? - Psychologizing the Subject

This section provides a reading of the psychological concept of the body image in immersive space. The body image is related to subjectivity and serves as a virtual double of the being, not in the physical sense but in the experiential sense. The body image arises as a result of the accumulated experiential history of the individual (Schilder, 2014). This section will examine several theories that surround subjectivity in order to provide a framework to understand the body image, drawing upon philosophy and psychology as it relates to perception of self, other and space.

The body image appears in tandem with subjectivity and this occurs through the identification of what constitutes the self and that which is outside of the self. From the beginning there is a notion of 'inside' and 'outside' and their relationship to each other. Jacques Lacan with his 'Mirror Stage Theory' describes this initial definition of the body image. The theory describes the moment of a (approximately) six-month-old infant finally recognizing itself as a subject. The infant, through the act of objectifying its own self-image reflection, gains subjectivity (Lacan, 1999). Subjectivity arises due to that which is virtual. Lacan's mirror provides the first virtual reality space from which identity manifests.

This process requires two modes of seeing: the scopic and the immersive. They are both present in 'mirror stage' and continue to work in tandem throughout the life of an individual. The scopic mode of visual perception relates to Freud's notions of the voyeur while the immersive relates to the narcissist (Lacan, 1953).

The development of the subject is interpreted in Sartre's ontological dimensions of the body: the body for self, the body for other, and the body for self as seen by the other (Sartre, 1969). The first- the body for self- can be equated to Freud's voyeur and the third- the body for self as seen by the other- can be equated to Freud's narcissist (Evans 1996). The third dimension works like the theory put forward by Lacan and can also be thought of in Deleuzian terms, the outside affects the inside. It provides the subject a way of objectifying the self as the other (outside) would in order to understand their own subjectivity. The two modes of seeing and the ontological dimensions of the body provide a way to understand the self in space. This is where architecture and the virtual space can provide an important role- they immerse the body within specific sensorial constructions which manipulate these modes and provide an opportunity to alter perception (Murray and Sixsmith, 1999).

Merleau-Ponty writes about the importance of perception on the body image. In *The Phenomenology of Perception* he asserts that every sensation

is charged with meaning. In other words, every perceptual experience has consequence and previous perceptual memory structures experience in the now. He calls this the 'association of ideas.' All experience of space is subjective, based on the previous experiences of the individual (Merleau-Ponty, 2002).

These philosophical theories are affirmed by work in psychology, specifically that of the psychologist Paul Schilder who first examined the body image disturbances in cases of patients with psychosis. He recognized the importance of sensory perception in its formation and evolution (Schilder, 2014).

The body image is a composite – it arises as an amalgam of its entire experiential history. As Merleau-Ponty and Schilder both assert, it adapts based on sensory perception but the body image also colors experience creating a subjective lens from which an individual experiences space. This body image, shaped by previous experience, is inherently shaped by culture and environment. In research conducted by Chiao et al., they recognized that culture plays an essential role in identity formation and how a person recognizes their self as compared with others and their environment. These scientific studies show how cultural values influence both psychological and neurobiological processes. Cultural beliefs influence perception, self-representation and self awareness (Chiao et al., 2008).

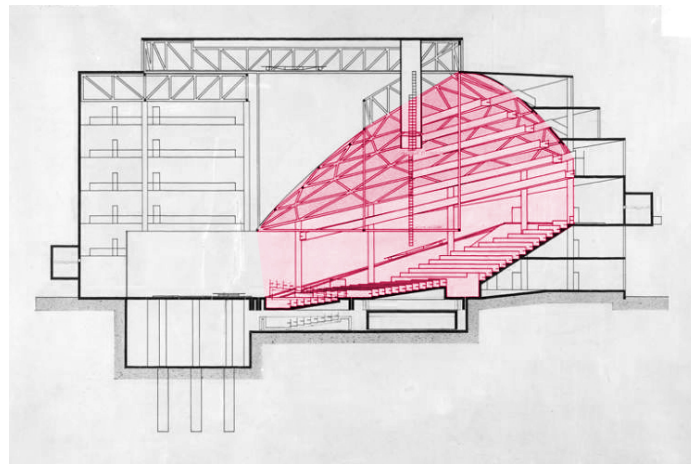


Figure 3. Gropius Total Theatre Section Drawing. Modified from Original Source: <https://thecharnelhouse.org>, 2014.

