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The Metaverse as Virtual Heterotopia

David van der Merwe

[1]*Hogeschool Utrecht, the Netherlands*

Abstract.

William Gibson's quasi-prophetic vision of cyberspace as a 'consensual hallucination' may have predated the commercial inception of the worldwide web by nearly a decade, but given the emergence of online worlds and the blurred virtual/actual (or 'phygital') interface, contemporary social and cultural investigation seems more appropriate than ever. The proliferation of online environments making up the shared virtual worlds now dubbed the 'metaverse' is bringing us one step closer to this vision. By applying Foucault's six qualifying requirements of a heterotopia to this largely ungoverned digital realm, it becomes apparent that the illusory nature of the online environments users inhabit makes them heterotopic in nature. This in turn asks how these non-places should be governed, financed and regulated or indeed whether their virtual nature precludes them from these 'real life' (RL) constraints. Furthermore, the amount of time and effort invested in these blockchain-powered metaverse environments and the construction of virtual identities to inhabit them – running the gamut of online social networks, gaming, commerce, blogs or otherwise – lends credence to the relative importance of these environments in comparison to RL interactions. The Heideggerian concept of *Dasein* can subsequently be applied to the metaverse and its heterotopic nature to question larger concerns at play regarding the essential nature of personhood and relationships within the metaverse.

Keywords: blockchain, Foucault, Dasein, identity, phygital

1. Introduction

Is it really a coincidence that both William Gibson's (1984) cyberpunk novel, *Neuromancer* and the eventual publishing of Michel Foucault's *Diacritics* article, *Of Other Spaces* (1986), stem from the same era? The mid-1980s was indeed a special time for imagination, philosophy and technology to mesh and these two disparate, yet still connected results are perfect snapshots of the zeitgeist not reflected in New wave music, neon colored clothing or other stereotypical cultural artifacts of the era.

Gibson speaks in his sci-fi noir tale of another layer of reality draped across that which we can see, touch and experience, of an entirely separate realm that limits access to those 'enhanced' or physiologically altered to interface with it. A "custom cyberspace deck" is required to "jack into" this so-called "consensual hallucination" (Gibson, 1984: 6), itself a gateway to another level of human sensory experience. The obvious connection is explicitly made with the science-fiction motion pictures when Gibson dubs this 'alternate reality' (AR) 'the matrix'. Today, however, we are confronted on a daily basis with a similar vision come to fruition in much the same way that many products of science fiction – from video calling to wafer-thin handheld tablets to automatically opening doors – have inspired real life (RL) product development. Not a day goes by without the majority of the developed world accessing our own shared repository of knowledge and experience, the internet, on some level. And the

1980s, with its third industrial revolution, the so-called 'digital revolution' (Rothkopf, 2012:88-89) of home computing, was the perfect breeding ground for the imagination that spawned this tale – as well as the eventual real-world applications we now rely so heavily upon.

Currently, we (a collective term for internet and technology users) are experiencing a rapid expansion of the virtual borders of the cyberspace we have grown so used to. The latest in these is an offline/online interface of a virtual set of worlds that has been dubbed the Metaverse: a realm wherein information exchange enjoys an even higher value than financial exchange, and offline consumption of goods, services and experiences is matched by the online navigation of the interfaces required to unlock, access and purchase said exchanges (Roh, 2021). Even this appellation is lifted from science fiction - a term coined by Neal Stephenson in his 1992 novel, Snow Crash. Metaverse theorist Matthew Ball (2021) defines these worlds as "a network of interconnected experiences and applications, devices and products, tools and infrastructure" and just as this network employs a variety of emerging technologies to aid and shape its functions, the growing shift towards the 'smart web' powered by blockchain is shaping the metaverse itself and the safety of its users. The internet may be the foundation stones of the metaverse, but blockchain enables a network "of security instead of vulnerability … where everyone owns and controls their own data" (Elastos.org, 2021) safeguarding the prodigious amounts of data that power the idealized vision of the metaverse.

