

[Transformative Immersion]

An interdisciplinary theory of VR immersion

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Transformative Immersion:
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Research Master Thesis

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*To my loved ones who showed me
it's more important where I am than where I'll be*

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Abstract

The concept of immersion is fundamental to understanding the complexity of Virtual Reality (VR). Most of its definitions align with the idea of mental or bodily 'relocation,' of plunging into a virtual or fictional world or another individual's experience. These definitions have given rise to theoretical approaches which assume that VR immersion requires a virtual world *separated* from reality into which the 'spectator' can enter. These discourses are embedded in the promise that virtuality can be the ultimate reproduction of 'reality.' However, they do not account for the nuances around the spectator's embodied location, emotions and memories. Therefore, I hypothesise that addressing VR as a *remediation* problem can guide the way towards an alternative theory of VR immersion based on the relational and fluid becoming of the 'real' and the 'virtual.'

This theory suggests that immersion needs not to be defined as entering some other 'location' (place or body). Instead, different mediated and real entities interact during immersion, making it a radical and embodied transformation. This process gives shape to alternative ways of perceiving and constructing our experience of reality and normalcy. This thesis will examine two strings of thought articulated around media studies and theatre studies working towards this new VR immersion theory. To find commonalities and limitations, and propose new possibilities, *interdisciplinary integration* and *intermediality* will be useful methodologies. At its broadest, my research aims to contribute to VR theories understanding it as a technology of embodied transformation and a place of possibility.

Keywords: Virtual reality, interdisciplinary research, digital new media, embodied knowledge, onto-relationality

Introduction

Mapping the Field

Immersion and immersive have been fundamental concepts to understanding the definition and development of Virtual Reality (VR) in media and theatre studies. However, these concepts appear as diverse and contradictory as the object they are approaching. VR is a new object of research, and its definition and applications conflate a wide variety of disciplines and theories. It was not until the 1980s that Jaron Lanier first coined it as a term,¹ providing 52 different definitions.²

Likewise, immersion has been theorised from a wide variety of approaches. As each media generate their own "type" of immersion, it has been and still is, a core concept to examine and theorise the 'spectator' and the 'image,' and their relation. Immersion has been understood as 'relocation,' – from the *illusion* of being placed in or surrounded by an artificially created, yet realistic, space;³ to the spectator's *multi-sensorial or empathic* expansion within an artificial event.⁴ In other words, a 'reader' can feel immersed while reading a novel,⁵ an 'observer' can feel it when looking at a painting,⁶ and an 'audience-participant' when being part of a 'dramatic space.'⁷ Either way, I suggest that most of the times, immersion describes the sensation of plunging into or being surrounded by an artificially created location, space or embodied experience.

I believe re-approaching VR can offer the theoretical tools for a novel and radically different approach towards immersion and how a participant, spectator, user or immersant becomes with virtuality. I suggest VR immersion can be addressed as a theory based not on a process of relocation, but on how reality and the virtual 'touch' and transform each other in an *onto-relational*⁸ process. I derive this from neurocognitive

¹ Rubin, Peter, and Jess Grey. "The WIRED Guide to Virtual Reality" in *WIRED*. 2020

² Lanier, Jaron. *Dawn of the New Everything. Encounters with Reality and Virtual Reality*. 2017

³ Grau, Oliver. *Virtual Art. From Illusion to Immersion*. 2003: 13; Dogramaci, Burcu, and Fabienne Liptay. "Introduction. Immersion in the Visual Arts and Media." In *Immersion the Visual Arts and Media*, edited by Fabienne Liptay and Burcu Dogramaci. 2015: 11

⁴ Machon, Josephine. "Immersive Theatres: Intimacy and Immediacy" in *Contemporary Performance*. 2013

⁵ Grau, *Virtual Art*, 2003

⁶ Grau, *Virtual Art*, 2003

⁷ Machon, "Immersive Theatres" 2013

⁸ This term is used by Liam Jarvis to define one of the qualities of his theory *theatre of mislocalized sensation*. According to Jarvis, onto-relationality aims to reconcile the differences between one's own being and others. Through an etymological review and analysis, he argues that *ontology* deriving from the Greek *ōn*, ont- 'being' plus -logy ('Ontology') and 'relational' meaning the 'way in which two or more people/things are connected' ('Relational'). So his onto-relational approach towards immersive VR creates the conditions to understand the relationship between the participant and the artificial world as a synchronous being and becoming.

research that demonstrates that 'objects' in immersive VR experiences 'touch back' affecting and shaping the participant's body.⁹ Approaching VR immersion from these bases can drastically refashion current VR immersion approaches and how our 'real' bodies relate and become with the 'virtual' experience. Therefore, I will take the implications of neurocognitive research as a guiding framework to take another look to the way immersion has been theorised from the perspectives of media and performance studies to find commonalities, limitations and new possibilities.

Recent works by Liam Jarvis are adopting a similar interdisciplinary turn to theorise and analyse VR. Jarvis' thoughts partly seek to enrich performance studies with how neurocognitive experiments account for the human body's flexibility and constant negotiation with the virtual. For him, neurocognitive sciences demonstrate that we can feel the virtual in our skin. By applying these ideas in theatre studies, he theorises that VR promises *to become with another's body*.¹⁰ For him, immersion comes with the techno-utopian notion that our bodies can be fully extended or relocated in and with the virtual.

In a similar vein, Gabriella Giannachi argues that VR is a *hypersurface*. She suggests that VR is where the virtual and reality can interrelate without losing their identities.¹¹ She observes that immersive experiences entail an articulation and a transformation between 'real' and 'virtual' entities. Once the 'spectator' becomes immersed, hence becomes part of the virtual, the experience *remediates* their physical performance.¹² Therefore, VR immersion does not equate with the promise of full-body relocation illusion; i.e., fully crossing the threshold. The hypersurface is not 'fully' immersive, but it simulates immersion.¹³ Although she is not actively utilising neurocognitive sciences, she aligns with this discipline by articulating the real and the virtual, the inside and the outside of the VR experience, as equally relevant.

Therefore, immersion may not entail the relocation in an entirely realistic space, but an onto-relational and situated experience based on transformation. Jarvis and Giannachi open the ground for several theoretical reconsiderations regarding the promises of knowing, being and becoming with virtuality. I believe that this new approach will reformulate the promises of VR immersion, and with it, the ontologies of images and spectators, and how these ontologies come into existence. Only a few works have delved

⁹ Hansen 2006; Slater et.al 2008; Maselli and Slater 2014; Slater and Sanchez-Vives 2016; and others

¹⁰ Jarvis, Liam. *Immersive Embodiment. Theatres of Mislocalized Sensation*. Palgrave, 2019

¹¹ Giannachi, Gabriella. *Virtual Theatres: An Introduction*. 2004: 156

¹² Giannachi, *Virtual Theatres*. 2004: 8

¹³ Giannachi, *Virtual Theatres*. 2004: 95

into the possibilities of approaching immersion from this perspective, and it has never been critically elaborated from the perspective of media studies.

As a contribution and a response to this ongoing discussion, I propose in this thesis an interdisciplinary theory¹⁴ to rethink VR immersion. This theory will offer a new hybrid paradigm, drawing from the approaches of different disciplines and traditions to bring new light on VR. As I believe VR resists fixed definitions, I state that this theory is one approach among the many drawn from interdisciplinary research. This process will integrate theories and empirical evidence from media, performance, and neurocognitive studies through an interdisciplinary approach.

This process will lead to my hypothesis that an expanded or refashioned notion of *remediation* lies underneath the numerous strategies of VR immersion. Remediation refers to the way media refashions and coexists with other media. However, my approach to this theory requires a complicated definition of media. It mainly focuses on the way the real and the mediated overlap and interact in a feedback-feedforward loop. Therefore, in this process, remediation will also obtain a new shape based on complicating the ontological differences and relationship between the mediated and the real. In other words, the approach to remediation that allows me to understand how mediated and live elements coexist and transform one another can give shape to a novel theory of VR immersion.

This approach is necessary because it is an active response to the preoccupations raised by Kate Nash through her concept of *improper distance*. For her, the promise that VR can make us become and feel like somebody or something else, as something indistinguishable from ourselves, posits fundamental risks.¹⁵ For her, an immersed 'spectator' in VR runs the

¹⁴ The way I understand the nature of theory and the action of theorization is not through the process of providing concrete and affirmative statements, but through contesting and questioning obvious postulates. Although I will use a great part of my research to demonstrate the validity of my theoretical contribution to the discussions around VR, I am not providing clear and unquestionable statements. They will be highly situated, limited and open-ended commitments. These ideas around theory and theorization concur with Jonathan Culler's definition and approach towards these terms. For Culler, theory is: 1) interdisciplinary, as the discourse has effects outside its original discipline; 2) analytical and speculative, as it is an attempt to work out in what is involved in the formulation and application of concepts; 3) a critique of the common sense, questioning and re-thinking what is taken for granted and; 4) reflexive, as it enquires into the categories used in making sense of things. (Culler. *Literary Theory. A very Short Introduction*. 1997: 14-5) Also, my approach to theory resonates with Culler's as my aim in for this research is to provide a concept to organize and understand a phenomenon, namely immersion in VR experiences. But what I am most interested in is on the impossibility for theory to do this, because there will always be more and other ways to know. Therefore, Culler's approach (and also mine) is to use theory as a tool for questioning the presumed results and assumptions on which particular phenomena are based (Culler 1997: 16).

¹⁵ Nash, Kate. "Virtual reality witness: exploring the ethics of mediated presence." *Studies in Documentary Film* 12, no. 2 (2018): 119-131

risk of appropriating the event they witness. Hence, projecting themselves in the situation of the other and blurring their differences. Although I will not actively address this issue, I believe that thinking VR can offer such an experience disregarding the embodied and situated condition of the 'spectator' posits a risk that influences how many theorists, makers and users approach VR.

Therefore, this research will understand and argue for a perspective that complicates the differences between the real and the virtual, spectator and image, live and mediation. This approach, guided by an expanded notion of remediation, will allow me to re-read the way immersion has been theorised, and position it in VR. Hence, I will suggest that the virtual 'other' is not entirely detached from or is a specific 'other.' Virtuality and reality exist and develop together and separate during immersion. Being, becoming and knowing *with* other virtual 'bodies' can account for the similarities and the differences between the physical and virtual, not as a potential replacement but as a process that is networked and onto-relational.

Research Question & Sub-questions

How to critically integrate different strings of thought concerning *immersion* through *remediation* to propose a novel theory and approach towards VR immersion?

How is *immersion* understood and applied as a conceptual tool in the fields of media and performance?

How can *remediation* serve for the interdisciplinary integration of these different perspectives towards immersion?

What new theories and approaches towards VR immersion emerge from this integration? What new definitions this theory of VR *immersion* offer to the concepts of 'image' and 'spectator' and their relationship?

Theoretical Framework and Chapter Overview

[Chapter 1] As VR is a fluctuant and undefined object, this first chapter will prove useful to map, analyse and articulate different theoretical approaches towards immersion in and around media and performance studies. Both strings of thought will lead to suggesting two clear sections: *immersive images and illusions*, and *immersive theatre*. This chapter will map and amass a comprehensive overview of techniques and ideas around immersion and concepts related to immersion. However, I will not articulate them around a particular medium but how they theorised the spectator, image and their relationship.

In the first section, I will explore Oliver Grau's understanding of VR immersion as he places it as a part of the tradition of 'western images and illusions.' Overall, with his argument, he seeks to trace the history that gives shape to VR. For him, the tradition from which VR emerges is the product of images that break free from their two-dimensional limits. These images oscillate between scenarios that create realist ambiances, to glasses-like devices which only covers the spectator's eyes. For Grau, VR derives from both of these trends because they are all 'images' that negate their nature as images. They are fictional experiences that expand towards the real simulating it. They can replicate reality and realistic spaces.¹⁶ Therefore, for Grau, VR images are *image spaces* closer to illusory architecture than to inaccessible aesthetic objects.

Furthermore, I will explain Grau's argument with Michael Fried's *absorption* concept and Roland Barthes' *cinematic hypnosis*. Despite analysing different media, both Fried and Barthes suggest that a mental relocation is produced by negating the spectator's bodily presence in front of the image. Although they are not discussing VR or immersion, I suggest that their ideas shed light on Grau's VR immersion exploration.

Finally, the work of Burcu Dogramaci and Fabienne Liptay, and Barthes will prove useful to analyse Grau's approach to spectatorship. As Grau theorises a process of immersion which is mental or through the imagination, the spectator always remains distant and intact. Although image spaces allow the participant to dwell, it is only an illusion. In this vein, Dogramaci and Liptay suggest a material difference between the *image space* and the *participant*. Likewise, Barthes states that the spectator becomes doubled during a cinematic event. For him, the spectator exists simultaneously pressed against the moving image, and in their seat.

¹⁶ Grau, *Virtual Art*, 2003

In the second section, I discuss Josephine Machon's theory of *immersive theatre*. This approach is fundamentally different from Grau's because it promises that the audience will relocate mentally or emotionally, and physically inside the fictional world.¹⁷ This new approach to immersion reformulates the concept of 'spectator' and its relation to the 'image space' or the 'dramatic environment.' For this reason, Machon uses the concept of *audience-participant* to describe and analyse how bodies exist and physically become with immersive experiences. Her approach suggests complicity between the spectator and the dramatic space as now the audience-participant is an active part of it. In this same spirit, Adam Alston explains that in immersive theatre's physical relocation, the audience-participant becomes a material element for producing the performance.¹⁸ However, Alston reflects on the immersive experience's materiality and argues that the 'image space' is always incomplete; it has gaps that the audience-participant has to fill in.

Another fundamental aspect of immersive theatre is that, as Alston suggested, it produces introspection. In other words, relocating physically inside a dramatic space transforms the audience-participant, it makes them approach their everydayness differently. Therefore, the immersive experience changes audience-participant's sense of *normalcy*. They exist and perform in a transformative limbo between being an active material for the performance, and being touched back by the experience.

Finally, Liam Jarvis's ideas will prove useful to expand immersive theatres further and position it within VR. For him, VR immersion is mainly a process of sensuous relocation or expansion. Supporting his argument in neurocognitive theory and empirical evidence, Jarvis states that VR produces the possibility of feeling more fully through another's virtual body. Neurocognitive experiments showed that different from tools, VR experiences prompt affective and sensuous responses. Through a post-human approach, Jarvis understands these sensations as the active and embodied incorporation of the virtual. Thus, the immersed body experiences 'twice' as they are half-in-half-out.¹⁹ I find relevant for this discussion how Jarvis problematises the 'location' of the audience-participant's embodied and sensuous self while also promising that you can experience as if you were somebody else through VR.

[Chapter 2] This chapter will integrate and rethink some aspects of the aforementioned theoretical approaches to immersion using *remediation* theory by Jay

¹⁷ Machon, "Immersive Theatres" 2013: 63

¹⁸ Alston, Adam. *Beyond Immersive Theatre. Aesthetics, Politics and Productive Participation*. 2016

¹⁹ Jarvis, *Immersive Embodiment*. 2019: 19

David Bolter and Richard Grusin. In response to my hypothesis that remediation is an underlying theory for immersion, I will build this chapter around remediation's structural concepts: *immediacy* and *hypermediacy*. Firstly, I will demonstrate how Bolter and Grusin's suggestions underlie immersive media and illusions, and immersive theatre. Secondly, I will use their ideas as a bridge between both strings of thought. This exercise will allow me to argue for a novel promise of VR immersion, which has at its centre the possibility of perceptual transformation.

Remediation refers to the way new media refashions and coexists with older media. It questions the apparent linearity of media history and opens the possibility for a complex articulation.²⁰ From this perspective, media technologies constitute a hybrid network expressed in material, social, aesthetic, discursive and affective terms; thus, media cannot be understood in isolation. So, each medium is framed within a constellation of media and responds to, redeploys, competes with, and reforms other media. However, for Bolter and Grusin, every mediated event has one same goal, to produce coherent images that, ideally, the spectator will experience as non-mediated. In other words, mediated experiences seek to make their mediation process unperceivable. Therefore, a medium or media product can be approached from two different perspectives: as an articulated and coherent whole, or as an irreducible multiplicity of media and sources which shape it. Both approaches correspond to the two concepts giving shape to remediation: *immediacy* and *hypermediacy*.

