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VR Heterotopia: User Imaginaries of Virtual Reality Headsets as Technology for Reaching Utopic Spaces

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Abstract

The re-emerging nature of virtual reality (VR) and recurring waves of hype have made this technology a conduit for imaginations of solving complex social and ecological problems. Recent iterations of VR, such as mobile VR and VR head mounted displays (HMDs) for casual users, have made it evident that the spatial relations of VR are multiple and complex. This article utilizes the Foucauldian concept of heterotopia to explore how spatialities of VR are imagined and practiced as counter-spaces in a digital landscape of smartphones and social media. Focusing on the heterotopia's ability to provide a space for contesting and inverting the societies within which they exist, I show how VR is constantly juxtaposed against other technologies, digital places, and techno-embodiments in user imaginaries and practices. Through ethnographic materials on domestic VR usage collected in Swedish homes, I found that notions of VR as an "other" or different medium are laden with imaginings of VR technology bringing about a better society—a virtual utopia. These positive futures are paired with and derived from dystopic imaginaries and fictions. Recognizing the necessity to take media imaginaries and their inherent spatiality seriously, through how they are expressed and acted upon in the digital geographies of everyday life, I explore how VR users' contesting ideas are deployed to make VR a hopeful other in a technological landscape. I conclude that conceptualizations that are slippery, self-contradicting, and do works as tricksters have much to offer digital geographies.

Keywords

digital geographies; dystopia; domestic VR; heterotopia; media imaginaries; virtual reality; utopia

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1. Introduction

Utopic aspirations lie at the heart of emerging technologies. Each new medium offers the possibility for a brave new world—the end to constrictions on humanity such as geography, politics, and temporalities of communication (Mosco, 2004). The text presented below is from my fieldwork on domestic virtual reality (VR) usage in Swedish homes carried out from 2023 to 2024. It was the first moment that one of my research participants started talking about the imagined futures of VR using dystopic imagery. Although users would frame their own VR usage, and VR itself, as a medium that references or strives toward positive futures, the utopias of VR imaginaries are confusingly dystopic:

> "We are building our own Matrix," Pärlan says with some profundity. As I ask him about what is to come for VR, Pärlan tells me about a future where we won't have to leave our VR headsets ever, a better future. Confused by the reference to humanity being ruled by machines framed as positive, I ask, "Isn't that what the traitor in the movie *Matrix* realizes? That it is better not to know about the reality outside, if that reality is worse than the virtual one?" As Pärlan pauses, I consider whether it was rude of me to suggest his future vision would be a dystopia rather than a utopia. But Pärlan is more practical in his reply: "Yeah, they really had that figured out, keeping the body safe in the pods and everything."

It is common to draw upon fictional representations when talking about VR (Chan, 2014). Although VR is as accessible as it has ever been on the consumer market, the technology's relation to an imagined future imbues it with a quality of never arriving (Evans, 2018). This shifting nature, where VR is positioned as having arrived while also remaining a technology of the future, makes for an interesting moment in imaginaries of VR technology and the society toward which it is hoped to lead. Following the suggestion from Fraser (2023) to explore VR as a heterotopia, this article explores user imaginings of VR as a device for accessing digital spaces differently. Heterotopia is a Foucauldian concept that, while contested, is widely applied as a spatially focused approach to otherness and deviance (Johnson, 2013). In the case of VR, it provides an opportunity to capture user tendencies to situate VR as a technology that produces counter-sites to everyday digital spaces, framing VR as a different technology within the wider tech landscape.

VR technology produces spaces that challenge our way of talking about digital spatiality, as well as affect our imaginings of media spatialities themself. This article contributes to the increasing interest in imaginaries of media and the mediated in the intersection between geography and media, whether you call that geomedia (Fast et al., 2019) or digital geographies engaging with mediation (Leszczynski, 2015; Rose, 2019). As showcased by Hill (2024) in her use of mental maps when exploring streaming practices, media imaginaries are always spatial. We find examples of this in work on building for digital futures (Couldry, 2024), geomedia imaginaries (Fast et al., 2024), VR imaginaries of different realities (Messeri, 2024), metaversical dystopias (Lanier, 2021), and digital constellations and expression of hope (as explored in this thematic issue).

Recognizing that all media use is placed somewhere (Fast et al., 2019), that media use creates complex spatial relations McQuire (2012), and that inquiries into media should have a spatial sensibility (Braunerhielm & Bengtsson, 2023), this calls into question how the casual usage of VR head mounted displays (HMDs) ties into imaginaries of VR futures, particularly with the spread of the latest iterations of quite affordable, plug-and-play VR HMDs that you can use "anywhere" (Saker & Frith, 2018, 2020) including in one's own home.

This article contributes to empirical work on the spatial relations produced through VR usage in the field of digital geographies. Although engagements with VR as a technology and VR spatialities as empirical subjects for digital geographers are increasing (Osborn & Jones, 2023), further engagements remain necessary (Bos, 2021; Fraser, 2023; Osborn & Jones, 2022). Contributions by geographers working with VR, augmented reality (AR), and extended reality (XR) have already noted the dystopian and utopian connotations of the technology. For instance, Jones (2023) comments on the dystopian futures of the metaverse, and Wright (2023) frames XR experiences as a heterotopia of deterritorialization.