This paper supports the argument that architectural and art historical spaces like the Roman frescos (figure 2), panorama rotundas (figure 4), total theaters (figure 3), and cinema serve as precedent for today's digital VR's (Grau 2003).

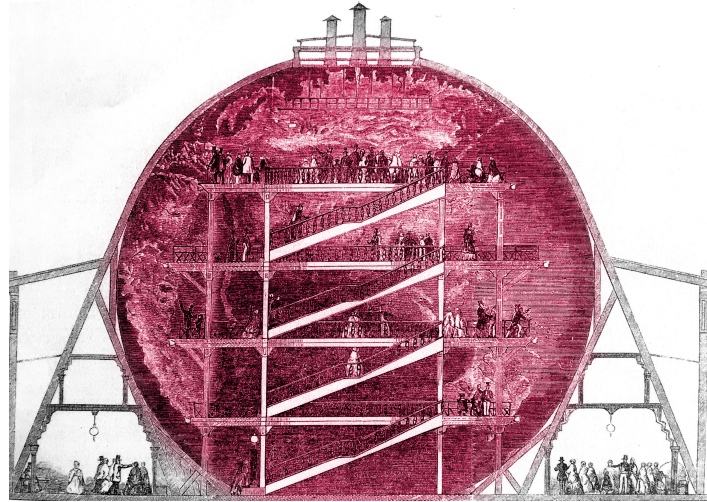


Figure 4. Panorama Rotunda Section Drawing. Modified from Original Source: Oettermann, *The Panorama: History of a Mass Medium*, 1997.

Panorama immersions, while seen as novel in each society's respective iteration, have been created using various technologies but ultimately produce the same result. They create a reflection of the society's values and a representation of the world as it was or idealized. Digital virtual realities today capitalize on current technologies to surround their audiences with a created environment. Examples such as Decentraland, Voxels (Cryptovoxels) and Sandbox define parameters that set up and perpetuate specific value systems (NFT Plazas, n.d.). These spaces, like those that came before, have consequences on the development of the body image.

3 Results

3.1 Our New Looking Glass

The metaverse provides a space for new representations. In some respects it functions like a panorama space using the technologies of today to immerse people into this digital realm. There are obvious differences from historical virtual spaces and from these differences come novel opportunities of creation and experience. However, from a psychological perspective, they do not produce such a schism from what our body image and subjectivity already negotiate. Humans already inhabit multiple personas (or avatars) dependent on their environments- we can think of personalities created for 'spaces' like social media vs. work vs. family vs. friends, etc.- and, using the argument that architecture and art has historically produced virtual realities, humans constantly negotiate virtual experience. (In fact, we could argue that

all experience is virtual and therefore all virtual realities are reality.) Therefore, psychologically and phenomenological speaking, the metaverse is simply another virtual space that the body adapts to. Neurologically speaking, the stimuli received from this virtual space is no different from that of 'reality.' However, important to acknowledge is that the design of the metaverse- its 'likeness' with reality and the transition- is another important factor to the success of these spaces. We can see comparisons with this in history. For example, with the early panorama rotundas (figure 4), people experienced 'panorama sickness' since the transition was dramatic (Grau 2003) and in the contemporary context, users unfamiliar with VR headsets experience disorientation when first trying them. As part of the design, designers will have to assign parameters and, at least for the immediate term, in order to have productive spaces of civic engagement, these parameters will need to include recognizable indicators from reality- for example, the use of gravity and mass. There needs to be a consistent 'language' or point of reference from which to understand the world. Looking at the example of Decentraland, we can see certain aspects that have been translated from reality. In this VR space, in order to create revenue and an economy, it uses a land ownership model that is reliant on a finite amount of allocated land space in the world (in order to produce land value). It also uses a planar methodology of understanding the relationship of one parcel to another- they need to be adjacent. This is an interesting design decision given that VR does not need to follow laws of physics, spaces could in theory be accessed by portals and exist together mapped in a much more 4-dimensional way. However, by making the world planar, it more closely resembles mapping techniques that humans have used for centuries, making it easier to understand. Our subjectivities and modes of perception have been defined by our external environment (one that has evolved over the centuries) so this needs to be considered. Perhaps future metaverses will slowly incorporate different dimensions of access, contributing to a type of evolution that takes us beyond recognizing planar mapping structures.