In a nutshell, *immediacy* will serve to integrate the techno-utopian ideas suggesting that VR can create a specific and realistic location into which the 'spectator' can jump. In other words, VR immersion produces and is produced by replicating a 'real' space or a 'real' embodied experience. This integration will also comprehend some ideas on how different media generates immediacy. I will contrast these processes with the aforementioned techno-utopian promise. This way, in this chapter, immediacy will allow me to critique the same promise it sustains. It will allow me to post critical inquiries regarding how immersive theatre and immersive media and illusions promise the full or partial relocation of the 'spectator' into a realistic 'other.'

Furthermore, *hypermediacy* will allow me to integrate how immersive media and illusions, and immersive theatre address the complicated relationship between media and non-media. Although both strings of thought approach these issues radically different,

²⁰ Bolter, Jay David, and Richard Grusin. *Remediation: Understanding New Media*. 2002: 15

hypermediacy will allow me to find commonalities and to suggest the ground bases for an alternative theoretical vocabulary to address VR immersion. This integration will let me start theorising a new VR promise not based on 'relocation' but the becoming, transformation and onto-relationality between the 'real' and the 'virtual.' These particularities will further resonate and expand towards 'media' and 'live,' 'reality' and 'fiction,' the 'spectator' and the 'maker.'

The work of Sarah Kember and Johanna Zylinska will inform my understanding of *hypermediacy*. They suggest that hypermediacy overcomes remediation's teleological approach. It allows understanding the relationship between media and non-media as a process in which the 'new' does not replace the 'old.'²¹ Furthermore, this exercise will be enriched by Philip Auslander²² and Sarah Bay-Cheng's work.²³ Both problematise the relationship between the 'live' event and the 'recorded' and clarifying how media and non-media categories interact theoretically and empirically. More specifically, they argue that virtual entities are as creative of 'reality' as the 'real' ones. I will apply their ideas to demonstrate why this complicated and onto-relational approach is productive to theorise new takes towards VR immersion.

[Chapter 3] In this final chapter, after demonstrating the possibilities of using remediation as a theory to integrate different aspects of immersion, I will comprehensively delineate the scope of my theoretical approach towards VR immersion. Complementarily, I will suggest alternative concepts to define 'spectator' and 'image:' *audience-participant-maker* and *networked experience*. Finally, to provide additional coherence, I will apply these ideas to analyse the VR experience by *The Constitute* called *EYESECT*.²⁴ In this project, the 'user' sees two different images on each eye through two independent cameras attached to an HMD. According to various sources, *EYESECT* allows the 'user' to perceive as if they were an insect or a chameleon. However, I suggest that this VR experience does not allow the user to 'relocate' inside a non-human body and perceive as an 'other.' But it materialises the sensorial transformation I am arguing in this thesis. For me, *EYESECT*'s immersion is about confronting our body with the way it usually perceives and how it gives shape to reality. This final case study will exemplify my ideas and fully bring them to appearance. I believe that theory and practice have to go hand-in-hand involving a

²¹ Kember, Sarah, and Joanna Zylinska. *Life after New Media. Mediation as a Vital Process*. 2012

²² Auslander, Philip. "Digital Liveness: A Historico-Philosophical Perspective." *PAH: Journal of Performance and Art* 34, 3, 2012

²³ Bay-Cheng, Sarah. "Theater is Media. Some Principles for a Digital Historiography of Performance." *Theater* 42,2, 2012

²⁴ The Constitutive. n.d. <http://theconstitute.org/eyesect/> (accessed November 2019)

continuous dialogical negotiation between the different objects and the concepts created to analyse them. Analysing a VR experience through my interdisciplinary approach will allow me to prove its validity and application in the field of VR while consolidating its qualities.

Methodology

Because my theoretical and empirical sources concern different media traditions and disciplines, my methodological approach will be *interdisciplinary* and *intermedial*. These methods will allow me to temporarily blur their limits for a new and more comprehensive understanding of VR immersion. Following Jarvis, who integrates neurocognitive sciences with theatre theory to analyse VR, my research will also examine and *integrate*²⁵ different approaches to immersion from media and theatre studies. Although neurocognitive sciences will briefly inform my thinking process, the interdisciplinary integration process will have a predominant direction guided by media studies by the crucial role of remediation theory.

My interdisciplinary research approach will follow the book *Interdisciplinary Research* (2017) by Allen F. Repko and Rick Szostak. Their two main methodological conditions will guide how I read my sources and articulate my argument. For Repko and Szostak, a precondition for interdisciplinary research is that disciplines are defined and are stable. This way, the researcher can successfully integrate them for *more comprehensive understandings* of the object.²⁶ This methodology will prove useful to articulate my theoretical framework in chapter one and for the integration and analysis in chapter two. In a similar vein, Dawn Youngblood will inform this process. She expresses that integration is what happens when researchers go beyond just establishing familiar meeting places.²⁷

²⁵ For Allen F. Repko and Rick Szostak, integrate or integration can be traced back to its Latin root meaning 'to make a whole.' Therefore, as a verb (as a process) integration in interdisciplinary research means to unite or blend into a functioning whole. Distinct for synthesis, integration is guided by the desire to articulate different perspectives with creative aims. It is the process of forming something new, greater than, and different from the sum of its parts.

²⁶ Repko, Allen F., and Rick Szostak. *Interdisciplinary Research. Process and Theory*. 2017: 376

²⁷ Youngblood, Dawn. "Interdisciplinary Studies and the Bridging Disciplines: A Matter of Process." *Journal of Research Practice* 3, no. 2 (2007)

Therefore, integration is a critical exercise to look between two or more disciplines and see their commonalities, contradictions and limitations.

In chapter one, I will do an interdisciplinary literature review²⁸ and a comparative analysis of my main theoretical framework through delimited disciplinary strings of thought. For this, I will analyse, articulate and compare my main body of sources as a process of mapping the field and amassing broad disciplines. For this, Moti Nissani's suggestions will prove useful. He suggests that for interdisciplinarity, a discipline "can be conveniently defined as any comparatively self-contained and isolated domain of human experience which possesses its community of experts. Every discipline has its peculiar constellation of distinctive components: such things as shared goals, concepts, facts, tacit skills, methodologies, personal experiences, values and aesthetic judgments."²⁹ Therefore, in the first chapter, the different theoretical work I will discuss and articulate as one discipline will have commonalities around their approach towards spectatorship, image, the relationship between them, their promise of immersion and how that promise is carried out. To do this, I will rely on theoretical work analyses, research papers and detailed descriptions of cases on immersive or immersive-like experiences.

In chapter two, I will perform the *interdisciplinary integration* of both disciplines I coherently amassed in the previous chapter. This theoretical exercise will be structured around particularities of remediation. They will dictate the structure of this chapter while guiding my analysis and thinking process. Even though my research desires to produce a novel theoretical approach towards VR immersion, my goal is not to disprove the works I am using as a framework. On the contrary, my integration will be an addition to the discussions around VR experience.

In this same spirit, *intermediality* will provide the tools for analysing different immersive VR cases. The intermedial analysis will allow me to complicate the concept of 'media.' Therefore, to understand its formal boundaries as relational and flexible. Similarly, for Freda Chapple and Chiel Kattenbelt intermediality is associated with the relational blurring of generic boundaries. It is a self-conscious reflection that showcases and analyses the devices and qualities of performance in the performance.³⁰ It is a process that requires

²⁸ For Repko and Szostak interdisciplinary literature review requires not only the integration of the different perspectives towards one problem or object but also the individual and separate literature searches. (Repko and Szostak. *Interdisciplinary Research*. 2017: 240)

²⁹ Nissani, Moti. "Fruits, Salads, and Smoothies: A Working Definition of Interdisciplinarity." *The Journal of Educational Thought (JET)* 29, no. 2 (1995)

³⁰ Chapple, Freda, and Chiel Kattenbelt. *Intermediality in Theatre and Performance*. 2006

paying close attention to the operation of demarcation, definition and qualities of specific media, as well to the performativity of these media and the way they relate and affect each other. In other words, and as Ágnes Pethő explains, the 'inter' prefix in intermediality indicates that the focus of analyses should be on relationships rather than on structures, which 'happens' in-between 'media'.³¹

Intermedial research will help me discuss specific case studies in chapters one, two and three, which will complement my theoretical exploration, articulation and integration. This methodology involves a continuous negotiation between the event (as a case study or theoretical object), and the concept of theory generated to analyse it.³² Therefore, the analysis of different case studies will allow me to consolidate my thinking process and the qualities of the strings of thought at issue. I will perform these analyses differently depending on each case and the access I have to the experiences and relevant information. The sources will be diverse, fluctuating between my own experience to a close reading analysis of how other theorists have addressed and understood these experiences. I will complement these approaches with project descriptions, online interviews with the makers, and multi-media recording of the pieces; all of which are found on the artist's webpages

Conversely, intermediality will prove useful to account for the spectator's body in my analysis to further problematise media definition. For Liesbeth Groot Nibbelink and Sigrid Merx, the spectator's body is fundamental in the process of intermedial research and experience. In analysing a performance, they argue that experiencing intermedially is an active and embodied negotiation between different media realities and our embodied perceptions.³³ Even though I am not considering VR solely as a performance, this methodology will allow me to structure my analysis around the sensuous and embodied qualities of the VR experiences.

Finally, as a common theoretical vocabulary to describe and analyse the formal qualities of different VR experiences, the typology exposed in the paper *Behind the Curtain of the "Ultimate Empathy Machine": On the Composition of the Virtual Reality Nonfiction Experience* (2019) by Chris Bevan and colleagues will prove useful. Although it is a typology

³¹ Pethő, Ágnes. *Cinema and Intermediality: The Passion for the In-Between*. 2011

³² Groot Nibbelink, Liesbeth, and Sigrid Merx. "Presence and Perception: Analysing Intermediality in Performance." In *Mapping Intermediality in Performance*, edited by Sarah Bay-Cheng, Chiel Kattenbelt, Andy Lavender and Robin Nelson. 2010: 219

³³ Groot Nibbelink and Merx. "Presence and Perception: Analysing Intermediality in Performance." 2010: 219

to describe nonfiction VR experience, and unfortunately does not suffice for the different experiences I will analyse, it is one of the most complete and comprehensive shared vocabularies to describe VR formal qualities.

Chapter One

Immersive Media and Illusions: An Introduction

Since the end of the 1980s, designers and artists created multiple devices and interfaces to simulate immersive three-dimensional scenarios. Most of these devices are considered the predecessors of the currently available head-mounted display helmet (HMD). The multi-sensorial experiences created by these devices and interfaces, allowed the participant to feel as if they were moving and intervening creatively in 'real-time'.³⁴ Although VR has different definitions and traditions, during this section, I will examine Oliver Grau's take on this technology. He understands and analyses VR as part of the 'European tradition of images and illusions' that positions the spectator utterly separated and independent from the image they are looking. The observer is closed-off from the image, and whichever immersive feeling is an illusion. It is also essential to mention that, although he analyses VR, this hermetic condition of images did not make its first appearance in computer-generated scenarios. On the contrary, he positions it at structural for this tradition and how thinkers and maker have addressed their relationship with images and mediation. Grau understands the distant nature of images as fundamental for visual arts traditions, and VR as part of it.³⁵

For this reason, Grau strongly disagrees with theorists who try to understand VR as a radically new phenomenon. VR is a 'next step' in the European visual production enabled by particular technological developments. VR is the product of a high level of interdisciplinary collaborations between scientific areas and the arts.

According to Grau, VR is a panoramic view joined with the possibility of exploring the image in a sensorimotor manner with reactive sounds that give the impression of a 'living' environment.³⁶ Panoramic views were a popular public spectacle that represented landscapes, foreign topographic views or historical events. These spaces were a 360-degree painted visual medium where spectators felt immersed as the image rendered the original landscape with high fidelity. After following Grau's historical analysis of VR, it is possible to see this technology as part of the same discussions around how the panoramic painting changed the relationship between the spectator and the image. Firstly, VR radically reframes how images are understood and experienced. Like in the panorama, images are no longer 'framed' objects, but are hybrid constructions between an image and space. They offer the feeling of being in a three-dimensional space, and with it, the

³⁴ Grau, *Virtual Art*, 2003: 3

³⁵ Grau, *Virtual Art*, 2003: 5

³⁶ Grau, *Virtual Art*, 2003: 7

spectator can explore it as if they were dwelling. Secondly, although the spectator can enter into the image, they both stay ontologically and materially different. Finally, also like a panorama, VR promises and in many cases, relies on 'high-quality' representations that replicate or simulate a 'real' scene.

Grau positions VR as part of this tradition and builds coherent historical parallels between different technologies that refashioned the way we experience images. This way, he provides a particular and concrete understanding of immersion in and through VR. The upcoming lines will unwrap Grau's discussions around immersion and the promises of VR, and explore his perspective towards the conceptualisation and experience of images. I will carry out this process through three central angles. Firstly, the conceptualisation of images as *image spaces*. Secondly, the way spectators relate to image spaces. Thirdly, VR's promise of replicating the 'real' as a complete and seamless recreation of reality inside the virtual, a process which arguably allows full immersion. These three angles will intertwine with Grau's argument that immersion is a quality enabled by the technological device.

Immersion in Immersive Media: Moving into the image as space

Oliver Grau's proposal towards defining and describing the tradition which gave birth to VR immersion and its immersive qualities

Immersion is undoubtedly crucial to understand the development, analysis and interaction of new media, although it is a concept that appears somewhat opaque and contradictory.³⁷ The term has a wide variety of uses, especially in the English language. It derives from the Latin *immersio* and refers to any act or experience of plunging or being plunged into something, namely an artificial space or environment. In a broad sense, immersion was and is still used to describe the sensation of *being placed in or surrounded by* an artificially created space, not necessarily generated by or experienced through a set of digital interfaces and devices. Immersion can equally arise from reading a book, watching television, visiting an exhibition, or playing a computer game.³⁸ In this spirit, Oliver Grau

³⁷ Grau, *Virtual Art*, 2003: 3; Dogramaci and Liptay. "Introduction. Immersion in the Visual Arts and Media." 2015: 3

³⁸ Dogramaci and Liptay. "Introduction. Immersion in the Visual Arts and Media." 2015: 11

explains that immersion is a mentally absorbing process, a change or a passage from one mental space or state, to another.³⁹ It diminishes the distance between the observer and the observed and increases the emotional involvement with the event.⁴⁰

Grau understands immersion as 'mental absorption' which allows the body to enter and dwell in a new reality.⁴¹ For him, immersion is something not utterly distinguishable from a feeling and a cognitive state. It is not enabled by one or the other. However, it is dictated primarily by a mental condition or by imagination. Throughout Grau's analysis and historical recollection, there is a constant preoccupation with the experience's formal qualities and how they produce a particular mental state for immersion. Although it is mainly a mental process enabled by human imagination, it relies on the experience's material characteristics. In other words, the technological machine's physical and formal features create in the spectator the illusion of being somewhere else. Grau theorises a complicated process and feeling of immersion somewhere between breaking the 'forth' wall stimulating the spectator to achieve an intense sensation of 'being there' – and the many ways this physical infrastructure produces that mental relocation. These observations resonate with Janet H. Murray and Marie-Laure Ryan's approaches towards immersion as an aesthetic experience. Murray expresses that immersion is the 'perceptual sensation' 'of being surrounded by a completely other reality.'⁴² At the same time, Ryan understands it as a mental act by which "consciousness relocates itself into another world."⁴³ Grau's approach is a combination of both. He explains that immersion is a perceptual sensation and a mental act mainly aroused by the experience's formal qualities.

Furthermore, Grau builds a theory of immersion from reviewing and comparing the historical relationship between the spectator and a framed image in the western tradition. For him, the impression of being immersed in VR is comparable to looking through Alberti's window⁴⁴ – a concept elaborated in the 15th century that fostered artists to create paintings or murals which produced a feeling of three-dimensional depth by employing the

³⁹ Grau, *Virtual Art*, 2003: 13

⁴⁰ Grau, *Virtual Art*, 2003: 13

⁴¹ Grau, *Virtual Art*, 2003: 14

⁴² Murray, Janet H. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. 1997

⁴³ Ryan, Marie-Laure. *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media*. 2001

⁴⁴ By the early 15th century, painters began to create an illusion of three-dimensional depth in their paintings and murals. They did this by employing the mathematical principle of the vanishing point (Berger. *Ways of Seeing*. 2007; Andrews. *Story and space in Renaissance art*. 1995; Baxandall. *Painting and experience in fifteenth century Italy*. 1988). During the Renaissance, this technique became ubiquitous, as did a commitment to creating and exploring the human world with mimetic yet enhanced perspective. (Google News Lab. *Storyliving* (accessed October 2019))

mathematical principle of the vanishing point.⁴⁵ In the same vein, Mandy Rose positions immersion as part of the 'technologies of seeing' from the Renaissance.⁴⁶ The experience of VR is thus comparable to the visual illusion of falling through that window, going into the limits of an image no longer perceived as two-dimensional. From Alberti's widow, Grau constructs a tradition or a discipline of media that derives from the promise of simulating 'real' scenarios where the spectators can feel they walk-in 'as if' it was a 'real' space. Therefore, he positions VR within the tradition of 360° images such as the fresco rooms, the panorama, circular cinema and computer art in CAVE.