What hope can be found in taking seriously the imaginings of VR as different from other media technologies in the current tech landscape? I approach user understandings of VR as providing for and producing other spaces as a hopeful possibility; the imagined difference of VR as a medium might provide insights into hopeful trajectories that include futures of resistance to all-encompassing digital convergence and platform domination.

In the following sections, I first engage with VR spatialities and their relationship to reality, which I argue has complicated conceptualizations of VR and VR HMDs within the field of digital geographies. Second, I introduce the concept of heterotopia and describe geographers' productivity and annoyance in deploying this concept in their work. The methods section presents the collection of empirical material on VR usage in domestic settings in Sweden. The results discuss VR as a heterotopia, with a focus on the heterotopias juxtaposing quality and utopic aspirations. The analysis reveals that users consider VR as a hopeful other in a technological landscape; in the imaginaries and practices of VR-usage, utopic and dystopic futures are blended until they are hard to tell apart.

2. Background: Spatiality of VR and Digital Geographies

In his 1967 lecture, *Des Espaces Autres*, Foucault states, "We are in the epoch of simultaneity: we are in the epoch of juxtaposition, the epoch of the near and far, of the side-by-side, of the dispersed" (Foucault, 1984, p. 1). For Foucault, this epoch of scrambled spatialities was rooted in technological developments: Emplacement was shifting from the located to a question of reach. This called for contemplation of the questions emerging technologies posed to our sense of the spatial—and no medium plays on illusions of infinite reach and anywhere-ness like VR.

VR is a medium often explained through its immersive capabilities—that is, the notion of feeling present in the virtual, and the spatial sensation of being "there" created through VR devices (Bailenson, 2018). Measuring and improving immersion to optimize VR has been an ongoing endeavor within VR research (Slater, 2009; Slater et al., 2022; Valentin et al., 2019; Witmer & Singer, 1998). These immersive capabilities feed into imaginaries of being able to visit places and embodied outlooks virtually, reaching through time and space to visit inaccessible places such as historical sites (Izaguirre et al., 2024), refugee camps, and coral reefs (Hassapopoulou, 2018), as well as seeing from marginalized outlooks such as indigenous and trans bodies (Kostopoulos, 2024). Imaginings of inhabiting others' embodied outlooks are especially strong in the hype of VR as an empathy machine (Milk, 2015). Recent work in media and communication studies has, however, called for critical approaches to immersion (Bowman et al., 2024) and critique of VR as a device for identity tourism (Kukshinov, 2024).

Despite the alluring spatialities evoked through VR applications and imaginings, digital geographers have yet to engage with VR as a spatial medium on a grander scale. I am not the first to note that, in terms of empirical engagement, Virtual Reality and VR have been somewhat overlooked (Blackman, 2022; Bos, 2021; Fraser, 2023; Osborn & Jones, 2022, 2023). Recent work in digital geographies on digital ecologies names VR and AR as a way to engage with world-making and materiality of the digital (Turnbull et al., 2023). The most ongoing engagement with VR in the field of digital geographies is represented by the works of Jones and Osborn, who have considered the metaverse (Jones, 2023), embodiment in VR (Osborn & Jones, 2022), VR in geography education (Jones & Osborn, 2020), and VR as a research tool (Jones et al., 2022). That VR is a technology for engaging with places (Gardner et al., 2023) can be noted through the intersection between VR research and research on teaching geography in higher education. Not only a tool for teaching but for knowing and going places, Jones and Osborn (2020) and Schott and Marshall (2018) have shown that virtual fieldtrips can produce the same insights and sensations for undergraduate geography students as "real" fieldtrips.

Although VR can produce a place experience, this experience is time again understood as a different way or mode of being in place. VR is described as giving another dimension to interacting with the teaching material (Bos et al., 2022; Schott & Marshall, 2018), and McLean's (2021) attempt to use VR to amplify indigenous voices has shown that VR is imagined as a possibility for decolonial practices and different ways of knowing. Roelfsen and Carter-White (2022) found that virtual fieldtrips provided a socio-spatial environment with other rules of interaction; for students who felt inhibited by visiting historically charged sites such as Auschwitz, the virtual visit provided a condensed, deferred representation of the actual place. Bos et al. (2022) found that students became more critical through engaging with a virtual place in VR because they reflected not only on the virtual place as a place, but as a representation of a real place. VR is thus constantly made out as other than and a possibility to reflect or mirror the real. Šašinka et al. (2018) even argue that it is this juxtaposition of place representations and environments that makes VR a good fit for geography education.

At the heart of discussions on VR in human geography is the question of realness and the relationship between VR and non-VR. VR is a medium that confuses conceptualizations of materiality and the reality of digital spaces at different levels: from the simple question of where one *actually* is and how the spatialities of VR relate to other emplaced media practices, to the very question of the digital/virtual/physical divide and the real and the virtually real. Descriptions of spatial experiences of the virtual, such as sensations of being removed from one's immediate geography (Osborn & Jones, 2022) or being "teleported in and out of a digital landscape" (Zhou et al., 2024), lend themselves to this separation of virtual and non-virtual places. The entanglement with these questions can be traced back to earlier discussions of VR technology, virtual reality, and cyberspaces, which engaged geographers interested in emerging virtual spaces and places in the 90s and 00s. Conceptualizing VR as an interface to enter cyberspace, the exciting space developing through computers and the internet (Kitchin, 1998)—the hype was recognizable. Discussions of cyberspaces centered on how to understand the virtual in relation to the real or the material (Batty, 1997) and reduced VR to a "badly analyzed version of the real" (Doel & Clarke, 1999, p. 261) within the field of virtual geographies. It is no wonder that the emerging field of digital geographies, picking up some of the spaces and objects that virtual geographies aimed to study, declared an interest in concrete objects, doings, and ontics rather than the nature of reality or ontologies (Ash et al., 2018).