Foucault, on the other hand, already had a long history of deep thinking and critical discourse behind him and *Of Other Spaces* was merely another in a long line of academic musings on the complex relationships between knowledge and power for the French philosopher. Knowledge and power were enacted in equal parts in what Foucault called 'heterotopias', imagined spaces approaching a near-utopian faced of perfection but still requiring several levels of deeper engagement before access could be given. In identifying that the current age would be "the epoch of space" (1986: 22) Foucault's quasi-prophetic words take on new meaning as we see the fourth industrial revolution (4IR) establishing new frontiers within the ungoverned and undefined borders of virtual space within the cloud.

The immediate connection between a cyberspace – or even a metaverse – of virtual worlds unregulated by recognized human governmental authority but still maintained by a strict protocol of rules established between users and owners and Foucault's quasi-utopian space is unmistakable. As such, my goal with this paper is to draw parallels between Foucault's parameters of definition of an heterotopic space and the interfaces required when accessing the metaverse. Just as Foucault invoked the memory of Galileo, "in his constitution of an infinite, and infinitely open space" (1986: 23), I find myself imagining similar unrestrained growth across the multiple portals of the metaverse bordering on Gibson's matrix but much closer to our perceived reality than his romanticized novel could ever envisage. And I am not alone: Jonathan Glick, former New York Times senior editor of Product and Technology separates the metaverse into two distinct areas: the enactment of the human aspiration to exist in an entirely virtual space that is in some way 'better' than the real world, as well as the actual set of technologies that can eventually enable this connection between fact and fiction (Glick in Hackl, 2021). While the latter is a far more grounded, pragmatic perspective, the former is as much a product of escapist imagination as that of Gibson or indeed myself.

Additionally, the importance attached to interactions within the metaverse and their RL consequences must be considered. As a product of the Heideggerian concept of *Dasein* (1962), questions regarding personhood and relationships established in non-physical environments inevitably arise: are these identities and relationships any less real for being virtual, especially when considered through the perspective of a citizen of the metaverse? And are these idealized, even romantic, considerations of self themselves aligned with investigations into heterotopic spaces like the metaverse?

2. Discussion

2.1 Places outside places

The metaverse is something of a paradox, both an inhabited and enacted space as well as an impermanent interface between the digital and physical realms – an expression called 'phygital' in contemporary investigation into experience design (Gaggioli, 2017). Calling this collective of online worlds a "placeless place" (Foucault, 1986: 24) would not be incorrect, but perhaps that is not enough. Augé (1995: 78-81) describes these temporary and transitional locales as 'non-spaces' but even that is inaccurate: one of the defining hallmarks of non-places is their generic flavor and lack of personal identity imprinted by their inhabitants. An example cited would be an airport: a functional space rather than a characteristic one, wherein every airport on a global scale bears some resemblance to every other. The metaverse is obviously not one of these: the largely co-created digital spaces are unique in form, design and function, as are their users and their avatars. The near-obsessive, practically religious fervor with which adherents interface with these environments makes them more cyber*place* than cyber*space*: to misquote Sheldrake (2001:44), users not only live in these worlds, they create the images and form thereof. Form, as in many disciplines, follows function and gaming spaces are constructed differently to virtual fashion shows, which are in turn different to marketplaces, and so on. These 'virtual platforms' may be the public faces of the metaverse, but they are only one layer of a deeply stratified technological aggregate.

The first principle defining heterotopias does align with the concept of inclusivity and global connectedness expressed in a wide variety of formats, however, in that heterotopic spaces are a constant in every human culture. The metaverse is also representative of this, as global communities share connections to the metaversal portals regardless of geography. By way of example, the multitude of online gaming avenues available demonstrates this phenomenon: from Fortnite to Roblox to TenCent and beyond. In China alone, a meteoric rise in metaverse-based game worlds has been recorded despite an answering pushback from legislation attempting to limit individual freedom within these environments (Ye, 2021). COVID-19, rather than being the stumbling block in the way of so much development, has instead been a significant driver in making the metaverse real. The push towards social distancing and virtual connection the pandemic forced upon the global populace may have seen declining numbers in many industries, but in digital technologies the reverse holds true (Kotler et al, 2021: 72-74) and the metaverse, as a product of digitalization, has only benefited.