As part of this tradition, Grau suggests that the changes immersive technologies underwent, altered the way images were conceptualised and experienced. In his critical approach to VR, he defines images as *image spaces*. From this tradition, images are produced and experienced as architecture or designed spaces that the spectator can dwell. From Alberti's window and quadrature painting, image spaces, to immersive 360° images and VR environments; had and still tend to negate their nature as an image.⁴⁷ By refashioning and translating media materialities and their sensory intervention into the field of images, image spaces exist to deny their qualities as images. They live in conjunction with appealing other senses besides the visual (namely acoustic spatial simulation) in the cross-fertilisation of various media. This alternative approach to images allowed Grau to argue that images negate its hermetic nature, and suggest that the spectator can feel as if they were inside them.

Grau showed that VR is part of a tradition of image spaces that promise full immersive environments through fully replicating 'reality.' He demonstrates this through the comparative analysis of several cases from the mid-1900s to more current immersive works. For instance, Grau elaborates on works like Eisenstein's essay *O Stereokino* (1947) and the multi-sensorial cinematic experience *Cinéorama*; to John Cage and Nameth's *HPSCHD* (1969), and Char Davies' *Osmose* (1995). Regardless of the diversity of the experiences' formal qualities, he articulates them around one tradition and discipline under the concept of image spaces. Image spaces such as large-scale spaces designed to accommodate all of the spectator's body were cross-fertilised with the devices that the spectator places in front of their eyes. In other words, scenarios like 360° frescoes, the

⁴⁵ Berger 2008; Andrews 1995; Baxandall 1988

⁴⁶ Rose, Mandy. "Technologies of seeing and technologies of corporeality: Currents in nonfiction virtual reality." 2018

⁴⁷ Grau, *Virtual Art*, 2003: 252

panorama, the Cinéorama and the IMAX cinemas, and lens-like devices such as peepshows, stereoscopes and HMDs influenced one another.⁴⁸

Immersion, the illusion of going into another space

Following Grau, immersion is the illusion of moving into the image space. It is a sensation produced when the image space's material qualities stimulate the spectator arousing their capacity for imagination. As in a *trompe l'oeil* - a painting technique which mimics spatial the depth on the painted surface, creating a visual illusion -⁴⁹ the spectator does not experience the dwelling, but *they assume it*. Quoting Alexander Gosztonyi, and moving his argument to VR, Grau emphasises the illusory nature of virtuality. He states that through plunging into the image space, the spectator can dwell only through thought or imagination. Therefore, the spectator experiences distance through assumed movements. Under this logic, he sustains a distance between reality and fiction, and between the spectator and the image. In most VR immersive experiences, no matter how close we are or we think we are, there will always be a separation. This way, the spectator is safe from the plastic objects appearing and moving in the illusory environment of virtuality. Like the indirect lights used in panoramas, VR elements correspond to 'reality' as they aim to simulate out-of-immersion experiences that seamlessly react to the spectator's agency. However, virtuality cannot respond. It cannot, or the maker did not design it to acknowledge the presence of the spectator.

In the same vein, Burcu Dogramaci and Fabienne Liptay understand VR immersion as a predominantly visual experience. Drawing from the movie *Orphée* (1950) by Jean Cocteau, Dogramaci and Liptay tackle immersion as *moving into* an image. Using liquidity as a metaphor, they explain VR immersion as a dissolution and liquefaction process, transgressing spatial borders and breaking down the Cartesian coordinates' boundaries.⁵⁰ Their approach challenges the distance between virtual and real spaces, arguing that the viewer in an immersive VR does a similar action as Jean Marais in *Orphée*. In the movie, Marais introduces his hand into a mirror, entering into the reflection. With this, he challenges the separation between his body and the image. Echoing Grau, Dogramaci and

⁴⁸ Grau, *Virtual Art*, 2003: 349

⁴⁹ Gosztonyi, Alexander. *Der Raum: Geschichte seiner Probleme in Philosophie und Wissenschaften*. 1976 [in Grau, *Virtual Art*, 2003: 16]

⁵⁰ Dogramaci and Liptay. "Introduction. Immersion in the Visual Arts and Media." 2015: 2

Liptay's analysis builds on the tradition of understanding immersion as a process of breaking the image's boundaries, now the spectator can dwell in it. Following Marais, in VR, the distance between the spectator and the image space shrunk. However, this action is not suggesting that the viewer and image space are becoming one. Human bodies can indeed go inside and move through hybrid and illusory spaces without losing their integrity. Going in and moving through image spaces is like a frame within a frame. Nonetheless, Marais not only goes into an image, but he goes into a mirror, which, as a reflection, is a simulation he assumed as a copy of reality.

Distant Spectatorship: Being distantly safe yet vulnerable

Denis Diderot's concept of absorption, the perfect trace of imaginative involvement

The spectator's role regarding still or moving images has been vital for how different fields, media, and disciplines approach the problem of immersion. Complementarily, for Grau, interfaces' design and functionality are also important as they define the qualities of interaction and perception enabled by a particular event or device.⁵¹ So, the formal characteristics, design process and interaction with interfaces are fundamental to understand image space's immersiveness. In this spirit, Michael Fried's⁵² use of Denis Diderot's work on *absorption* posits valuable insights clarifying the spectator's positioning in VR as part of the traditions of images and illusions.⁵³

For Fried, Diderot's work on absorption prepares the ground to understand how immersion works in the cinema's darkened rooms, therefore in VR. Diderot's analyses of French figurative paintings of the early and mid-1750s offer a detailed understanding of the relationship between the spectator and the image. By *absorption*, he explains that

⁵¹ Grau, *Virtual Art*, 2003: 198

⁵² Diderot thinks through this preoccupation to analyse the works of four painters that he describes as among the most important of their generation (35); Jean-Baptiste-Siméon Chardin (1699–1779), Carle Van Loo (1705–1765), Joseph-Marie Vien (1716–1809) and Jean-Baptiste Greuze (1725–1805).

⁵³ In this statement, I do not want to make big claims about what media tradition is and how does VR is framed. I am aware that media has different traditions, and with them, different ways of understanding what media and mediation are. Throughout this thesis, I will refer to the 'tradition of images and illusions' as a simplified version to mention the tradition of media studies elaborated by Oliver Grau and the way he positions VR as a part of it.

painters like Jean- Baptiste-Siméon Chardin and Carle Van Loo through negating the beholder's existence in front of their paintings, invited them to participate in the image mentally. These painters allowed mental inclusion by depicting actions and emotions that did not directly address the viewer. These paintings create in the spectator the feeling of being sealed off from the scene. According to Fried, this invites the viewer to remain rapt in concentration; thus, they can project themselves into the painting through imagination. In other words, the negation of the viewer's presence produces a "perfect trace of imaginative involvement."⁵⁴ This situation creates a special subject-image relationship whose innermost nature is an active mental engagement. The subject is not a passive onlooker as they engage mentally in a playful way. The image attracts the beholder's gaze by its alleged capacity for a supreme fiction while negating their bodily presence so they can relocate within the work through a sort of 'metaphysical illusion.' Therefore, for Fried absorption refers to the compositional strategies used by late rococo painters to negate or neutralise the beholder's existence,⁵⁵ drawing them into an intense focus and mental involvement with the work.

Similar properties of disregarding the spectator's bodily presence are present in cinema and VR. The auditorium's darkening cloaks the viewer's body and facilitates their absorption relocating inside the screen through their imagination. The negation of the observer's presence was a mechanism that allowed the beholder's body to transcend their physical circumstances and become mentally immersed. This approach posits a contradiction that will explain much of the theories that shape our experience and promise of VR immersion. On the one hand, to produce immersion, Grau states that the spectator's body undergoes multi-sensorial stimulations; on the other hand, according to Fried, the experience negates those same bodies.

Roland Barthes and the darkness of the cinematic experience as a tool for immersion

In a similar vein, Roland Barthes addresses and analyses the spectator's body's negation in cinema. Although he does not relate this issue with Diderot's work, framing them as part of the same discipline will bring some clarities to further elaborate on immersion from the perspective of images and illusions. As part of the cinematic

⁵⁴ Fried, Michael. *Art and Objecthood: Essays and Reviews*. 1998 [1967]: 103

⁵⁵ Fried. *Art and Objecthood*. 1998 [1967]: 131

experience, the theatre places the viewers in a dark room. According to Barthes, this situation allows the body to become free from its situational limits and repositioning it in the world of moving images. In a similar vein as Grau and Fried, Barthes detects in the darkness a neglected body. However, in the cinema, this dimness does not exist in the image, but in the theatre. Barthes recognises that a movie is not only a moving image on a screen, but it offers a unique spatial and embodied experience. Darkness is the very substance that allows seeing movies - the darker the room, the better we can see the image. However, it also reshapes who is watching it - in the absence of light, of outer worldliness, the spectator's body and its surroundings do not matter for the screened moving image.

For Barthes, the darkness of the theatre is much a part of cinema as the film. This darkness results in the negation of the spectator's body that frees them from their bodily constraints. He explains that a darkened body in the presence of moving images is a cinematographic cocoon for imagination and the emergence of affects.⁵⁶ Because the spectator's body is covered and negated by darkness, they can become fascinated with the film. As a sort of parasite, the spectator is pressed against the projected image in the form of what Barthes calls *cinematographic hypnosis* from which they cannot escape.

According to Barthes, the dark frees the spectator from their embodied and contextual boundaries. Indistinctively if they are in a full or an empty theatre or how far away from the image they are sitting, the darkness neglects their bodies and frees them from their situated conditions. Like a moth, the glowing image attracts them, "I press my nose against the screen's mirror, against that 'other' image-repertoire with which I narcissistically identify [...] the image captivates me, captures me: I am glued to the representation."⁵⁷ Because darkness surrounds and negates the spectator, they can mentally dwell in, and be part of the scene. In other words, it is a moment of freedom that results in a confrontation.

Barthes points to the 'immersive' strategies and qualities of images similar to Fried's interpretations of Diderot's work. In the same vein as rococo paintings, cinema's darkened theatre negates the spectator's presence, allowing them to relocate in the picture. They both notice the image's imagination-inductive effects, and their qualities to mentally incorporate the spectator.

⁵⁶ Barthes, Roland. "Leaving the Movie Theatre." In *The Rustle of Language*. 1986: 346

⁵⁷ Barthes. "Leaving the Movie Theatre." 1986: 348

The two bodies of a spectator suggested by Barthes during the cinematic experience

For Barthes, the *cinematographic hypnosis* posits a problem. Being glued to the film comprises the observer's imagination and their sense of ideological truth.⁵⁸ Hence, he suggests another way of being a spectator in the darkened theatre. He says that to unglue ourselves from the image, we need to be fascinated *twice over*: by the image and its surroundings. As if we had two bodies at the same time, a *narcissistic body* whose gaze gets lost in the mirror; and the *perverse body*, ready to fetishise what exceeds the image - the texture of the sound, the hall, the darkness, the obscure mass of other bodies.⁵⁹

Resonating with Grau and Fried, Barthes understands the spectator in front of the image as dual and paradoxical. The tools used to bring the observer inside (to accomplish immersion), are the same tools that negate their corporeality. Through this approach, the spectator needs to have active participation in the image. The image cannot utterly seduce and absorb the spectator. Once freed and stuck against the image, the darkened body needs to return to its original surroundings. Barthes states that being aware of everything that exceeds the moving image, the perverse body, is the only way of not being entirely hypnotised by the cinematic image. If we translate these concerns to VR, what are those 'surroundings,' that perverse body Barthes refers? Although I will not answer this question right now, I ask the reader to keep it in mind. However, I will like to elaborate on how this doubling effect challenges spectatorship paradigms and the image's definition.

The body is negated and pressed against an image that refuses its two-dimensional nature. The spectator's body becomes doubled: it is pressed against the image yet free, neglected by the image yet dwells in it as if it is a space. As a frame within a frame, the darkened body while negated remains untouched. These observations suggest a promise of immersion in which observers can dwell inside an image. However, they do it only as an illusion; they are protected and sealed off from external impressions. This complicated situation is an initial hint to what will be elaborated further in the second section of this chapter. Although Barthes is not talking specifically about immersion, he starts to consider some fundamental elements of images that, as image spaces, invite the spectator to go inside.

Before observing VR through this approach, it is relevant to mention that Barthes and Fried are problematising how images and illusions relate with and understand the

⁵⁸ Barthes. "Leaving the Movie Theatre." 1986: 347

⁵⁹ Barthes. "Leaving the Movie Theatre." 1986: 349

observing body. They propose a common thread across multiple media and disciplines that derives from observation and personal experience. From paintings to moving images, the spectator has been theorised as physically far yet mentally near. They argue that although the spectator can mentally move inside the image, the distance remains. For Barthes, this is a critical distance. However, he grants central importance to the experience's 'outer' spatial elements. He suggests that the place where the image is and how it addresses and relates to the spectator is fundamental to understanding how we feel immersion. In this double movement between two bodies, two movements, two states, Barthes complicates a relation, by a *situation*.⁶⁰ He explains that what we use to distance ourselves from the image, is what ultimately fascinates us.⁶¹ The spectator is hypnotised by a distance, by neglecting their presence. The image demands its attention while ignoring it; it is a space that spectators can only explore mentally. Fried and Barthes have prepared the field to understand the way image spaces relate with the spectator, and how mental immersion is fostered while the spectator remains comfortably in their seat.

Sonaria, a VR case study to place the theories from Fried and Barthes

For example, the VR experience *Sonaria* (2017),⁶² available through *Google Spotlight Stories* demonstrates these paradoxical ideas around immersion. We can access *Sonaria* from any device with the *Google Spotlight* app, namely a cell phone placed inside an HMD (like a Google Cardboard viewer). In *Sonaria*, the spectator follows two creatures that transform as they flow from one life-form to another in a movie-like journey or what Bevan and colleagues defined as a *placed in or on moving object* locomotion.⁶³ However, in it, there is not a surface you are 'walking' on; you float around the scene. The viewer is a *passive observant*, as they are not playing an active role in the story and are only witnessing a series of semi-abstract events. Like a slow rollercoaster, the experience's point of view is in first person (1PP), and there is no evidence of virtual embodiment. From beginning to end, the spectator relies only on visual participation and head movement to discover the experience that happens entirely in real-time. The audio composition is simultaneously

⁶⁰ Barthes. "Leaving the Movie Theatre." 1986: 349

⁶¹ Barthes. "Leaving the Movie Theatre." 1986: 349

⁶² *Sonaria*. Directed by Google Inc. Performed by Google Inc. 2017

⁶³ Bevan, Chris, et al. "Behind the Curtain of the "Ultimate Empathy Machine": *On the Composition of Virtual Reality Nonfiction Experiences*." *CHI 2019 - Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, 2019: 10

spatial and diegetic. Some sounds emanate from the virtual world and the characters or 'creatures,' while spatial or ambient music is playing, which helps to convey the emotions in the virtual environment.

As a spectator, you are guided visually and audibly from beginning to end through a series of semi-abstract events. You can experience a space that resembles a wet forest or a lagoon's shore. You observe shapes and colours resembling recognisable flora, fauna and a landscape. Although it is arguably a different medium, *Sonaria* relies on a similar strategy as the rococo paintings and the cinema. On the one side, the spectator has no virtual body, nor the 'creatures' in the landscape acknowledge the spectator's presence. There is no hint of your virtual embodiment, nor creatures and objects inside the experience actively interact with your gaze. *Sonaria*'s environment is closed off. You are jumping inside the window and participating in it; however, the image negates your presence. It is as if you were looking through a window, but the window is not looking back at you. You can only participate in it imaginatively, the agency between you and the image space is only mental or emotional. *Sonaria* echoes rococo paintings' promise as the spectator is physically separated, as a frame in a frame you remain stable. On the other side, the HMD visually isolates the spectator's body from itself. After you place yourself behind the HMD, your body is neglected while being pressed against the image. You are in a 'darkened' state. However, your body is still in the room you decided to put the HMD on, your feet are still on that rug. Your breathing serves as a bridge between the ethereal image spaces from *Sonaria* and your body lying against your couch.