The discussion of realness and reality looms over discussions of the virtual in human geography (Kinsley, 2014). It haunts discussions of the digital through quests for material articulations of how the ubiquitous digital

entangles itself with our ecologies and worlds (Turnbull et al., 2023). The concept of heterotopia refuses taxonomies and holds conflicting qualities together, being a real and unreal place at the same time (Foucault, 1966/1970). Therefore, rather than avoiding this discussion of reality, I argue for the separation of the virtually real and the real as a productive tension in user imaginings of VR.

3. Introducing Heterotopia

The development of the concept of heterotopia can be considered as having two origins. The first is given in the introduction to his book *The Order of Things* (Foucault, 1966/1970), where Foucault is reading Borges's fictional taxonomy, "Celestial Emporium of Benevolent Knowledge." Reflecting on the merciless mix of real, made-up, and lucidly dreamt creatures, Foucault (1966/1970) states that "the non-place of language" is the only place where these animals can meet and be juxtaposed (p. xviii). The heterotopia is introduced through its properties of gathering the seemingly incompatible: It springs from the need for a place where the unreal and real can co-exist—a utopia.

The second mention of heterotopia is in the lecture *Des Espaces Autres*, commonly translated as *Of Other Spaces* or *Different Spaces*, given in 1967 and published in 1984. Here, Foucault considers relational sites, or relations between places, in response to the spatial anxiety caused by technological developments. He focuses on utopias and heterotopias, places that contest the places they refer to through representation and inversion. As related concepts, Foucault (1984) makes a distinction between utopias as "sites with no real place," while heterotopias are real places that "have the curious property of being in relation with all the other sites, but in such a way as to suspect, neutralize or invert the set of relations that they happen to designate, mirror, or reflect" (p. 3). The relational—both through heterotopias being relational sites and their raison d'être as spatial expressions of the constant juxtaposition against other places in their societies—is present in both these starting points. In *Des Espaces Autres*, Foucault (1984) sets up six conditions for his heterotopia. These principles are presented below. I then discuss the juxtaposing quality of heterotopia, which I argue can be found in all of principles of heterotopia, as well as what I call the utopic aspirations of heterotopia: The need for heterotopias to relate to, reflect, and mirror a perfect place.

3.1. Principles of Heterotopia

The first principle is that heterotopias exist in all cultures. Due to their juxtaposing and relational nature, heterotopias take different forms in different societies. Here, Foucault (1984) distinguishes between heterotopias of crisis and of deviation, arguing that the former speak to a need to place some experiences outside of daily life (the menstrual hut, spaces for the sacred). Foucault observed an increase in heterotopias of deviation, answering a need to place some people and phenomena outside of society (asylums, prisons, retirement homes). Heterotopias serve the double function of providing a refuge: a place of illusion, as well as a place that is other, yet perfect in a way that real everyday places are not.

The second principle is that, because heterotopias serve distinct functions in their societies, their properties can change over time. This again speaks to their juxtaposing quality: As societies change, so do the ways in which heterotopias are constituted as other than. Foucault gives the burial site as an example and how spatial planning, as well as social norms constructing death as removed, have affected graveyards.

The third principle is that heterotopias "are capable of juxtaposing in a single real place with several spaces, several sites that are in themselves incompatible" (Foucault, 1984, p. 6). This is exemplified by the garden, which gathers plants, cultures, and ecosystems as a microcosmos of its own. Other spaces can have presence in the single heterotopia which holds ambiguous relations with other places and spaces present, "simultaneously represented, contested and inverted." (Foucault, 1984, p. 3).

The fourth principle is that heterotopias break with traditional time and relate to, as well as constitute, a slice of time. Heterotopias function best when they have multiple, simultaneous, and confusing temporalities. Examples here include festivals celebrating historical events, archives, and museums.

Principle five is that the access to a heterotopia is not straightforward. In Foucault's view, heterotopias condition their entrance through systems of opening and closing; they can be isolated, but they are not closed. To enter the heterotopia, one must have knowledge of access, as they demand certain rites to enter (e.g., sacred sites, hammams, or saunas). To recognize the heterotopia as an "other" space, one must enter it in a way that performs this otherness and separation.

Principle 6 concludes that heterotopias are relational to all other spaces. Here, Foucault distinguishes between the heterotopia of illusion, which is a seemingly perfect place that exposes other spaces as illusory (exemplified, for Foucault, by the brothel), and the heterotopia of compensation (where Foucault gives the example of early colonization), the imagined creation of an ordered place that is juxtaposed against the disorder of other spaces.