Adding to the observation regarding China's gaming proliferation, the ubiquity of heterotopic tendencies within the metaverse is seen in the very different attitudes towards the metaverse exhibited by its major stakeholders. What Foucault (1986) predominantly describes as a Western experience governing our views of time and space has been turned on its head by the

Asian dominance of the emerging metaverse. As Wang (2021) and Ye (2021) both discuss, the birth of the internet may have been a Western-led phenomenon, but the overwhelming evidence is that it will be the East that dictates how the metaverse will operate in the future.

2.2 Transitional functions

Function within the metaverse is not a fixed concept. Just as the second principle of heterotopias dictates, an existing function within a space can very often transition into another. Just by examining the driving force behind the metaverse's current state of evolution – Blockchain – we can see this principle of multiple functions and capabilities simultaneously at work (Roh, 2021).

At its inception, Blockchain was developed as an effort to take back ownership of the internet and return the control of the online world to its users rather than a handful of silicon valley monopolies. While the running joke is that asking ten Blockchain experts for a definition of the technology will yield eleven unique definitions, one description that suits the technology within the metaverse context is that Blockchain is "a general mechanism for running programs, storing data, and verifiably carrying out transactions… a computer that's distributed and runs a billion times faster than the computer we have on our desktops, because it's the combination of everyone's computer" (Sweeney in Takahashi, 2017). Its transparency and accurate ledger of transactions shared to all users along the chain, including end-user consumers, has made Blockchain the obvious choice for building one of the most exciting, fluid and disruptive technologies dominating financial markets – cryptocurrency.

The concept of an economical model built on user engagement rather than a commodity-based standard flies in the face of financial logic, yet Blockchain makes it work and the vast number of cryptocurrency options available globally (Bitcoin and Etherium being the most recognized, but not discounting the likes of Polkadot, Cardano, Monero or even the tongue-in-cheek, wildly speculative Dogecoin) is an example of transitional function. If the metaverse is a mobile, living internet, then cryptocurrency is a mobile form of money. Blockchain is taken even further in the metaverse, though, and the function extends far beyond buying and selling: marketplaces are only one part of what the metaverse offers: China's metaverse boom, for example, relies heavily on online gaming. Social interactions, education, knowledge sharing… all these and more are functional by-products of Blockchain leveraged by the world builders of the metaverse. The decentralized, distributed network that is Blockchain is precisely the system needed to make the metaverse a user-centered, user-operated and user-owned virtual community.

In the west, the cryptocurrency explosion is driven more by capitalist values; a similar east/west schism is seen in other emerging technologies and their application, not just blockchain. Take artificial intelligence (AI), for example: the greater proportion of the American push towards adopting 'smart' algorithms is based on individual satisfaction and hyperpersonalized interfaces with these technologies (Kottler *et al*, 2021: 118-120). The east, spearheaded by its history of Socialism, will instead harness AI's power for large-scale social changes, often in a Baudrillardian nightmare of surveillance and data ownership (Miller, 2019). Consider TenCent's facial verification system, 'Midnight Patrol', that is designed to keep tabs on children and teenagers playing between 10PM and 8AM, and forcefully eject players that fail or refuse the recognition test (Yaling, 2021).

2.3 Spaces within spaces

In nature, the microcosm often reflects the macrocosm. This extends into the physical, such as where atomic structure mirrors the formation of galaxies, as well as the spiritual, one example being the Buddhist belief of man being a smaller reflection of the universe itself. In heterotopic spaces, seemingly incompatible and unrelated spaces co-exist within one shared space. Within the metaverse, single portals often encompass avenues to other, larger portals. The Roblox platform is just one example: Richard O'Connell's shared virtual space is a hub for more than 9,5 million creators, artists and gamers (Roblox Corporation, 2021) all connected through the simple love of games and gaming culture.