The underlying desire of VR is to position your body inside the 'painting frame,' transforming that image into the image space. *Sonaria* is an immersive experience in which the animation is an enveloping environment which follows a cinematographic narration, as there is a linear succession of events. Simultaneously, the immersive desire becomes *absorptive*; it negates you from your body; you are like a ghost witnessing a series of scripted events. Despite you can move your head to look around, adding the element of interaction, *Sonaria* is fulfilling the cinema's promise of the darkened body to feel as if you were inside the event. This feeling depicted by VR is known as *presence*, an optical illusion that fits within the cinematic tradition "a peculiar ability of the human eye to deceive the mind."⁶⁴

⁶⁴ Mulvey, Laura. *Death 24x a Second: Stillness and the Moving Image*. London: Reaktion, 2006

Spatio-temporal simulation of 'reality': In the presence of a living space

The promise of VR to recreate real-like spaces and experiences and its effects on immersion

Another strategy for immersion around image spaces is through their promise of the ultimate "as-if" experience. In other words, image spaces seek to produce a full replica of the world. For Grau and many other theorists, panoramas used true-to-life images and indirect light to make the image appear as the source of the real.⁶⁵ In the same spirit, VR environments seek to produce high levels of immersion through accurate representations of 'reality.' In particular, they offer realistic scales, colour, light and seamless movement. For Grau, the more 'naturalistic' the experience, the more immersive it will be.⁶⁶ Here again, the promise of immersive spaces echoes Jean Marais in *Orphée*, as he went inside a mirror.

Virtual imagery requires to replicate reality or to quote the user's previous experiences. Through this approach, immersion mainly entails expanding the real into the virtual's perspectives and expectations, making it appear natural.⁶⁷ The virtual develops extensions and representations that simulate the appearance of the experienced or expected reality so that it seems to bring it to life. Although VR can copy the real, model imaginary worlds or refer to utopian spaces of possibility, it still relies on formulating 'as if' worlds. These scenarios promise the ultimate replication of reality. Therefore, VR immersion is charged with the promise or the 'goal' to replicate reality. This possibility is the product of its technological development and a commitment to the tradition of illusions.

This promise of VR relies on two different strategies. On the one hand, the simulation of the spectator's body in the experience, integrating a representation of the observer's body into the image⁶⁸ (for example having a virtual version of your body, or parts of it). On the other hand, by including artificial 'agents' that behave in an intersubjective way, and seems to coexist with, or react to, the observer in *similar ways* as other 'agents' outside the immersive experience.⁶⁹ Besides being a key concept and

⁶⁵ Grau, *Virtual Art*, 2003: 13

⁶⁶ Grau, *Virtual Art*, 2003: 252

⁶⁷ Grau, *Virtual Art*, 2003: 13

⁶⁸ Grau, *Virtual Art*, 2003: 252

⁶⁹ Grau, *Virtual Art*, 2003: 252

strategy to understand and arguably create the feeling of immersion, it carries the ultimate desire or utopia of full immersion through fully replicating reality. According to Dogramaci and Liptay, this promise of whole immersive 'as-if' experience is at the centre of the discourses around VR. An example of this is the frequent narrative around immersive scenarios accompanied by its potential confusion with 'reality'.⁷⁰

Echoing Marais' action in *Orphée*, the promise of VR is not only about plunging into an image as if it was space because he does not enter into a mere image, but into a mirror.⁷¹ Similarly, Bathes argues that with the *narcissistic body*, the observer's gaze is pressed against the shot because they can identify with it, with the 'other.' These observations bring light on the central qualities of immersion Grau brings forth.

For Barthes, our fascination with films lies in the *cinematographic hypnosis* - when the image captivates the spectator through verisimilar and empathic identification. Barthes explains: "I fling myself upon it [the film] like an animal upon the scrap of 'lifelike' rag held out for him."⁷² For him, we are pressed onto the image because it establishes an assumed naturalness. In other words, we believe that the image is partially alive, so it becomes real and produces resonance with the truth. Similarly, as Marais is captivated and pressed against a credible replica of the truth, a cinematic image hypnotises us and allows (or forces) us to relocate inside of it. Both theorise that images that replicate 'reality,' offering a sense of 'truth' enabling the spectator to plunge in them.

Marais and Barthes offer two different approaches to one same phenomenon. In the former, immersion is the feeling the image space produces when it seamlessly correlates with the spectator's body and how it performs and experiences. In other words, when we can see ourselves 'reflected' as part of (inside) the image. Conversely, Barthes proposes that images produce the illusion as if they were alive. This deception enables the spectator to identify themselves with what they are watching on screen. In other words, through producing life-like recreations and emotions, the spectator believes that the image has some degree of naturalness – like the animal which reacts to a moving cloth as if it was alive.

In this spirit, Grau states that the most ambitious projects appeal to the spectator's body through an interplay of hard- and software elements addressing as many senses as

⁷⁰ Dogramaci and Liptay. "Introduction. Immersion in the Visual Arts and Media." 2015: 3

⁷¹ If you want dive further into the modern approach to mirrors and its relationship with moving images, see: Melchior-Bonnet, Sabine. *The Mirror. A History*. 2001

⁷² Barthes. "Leaving the Movie Theatre." 1986: 348

possible in the highest possible degree of an illusionary replica of the 'real'.⁷³ When talking about the *Sensorama* - a machine that simulates lifelike experiences through multi-sensorial stimulation - he states that "...simulated stereophonic sounds, tactile and haptic impressions, thermoreceptive and even kinaesthetic sensations will all combine to convey to the observer the illusion of being in a complex structured space of a *natural world*, producing the most intense feeling of immersion possible."⁷⁴ Here again, Grau points out the importance of the sensorial experience and the work's formal strategies for the mental process of immersion. However, he highlights that those formal elements are carefully designed to imitate 'real-life' experiences (or the world outside the immersive experience). Feeling immersion is more substantial, the more the soft- and hardware interface elements replicate 'reality.'

For example, *Sonaria* relies on some of these qualities, arguably, to achieve immersion. Although it is not attempting to replicate a real-life environment and getting confused with reality, some formal elements simulate real-life movements and interactions. The colours, movements and shapes render walking, swimming or moving in a damp water landscape. Similarly, the diegetic sounds are as if the creatures in *Sonaria* were breathing, swimming, blinking, and splashing in different spaces and textures. These sounds correlate with the images you are seeing, allowing you to relate with the experience.

Resonating with Grau, *Sonaria* intensifies the feeling of being inside the image space further by including artificial beings that behave as if real-life non-humans. The simulation comprises anthropomorphic simulation and animal-like intersubjective behaviour as standard features. The creatures look like and interact predictably; they encounter other 'animals' that emulate squirrels, fish, fireflies, frogs, and flies. These creatures are not naturalistic depictions as they have a synthesised shape and colour. However, they do

⁷³ Although there is a high level of mainstream discussions about VR being mainly a visual experience, there is extensive work that directly or indirectly tackles this issue. They thoroughly demonstrated that VR is not only, and not even primarily, a visual experience. However, the importance of visuality lies in its discourse about objectivity and dryness. To begin with, as the panoramic view, cinema brings with it a sense of analogue 'realness' inherited from photography. In an interview by Frank Biocca, Jaron Lanier says that visuality has a predominant role in the design of technological devices, interfaces and spaces because there a rhetoric construction of dryness and objectivity around it. For Lanier, visuality is understood as the most objective of the senses because the perceiving subject, therefore the registering machine, is distant hence not affected by the observed. Technological devices like the different gadgets of VR and the experiences they produce inherited this machine-like dryness which Lanier is talking about in search of objective universality. (Biocca, Franc. "An Insider's View of the Future of Virtual Reality." *Journal of Communication* (1992))

⁷⁴ Grau, *Virtual Art*, 2003: 15 [my emphasis]

resemble recognisable animals. Also, they interact with the spectator as if they were the real animals. They do it with each other and other non-human elements such as synthesised trees, leaves, branches, algae soil and water.

Furthermore, as Marais showed, the spectator's mirroring is not as straightforward as the other. *Sonaria* replicates 'real' animals interacting as if they were in 'real' settings, not entirely but recognisably. However, when it comes to mirroring the spectator's body, *Sonaria* does not rely on replicating it visually. You do not see yourself inside the image space, but how you move your head while experiencing *Sonaria*. There is no visual evidence of a virtual embodiment when you see and hear this 'lifelike' virtual beings. You do not have an observable virtual body you can see and interact with the experience. Nonetheless, the way you move your head and how you explore the space is a replica of your body. Perhaps you cannot see your hand or feet inside *Sonaria*, but you can feel your head and gaze moving in and through it.

Final thoughts around Immersive Media and Illusions: bodies, ideas and paradoxes

As seen in *Sonaria*, my argument build around Grau's becomes apparent. Although I have only analysed one VR experience, *Sonaria* is not an isolated experience, and there are many more that have similar characteristics. The main qualities of this experience revolve around the refashioning of what it means to experience an image, and the way images render and overlap with (or mediate) 'reality.' Experiencing an image in VR posits many paradoxical conditions of inclusion and negation of the image's nature and its *situation* with the viewer. It is a particular situation which complicates the spectator moving into the image space. Namely, the image space obscures or denies the body while it desires to incorporate and mirror it through many strategies. Also, through this process, the image space is negating its nature as an image. The spectator can now dwell inside; thus, images can be experienced and conceptualised as spaces. Therefore, this approach towards immersion reformulates the situation between the image and the spectator.

On the one hand, VR negates the body of the spectator through different material strategies. This mechanism fosters a mental and emotional process of feeling inside the image. Like sealed rococo paintings and darkened film rooms that obscure the body, *Sonaria* negates the spectator's body and presence. However, this same process stimulates the spectator's fascination and enables the mental illusion of being in there as a part of the experience. Furthermore, for Grau, panorama, films and computer image displays are different machines but are always driven by the promise of increasing the illusion of immersion as relocation.⁷⁵ This illusion brings the promise that image spaces will be able to produce realities impossible to distinguish between simulacrum and original. This statement is a point of calculated totalisation of the illusion, where there is no longer a clear limit between mediated and mediation. It presents a general rule of immersion: if immersion emerges from the perceived lack of mediation, the medium will become invisible (or imperceptible).

On the other hand, the image negates its condition of an image. It is a hybrid experience between the image as contemplation and space as participation. It is no longer a distant object inside a frame, as the spectator can now dwell inside. Moreover, this dwelling is part of a mechanism of imagination triggered by the multi-sensorial appeals from the experience. Although *Sonaria* breaks this distance as the image is frameless, and the spectator can multi-sensorially explore it; the spectator stays safe and distant from the image. For Grau, the primary process of immersion – the feeling of relocating in the experience – is a mechanism of imagination. Although Barthes warns us about the ideological influence the power of mental relocation, he also provides strategies for spectators to keep their safety and distance from the image. The body is addressed, yet it remains unacknowledged and untouched.

Nevertheless, there is a fundamental element in cinema's mechanism that is still unacknowledged by Grau; Barthes' theory of the perverse body. If VR is part of the same tradition of illusions, we should consider Barthes' preoccupations and mechanism to distance ourselves from the mirror image. Thus, I suggest taking a closer look at what are these surroundings. What is this perverse body Barthes is referring to in the case of VR?

Another paradox is that immersion produces and exists because of the complicated situation of addressing the body yet ignoring it, being physically stimulated in one space to be mentally hypnotised inside another and, submerging in the image yet remaining distant,

⁷⁵ Grau, *Virtual Art*, 2003: 343

untouched. Although Grau's focus is on how physical structures stimulate physically the spectator enabling them to dwell inside the image space using their imagination, Barthes starts hinting to the importance of focusing on the spectator as an essential part of creating the feeling of immersion. In other words, the underlying promise of VR of fully replicating 'reality' is not entirely a responsibility of the image space. It is a *situation* between the spectator and the image.

For this reason, and providing answers to the open question about the perverse body in VR, the upcoming section will delve into immersive theatre, and the way thinkers theorise the relationship between the image and the spectator from this perspective. Examining this discipline will allow me to shape a new approach towards immersion and explore its theoretical possibilities in constructing an interdisciplinary VR immersion theory.

Immersive theatre: A flexible introduction

For Josephine Machon, immersive theatre is a term applied to various heterogeneous events seeking to exploit all that is experiential in a performance by placing the audience at the centre of the work.⁷⁶ She argues that beyond using immersive as an adjective, there is a trend to define and amass it as a 'genre' of theatre.⁷⁷ However, it is a loose term. Machon's formal analysis reaffirms this, namely because it excludes other forms of production connected to the works and theories around immersive theatres.⁷⁸ For this reason, the reader will not find a rigid definition of immersive theatre in these upcoming lines. However, you will find common theoretical approaches that emerged from its promise and preoccupations: the audience's transformation as a part of the performance's material composition. For Adam Alston, immersive theatre's most significant element is that the audience's multi-sensorial participation is part of the set of materials for the performance.⁷⁹ Following Machon's logic, immersion is not solely a mental process enabled by the technological infrastructure but also involves embodied and physical participation.

Machon adopted the term *audience-participant* by Adrian Howells to acknowledge the active role the audience plays when a mutual construction of the piece between the spectator and the dramatic situation or space operates in the encounter.⁸⁰ She argues it is imprecise to understand immersion only as a mental involvement (like Grau)⁸¹ since all experiences could be defined as such. This approach makes it impossible to delimit the particularities of practices that demand and require an active embodied participation from the spectator. Immersion acts as a threshold experience to transport unrehearsed

⁷⁶ Machon, Josephine. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." In *Reframing Immersive Theatre. The Politics and Pragmatics of Participatory Performance*, by James Frieze, 2016

⁷⁷ Machon, "Immersive Theatres" 2013: 21

⁷⁸ For example, civic performance and pageantry, happenings, environmental theatre, site-specific performance, installation art, and relational art (see Alston, *Beyond Immersive Theatre*. 2016: 6)

⁷⁹ Alston, *Beyond Immersive Theatre*. 2016: 7

⁸⁰ Machon. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." 2016: 30

⁸¹ This resonates with Rosemary Klich and Edward Scheer's argument. They argue that immersion can pertain experiences, both mentally and physically; thus, they differentiate between cognitive and sensory immersion. The first approach echoes with Grau's because it is defined as the effect or illusion of being present in a fictional reality, whereas *sensory immersion* "can be created through the corporeal and material dimension of the performance." (Klich and Scheer, 2012:132) This way of addressing immersion expands the theorisation mentioned above proposed around the traditions of images. It understands it as a system that entails the spectator's mental dislocation inside the 'imagined space', plus its bodily presence and agency. It involves the spectator, both mentally and physically.

audience members not only mentally, but physically inside a particular spatio-temporal world⁸² and body.⁸³

Immersive theatre comprises a temporary transformation of the spectator into something other than a 'spectator' but into a hybrid status between spectator and actor, between myself and an 'artificial' other in an artificial 'other' place. This approach offers a resolution of immersive theatre's intrinsic paradoxes: "the desire for an immersant's physical presence in a circumstance beyond their immediate 'here and now' [...] the desire that [also] undergirds much immersive experience is to *feel more fully with the body of another*."⁸⁴ The latter has been observed and analysed in VR by Liam Jarvis. He suggests that VR experiments enable the plasticity of the immersed participant's body. By integrating immersive theatre theory and empirical experiments from neurocognitive science, Jarvis explains that VR allows the audience to extend beyond their skin layers. He introduces modes of spectatorship that would enable the physical and sensuous extension of the audience-participant's body while allowing them to take up the on-screen avatar or character position. In other words, VR enables a sensuous and affective experience that extends to incorporate the experiences and bodies of 'others.'

My main interest in immersive theatre is the researchers' understandings of the spectator's body and experience as a material quality for the performance. For this reason, I will approach this section in a similar tone as the previous one. With this, I will incorporate to the discussion this particular approach to immersion defined as a process of space and body dislocation (or relocation) focused on the spectator's agential expectations (the participant's role) and its effects (what happens to the audience-participant after the experience).⁸⁵ In other words, the upcoming lines will concentrate on the promises immersive theatre has regarding the physical relocation of the spectator's body within an artificial space and body, and the transformations this entails.