3.2. The Juxtaposing Quality of Heterotopia and Its Utopic Aspirations

Foucault (1966/1970) describes heterotopias as disturbing due to their capability of holding things together that contradict each other. This makes for a refusal of taxonomies (Knight, 2017). From the first mention of heterotopia, the sheer ridiculousness of Borges's taxonomies leads Foucault (1966/1970) to muse on heterotopias as spaces that confuse categorizations and destroy syntax. Foucault's laughter can be seen as extended to heterotopias when grouped, as the mentioned examples of heterotopias in themselves do not go together—a train, a garden, a graveyard, a brothel. This eclectic gathering is continued by scholars who use this concept; porn webpages, group dynamics, masculinity practices, museums, and the Vienna Gardens are merely a few examples (Johnson, 2013). One might be tempted to deem heterotopia a concept without sharp edges (and some do, as we shall see). But it is in the combination of the juxtaposing quality and the disruptions of taxonomies that it becomes a trickster concept. Heterotopias let the real and the unreal go together in a way that does not make sense. As we see in the six principles, heterotopias are constantly juxtaposed and juxtaposing other spaces, temporalities, and embodied behaviors. This juxtaposing quality is dependent on a certain spatiality of proximity, with heterotopias appearing outside as well as side-by-side to other sites. It creates a place that is different or other, through positioning. This juxtaposition allows for the heterotopias' needs to be self-contradicting, inhabited by opposites. For example, heterotopic sites are both mundane and profound (Johnson, 2013) and can be real and unreal simultaneously (Foucault, 1984).

This is underlined in heterotopia's relation to the non-place, utopia. I am not the first to argue that utopic aspirations are central to how we understand heterotopias. Johnson (2013) notes the strong imaginative qualities of heterotopic sites, and Dalton (2014) argues they are key to understanding heterotopia as a

concept: “There is no heterotopic space that does not have a corresponding utopic vision and, far from being ‘imaginary,’ utopias give form to the content of heterotopias” (p. 50).

4. Approaching Heterotopia: Spatiality, Difference, and Digitality

In presenting heterotopia as a trickster concept of spatial difference, contesting not just other places and spaces but also itself, I set the stage for presenting why geographers have found heterotopia both provocative and productive. While VR has been theorized through engagements with VR in geography, empirical engagements with VR HMDs by geographers are bourgeoning. Heterotopia has had an opposite trajectory: Engagements with and cataloguing of heterotopias have been carried out over global objects of study, ranging from cultures, architecture, places, and countries (on the cottage industry of heterotopia, see Johnson, 2013). At the same time, heterotopia as a concept is often accused of lacking theoretical grounding. These opposite directions make for a conundrum in this article; analyzing VR as a heterotopia purely as a theoretical question is a disservice to empirical VR research in digital geographies, which benefits from empirical engagement. But establishing the empirical case of VR as a heterotopia will do just that—add another space to the bestiary/atlas of these spaces. Taking Harvey’s (2000) question of why we should care if a place is heterotopic seriously, I present how heterotopia as a concept has been both productive and contested by geographers and introduce my approach to it. I then present my methods and data collection on casual domestic VR usage.

4.1. Contesting Heterotopia

In the context of a lecture for architects, *Des Espace Autres* where Foucault develops the concept, heterotopias have been understood both as an opportunity for Foucault to enjoy a pure contemplation of space, unbound by fitting in with theoretical frameworks, as well as an underdeveloped concept disconnected from the rigor of the Foucauldian theoretical framework (Dalton, 2014; Harvey, 2000; Johnson, 2013). Heterotopia is often presented as a concept in need of further contextualization and paratexts (Knight, 2017). For geographers engaging with the concept, the interview Foucault gave in *Héredote* in 1976 on spatial questions in his writing is considered one important paratext (Johnson, 2013). The interview discusses questions of spatiality in Foucault’s concepts and theory, and it begins with the interviewer stating that time and temporalities are privileged over space and spatiality in the philosopher’s work. What is often highlighted is Foucault himself concluding that he has changed his mind throughout the interview, and that in his further theorizing, “Geography must indeed necessarily lie at the heart of my concerns” (Foucault, 2007, p. 182). Cresswell (2015) holds up this interview as a turning point for Foucault, recognizing that, in questions of power, space is just as important as time—or even more so. Curiously, this interview is championed as Foucault recognizing the primacy of spatiality, while Foucault’s texts on heterotopias are heavily criticized for their lack of theoretical rigor.

How to understand heterotopia is in itself contested. Johnson (2013) argues that geographers like Saldanha (2008), who call heterotopia “disproportionately influential” (p. 2081), and Harvey (2000), who holds up the *Des Espaces Autres* as if not typical of Foucauldian theory, typical for his approach to geography, both use heterotopia as a vehicle for their overall critique of Foucault. Elden (2002), meanwhile, underlines how *Des Espaces Autres* is not typical of Foucault’s geographical approach, which has more to offer. In *The Dictionary of Human Geography*, heterotopias are defined as “any real or metaphorical space that permits thought and

action that noticeably departs from the conventions of a society" (Rogers et al., 2013). It is thus easily reduced to a question of spatial difference and or places allowing for behavioral deviance. Dalton (2014) challenges the one-size-fits-all approach in this adaptation of the concept as simply any deviant space, or space as "other." Rather than inventing a radically new space, heterotopia is a spatial approach.