This also applies to the rules and value systems put in place. Many digital virtual spaces have the noble goal of creating an accessible democratic space for everyone. We can speculate that perhaps this desire to create democratic public space comes as a reaction to the social conditions of our times that has produced more fragmentation and given common people less agency over their politics with an increasing amount of control put in the hands of corporations and the one-percent. This illustrates a cultural dissatisfaction with the status quo that will now be preserved in these digital spaces for future generations to look back on and examine. However, though they may be made with good intentions, there are very real and non-virtual infrastructures that make these spaces possible. They require energy, data storage, physical space and money- there are limitations and ethical questions that must be considered. What communities/environments may be compromised to support this infrastructure? What consequences will be produced?

We already are seeing versions of governance forming within these spaces, many of which are community driven. Platforms like Mona aim to allow for any creator to develop their own world. On the other hand, there are also strong capitalist influences with many commercial industries buying land in the metaverse and selling NFT's of their products (Shamash & Nordnes, 2022). So we are at a pivotal moment in determining how we want these spaces to serve us and how they will be governed, supported, used, and funded- and who is making these decisions.

Human subjectivity is shaped by its entire history of experience, including the histories of the people that came before. It evolves rather than entirely breaking from the past. These social and cultural aspects become strong influences upon the design of new spaces, including virtual spaces. As can be seen from examples throughout history and today, aspects from the social and physical reality are directly translated or reacted to into the VR spaces.

From an architectural perspective, the metaverse provides a place to produce community spaces that can be accessed from all around the world, bringing together people from diverse backgrounds and perspectives in a way that could be radical and sets it apart from previous virtual realities. The question then for architects and designers is how can we shape these spaces and what will our role be potentially beyond the design process? What culture and societal ideology will we project into the space of the metaverse? Since, it is impossible to exist in a vacuum, without the influence of culture, it is inevitable that the history of architecture and society will be translated to the space of the digital, producing a new looking glass that reflects our social values and narratives.

4 Discussion

Humans have always in some capacity created virtual spaces and places for immersion through representation. Perhaps it could be argued that this is a consequence of subjectivity arising due to that first virtual encounter with the mirror. Digital virtual realities and the metaverse are simply an extension of these habits that use a different technology and medium. To refer back to Deleuze's notion of the fold, the metaverse or the various metaverses, then simply become another inside of the outside. Humans exist in a constant stream of virtual realities and go from one inside to another that all exist within a greater outside. Like architecture, they provide a means of projecting identity and encapsulating culture and history. The digital space is an extension of the physical space where a continuation of generated representations of identity occurs.

For those that believe this new virtual space of extension will provide a totally blank canvas for a completely new society, or conversely, that it will jeopardize human identities, these presumptions are naïve, since humans

have constantly negotiated virtuality and metaverses are no different with respect to this point, though they provide new and radical opportunities of interaction. Regarding the former aspiration, culture is embedded in subjectivity and being, so in order to produce an entirely different society, humans would need to entirely disengage with everything that has made us who we are- an impossibility. Regarding the latter belief, identity is largely informed by environment. As Sartre writes in *Being and Nothingness*, the being produces a version of itself that relates to the 'other'. A being exists with multiple 'avatars' already that do not jeopardize it but rather add new 'folds' (figure 1). The body creates new alignments, using its subjective knowledge, with virtual spaces just as it has done previously with others.

Reflecting on the lineage of representation and virtual reality allows for an interrogation of architectural practice and the role of this in producing new virtual realities. Incorporating psychology and philosophy provide a reading of the subject in space that can reflect upon the impact of culture and society and how this embeds itself in design. This paper begins to dissect this through the referenced literature with the aim of producing further dialogue around the implications of the metaverse and the production of new 'time capsules' and 'memory palaces' of the contemporary.

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