⁸² Machon, "Immersive Theatres" 2013: 63

⁸³ Jarvis, *Immersive Embodiment*. 2019

⁸⁴ Jarvis, *Immersive Embodiment*. 2019: 3 [original emphasis]

⁸⁵ This process resonates with what Janet H. Murray calls the process of 'learning to swim' once immersed in a virtual environment. The tactics of reconciliation between the beholder's body and the immediate physical circumstance pose a process of transformative becoming, a sensuous alteration and a process of physical self-definition. (Murray. *Hamlet on the Holodeck*. 1997)

Immersion as physical relocation into a 'counterfactual world':

Haptic rhetoric

The theoretical implications of the audience-participant's physical participation in immersive experiences

Immersive theatre is a diffuse term applied to define and analyse a series of events that amass various forms that seek to explore all that is experiential in performance. Despite the many definitions and applications for 'immersive,' Machon determines a common thread. She explains that they place the audience's experience at the centre of the work and frames it as the multi-sensorial feeling of being surrounded in a medium different from their known environment; hence it feels refashioned.⁸⁶ Furthermore, spectators are part of (complicit with) the performance's concept, content and form. Machon frames the audience-participant as a subject who responds holistically and whose physical participation is required by the work. Therefore, immersive theatre establishes a horizontal exchange between the spectator and the dramatic situation at the core of the performance.⁸⁷ Similarly, James Frieze states that all immersive theatre events offer and promise the chance to do something more than distantly observe. They afford the possibility to interact with, and even become, the object of attention.⁸⁸

For Machon, a transversal quality of immersive theatre is the priority makers place on the spectator's *embodied engagement* as part of their performance's material and conceptual design. This process considers and requires an understanding of immersion that is both mental and physical; that stimulates different human capacities shifting between the sensual and the intellectual. Therefore, immersion must establish a unique 'in its own world'-ness experience created by exploring the dramatic physical space, scenography, sound, duration and actions.⁸⁹ Machon argues that both world-making processes (mental and physical) are as relevant for an immersive experience and cannot be separated. However, they are distinguishable by a *felt* fusion of making *sense* between a semantic and cerebral fashion. The former, names an understanding through somatic perception and feeling (a palpable making-sense occurs during the event).⁹⁰ So, the process of *sense-*

⁸⁶ Machon. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." 2016: 30

⁸⁷ Machon. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." 2016: 30

⁸⁸ Frieze, James. "Reframing Immersive Theatre: The Politics and Pragmatics of Participatory Performance." 2016

⁸⁹ Machon, "Immersive Theatres" 2013: 207; Machon. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." 2016

⁹⁰ Machon. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." 2016

making in immersive experiences are semantic readings and somatic identities enabled by the relocation of the body. In other words, immersion emerges through the physical relocation of the spectator's body into the dramatic world that comprises the scene and the body's parameters and composition.

Through the physical relocation and exploration of dramatic environments, the body does not engage only logically or rationally. However, instead, there is an embodied understanding of the work that the spectator is not necessarily able to put into words. For Machon, the possibility of *being in* the performance resides in its haptic and embodied exploration. Immersive theatre requires the touch of the audience-participant. They need to be physically there while the performance is being created. This approach suggests complicity between the spectator and the dramatic space as the audience-participant is a part of it. They are also responsible for the series of events. Simultaneously, it blurs the differences between the actual and the imaginary, between the spectator as themselves and as someone else.

The Pleasure of Being: Washing, Feeding, Holding, the process and power of being touched through the dramatic experience

For Machon, *The Pleasure of Being: Washing, Feeding, Holding* (2010) by Adrian Howells, illustrates how immersive theatre's physical relocation prompts a transformation of the audience's agency within the work.⁹¹ In this one-on-one performance, Howells creates and invites the audience-participant - Josephine Machon - into a clean hotel room's bathroom. She retells being immediately immersed in the calmness of the bathroom's faded elegance and by the warmth and genuine smile offered by Adrian.⁹² Steam rising from the hot water within the bath, upon the surface of which red rose petals float. As she steps into the bathtub, Adrian suggests closing her eyes. It allowed surrendering to the sensations and a release of the imagination. Howells' gently dripping water over her face and body is a precursor to the intimate bathing about to happen. He

⁹¹ Her reflections account for her own experience and the bodied memory that remained and influenced her involvement and understanding of the work. As she claims each immersive theatre experience is unique, she is not trying to suggest anything in particular of the performance as something separate from her experience. On the contrary, all of Machon's reflection resonate with the way the performance made her feel about herself and her past.

⁹² Her use of his first name during her reflections is a clear sign of the intimacy experienced throughout and after the performance.

washes her face, and she feels like a child again. She describes everything felt very clearly choreographed, from the scent of soap pungently clean to the lifting of her arms.⁹³

Machon is conveying her encounter with Howells, with the bath, with herself and her memories. While he gently splashed water on her body, Adrian was not merely washing her; she felt immersed in the own world-ness established by the temporary relationship between them. An everyday action was recreated and elevated as extraordinary in an event created as a ritual, theatre, and precise choreography installation. It was not only a 'representation' or a 'recreation' of being bathed; it was a *simulation*. While maintaining its differences with a 'real bath,' it stood for one and refashioned how she experienced other baths in the past. *The Pleasure of Being* is a simulation of the 'real' (an actual bath) that opened up space for her to pay attention to the bodily ways which perceptions came to bear and, the incontrollable memories and affects it evoked and even altered. Josephine Machon was in a liminal state between the choreographed bath she was undertaking and other baths she already took and will take. She explains that being present, being touched by Howells went beyond a reconnection with her own physical body, "it touched my son, my mother and my past, present and future self in the same moment."⁹⁴

She felt complicity with the performance's concept, content and form. She explains that her responses influenced the tones and textures, making this an extraordinary meeting. She felt that she altered the carefully designed performance by Howells; thus, she was co-creating it at the moment by a delicate mutual exchange of actions, movements and affects. *The Pleasure of Being* demonstrates the importance of touching bodies and the spectator's physical relocation in immersive theatre.⁹⁵ The body is no longer only a sensual material for the subjective experience, but it is the primary tool for production and interpretation.

Machon's analyses resonate with Adam Alston's thoughts around immersive theatres. He explains that participants are *means* for aesthetic production.⁹⁶ It is required for audience members to 'complete' the artwork by interacting with the performer who guides them towards a designed goal. Unlike Machon, Alston has a productive and goal-oriented understanding of the spectator's role in the aesthetic experience. For him, the particularity of immersive theatre is that the audience participant besides physically relocating, they become materials for the performance. In the performance's

⁹³ Machon. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." 2016: 31

⁹⁴ Machon. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." 2016: 37

⁹⁵ Machon. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." 2016: 41

⁹⁶ Alston, *Beyond Immersive Theatre*. 2016: 7 [my own emphasis]

conceptualization and design, the spectator is thought of as somebody who will fill in some 'gaps.'⁹⁷ They respond not only to the performance but to their role in it.

Furthermore, for Alston, performances like *The Pleasure of Being* (immersive theatre) do not actively elicit physical participation but promote introspection. Through promoting profound experiences that arise from the audience's investment, the performance can come into existence. This perspective complements Machon's experience. Besides the fact that Howells took her into an introspective journey refashioning her experiences, her body and affective energy were materials for the artwork. Machon's body and affects were productive pieces for the environment created and orchestrated by Howells. The physical relocation of touch and being touched in an immersive theatre elicits bodily and affective experiences making us rethink what we are experiencing as everyday events.

However, the notions of physically entering a fictional universe, world or situation has been problematized. Keir Elam, thinking through Nicholas Rescher's work, argues for the impossibility to 'physically' enter a dramatic world. For Elam "the access to all possible worlds – including the dramatic – is, naturally, conceptual and not physical."⁹⁸ The 'here and now' of the theatrical circumstance (the spectator's current physical condition) is the obstacle for the 'there and then' of the dramatic situation.⁹⁹ Elam states that the dramatic or counterfactual worlds are only 'actual' for their imagined inhabitants; hence audiences can never genuinely experience their condition. It would involve a transformation of the 'here' of their physical context into a remote and physical 'there.'¹⁰⁰

⁹⁷ Alston, *Beyond Immersive Theatre*. 2016: 7

⁹⁸ Rescher, Nicholas. *A Theory of Possibility*. 1975: 92 in Elam, Keir. *The Semiotics of Theatre and Drama*. 1980:97

⁹⁹ Jarvis, *Immersive Embodiment*. 2019: 8

¹⁰⁰ Elam. *The Semiotics of Theatre and Drama*. 1980: 97-98

The promise of becoming some(body) else: Immersive embodiment in VR

Body swapping and the promise of knowing through some(body) else

VR's promise of physically relocating the spectator's body entails a new approach for the audience-participant condition: *feeling more fully through another's body*. Through the analysis and integration of theory and experiences around immersive theatres, neuroscience and VR, Liam Jarvis concludes that being immersed 'inside' the space of drama or re-enacting historical events often carries the further promise of becoming somebody else. He utilizes theories and preconceptions around 'body-swapping' to reformulate the possibilities and promises of immersive experiences. For him, they can offer to feel more fully through the body of another. His suggestions entail a relationship between mislocalized sensations and the virtual relocation of the self.

Jarvis' interests not only concern issues around *telepresence* – the technological mediation and relocation of bodily agency into a different location – they also entail the relocation of the immersant's sense of bodily selfhood. He suggests that VR experiences unsettled bodily integrity when incorporating a virtual body/avatar as an extracorporeal prosthesis, as part of their body schema.¹⁰¹ This situation temporarily alters the audience-participant's physical and affective sense of selfhood.

Building on the field Machon opened with her work, Jarvis addresses and expanded the possibilities of being physically relocated and sensuously interwoven with other-worldly selves from the dramatic world. The space of drama or re-enactment is not only narrative but intensely emotional and affective. Echoing Jennifer Allen who states that re-enactment uses the body as a medium to reposition the past, relocating past affects into the present,¹⁰² Jarvis explains that the promises of body-swapping regard 'otherness' is brought into 'myself' through embodied and empathic processes. Conversely, Alexander Cook explains that "projects involving re-enactment are not 'about' the period or the events being re-enacted. Instead, they are about a modern set of activities that are inspired by an interest in the past."¹⁰³ Cook adds a relevant approach to the promise of being some(body) else as this relocation also expresses something about the present. In

¹⁰¹ Jarvis, *Immersive Embodiment*. 2019: 77

¹⁰² Allen, Jennifer. "Eimal ist Keinmal: Observations on Reenactmen." 2005: 19

¹⁰³ Cook, Alexander. "The Use and Abuse of Historical Reenactment: Thoughts on Recent Trends in Public History." 2004: 494

other words, body-swapping makes claims about what comprises the experience of the 'other' and how it relates and co-creates 'myself.' The promise of VR that Jarvis is arguing for is mainly a process of being and knowing through some(body) else, through some 'other' self. The past-present movement required for re-enactments (the process of retelling and re-living a historical past) is transposed to the 'physical me' – 'virtual other' relationship. It is the process in which you, as an audience-participant, can experience and live 'in the shoes' of some(body) else. It does not move away from the linear construction of stories, but it includes the possibility to comprehend something (or somebody) in more bodily and sensuous ways.

This approach echoes with the 'second wave' of cognitive science research – namely the interdisciplinary field of embodiment cognition that emerged from integrating phenomenology, biology, cognitive psychology and cognitive linguistics.¹⁰⁴ Embodied cognition problematizes the computational mind-body dichotomy, rejecting that the body is a container of the self.¹⁰⁵ Its proponents suggest that the mind is embodied and situated instead of code-based computational models that explain cognition in terms of information processes and symbol manipulation.¹⁰⁶ Jarvis's approach towards embodied cognition is to rethink body-swapping not as a process in which the user has moved 'inside' a virtualized body through an overlapping transaction, nor a functionalist action to examine what we can *do* with the body. His approach results in a more holistic analysis of how we *experience* our bodies. Bodies are not merely “tools” or “media” to decipher the world, but it is how we experience it. Therefore, body-swapping for Jarvis entails a more complex movement than to take the place of the other; it is to take the position of the on-screen (or HMD) character (or person) with the ever-greater techno-utopian promise that the spectator and the character's embodied experiences may crossover.¹⁰⁷

¹⁰⁴ Shaughnessy, Nicola. *Affective Performance and Cognitive Science: Body, Brain and Being*. 2013: 5 in Jarvis, *Immersive Embodiment*. 2019

¹⁰⁵ Manning, Erin. *Politics of Touch. Sense, Movement, Sovereignty*. 2007; Manning, Erin. “Taking the Next Step: Touch as Technique.” 2009; Munster, Anna. *Materializing New Media. Embodiment in Information Aesthetics*. 2006; and others

¹⁰⁶ Jarvis, *Immersive Embodiment*. 2019: 16

¹⁰⁷ Jarvis, *Immersive Embodiment*. 2019: 3

The possibilities of sensuous incorporation as an argument towards feeling through the virtual body of another

Jarvis' take on cognitive embodiment resonates with Gail Weis's reflection about the incorporation of prosthetics and how they modify the human body. She explains that the body's capacity to relate with external objects and spaces is more than an adaptation but a co-construction. Basing her argument in phenomenology and evidence from the 'second wave' of cognitive science, she explains that the body's flexibility enables the embodied acquisition of prosthetic devices, instruments and tool; such as glasses, artificial limbs, and surgical implants.¹⁰⁸ She argues for an inherently open and pliable body which can incorporate its external material environment. In this same vein, scientific research in body ownership since the 1990s has demonstrated that incorporating objects occurs in bodies unaffected by neurological disorders. The Rubber Hand Experiment showed that bodies sensuously include an external rubber hand as part of the body scheme.¹⁰⁹ Following these findings, the experimental induction of out-of-body experiences¹¹⁰ or body substitution illusion, in which the participants feel ownership over a virtual or surrogate body,¹¹¹ have been successfully carried out using VR.

Despite the conscious awareness of being inside an illusion, neuroscientific experiments have used different techniques to show that the sense of body ownership, of incorporating external objects, is far more complicated than functional (as tools). There has been a series of experiments looking into the expansion of the body ownership through physiological measures (e.g. skin conductance response), neural measures (e.g. positron emission tomography) and conscious behavioural measures (e.g. participants' introspective reports)."¹¹²

Jarvis critically analyses these experiences to argue around the promise of feeling through the body of another. In light of these findings, Jarvis assures that arguments like the one

¹⁰⁸ Weiss, Gail. *Body Images: Embodiment as Intercorporeality*. 1999; in Hansen, Mark. *Bodies in Code. Interfaces with Digital Media*. 2006

¹⁰⁹ Botvinick, Matthew, and Jonathan Cohen. "Rubber hands 'feel' touch that eyes see." 1998

¹¹⁰ Lenggenhager, et al. "Video ergo sum: Manipulating bodily self-consciousness." 2007; Ehrsson, Henrik H. "The experimental induction of out-of-body experiences." 2007

¹¹¹ Petkova, Valeria, and Henrik Ehrsson. "If I Were You: Perceptual Illusion of Body Swapping." 2008; Slater, Mel, Maria V Sanchez-Vives, and Bernhard Spanlang. "First Person Experience of Body Transfer in Virtual Reality." 2010

¹¹² Jarvis, *Immersive Embodiment*. 2019: 9

proposed by Weiss need precision.¹¹³ There is a difference between functional incorporation of 'tools' and sensuous experiences like the rubber hand illusion. There is a different sense of body ownership between both cases; we cannot feel a tool as a 'part of us.'¹¹⁴ For example, a pencil is not usually part of one's felt body the same way as the hand that grips it. Frederique de Vignemont and Alessandro Farnè argue that "tools are embodied but only motorally, and not perceptually."¹¹⁵ They evidence this difference when observing that in the rubber hand illusion experiment, when the rubber hand is threatened or hit by the hammer, the participant reacts physically and sensorially. Breaking somebody's glasses will produce an emotional reaction and following visual difficulties, but it will not produce physical pain. For Jarvis, this evidences a 'perceptual embodiment' – plasticity in the participant's affective experiences of a self that hyper-extends beyond the skin to incorporate sensuous and affective experiences of 'otherness.'

These observations allow Jarvis to rethink the body-prosthesis relationship not as functional of tool-based (of what we can do with the body) but as their sensorial and affective incorporation. The relevant difference between these two approaches towards body-prosthesis interaction is that the latter acknowledges the object 'reacting back.' It potentially places the virtual not only as a tool (to make something or to have some level of agency somewhere else like in telepresence) but as an experience that affects us in return through its perceptual embodiment.