Heterotopia has become particularly successful as a spatially oriented approach to study the spatialities of difference, most notably in Hetherington (1997) and Soja (1996). Johnson (2013) argues that heterotopia should be understood as a methodological concept that allows for modes of studying difference and space with an emphasis on the emplaced, while Rousseaux and Thouvenin (2009) use heterotopias as epistemological sites for exploring otherness or deviance in the virtual. Lefebvre (1974/1991) calls heterotopias "contrasting places" (p. 163) or "mutually repellent places" (p. 366), hinting at their processual nature. One could argue that heterotopic places are simply other, but then again, everything is other than something, unless it is per definition everything. Rather than difference, deviance, or resistance, I suggest lifting up the juxtaposing quality of heterotopias as constantly positioning them as other, allowing the heterotopia to constantly shift and morph in how it is imagined and experienced.

4.2. Methods and Data Collection

The data presented in this article were collected during the period 2023–2024 as part of an exploratory study on VR usage in Swedish homes. As Pink (2021) notes, homes are environments where one, as a researcher, cannot spend prolonged periods of time without becoming part of the place and social setting. I prefer Wilmott's (2020) term "ethnographic encounters," although similar data collection processes (interviews and participatory observations) have been deemed ethnographies within the field of digital geographies (Ash et al., 2023). The study design, including interview questions and observation schema, underwent a review by the university's ethics board. The study was approved as the data collected and the suggested analysis would not tend to include sensitive personal information. Participation in the study was deemed safe and without any negative impact on the research participants. The participants did not receive any compensation or benefit for participating. Participants were recruited through various channels organized around VR including Meta groups and Discord channels on the subject of VR as a technology, specific VR consoles, and specific VR experiences and games. This was complemented by snowball sampling.

Drawing on Pink's (2015) sensory ethnography, data collection aimed to capture users' sensory experiences and understandings of their emplacement and embodiment when using VR at home. Data collection was structured as a home visit with an audio-recorded interview and video-recorded observations. The questions were organized around the usage area, embodied usage, and the social setting of the home. A total of 24 research participants over 22 homes shared their ideas about usage, spaces, and practices of domestic VR. The users were recruited as casual users of VR who all owned a VR HMD that was kept and used in their home. One third of the participants were women and two-thirds were men, with an age range of 19–58 years old.

Recognizing that data collection took place in the research participants' homes, an intimate environment that, in most cases, was shared with others (e.g., spouses, partners, children, and pets), and that the data collection was carried out by the author face-to-face, some reflexivity is in order. Although there are limits to what reflexivity can do in accounting for the researcher's effect on the data collection process (Rose, 1997), it speaks

to the fact that the researcher does not shed her body in going out to the field and that power relations and social position carry over to the social situation of data collection (Valentine, 2002). In this study, the fact that I am a white, middle-class, relatively young-looking woman probably played into my participants' comfort in letting me into their homes. Because about 50% (n = 13) of research participants were parents, the fact that I was a mother of toddlers worked to further flesh out my person as familiar in a domestic setting (as well as providing an excuse to claim my home was messier than that of any research participant in the study, something women would often make excuses for when letting me in).

The data were transcribed and the material was coded using the qualitative data analysis software NVivo. This was followed by abductive analysis which allowed for significant themes to arise both from theory as well as the material. This article focuses on the themes of imaginings, the relationship between VR and other current and future realities, as well as notions of VR in a wider societal technological ecosystem, which are themes that emerged from the material. The material is presented in a summarized fashion as well as in longer quotes when needed to illustrate complex and sometimes self-contradictory beliefs among the users in the study. Based on user preference, participants in the study either chose to participate under their own name, chose an alias, or were given an alias by me. These names are used to present their statements in Section 5. The research participants are referred to as users and participants in the study interchangeably. Claims about VR users should be read as referring only to users who participated in this study.

5. Results and Discussion: Juxtaposing VR Spatialities

In this section, I demonstrate how VR is constantly juxtaposed against other technologies, spaces, or expressions of digitality and technology in our society through user practices and imaginaries. I use Foucault's principles of Heterotopia to structure the discussion, showing how users constantly position VR technology as other or provide a quality of otherness. I focus the discussion on utopic aspirations to Principle 6, where I find that constellations of the real, the virtual, and the hyperreal build toward imagined utopic/dystopic futures.

5.1. Principles 1–2: VR in the Digital Landscape

To scholars of and professionals working with VR, the acquisition of the VR company Oculus by Meta, formerly Facebook, signaled that VR as a technology had arrived (Bailenson, 2018). For users in the study who owned a Meta headset, the connection to Meta or the fact that they could see who from their friend lists was using VR did not affect their choice of which virtual spaces to visit. Users cared little for the connectedness of their VR device to social media, and the connection to a Meta account was mentioned only in cases of annoyance. To the dismay of some users in the study, VR devices from Meta require users to have a Meta account to use the headset. Matilda was angered by the isolating effect this created for the headset, locking it to one user. She, a married mother of two, would like for the VR to be a family device, and saw a future for VR in classroom settings, but the logistics and privacy infringement of forcing students to get user accounts made her hopes for VR as a teaching device complicated. Wilke, meanwhile, tried to use his headset without an account for as long as possible. When he gave in, he felt immediately punished for it: The headset kept giving him pop-up notifications in all his virtual experiences from a health app that he could not uninstall. Both Matilda and Wilke expressed annoyance at attempts by Meta to connect VR to other digital spaces, encroaching on the feeling of VR as a counterspace. Users expressed experiencing

VR as being invaded by platform logics, while it would preferably be a separate space in the societal digital landscape.