It is therefore obvious why so many parallels with the pop-culture phenomenon 'Ready Player One' (Spielberg, 2018) are drawn, despite a plethora of other equally well-realised options being available in media culture: the OASIS in Ernest Cline's 2011 novel and the richly imagined motion picture version is a virtual hub combining meeting place, marketplace, fashion show, event center and gaming platform all under one umbrella, just as the metaverse proposes to do. The immersive shopping environment brought to us by Charlie Cohen, Selfridges, Yahoo and Pokemon, *Electriccity* is a contemporary instance of fiction becoming fact, as was Travis Scott's virtual music performance, *Astronomical*, set inside the Fortnite world. These 'massively interactive live events' (MILEs) are setting a new standard for the experience economy within the digital realm.

You also have the phenomenon of 'mirrorworlds' occurring within the metaverse: just as Foucault (1986:24) described the mirror of heterotopic environments as "a placeless place … an unreal, virtual space", examples like Microsoft's long-running *Flight Simulator* game are actual mirrors of reality, from accurate satellite information detailing topography and architecture to real-world air traffic control all the way to real-time weather systems being recreated within the digital realm (Warren, 2020) for players to interact with. And it is this actual interaction that so subtly alters the mirrorworld: this virtual representation of real space within virtual space is yet another example of these places that are simultaneously everywhere and nowhere (Augé, 1995: 94-96) both existing ephemerally within digital space but still being imbued with the concrete and symbolic construction of place that engages with users' identities, histories and relationships. Thus is the metaverse space in actuality an enacted place overlaid on what we perceive as the 'real' world.

What the metaverse proposes, like so many technologically driven transformative processes, is a re-evaluation of the internet itself. Until now, the cyberspace we have interacted with has been localized, stored at first within physical servers and more recently, the vague and nebulous space called the 'çloud'. As it grow and develops, the metaverse will evolve and iterate, shifting the balance until we, as its users, "will constantly be 'within' the internet, rather than have access to it, and within the billions of interconnected computers around us" (Ball, 2021). While this disrupts and flips the heterotopic argument above on its head, once the digital dust clears the same argument will still hold true: RL as we know and experience it will still exist, only no longer as an external gateway to the metaverse, but a physical extension thereof.

2.4 Zeitgeist

Worlds within the metaverse operate according to their own laws, and the passage of time is no exception. Just as a textbook heterotopia is reflective of a fixed section of time (or heterochrony) so too are metaverse interactions limited to specific time-related constraints. Take the brevity of the battle royale setup of Fortnite: groups have a limited deadline in which to defeat their opponents. This deadline may be reflected in the RL time spent interfacing with the game platform, but as Flow State theory (Csikszentmihalyi, 1990; Mirvis, 1991:636-640) opines, that passage of time is experienced (and possibly displayed) differently. Objects that would take hours to build in the physical are constructed in seconds, for instance.

To take the Fortnite, or almost any other co-operative gaming experience, example further, consider the constraints imposed on players: the 'world' they inhabit only exists for between one and twenty-five minutes and any changes they bring to the world's physical structure (cutting down trees, for instance) are only applied for those players connected for that timeframe. For this extremely limited audience, this miniscule slice of the metaverse is the whole world for that time, entirely separate from RL. That admittedly tiny slice is growing, however, as Epic Games (the publisher behind Fortnite) CEO Tim Sweeney (in Rubin, 2019) asks, "Our peak is 10.7 million players in Fortnite—but that's 100,000 hundred-player sessions. Can we eventually put them all together in this shared world? And what would that experience look like?"