The Machine to be Another and the sensible and affective nuances of becoming with the body of another

In the summer of 2016, Jarvis participated in a 15-minute VR performance by the collective *BeAnotherLab* called *The Machine to be Another*.¹¹⁶ It incorporated low-budget Creative Common technology and performance that allowed to apply neurocognitive studies about embodiment in theatre spaces. The performance used two *Oculus Rift* HMD

¹¹³ He argues by critiquing Mia Perry and Carmen Liliana Medina's conceptualization of the body as a tool, a creation of progress in: Perry, Mia, and Carmen Liliana Medina. "Embodiment and Performance in Pedagogy Research: Investigating the Possibility of the Body in Curriculum Experience." 2011

¹¹⁴ Jarvis, *Immersive Embodiment*. 2019: 6

¹¹⁵ de Vignemont, Frédérique, and Alessandro Farnè. "Widening the Body to Rubber Hands and Tools: What's the Difference?" 2010: 209 in Jarvis, *Immersive Embodiment*. 2019

¹¹⁶ See further: BeAnotherLab. beanotherlab.org. n.d. <http://beanotherlab.org/home/work/tmtba/> (accessed September 2020)

with built-in cameras that showed a live video feed so the audience-participant could occupy the performer's body located in the same room but hidden behind a partition.¹¹⁷ A combination of formal characteristics produced the feeling of being and sensing the body and the story of the 'other' who was the performer. For instance, Jarvis had a first-person perspective (1PP) which coincided with the performer's body and gaze. Also, the performer mirrored Jarvis' physical movements in real-time with added realistic tactile feedback. In other words, when Jarvis saw that the performer was touching something, somebody touched him identically. Thanks to this myriad of stimuli, Jarvis recalls having agency over the 'performer's' body image and the 'performer' having agency over him. This description fits with Bevan and colleagues' typology of *the first-person* perspective and the *active participant*.¹¹⁸

Nevertheless, within the tools provided by Bevan and colleagues, there is no category to define this experience's visual composition. *The Machine to be Another* is formally similar to a *live-action 360-degree video* but drastically different in its discursive design. The experience finalized with a face-to-face encounter between both 'participants,' evidencing that the experience was not a live-action 360-degree video but some '*live*' 360-degree video. The main difference between the both is that the visual and tactile experience is not pre-recorded, Jarvis was experiencing it in 'real-time' (or at least that is what he felt). This level of liveness experienced by Jarvis is not accounted in the paper by Bevan and colleagues. For Jarvis, liveness, which he also described as telepresence, was fundamental for his body-swapping argument. The sensation of feeling through somebody else's live body opened new options for the embodied agency in performance and spectatorship.

The Machine to be Another is one of the few connecting this concept to *body-swapping*, to shifting bodily experiences. In other words, this performance relocates the spectator to some additional space and some other 'body.' The virtual movement performed by the spectator other than extending beyond the confines of its physical limits, they interweave with some(body) else and their experiences.

The experience had two notably different body-swapping movements. On the one side, Jarvis could relate empathically with the performer's experience – a woman living in a refugee camp in the UK. Simultaneous with the touching and moving, Jarvis heard the non-diegetic pre-recorded story of the performer's life on a refugee camp through a set of

¹¹⁷ Jarvis, Liam. "The Ethics of Mislocalized Selfhood. Proprioceptive drifting towards the virtual other." 2017: 30

¹¹⁸ Bevan, Chris, et al. "Behind the Curtain of the "Ultimate Empathy Machine" 2019

headphones. Her pre-recorded voice, telling her experiences as a refugee, reinforced Jarvis' feelings of him momentarily exploring the world in her shoes. Although her story and the situation created in the performance were dislocated, Jarvis felt her story as his. In other words, the performer's experience as a refugee did not correspond narratively to the embodied experience through the VR.

On the other side, Jarvis physically confused his body with the performer's body. Through realistic visuotactile feedback, he experienced her body as his without forgetting about his own. He remembers looking down at 'his' new female body image – the tattooed arms he held in front of him felt like they were his while being identifiably from some(body) else.¹¹⁹ The two moments of body-swapping in this experience were: a discursive or narrative relocation (or appropriation) and a sensuous relocation. *The Machine to be Another* is an exploration of sensible and affective body-swapping with VR. In it, the presence of a 'virtual' body is not a tool for immersion¹²⁰ but a fundamental material element for the experience.

The Machine to be Another and the doubling of the body; becoming half-in-half-out between reality and the virtual

Furthermore, the event had two distinct effects on Jarvis' perception of his embodied self. On the one hand, he had an illusory feeling of owning a body that crossed different social, political and gender boundaries as he was experiencing not only through the body of some(body) else but also her story. Jarvis and the creators considered this a radical act of empathy.¹²¹ This argument echoes the approach from several theorists and practitioners towards VR as the 'ultimate empathy machine.' For Chris Milk, the possibility of experiencing 'as if' you were someone else through VR is different from other mediated experiences. VR allows you to feel like 'real life,' as if you were right there with the characters.¹²² This particular statement inspired numerous practitioners driving their

¹¹⁹ Jarvis. "The Ethics of Mislocalized Selfhood." 2017: 3

¹²⁰ Pimentel and Teixeira noted the importance of seeing the representation of your hand changes the perspective and experience of VR. Having a virtual hand, or body is an anchor in the virtual world. "You are actually inside the computer because you can see your hand in there." (See further Pimentel, Ken, and Kevin Teixeira. *Virtual Reality: Through the New Looking Glass*. 1995 and Dixon, Steve. *Digital Performance. A History of New Media in Theatre, Dance, Performance Art, and Installation*. 2007)

¹²¹ Jarvis. "The Ethics of Mislocalized Selfhood." 2017

¹²² Milk, Chris. "How virtual reality can create the ultimate empathy machine." *TED.com*. March 2015

productions towards effective forms of *immersive witnessing*, namely in humanitarian and journalistic contexts.¹²³ Sam Gregory investigates and argues for the potential of VR's effective moral response grounded in empathy and in its unique ability to provide the spectator with a 'new self.'¹²⁴ In the same spirit, Mandy Rose writes that VR can provide privileged access to another's experience, thus generating empathy with the virtual subject.¹²⁵ In this vein, Jarvis follows this approach and argues that through an undergirding capacity, one might 'do as others do,' and 'feel as others feel.' These ideas created the promise that VR allows 'being other bodies *without separation*.' As body-swapping, immersion enables us to experience with the body of another as if it was our own.¹²⁶

On the other hand, Jarvis recognizes the limits and probable impossibility of feeling fully as if he was this 'other' (the 'performer' and 'refugee woman'). Echoing Elam and integrating Gabriella Giannachi's analysis of *virtual theatre*, Jarvis elaborates on the state of in-betweenness audience-participants' bodies are during a VR immersive experience. He is namely 'half-in-half-out' from virtuality and reality. A body using headphones and an HMD is theoretically and experientially between themselves and some(body) or somewhere else. Regardless of having a visible virtual body, the audience-participant is simultaneously part of the virtual experience, and present in the physical room. By integrating Giannachi's hypersurface concept into his argument, Jarvis theorizes an immersed body that is never entirely inside or outside the virtual. Hypersurface is the liminal place where the real and the virtual meet.¹²⁷ Giannachi argues that hypersurface renders VR as the place where virtuality and reality can coexist. While maintaining their identities and avoid synthesis, they can exist interrelated.¹²⁸

In experiences like *The Machine to be Another*, the societies of information and flesh temporarily merge, yet they exist separate. During the experience; viewers are never fully present in the real nor the virtual.¹²⁹ Similarly, Yacov Sharir's ideas about *Dancing with the Virtual Dervish: Virtual Bodies* (1994), a performance he co-created with Diane Gromala, resonate with Jarvis and Giannachi's take on VR' half-in-half-out' embodiment. He

¹²³ Nash, Kate. "Virtual reality witness: exploring the ethics of mediated presence." 2018: 2

¹²⁴ Gregory, Sam. "Immersive Witnessing: From Empathy and Outrage to Action." 2016 in Nash "Virtual reality witness"

¹²⁵ Rose, Mandy. "The immersive turn: hype and hope in the emergence of virtual reality as a nonfiction platform." 2018: 11

¹²⁶ Jarvis, *Immersive Embodiment*. 2019: 92

¹²⁷ Giannachi, Gabriella. *Virtual Theatres: An Introduction*. 2004: 95

¹²⁸ Giannachi. *Virtual Theatres*. 2004: 156

¹²⁹ Giannachi. *Virtual Theatres*. 2004: 11

explains that "even though you are grounded in a physical space, you are immersed in cyberspace, and you live now two lives; one in the physical space and one that you are immersed in, which is cyberspace via your googles. Disconnected from the physical world: entering the cyber world that is designed on the computer. Surfing in cyber world where the surf speed is 60 to 70 miles an hour [...] But surfing that fast, you get nauseous, sick in your stomach, and you haven't moved physically."¹³⁰ In this reflection, Sharir points out that although flesh and information exist separate, immersion has actual physical aftereffects in the physical body. Therefore, it can be said that immersion results in a constant flux between two bodies and two feelings of embodiment. They all exist and felt simultaneously yet apart. They are onto-relational.

Jarvis' experience in *The Machine to be Another* is similar to Sharir's conceptualization and empirical description of his work. In both cases, the audience-participant is in a liminal situation. They are not entirely some 'other,' in some other place, as much as they are not wholly 'themselves.' Their bodies are half-in-half-out from virtuality and reality; both 'realms' affect each other. When Jarvis explains feeling the 'performer's' body as his own while knowing it was not, he describes being doubled and confused between both bodies and experiences. For him, this allowed virtuality to react back and affect him while still knowing this transformation is only a momentary illusion. However, Jarvis and Sharir experiences are different.¹³¹ In Jarvis' there is a seamless correlation and realistic tactile feedback (like telepresence) while in Sharir's there is no intention to couple both the physical and the virtual experiences. Nevertheless, both exemplify the liminal position and the VR embodiment's co-construction process between the virtual and the real.

By this logic, the immersion we should discuss regarding VR is never 'fully' immersive. It should occupy a hybrid status, eliciting a sense of *proprioceptive rift*¹³² - the sensual alteration of the entire body's or a limbs' location - while knowing that this experience is fictional.¹³³ Therefore, there is a shift in the implications of the relationship between the spectator and the virtual other. In this spirit, Giannachi suggests that virtual theatre

¹³⁰ Sharir, Yacov. "The Tools." 1999. <http://www.arts.state.tx.us/studios/Sharir/tools.htm> in Dixon, *Digital Performance* 2007: 377

¹³¹. There are several other differences between these two works; however, I do not consider them relevant for the argument.

¹³² "Crucially, immersion in this artwork (Richards, Catherine. "Virtual Body: Statement from the Show Eldorado Centrum." 1993) is not simply multi- or poli-sensory. What Richards stages is the participant's sensory conflict between proprioceptively owning an arm that feels attached, with the visual sensory feedback of seeing one's arm virtually drifting away from the body." in Jarvis, *Immersive Embodiment*. 2019: 58-59

¹³³ Jarvis, *Immersive Embodiment*. 2019: 89

experiences do not equate with the promise of full-body immersion illusion: fully crossing the threshold. The hypersurface she contends is not fully immersive, but it simulates immersion.¹³⁴ After a close reading of her argument, Jarvis concludes that VR and its promise of experiencing total subsumption in a simulated environment are also part of its simulation process. In other words, 'entering' the simulacrum is also a simulacrum in itself.

Moreover, Giannachi further suggests that these implications affect the participating self on the level of body composition. Although she agrees that the incorporation and expansion of virtual objects and bodies are fictional, she suggests that through this process the spectator's body is relocated and, exists and performs in multiple locations at the same time. The spectator is part of the work of art; thus, they become translocally with the virtual.¹³⁵

For this reason, she affirms that hypersurface as much a place where flesh and information coexist as where they meet and merge.¹³⁶ Bodies (partially) immersed in the hypersurface materially transform because they are conformed by flesh and information simultaneously as part of the virtual. In other words, Giannachi suggests that experiences between a 'real' and a 'virtual' (like body-swapping in *The Machine to be Another*) entail a transformation. She argues that once the spectator becomes immersed, hence becomes part of the virtual; the experience *remediates* their bodily performance,¹³⁷ it is virtualized.

Remediation is a concept borrowed from David Bolter and Richard Grusin that, in a highly simplified manner, stands for the influence of one medium in other at the level of content and form.¹³⁸ Virtual theatres then engage with immersion through a coupling of virtuality and reality in remediation terms. Even if the virtual experience is not 'real,' it still produces 'real' effects because it engages with reality transforming (remediating) the spectator's performance. For Giannachi, virtual theatre transforms the spectator's performance through remediation. This process modifies the audience-participant's body and enables them to enact translocally by their virtual embodiment.

¹³⁴ Giannachi. *Virtual Theatres*. 2004: 95

¹³⁵ Giannachi. *Virtual Theatres*. 2004: 11

¹³⁶ Giannachi. *Virtual Theatres*. 2004: 95

¹³⁷ Giannachi. *Virtual Theatres*. 2004: 8

¹³⁸ Bolter, Jay David, and Richard Grusin. *Remediation: Understanding New Media*. 2002: 45

Final thoughts around Immersive Theatre: Does Josephine Machon stopped being herself?

The works by Machon and Jarvis prove new approaches towards VR immersion. They theorise a practice that focuses on the body as part of the technologies of immersion. Either if participating in the virtual is a physical relocation or the remediation of the spectator's performance, it entails a transformation of what it means to be a spectator. This approach is called *audience-participant*. This concept pinpoints the physical possibilities the spectator has in immersive experiences. Machon focuses on the productive transformation immersive theatre has in ways of being in the performance. Firstly, the material participation accounts for how you can engage physically with the experience (like actively moving an object or stopping a performer from completing their action); and secondly, for what the physical participation evokes in the spectator. The latter is a tool for immersion as physically participating in the experience blurs the differences between the virtual (or dramatic) and the real (or sense of normalcy). Machon conceptualizes a physical relocation that plays with the spectator's everydayness inducing a new sense of normalcy that limits fiction. Alston problematises this approach to embodied participation in immersive experiences. For him, the audience-participant's physical relocation and affective engagement are means for production. Immersive experiences not only account for spectating, but they require material and affective attention. The spectator is a material piece in the performance's productive machinery who fills in 'gaps' in its development. This material transformation enables the physical feeling of being there and a level of affective engagement.

However, the actual transformation of the embodied self, of the spectator's physical 'here' is problematized. Does Josephine Machon stop being herself when she is a material piece of an immersive experience? For Jarvis, a question like this is fundamental to understand the possibilities and promises from VR. To answer these questions, Jarvis integrates concepts and empirical evidence from neurocognitive sciences with immersive theatre. This process allows him to expand the field opened by Machon merging it with VR experiences and understanding it as a theatre problem. For him, immersive VR removes the binary relationship between spectating and performing. In both immersive theatre and VR, the embodied relation inside the fictional environment (to participate) does not dismantle the experiencing exterior position. It is a paradox between being myself and others, between being inside and outside. The uniqueness of Jarvis's argument is that it integrates how VR sensuously and empathically expand or relocate the audience-

participant's bodies. He states that VR has the promise of sensuously incorporating objects as a way to feel more fully in the body of another. For him, this is not only an illusion allowed by body-swapping, but it is also a new way of experimenting our bodily limits and therefore, the world. He states that immersion implies the promise of knowing through a virtualized conflation of the self and the other. These ideas echo with what Vilayanur S. Ramachandran has described as an 'era of experimental epistemology.'¹³⁹

For Jarvis, sensuous incorporation relates to telepresence not as something we can do with the mislocalised self but as how we know through it. VR promises relocalised and empathic learning. Therefore, an immersive experience entails being in a different space and sensuously being in and with some(body) else. The integrity of the physical self is temporarily compromised. The illusory dissolution of an immersed body's borders provides a different position and experience in the face of the other and the self. Jarvis' interest follows the concern that VR immersion is 'dipping into' a virtual 'other,' generating the sensation of bodily transference.

Going back to the initial question, does Josephine Machon stop being herself when she is a material piece of an immersive experience? The answer is yes, and no. This understanding of immersion concerns the perception of crossing the boundary of one's skin becoming with the other, but without stopping being oneself. Theatre of mislocalized sensation attempts to position the participant's outside of their habitual bodily experience and within virtualized subjects *without separation*, occurring in the borderline between two poles that are no longer opposed but intertwined.¹⁴⁰

¹³⁹ Jarvis, *Immersive Embodiment*. 2019: 21

¹⁴⁰ Jarvis, *Immersive Embodiment*. 2019: 81

Chapter Two

Introduction

As mentioned previously, Gabriella Giannachi suggested, without elaborating it thoroughly, that one of the most relevant elements to produce the feeling of immersion in VR is its potential to *remediate* the spectator's performance. This statement is elaborated from rereading the seminal work of Jay David Bolter and Richard Grusin. They coined the theory of *remediation* alongside the two structuring concepts: *immediacy* and *hypermediacy*. The word remediation is used in different disciplines to refer to 'restoring' or 'improving' some type and level of performance. It comes from the Latin *remederi*, which means "to heal, to restore health." Bolter and Grusin adopted this term previously used by Paul Levinson to describe how one media reforms other media to resemble or reproduce more anthropomorphic images.¹⁴¹ For Levinson, remediation is an agent for teleological evolution; this means that new media improve older media, making it closer to 'reality.'