Foucault (1984) argues that, historically, heterotopias have provided spaces for *crises*—situating events that needed to happen outside of society—but that we now see an influx of heterotopias of *deviation*—spaces that allow for different behaviors and norms. The constant juxtaposition of VR technology as other to social media and the societal tech landscape overall was not expressed by users as a hope for a space allowing for deviant behavior. Rather, other technologies were posed as deviating from social behaviors, with VR providing a more real connection. Robert, a very active user of his VR headset, had strong feelings against the spread of smartphones and social media and the effects they might have on younger generations' mental and physical health. VR, he argued, is something else; a place where you can *really* connect. Users discussed VR as different from normative digital socialites of our time, and they imagined it as providing a possibility to explore connections in digital spaces.

Because my data collection was carried out in 2023–2024, the upcoming release of Apple Vision Pro was something that came up as participants discussed VR's position in the wider tech landscape. Apple's release was imagined as a possibility for VR, and many users mentioned Apple's ability to make technology become mainstream. That VR technology would spread throughout society was imagined as a positive. Although VR was understood as a technology providing a counterspace to social media and platforms, users looked forward to VR becoming part of societal processes rather than a technological outsider.

5.2. Principle 3: VR and the Juxtaposition of Spaces

Foucault (1966/1970) describes how heterotopias play with and disrupt taxonomies. This can be seen in the varying spaces accessed through VR and how users understand them. There was no consensus among users on what kind of space VR is or what activity VR HMDs should be used for. Rather, users were surprised by their usage and which spaces they used their VR HMD to access. The third principle of heterotopia states that heterotopias can create their own microcosmos with ambiguous relations to the spaces which they reference, contest, and invert. This is especially noticeable in the relationship between VR HMDs and gaming spaces. Although these headsets are used to access a plethora of spaces, users reported using VR for work (as an office space or for meetings), traveling devices (pre-visits or actual trips), and gyms (home gym equipment or a way to leave the home for a workout, without actually leaving), many users have or are currently using their VR HMD for gaming.

Gaming makes up a significant part of the content bought in VR stores (Wehden et al., 2021). Notably, users expect and describe gaming spaces in VR as different from other, normal forms of digital gaming. This is why Stefan expected to be mind-blown when he got his first VR headset: this would be something else. Mirea, a self-described gamer, expressed surprise at her VR gaming, which she considers different from video games as a hobby. Pärlan and Vincent spoke of VR as a different style of gaming, more physically taxing and therefore not as at hand as a video game. This is reminiscent of Joffe, who traces her VR usage to being an old gamer with fingers that are too slow: VR provides another, embodied form of gaming. Non-gamer users had another way of juxtaposing VR as a different gaming space. Kunru, who turned Beat Saber into a virtual home gym, reported not being into games at all. Chiv, who had never been interested in gaming or technology, found himself part of an esports team in a VR game, with a complete lifestyle change of scheduled matches and

training sessions. Even for users who gamed or visited gaming spaces, VR gaming was juxtaposed against gaming as such. No matter if juxtaposed against the digital spaces of gaming or gaming as practice, VR as a heterotopia is constantly made out to be different.

5.3. Principle 4: VR Chronotopia

According to Foucault (1984), heterotopias play with time, which can be gathered, distorted, and multiple. Access to places that are heterotopic through VR (e.g., museums) is an example of these stacked temporalities and multiplicities (Korkut & Surer, 2024). VR lines up and provides access to virtual spaces such as gyms, games, travel destinations, and offices—thus blurring whether time is spent on leisure or labor. Anna, who bought her VR for virtual traveling, found herself playing violent action games to blow off steam, and Thomas, who expected to use his HMD for gaming, surprised himself by mainly using his VR as a home gym. Not only do the heterochronologies of VR confuse what kind of time is spent, but users also expressed a loss of the ability to sense time. Several users reported they found it hard to keep track of time in VR, and the HMD's caution that the battery had drained was a common reference point that two hours had passed. Users who usually checked the time on their phone lacked this option in VR, as they most commonly put away their phone when entering VR.

Although VR contains multiple temporalities, the future was the main temporality mentioned by users. Guy said that VR is "like something from the future," and Vincent noted his first go at VR as "arriving in the future." Users like Stefan, Robert, and Cam, who all tried VR for the first time in the 1990s, with lower graphics and brutish immersion, all recalled a futuristic feeling, glimpsing the future at low resolution. VR has a property of never arriving (Evans, 2018). The link between VR and the future is so strongly forged that even the possibility of getting VR for one's home does not mean that the virtual future is here. Although they were using VR HMDs in their homes, users talked about VR as a technology of the future that has not yet arrived. As an illustration of this vision of VR as a futuristic device, Max said that maybe VR would be here when we have flying cars. As a heterotopia, VR connotes the utopia of the virtual society and morphs to remain out of reach.