It all speaks to concepts beyond the experience of time's passage. In the metaverse, the future supersedes the present, just as 'what might be' guides vision to a greater extent than 'what is'. Just as Don Ihde (2001) theorized more than two decades ago, there are multiple levels of interaction with digital technologies yet to be experienced. We have already established the metaverse as a form of *embodiment*, or even prosthesis, in the heterotopic virtual environments users enact and imagine before inhabiting. In more simple terms, we use technology to perform functions on a daily basis. The *hermeneutic* level of interaction, where technology becomes a sign in itself, is long established now as purely digital worlds, from game environments to marketplaces and beyond, have become the norm. The metaverse itself is slowly entering the level of *alterity*, as the role of RL in phygitial relations is gradually losing prominence – eventually leading us to a new zeitgeist, where human interactions are often entirely eclipsed by purely digital ones, an era of *background relations*.

2.5 Access granted, access denied

Possibly the dominant shared characteristic between the worlds of the metaverse and heterotopic spaces is the fifth principle: that both are essentially isolated from the rest of the world and require some gatekeeping function and possibly even a ritual of sorts to gain access. Even then, levels of access may be strictly governed or even entirely discarded, depending on both the function and form of the environment under review.

Even if we don't need Gibson's cybernetic enhancements – yet – to access the features and worlds of the metaverse, there are still any number of technological requirements that can be considered a first hurdle. One of the core concepts driving the metaverse, of immediate mobile accessibility, implies the need for a smartphone and data access; over and above this,

some metaverse environments will also require even more. For some, a simple signup process is all while others need a paid subscription; taking this further, if the metaverse offering in question is powered by blockchain, a unique digital identifier and possibly a digital wallet will be essential.

Amazon's 'Go' concept brings mundane retail experiences into the realm of the metaverse via a different mode of access. The cashier-less concept makes convenience shopping truly convenient as all that is required is to scan a QR code upon entry with a valid Amazon account. Following that, shoppers merely take items off shelves and walk out – and Amazon bills them for those items automatically scanned through a clever network of sensors upon leaving the store. Cheng (2019) details how customers are encouraged to "just watch the magic happen" as even linked accounts for family shopping experiences are catered for by the intelligent system that suffuses physical activity with digital interactivity.

There also exists the possibility of illusory access, where external viewing may be possible, but this voyeurism is more a promotional tactic than actual integration into the heterotopia. Consider the metaverse equivalent of live music performance, as evidenced by the previously mentioned Travis Scott/Fortnite event or any similar MILE. Virtual conferences have become the norm in post-COVID society, but other creative and cultural gatherings are also represented in the metaverse, such as MeowWolf's (2021) *Convergence Station*, the online portal to immersive virtual experiences that run the gamut from shopping in alien worlds, exploring prehistoric/posthistoric architecture or even translating six-dimensional landscapes into a mere three – all built on a non-financial exchange system where shared memories sublimate currency.

2.6 Relativity

The metaverse may exist apart from RL, but that interface is becoming more blurred with each passing day. Futurist Kevin Kelly (2016:4-6) discusses how our relationship with technology is one of procedural and pragmatic improvement by increments and these improving technologies are changing the ways we access these environments as well. Heterotopias share a relativistic function with the worlds they exist apart from, either as illusory mirrors reflecting an easily recognized variant on RL, or an idealized structure that mimics but improves the already inhabited version of reality. The wide variety of metaverse worlds on offer are no different. Strictly organized and meticulous systems, such as RFOX VALT, a ledger-based community that embeds "traditional commercial enterprises inside the metaverse" (PRWeb, 2021), vie for popularity with the chaos of the medieval marketplaces like DMarket, an NFT based "skins economy for game developers and players everywhere" (DMarket, 2021) or Decentraland, the "first-ever virtual world owned by its users" (Decentraland, 2021) that make up this platform economy.