Following Levinson's ideas, Bolter and Grusin describe that remediation refers to the ways different media relate and refashion other media.¹⁴² Remediation explains how any media¹⁴³ refashions 'older' or 'other' media and how these 'other' media refashion between each other. Remediation suggests that 'old' and 'new' media coexist without the 'new' swallowing up the 'older.' Media do not absorb the media with which they articulate. However, for Bolter and Grusin, remediation suggests that different media coexist and connect to produce a more 'natural' experience. For this reason, they offer the two

¹⁴¹ Levinson, Paul. *The Soft Edge: A Natural History and Future of the Information Revolution*. 1997 in Bolter and Grusin. *Remediation*. 2002: 59

¹⁴² Bolter and Grusin. *Remediation*. 2002: 15

¹⁴³ I would not desire delving into much detail about how Bolter and Grusin address the issue of media. However, I think it is fundamental to state that they position media as part of the tradition discussed by Grau and Mandy Rose. Although they do not quote them as Grau and Rose wrote their texts later in time. It is clear that Bolter and Grusin only delve into a situated European and North American notions of media. As problematic as these categories may sound as I believe talking about geopolitical limits to define anything is anachronic, I follow the logics posited by these authors. For Bolter and Grusin, tying new media to old media is a 'structural condition' of all media they experienced. Without aiming for defining their universal dynamics, they do not claim remediation is a universal truth. Therefore, they elaborated this theory after the empirical analysis of different media from what they defined as 'Western media tradition;' the tradition or discipline I discussed in the first chapter is part of the tradition Bolter and Grusin are studying. For this reason, they state things like: "our culture conceives of each medium or constellation of media as it responds to, redeploys, competes with, and reforms other media" (Bolter and Grusin. *Remediation*. 2002: 55 [my own emphasis]). Instead of elaborating deterministic statements about media outside their immediate context. In this same vein, they explain that "the two concepts of remediation (hypermediacy and immediacy) have a long history, for their interplay of a genealogy that dates back at least to the Renaissance and the invention of linear perspective." In other words, they do not claim that these concepts are universal truths; rather they regard them as practices of specific groups in specific times – not looking for origins but the discovery of their unique aspect of a trait or a concept. (See further: Foucault, Michel. "Nietzsche, Genealogy, History." 1977: 146)

concepts that structure remediation. Those concepts stand for each of the processes described.

On the one hand, *immediacy* accounts for the desire of making media 'disappear,' by producing a more 'natural' experience. Hence, the spectator will not perceive the mediation process. On the other hand, *hypermediacy* accounts for the combination of different existent media shaping the mediated event.

Bolter and Grusin propose that remediation is an underlying or structural condition of every the media they experienced. All media exist and interact with other media part of a network conformed by other and different media. Nevertheless, this network of media aims to become imperceptible or offers a more 'natural' experience. In other words, despite Bolter and Grusin theorise immediacy and hypermediacy as opposed (as transparency and opacity), immediacy is the ultimate goal of remediation. For them, to get past the limits of representation and seamlessly achieve the 'real' is the objective of every media network.¹⁴⁴

In this same line, Giannachi's observations become relevant and will guide my upcoming reflections. She suggested that remediation is an underlying theory of every VR immersive experience. Although she did not elaborate on it, her ideas will catalyse a novel approach towards VR immersion, using remediation as a bridging theory between both perspectives examined in the first chapter. Giannachi suggested that remediation comprises not only media but also the spectator's performance.¹⁴⁵ For her, remediation not exclusively includes media or mediated elements, but also the spectator's bodily agency and movement possibilities. Therefore, an expanded notion of remediation can integrate both media and performance approaches toward VR immersion.

For this reason, this chapter will integrate both traditions previously discussed to amass an alternative interdisciplinary theory and approach towards VR immersion in chapter three. Both foundational concepts of remediation will prove useful separately to find parallels, limitations and new possibilities of immersion in VR. This theoretical exercise will allow me to argue for a novel promise of VR immersion that has the opportunity for transformation in its centre. In other words, that VR immersion complicates and refashions our sense of normalcy and perception of reality.

¹⁴⁴ Bolter and Grusin. *Remediation*. 2002: 53

¹⁴⁵ Giannachi. *Virtual Theatres*. 204: 6-8 [my own highlights]

Firstly, immediacy will serve to integrate the techno-utopian promises that VR can produce a full replica of 'reality' or 'normalcy' through multi-sensorial stimulation. In other words, that VR immersion makes and is produced by replicating a 'real' space or a 'real' embodied experience. This approach is based on the emotional and physical relocation of the 'spectator' into a realistic 'other' location. However, immediacy will also allow me to critique the same promise it sustains. In other words, immediacy will post critical inquiries regarding the way immersive theatre and the tradition of images and illusions theorise immersion around the desire of empathic relocation.

Secondly, hypermediacy will serve to integrate and shed new light on the paradoxes around the spectator's location and agency in and with the image. Both disciplines address these issues from very distinct perspectives, and integrating them can create a complex panorama. For example, when the spectator's body is negated and stimulated or the audience-participant is a material part of the experience yet remains separated. Hypermediacy will allow me to argue that such observations are part of one same logic and movement. Also, hypermediacy will allow me to demonstrate that the complicated relationship between the 'image' and the 'spectator' in VR immersion can be expanded towards the virtual-real relationship. In other words, hypermediacy integrates the different approaches and the way they theorise relationships between 'media' and 'live,' 'reality' and 'fiction,' the 'spectator' and the 'maker.'

I will carry out this integration through the main idea that hypermediacy complicates the differences between the media and the non-media, and understand their relationship as networked. Therefore, these paradoxes and dichotomous concepts will integrate through the shape of a network or constellation embraces the different dynamics both disciplines I discussed previously understand the relationship between these concepts. Furthermore, during this process, I will also show that a new theory and approach towards VR immersion promise can be suggested by integrating these paradoxes. This alternative promise is not about making the spectator relocate into a place or an experience that fully depicts a specific 'other.' It is not about the desire to allow the spectator plunge into a parallel reality that is a replica of the 'normal' reality. In other words, a promise that resonates with immediacy. I suggest a promise that has in its centre the idea that 'virtuality' and 'reality' overlap transforming how normalcy and reality are, were and will be experienced.

In a nutshell, through this theory, I will amass a VR immersion promise structured around the fact that different 'media' and 'non-media' become together in a constant process of horizontal refashioning. Therefore, the central promise of VR immersion should

not solely contemplate the desire to produce multi-sensorial experiences that replicate 'reality.' But that VR immersion is created by and as part of a *heterarchy* between 'media' and 'non-media' entities. In other words, VR immersion encompasses an onto-relational network of 'media' and 'bodies' that are simultaneously 'virtual' and 'actual,' 'live' and 'mediated,' inside and outside the virtual and reality. VR immersion's promise is not about relocation or creating a world or body that 'replicates' another. It is about 'bodies' and 'media' that stand in a remediation network as actual, creative and transformative.

In this chapter, besides following Giannachi's suggestion and expanding them, it will also involve levelling the relationship between immediacy and hypermediacy. Despite Bolter and Grusin theorise immediacy as the goal of any media part of the western tradition, I will argue that to integrate both disciplines of VR immersion, hypermediacy is not only the means to an end but paramount to the promise of VR immersion. Therefore, I will problematise Bolter and Grusin's teleological approach. In the end, I will address remediation mainly through hypermediacy. However, this process will not disregard the importance and possibilities of immediacy for VR immersion.

Immediacy: the process and outcome as a bridging concept

The epistemological and the psychological immediacy and immersion

Immediacy describes when the spectator does not perceive or assumes they do not perceive a process of mediation. This concept pinpoints when an image (or any mediated process) produces the feeling or stands for the event as if it was the 'real' object, person or experience. In other words, although one or multiple media produce the mediated event, the spectator feels they are experiencing the entity 'behind' the mediation. Bolter and Grusin theorise immediacy in two ways: the epistemological and the psychological. The epistemological is the perceived absence of mediation or representation in the mediated event. It describes the phenomenon of a medium erasing itself and leaving the viewer in the presence of the object or subject represented. The psychological immediacy describes the feeling that media objects are 'real.' In other words, it describes when the spectator behaves towards a mediated entity as if it was alive or as if it was the 'real' entity.

Addressing VR immersion from immediacy can bridge some particularities from Grau, Drogamaci and Liptay, Machon, and Jarvis's ideas. In a way, they all align around the suggestion that immersion produces and is produced when virtuality recreates a realistic experience. Immediacy can integrate VR immersion aspects, which account for the media's desire disappear its mediation process, making the spectator feel they are in the actual object's presence. For Bolter and Grusin, it is the feeling of being in the presence of an interfaceless interface. Both ways of immediacy will integrate transversal VR immersion elements while allowing me to pose some reflections and limitations. The epistemological will integrate the way the different technical approaches to immersion and VR experiences are conceptualised. In contrast, the psychological, expanded or further explained through the concept of *liveness* by Philip Auslander, will prepare the ground for a further critique on this promise of VR immersion.

Epistemological immediacy as a bridging concept. The challenge is to make the mediation look and feel like reality

In a similar vein as the epistemological immediacy, Frank Biocca suggests that "the challenge is to make that [virtual] world look real."¹⁴⁶ Similarly, Larry Hodges and colleagues indicated that the goal of VR is to foster in the viewer a sense of *presence* – that the viewer should forget they are wearing an HMD and accept the graphic image as part of the visual world.¹⁴⁷ For Bolter and Grusin, statements like these exemplify the desire and process of immediacy which images undertook and still undertake. Thinking with Philip Auslander's work around the concept of *liveness*, Bolter and Grusin clarify their immediacy definition. Auslander suggests that liveness behaves like a claim raised by the technology which the user has to accept. In other words, some media claim it, and we feel their 'liveness.'

For example, in broadcast television, we feel that performers (them) and the audience members (us) are physically and temporarily co-present.¹⁴⁸ In broadcast television, different media work together to produce the feeling that the spectator is experiencing

¹⁴⁶ Biocca, Franc. "Virtual Reality Technology: A Tutorial." 1992 in Hansen, *Bodies in Code*. 2006: 113

¹⁴⁷ Hodges, Larry F, Barbara Olasov Rothbaum, Rob Kooper, Dan Opdyke, James Wiliford, and Thomas C Meyer. "Presence as the Defining Factor in a VR Application." 1994 in Bolter and Grusin. *Remediation*. 2002: 22

¹⁴⁸ Auslander, Philip. "Digital Liveness: A Historico-Philosophical Perspective." 2012: 5

the event as if they were there in real-time.¹⁴⁹ In other words, the spectator is experiencing the promise and feeling of immediacy. For Auslander, broadcast television is like theatre but unlike film. He suggests that TV and theatre are characterised by the desire for immediacy, by immediate performance, because the spectator feels being in the scene.¹⁵⁰

Immediacy describes that images (or image spaces) seek to produce the illusory feeling that the image's fourth wall is no more. Therefore, the spectator feels they can dwell inside, just like Jean Marais dipping into the mirror or an observer going into the Albertian window. As I discussed in the first chapter, relocating into the image space has two main processes which can be accounted for with immediacy. The first one follows the ideas from Grau, and Dogramaci and Liptay (also Jarvis). It suggests that the image space enables emotional or imaginary relocation through multi-sensorial stimuli. In other words, image spaces that are as realistic as possible produce the feeling of crossing the fourth wall to experience the 'real' object without mediation. The second one resonates with Grau and Barthes. It suggests that diminishing the emotional and empathic distance between the observer and the observed produces the feeling or illusion of being in the real event's presence. For Barthes, the spectator can feel relocated and morally affected by the image partly because they can see themselves 'reflected' in the image. In other words, they see themselves replicated in emotional and empathic levels.

Furthermore, through the theatre of mislocalised sensations, Jarvis explains that VR can produce the feeling of being and experiencing through someone else's body. He argues that through the multi-sensorial correlation between the spectator's actual body and their virtual version (which could be a concrete other like the refugee woman, or a virtual body or limb), the spectator's body can sensorially relocate outside the limit of their skin. This way, the spectator, besides experience empathically as if they were some other, can sensorially relocate their body and extend their limits onto someone else's body. In other words, the audience-participant can empathically relate with the stories of some other while comprehending them in more bodily and sensuous ways. Jarvis' approach to the promise of VR finds support in neurocognitive experiments ideas and empirical evidence. They both argue that, through the multi-sensorial correlation between the 'real' and the 'virtual' bodies, the participant can feel the 'body' of some 'other' (human or non-human) as their own. The parallels between the epistemological immediacy and Jarvis' ideas are clear. Both suggest that mediated experiences seek to break the 'fourth wall'

¹⁴⁹ Bolter and Grusin. *Remediation*. 2002: 26

¹⁵⁰ Auslander, Philip. *Liveness. Performance in a Mediatized Culture*. 2008 [1998]: 15

between the 'image,' which in this case is somebody else's body, and the spectator to relocate the spectator's bodily experience in some other 'place,' or in this case 'body.'

For example, in *The Machine to be Another*, Jarvis felt as if he was experiencing someone else's story through their 'body.' According to his description and analysis, he felt two different ways of immersive relocation which correlate with Bolter and Grusin's concept of immediacy. The first one is when Jarvis explains that, through multi-sensorial correlation, he partially felt that the body of this 'other' was his own. Through 'realistic' visuotactile feedback, Jarvis felt the performer's body (namely her(his) tattooed arms) as if they were his, but without forgetting they were not. In Auslander's language, Jarvis felt the liveness as he partially and momentarily felt the experience was not mediated. *The Machine to be Another* was experienced through immediacy as Jarvis felt the fourth wall broke, and he jumped inside the object represented, the body of some other. In this case, jumping cross the forth wall was not a relation into a concrete space, but a body; the body of a refugee woman. The second way of relocation was in the level of empathy. In other words, it was based on empathic and affective appropriation. Like Barthes, Jarvis explains that besides relocating sensorially, he felt that the performer's experience (the story he was listening to), was momentarily closer to his narrative, history and experiences. Jarvis claims that for a moment, he felt her story was his. His experience was crossing over different social, political and gender boundaries. He was exploring the world in her shoes.

In this manner, both ways of immersive relocation converge through immediacy. The fact that Jarvis felt crossing over and going into the 'image.' He felt he was physically and empathically in a non-mediated 'image space,' and that the performer's story was happening to him that her body was his while remaining distant. Although he felt the opposite, Jarvis knew this was not 'real;' following Barthes, the narcissistic and the perverse body remained separate.

In this manner, the epistemological immediacy, as a bridging concept, integrates the desire of VR to produce highly realistic experiences through different strategies. From emotional and empathic, to multi-sensorial and proprioceptive. Both immersive theatre and western images and illusions, conceptualise that a myriad of formal, discursive and emotional correlated stimuli enables the 'spectator' to feel they are experiencing the 'real' object without mediation. For example, 1PP, sensorimotor correlation, recognisable qualities of 'reality,' seamless interaction, and some other reality simulations are currently being developed with these purposes. Through these formal qualities, we can detect an underlying promise that follows the direction of immediacy. The promise of VR to produce

a full body and complete illusory 'locations' that the spectator will submerge into so they can feel they are experiencing the body or space behind the screen as if it was the real one. Going through the Albertian window, diving inside the mirror, being pressed against the screen, and feeling through another's body is highly different. However, they all converge in the promise that through multi-sensorial stimuli – hypermediacy – the overall goal of an image space is to produce experiences we feel we can dive inside as if they were the represented event.

Psychological immediacy and immersion. The feeling of a mediated object as 'alive'

The second approach to immediacy also brings some light to integrating the different theories of immersion. Immersion in VR is more complicated than broadcast-like experiences as sometimes the image space is not seeking to reproduce a 'real' object. Therefore, looking into VR through psychological immediacy is also paramount. It names the situation when the viewer feels the object or the experience in front of them is authentic or 'real'.¹⁵¹ In other words, it describes that we feel that some 'mediated' objects do not mediate anything and that they stand as 'real' objects themselves. Through this second approach to immediacy, we can account for mediated objects that we can interact with as 'alive' and independent. In other words, besides perceiving the event as if it was non-mediated and in 'real-time,' they 'participate' with the spectator. I can extract two relevant approximations to immediacy from this claim; that we can interact with mediated objects as if they were 'real' objects, and that immediacy is mainly a situated and affective feeling.