5.4. Principle 5: Entering VR

Foucault (1984) states that rites of transition must be performed to enter heterotopias. In the case of VR, these transitions serve both to mark entering another space and as expressions of spatial, embodied, and technological needs. Because VR is a separate space, but the user also remains in the physical place, some users have rituals for preparing their home for VR usage. They also reported spending time acclimatizing their body to VR to avoid what Wehden et al. (2021) call cybersickness. Centering user imaginaries of VR as a technology of otherness, and how VR is juxtaposed as providing access to different technological spaces, I highlight how connectedness and loneliness are expressed through casting. While PSVR and PSVR2 have auto-casting abilities (showing what the VR HMD user is seeing on their screen on another screen, like a TV or computer monitor), the Quest 2, the most common headset in this study, does not. Anna commented on this separateness of the virtual space, the isolation of the user, when she told me how there was no point in letting her husband try the VR: "He'll ask me what to do, and I can't. It's not like a videogame where you can just help. I can't see anything or push a button for him. You can't help anyone in there." Several Quest users expressed the need to cast to be able to help someone in the virtual space, but even when casting, the sensation of being intimately alone in a virtual space can be overwhelming. Guy describes playing a horror game while

having friends over. Although he was auto-casting through his PSVR2, he describes walking through the dark forest as something he experienced alone. In entering VR, you leave the home behind to enter a lonelier yet connected virtual space.

5.5. Principle 6: Utopic Aspirations and Imaginings of VR Futures

Heterotopic places are not only juxtaposed against other real places, but against unreal places as well (Foucault, 1966/1970). It is in heterotopia's Principle 6 that we find the relationship to the utopic the most pronounced. Dalton (2014) argues that each heterotopia has a utopia to which it refers, and although VR is a harbinger of good futures (Messeri, 2024), it is not always clear where the boundaries between the utopic and dystopic lie. Users provided numerous examples in which VR technologies are imagined to solve problems such as: an empathy machine for showing the lived experience of battered women; the possibility for virtual intimacy through VR sex for those unable to have intimate relationships in their non-virtual life; a space for youth to engage with the digital in healthier ways; an option to pacifying technologies like smartphones and computers; a way to reduce our need for painkillers through entering simulations that work to remove one from medical situations or bodily experience; or for phobia treatment. VR technology was described as having unpacked potential for positive change. Yet users kept referring to their imagining of VR futures through fictional work laden with dystopic narratives. When users described what sparked their interest in VR and imagined futures that VR HMDs would produce, it was through cultural references such as *Neuromancer*, the *Matrix*, *Johnny Mnemonic*, *Lawn Mower Man*, and *Ready Player One*. That VR is understood through fictional representations and cultural expressions is in itself nothing new (Champion, 2021; Chan, 2014). But the side-by-side, dynamic contrasting of how VR is a technology for bettering society that is derived from and inspired by dystopic narratives showcases the breakdown of categorization and dissolving of taxonomies that heterotopias enable.

In this final section, I present the utopic aspirations of VR as a heterotopia from users' imaginings of VR futures as they relate to the real/unreal. This reveals a sliding scale of the relationship between imaginings of VR and non-VR. Here, VR becomes hyper-real; it exists as its own realm in a digital landscape or presents a sharp split between virtual and physical/analogue reality. Throughout these imaginings, the utopia is confused with, overlaps, or becomes accentuated by dystopic futures. This article started with Pärlan's vision of a virtual space we have no reason to leave, if the VR technology is good enough. The utopic aspiration of this VR heterotopia would be for VR to replace the non-VR as primary. It is a utopic future as Baudrillardian (Baudrillard, 1981) simulacra: VR is more real than the real, it is the site of our life. VR would thus become a heterotopia of illusion (Foucault, 1984), revealing physical reality as imperfect and flawed. This utopia demands complete immersion that needs no breaks from a perfected virtual world.

The notion of never having to leave VR blends the dystopian/utopian striving of VR as a heterotopic device. When asked about the future, Cam mentioned never having to take the headset off: "In the future, VR will replace the phone. A headset you wear for all hours of the day. Charging while you lie down to sleep, still wearing it. Your whole life goes through a camera lens." This was not a dystopic vision for Cam; rather, he was dreaming of more immersion in his daily usage, a running bowl, a haptic vest that would make him feel interactions on his physical body. We might consider whether heterotopia's compulsion for juxtaposing, which confuses categorization and taxonomies at the cost of the stability of the heterotopia as a singular place, can be extended to the heterotopia's utopic aspirations; what becomes utopic or dystopic depends on what it is juxtaposed against, thus blurring the boundary between the utopic and the dystopic in the

imagined futures of VR. For Robert, the utopic possibilities of VR lie in how it is juxtaposed against social media, which he considers a technology that makes us antisocial. In sharply distinguishing between VR and other media in the digital landscape, Robert observed how hard it is to be together in the analogue world, because people are constantly on their smartphones. VR, meanwhile, enabled people to be together in the digital in a meaningful way. Dalton (2014) underlines the relationship between the heterotopia and utopia through how heterotopias mirror, invert, and relate to specific utopic aspirations. Although there is a loneliness to immersion through VR HMDs, in the virtual utopia reached through VR human connection is key. The duality of being an isolating technology for sociality is a heterotopic trait of VR; the refusal of taxonomies provides a place that is self-contradicting and shifting.

Kunru and Yu also make a clear distinction between the virtual and real worlds. Rather than striving against the virtual, however, Kunru argues that it is not a positive that VR might provide a perfect alternative to everyday life:

> I do have a negative comment on the future of VR. The idea, that when you put on your VR, you enter another world. You start using maybe other characteristics of you, doing other things in the other universe. It's like they (Meta) are saying, "We can make it so that you feel like you can get rid of your real life and enter another space." It's not a new world! It's a bit un-human. If you can do a social activity in reality, then do it in reality.