The consequence of this popularity is a re-evaluation of individual value systems. If we take Almquist *et al*'s (2016) taxonomy of consumer value as the lens through which we examine the phenomenon, we need to question the value assigned to metaverse interactions by its users. Beyond the functional, as described above, it is obvious that the gamification aspect of so many of the metaverse's realms makes a significant proportion of this value system emotional in nature. Entertainment, therapeutic, and reward value all play their part in shaping the personae of these consumers. However, the life-changing aspects of value (self-actualization and motivation, for example) can be argued as more important: achieving

integration with a metaverse world is a victory in itself, even for digital natives. The novelty of the technology underpinning the systems is the first hurdle; the establishment of an authentic virtual identity with which to navigate the system is the second.

It is these identities, these personae, that bear further investigation in the long run. The online *representations* over *presentations* of self discussed by Avgitidou (2003:135) or Barghe *et al* (2002:41) have evolved from being alter egos to being genuine reflections instead: Blockchain's prerequisite transparency and public record mandate accurate online reflections of RL users that transcends the visual. The proliferation of 'fake' social media accounts and bots of the last decade, described as either "privacy paradox" (Boyd & Ellison, 2008: 222) or "communicative identity" (Ellis, 2010: 37) have long since been eclipsed by users that don not draw distinction between their online and offline personalities. In the contemporary climate, where physiological gender is itself in a state of flux, mere aesthetic representation of the user is far less important than the authenticity of interactions and relationships built in the metaverse space.

As such, given the sheer effort put into and time spent on the metaverse there can be no doubt as to the value of this digital place. Especially when the interface itself extends into having RL consequences for its users, from mere product purchases to knowledge gained to reputation built and more. The epistemic value of RL may be *Sein* for users, but the metaverse is their *Dasein*, their actual definition of being and valued engagement with their chosen world. Thus does metaverse identity become a prosthesis, a coping mechanism for the rigors of human existence and a harbinger of a new posthuman condition: even if the access points are, for most users, separate from the body, their application can be said to make metaverse users cyborgs (Haraway, 1991; Hayles, 2008) as per the accepted academic definition.

As a pioneer in posthuman thinking, Lanier (2010: 25) may have envisioned virtual reality as a separate world which we can escape to, even a "cybernetic totalist culture… a new religion", but it is becoming more evident that the metaverse is rather a mixed reality we inhabit – where digital and physical immersive experiences are overlaid to occur concurrently.

3. Conclusion

Defining the metaverse in any strict, regulated method does mitigate its effect. The romantic, unrestrained expansion of this wild grab for virtual real estate, often described as a "Gold Rush" (Ye, 2021), relies heavily on imagination, not quantifiable data. Nevertheless, the philosophical nature of heterotopias as idealized and enacted environments does make the comparison between these two interpretations of space apt.

While the cases discussed adequately qualify the metaverse as an example of a technological heterotopia, the question does remain: for how long will these enacted virtual worlds remain idealized and illusory? It is entirely plausible that for many metaverse users the balance has already shifted and the heterotopic nature has been eclipsed and the RL environments the rest of us inhabit are the less defined mirror image. This new definition of the boundaries of posthumanism itself needs further interrogation to aid in understanding motivation, purpose and overall effect on all stakeholders in a virtual metaverse ecosystem.

As such, additional inquiry into these users and their identities will be the next phase of my foray into the metaverse, specifically aimed at identifying the reliability of Blockchain-based environments in terms of protection offered for these users. In an unregulated, largely ungoverned wild frontier of virtual expansion, who is held accountable for RL consequences of virtual interactions leaking across the interface?

One thing is certain: despite its unprecedented growth during the COVID-19 pandemic, the metaverse is still in its infancy. As its stands now, the proliferation of metaverse worlds are merely a minimum viable product that justifies us grouping the separate expressions of the larger ecosystem into one examinable phenomenon. The net result being, of course, a new frontier for metaverse research as much as a new phygital frontier.

References

References in text should have this form (surname, year), for example:

1 author:	(Krugman, 2012)
1 author and the same year of publication:	(Hoffman, 2012, A), (Hoffman, 2012, B)
2 authors:	(Krugman & Hoffman, 2014)
3 authors:	(Hoffman et al., 2012)

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