Paired with this imaginary that VR might lead to a future that loses its grasp of what is real and meaningful, Kunru and Yu still see VR as a technology with a positive impact on industry, and they are looking forward to increased immersion in domestic VR. Again, we see a breakdown of categories in imagining VR futures. Yu imagines that the separation between the virtual and the real will become starker; he thinks society's youth are more intrigued by the analogue than by misleading virtual spaces. To underline the separation, he ponders: "I guess future generations will be more into reality than the digital."

6. Conclusions

I have offered up heterotopia as a concept for digital geographies to juxtapose the current dystopic techno-political landscape with utopic aspirations, to consider hopefulness and difference in a time of a collapsing sense of the real. Hetherington (1997) argues that heterotopias should be understood through how they recombine "social control and expressions of freedom" (Johnson, 2013, p. 792). The current technological and political moment of White House bromances, doom scrolling embodiment, apathy before every day all day mass surveillance, the spread of genocidal technologies such as AI facial recognition (Mortensen, 2024), and live-streamed genocides call for investigating how realities are shared, overlapping, and conflicting.

While the end of geography is a driving mythology for the development of cyberspaces (Mosco, 2004), or what we today call the digital, making sense of these spaces and places requires spatial thinking. Although VR as a technology has not yet taken off in the platform economy, there has been significant interest shown by tech giants such as Sony, Apple, and Meta in developing their visions of the future. The imaginaries and politics of developers (Messeri, 2024), as well as the ideologies of developers, companies, and business leaders (Evans, 2018), affect where VR is going today. While the embodied internet of Zuckerberg's dreams, his VR utopia,

might have been simply a business move for Meta to have its own hardware production, the Metaverse is an imagined future backed by a lot of money (Evans et al., 2022). Lanier (2021) states that although VR might be imagined as a utopia, the Metaverse is deeply troubling and attempts at integrating VR "can even have a lonely, dystopian flavor" (Lanier, 2024).

This article began as a way to capture my research participants' imaginings about VR as a technology, as it related to their everyday usage. These imaginings were simultaneously utopic and dystopic, juxtaposing VR against other technologies, media, and forms of being together in the digital. Like Messeri (2024), pondering the "unquestioned acceptance of VR's benefit to humanity" (p. xiii), I found that dystopic references were used to describe utopic futures among home VR users. While VR has always been heavily tied to sci-fi and cyberpunk (Champion, 2021; Chan, 2014), we have the recent example of Turnbull et al. (2022) turning to science fiction and the weird to grasp current socio-ecological conditions.

Foucault's musings on heterotopias begin with Utopia, a real/imagined place created by Sir Thomas Moores in 1516. It can be found between Utensia and Uxal in the dictionary of imaginary places (Manguel & Guadalupi, 1999). If all happy families are alike, maybe all utopias are as well. Dystopias, meanwhile, are myriad and adapt to political climates and imaginings. The VR heterotopia described in this article is in constant flux to remain other to the particular geopolitical technological moment of today; this conversation reaches beyond VR and is expressed in a media landscape of fractured, different realities (Messeri, 2024). As the geopolitical landscape changes, we should pay attention to how technologies are shaped by imaginings of a better world, especially when multiple realities are being championed violently. Here, heterotopias can provide a starting point for approaching articulations of digital spatiality, if not differently: as unstable, constantly juxtaposed spaces. What I call the juxtaposing quality of heterotopias could also be formulated as a relational compulsion. The need for heterotopias to constantly juxtapose, to present themselves as different or counter to other places, makes them unstable as specific places. This is also a hopeful possibility: to be able to remain a counter and outside the society it is mirroring, inverting, and reflecting, heterotopias must be flexible in their contestation.

This provides for a slippery concept. I argue that digital geographers should seek out trickster concepts, as Haraway (1991) would have it. Concepts that defy taxonomies or, as Turnbull et al. (2022) put it, in their invitation for us to join in weirding geography, unsettle classification to allow for conceptualizing self-contradicting, fast-morphing media geographies. Engagement with media imaginaries and practices, such as VR usage, needs not only to center spatial thought, but also explore the spatial imaginings beyond a discussion of the real and virtually real, material or abstract. I have argued that the lack of empirical work on VR in geography stems from the very discussion of the real. The struggle to talk about the places and spaces of VR, because it transitions into a discussion on reality and materiality, is not isolated to VR HMDs but extends to virtuality and digitality as such. Whether you subscribe to the Deleuzian conceptualization of the virtual as real but not actual, or to a Baudrillardian simulacra (Baudrillard, 1981) where the virtual is more real than the real, or Shields' (2003) view of a virtual that is almost as real as the real, it is inherent to VR to discuss realities in the plural.

Here, I wish to make a final point about heterotopias in the digital landscape. Productive conceptualizations such as digital ecologies have been suggested to describe complex systems of how the digital materializes and is encountered (Turnbull et al., 2023), and heterotopias lend themselves to ecological thinking, as Gandy

(2012) showcases in the exploration of heterotopic alliances in Abney Park. Gandy points to the joint experiences of diverse people, animals, and imaginings in a real shared place, while underlining how difference is made through proximity. Not only a juxtaposing, but the side-by-side appearance of diverse elements, bodies, ideas, histories, and meanings. Even starker than the alongside-ness of the human and non-human (Ash & Simpson, 2016), the side-by-side existence of conflicting elements in heterotopias forces us to contemplate co-existence, not only at the scale of the earth, but in individual places.

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