Once again, liveness will help to clarify these subtleties of immediacy. According to Auslander, liveness is not only attributed to entities we access with a machine, but also to the machine itself.¹⁵² Mediated experiences such as websites *feel alive* to us. Auslander sustains that liveness encompasses the formal and material qualities of the experience. Simultaneously, it is about the affective predisposition we have towards the experience to feel and interact with it as if it was alive. For this reason, he suggests that different digital

¹⁵¹ Bolter and Grusin. *Remediation*. 2002: 70

¹⁵² Auslander. *Liveness. Performance in a Mediatized Culture*. 2008 [1998]: 62

representations raise various claims to us and, to feel them live or alive, we need to accept these claims.¹⁵³

Through psychological immediacy images, besides mirroring reality, they appear to us, and we interact with them as an independent part of the real. Following Grau's ideas, VR immersion is produced by mirroring 'reality' and including virtual characters or agents that behave intersubjectively towards the spectator. The spectator feels that these agents coexist with them. In other words, some elements of the fictional experience react and interact with the participant the same way as elements outside the immersive experience. From this approach, the mediated event is immediate because the 'world' 'inside' of it reacts to us as any other 'real' object.' Pushing immediacy, it can also account for Grau's observations that immediacy requires seamless participation. I can suggest that, if immediacy states that mediations exist as a part of a 'real' event, or as the 'real' event itself, we do not only perceive it as it happens. Psychological immediacy accounts for the fact that spectators partake in a mediated or fictional event as if it was a 'real' event.

As further explained through liveness, real-time participation is not enough; it also requires affective involvement. For Auslander, it is fundamentally different to see the letters that appear on a computer screen when we type in contrast to engaging in a conversation with a chat-bot. Although we can participate in real-time and have a real-time interaction, we feel the chat-bot is alive while the word-processing program is not. Through psychological immediacy, I suggest that immersion is when the spectator feels they interact with virtuality horizontally and in real-time.

Furthermore, psychological immediacy also echoes with immersive theatre's process of immersion. Firstly, Machon explains that immersive experiences create their unique worldly-ness experiences. Secondly, she states that participation is paramount (both physical and emotional) for immersion. In her reflections around *The Pleasure of Being*, Machon explains that feeling immersed, thus accepting its liveness (using Auslander's vocabulary), relies on the dramatic environment creating its own worldly-ness. Through formal qualities like scenography, duration, actions and choreography; the dramatic experience offers the spectator the possibility of feeling as if they were in a particular and individual world. For Machon, this dramatic world does not replace the 'real' one, yet it stands different. The performance she interacted with, was theorised and experienced as a world in itself as if it was a 'real' situation, but it stood independently from other similar

¹⁵³ Auslander. "Digital Liveness." 2012: 7

experiences. When Howells was bathing her, she recalls that that bath was not only a representation or a recreation of being bathed, it was a simulation that maintained its differences with the 'real bath' it stood for.

Additionally, Machon felt she interacted with the performance as if she was part of it. While physically and emotionally interacting with the dramatic space, Machon felt complicit with the performance's concept, content and form. For her, participating in the experience entailed she was modifying this carefully designed experience. Through this possibility of altering, or co-creating the experience, she felt immersed.

Psychological transparency serves as a bridge between Grau and Machon's ways of theorising how the now called audience-participant interacts in and through the experience and how they feel immersed. Their ideas converge in their suggestions that the feeling of immersion is produced because the audience-participant participates with and feels the fictional space is 'alive.' Also, both of them conceive a fictional reality independent, yet connected, from the objects it purportedly mediates. Hence, the fictional reality exists, and we can interact with it as if they were authentic objects, persons or situations. The immersive experiences simulate 'reality' and stand as an independent part from it, and create it. Moreover, following Auslander's suggestions, the image's immediacy or its possibility of producing a feeling of immersion is not only allowed by the formal characteristics of the experience, but it requires an affective predisposition of the audience-participant to accept its claim. To interact or to participate physically or emotionally is not enough to feel its immediacy, thus to feel immersed. The audience-participant has to be affectively triggered by it.

So, as a bridging concept, psychological transparency while integrating the argued possibilities that the audience-participant feels and interacts with the VR image space as if they were 'alive' shows that image spaces produce independent, yet attached, worlds. Remarkably, through this approach, VR immersive experiences seek to replicate reality and create new realities. This way, image spaces negate their nature as representations. Images claim we can dwell in them as spaces and spaces that do not stand for other space. They are as real as any other. Through this approach, image spaces are not only windows the audience-participant can jump through to perceive the event as non-mediated. They are experiences you can interact with physically and emotionally as if they were any other 'real' 'object.' However, the liveness of these 'virtual' or fictional spaces or objects requires affective predisposition. Following Auslander, there is nothing intrinsic defining them as live (as real) or mediated (as virtual).

Psychological transparency allows suggesting that the feeling of immersion in VR, on the one hand, allows and is allowed by the emotional and physical participation which the audience-participant with a fictional space which they feel is as 'real' as any other 'real' (non-mediated) experience. On the other hand, this feeling of reality, the fact that we feel we interact with some 'virtual' entities as if they were not virtual, requires a situated and affective response. As there is nothing intrinsic in this empirical category, the audience-participant has to accept the claims the experience is making concerning its 'realness.'

Immediacy: bodily gaps left open in virtual worlds

The negation of a complex body as a part of and for immediacy

The concept of immediacy can also complicate the same promise it offers to VR immersion. The psychological immediacy will be of particular importance as through it, the complicated bodies, objects and qualities that define immersion will start having new meanings. For Bolter and Grusin, a quality that belongs to both versions of immediacy is that the felt absence of human agency in the process of mediation produces immediacy. They build this argument around Stanley Cavell's ideas derived from André Bazin, who argues that transparent technologies are overcoming subjectivity. Cavell writes: "*by automatism, by removing the human agent from the task of reproduction, [photography] removed the artist as an agent who stood between the viewer and the reality of the image.*"¹⁵⁴ For example, compared to painting, the argued technological automatism of a photographic camera produces more transparent, more immediate; so less mediated images. In other words, the felt absence of human agency in image creation results in images that seem closer to 'reality,' hence more immersive. Although Bolter and Grusin's argument derives from photographic images' perspective, this does not mean it cannot be used to explain and rethink immersion in VR or other disciplines or media. I will show that through this approach towards immediacy VR's desire and promise of relocation into a 'full' replica of 'reality' cannot be substantiated; hence immediacy cannot be the goal of immersive experiences nor of remediation.

¹⁵⁴ Bolter and Grusin. *Remediation*. 2002: 26

To apply these considerations around immediacy and bridge immersive theatre and the western images and illusions are not as straightforward as in the previous section. I will integrate the different authors discussed through their suggestions around the 'negation' of a bodily presence. This body will oscillate between the audience-participant and the maker, and between inside and outside the VR experience.

Therefore, Cavell's ideas will serve as a starting point to integrate the ways bodies are 'negated' to produce immersion around the different theories I discussed. I will explore these ideas further through Fried and Barthes' work. They both state that for mental relocation, or immersion, the spectator's body and their agency were being negated or darkened. This process will be further integrated and with suggestions from Machon, Alston and Jarvis. They state that the differences between the 'maker' and the 'audience-participant' in an immersive experience are blurry. The maker's embodied agency is not distinguishable from the audience-participant's because Machon felt she was co-creating Howell's performance. If we follow the suggestions around immersive theatres that state that the bodily sensuous and agential composition and limits between the observer, the participant and the maker overlap and intertwine; Bolter and Grusin, and Fried and Barthes' suggestions can obtain new meanings. Thus, bringing some light to the process and promise of VR immersion.

The negation of a complex body expanded towards the nuances of VR immersion

Let us dive again into the theories around immersive theatre suggesting that through and in immersive experiences, the differences between the embodied agency of the participant, actor and maker are no longer apparent. Machon showed that when arguing for the audience-participant concept, the embodied positions and agency of 'spectator' is complicated in and through immersive experiences. It is because the spectator can participate in the experience and become a part of it. Alston complements her approach, arguing that the spectator's physical and emotional presence and participation are fundamental elements for the performance's production and completion. Pushing Machon ideas a bit further can allow me to argue that the audience-participant can become the maker as a physical and emotional part of the experience.

For Machon, immersive theatre offers the audience-participant a horizontal process for becoming and participating in the dramatic space. Thus, it creates complicity between the

audience-participant and the fictional experience. Machon explains that when being washed by Howells, she made a unique moment with every movement she performed and emotion she felt. In other words, with her participation, Machon influenced the performance's concept, content and form. This way, she experienced the performance and her body as the primary production tool; she co-created it. So, if we discuss these suggestions following Bolter and Grusin's ideas, and arguing that the embodied presence and agency of the 'maker' is negated; is understandable to ask, which embodied presence and agency is the one being negated? Is it solely the maker's, the audience-participant's? or is it something in-between?

Before providing answers to these interrogations and comprehensively integrating the different approaches towards negating a body for immersion, it is necessary to complicate things a bit more by incorporating the ideas around the spectator's negation's embodied presence. From different disciplines and media, Fried and Barthes propose a similar argument which suggests that the repeal of the spectator's bodily presence in front of the image enables their mental immersion.

On the one hand, Fried argues that some paintings produce absorption, like immersion (a mental relocation) through a series of compositional strategies creating vacuum-sealed images. These experiences which negate or disregard the bodily presence looking at them, allow the observer to relocate themselves in the picture through imagination. On the other hand, Barthes explains through the concept of *cinematic hypnosis* that the cinematic experience leaves the spectator without a physical body. The darkened theatre strips the spectator from their world, namely their individuality and immediate surroundings, seducing them until they are glued to the representation.

Both Fried and Barthes address differently the issue of negating the 'spectator's' body as a mechanism that 'images' have to produce immersion. Fried tackles it as an issue that concerns vacuum-sealed images which negate the spectator's presence, hence inciting mental relocation (immersion); while Barthes has a more complicated approach. He not only starts considering the 'image' as part of a system, the film is not experienced separated from the theatre (or how dark it is); he also positions the spectator's body and experience as part of a formal and cultural system. Both suggestions articulate around the negation of the spectator's bodily presence. In both, we can detect elements that echo with the idea that the spectator can mentally dwell in, and become part of the image.

However, to integrate Fried and Barthes' ideas with Bolter and Grusin's about the body's negation is only possible by following Machon and Alston's suggestions. The former two

argue for the negation of the spectator, while the latter negates the maker. Nevertheless, if the maker's embodied agency, the spectator and the participant intertwine in and by immersive experiences; therefore, Fried and Barthes' suggestions are relevant and can effectively articulate with Bolter and Grusin's. Thus, the 'negation' of the bodily presence and agency can converge, suggesting no concrete bodies with concrete VR immersion agencies.

A negated body as gaps left open in the VR world that the different but the same body has to fill in

Another aspect of immersion that should become part of the integration through this approach to immediacy is Alston's argument that the feeling of immersion requires a 'gap' the *audience-participant(-maker)* has to complete. According to Alston's analysis, the participant has to interact physically and emotionally with the experience to 'complete' it. For him, the audience-participant is someone and somebody who will fill in some gaps to complete the artwork. Therefore, the immersive experience is incomplete until the audience-participant-maker participates in it responding to the performance as a part of the performance. Complementing Alston's ideas with Machon's, the audience-participant(-maker) is a material element part of the experience with an active agency who, by filling in a 'gap,' completes thus, co-creates it. This way, the spectator is not solely a material component of the experience who is orchestrated by the maker. The experience transforms in response to *audience-participant-maker's* agency, and the audience-participant-maker shapes the experience with their presence and participation.

Immediacy is a concept that on the one side can sustain the promise that immersion produces and is produced by an experience that places the spectator in another space that fully replicates a 'real' event. On the other side, it brings problems to this promise. The negation of a complex 'body' that creates a 'gap,' thus renders the virtual world incomplete, complicates the same promise immediacy seeks to sustain.

In other words, the promise that a full replica of reality produces VR immersion also requires the negation of a 'body.' As I explored, using immediacy as a bridge brings together the different processes of negating a 'body' as a mechanism for producing immersion. However, following Machon, this 'body' cannot be concretely defined. In immersive experiences, the differences between the maker and the audience-participant

become blurry. So, despite not pinpointing precisely which 'body' is being negated, I can suggest that immersion requires the negation, the absence of a fluctuating embodied presence and agency. Nevertheless, I can affirm that either an audience or a maker, the negated 'body' creates a 'gap' in the experience through that negation. A gap that enables immersion as it requires an embodied participation from the audience-participant. Therefore, if we think the experience as a concrete and isolated object, it is incomplete until the audience-participant becomes horizontally part of and with it. The experience needs to be incomplete on some level. The experience negates a body while incorporating 'another' or the 'same' negated body.

Therefore, Alston's suggestions concerning the 'gap' besides being insightful for understanding the audience-participant's role in and with the immersive experience also bring some light about immersion production. From this approach, immersion cannot be produced through a full replica of the 'real' world, as the 'virtual' world will always be incomplete; it still has a gap. Immersion requires this gap. In other words, immersion is not produced by fully replicating 'reality' but precisely by the opposite. It is produced because the experience is incomplete.

Clouds over Sidra, an example of the negated body in and for VR immersion

I suggest that VR immersion cannot promise the full simulation of space or a body. The fact that the experience is incomplete produces the feeling of immersion. The experience has a gap that is the product of a negated or absent audience-participant-maker's body that the audience-participant-maker will have to fill. To further sustain this argument, Mandy Rose's analysis of the VR experience *Clouds over Sidra* (2015) is relevant. She explains that in making this 360° VR documentary, the maker had to leave the scene while recording it. The VR video camera had to record unattended, or the camera would inevitably capture the maker as it records all angles simultaneously.¹⁵⁵

For her, the absence of the filmmaker produces a shift on formal and experiential qualities. Their absence creates an experience that is a process of surveillance rather than one of dialogue.¹⁵⁶ Also, it changes the way the experience approaches and affects the audience.

¹⁵⁵ Rose, Mandy. "The immersive turn: hype and hope in the emergence of virtual reality as a nonfiction platform." 2018

¹⁵⁶ Rose. "The immersive turn." 2018

She writes that this can feel intensely voyeuristic to the viewer. However, I argue that besides these formal shifts that influenced how the users experienced *Clouds over Sidra*, it also exemplifies how the absence of a bodily agency enables immersion. In this vein, Philip Doyle, also addressing this same VR experience, theorises this situation as the filmmaker's disembodiment.¹⁵⁷ For him, in a way, the camera stands for the cameraman and the director. I suggest that through the approach discussed previously, this absence is one of the sources for immersion.

Clouds over Sidra tells the story of a 12-year-old refugee girl at the Za'atari Refugee Camp in Jordan. As an omniscient viewer, you see footage of a piece of her daily life, while listening to expected diegetic sounds, and her voice explaining what you are looking at, where she comes from and her dreams. Although you are experiencing her story from a distant perspective, you are placed in the middle of the scene. For example, you are in the middle of the classroom or the bakery or see how a martial arts class occurs. You are sitting right there at the school.¹⁵⁸ Although it may feel as if you are intruding in somebody else's space, the voyeurism is broken¹⁵⁹ when some kids interact with the camera, thus with you. For example, when some boys talk straight to 'you' while playing computer games¹⁶⁰ or when a group of girls plays around 'you'.¹⁶¹ In this experience, you are sometimes placed inside the scene as a passive participant and others a passive observant.

In *Clouds over Sidra*, the filmmaker's physical absence is a clear manifestation of the 'gap' left open that the immersed audience-participant-maker has to fill in to be immersed and become part of the scene. To create the feeling that you are part of Sidra's world and her story, a body must be missing. A 'gap' is spotted when 'you' as the absent 'maker' are, or feel directly addressed by some kids. When 'you' are in the playground seeing kids playing in a circle and after a few seconds exploring, you realise you are at the centre of the

¹⁵⁷ Doyle, Phillip. "Embodied and Disembodied Voice: Characterizing nonfiction discourse in cinematic-VR." 2017

¹⁵⁸ *Clouds over Sidra*. Directed by Gabo Arora and Christ Milk. 2016: min 1.55

¹⁵⁹ I do not agree with the claim that you are a voyeur in *Clouds over Sidra*, because in a way, the 'characters' in the film acknowledge your physical presence. There is a feeling of dryness that makes sense now that we know the camera was left unattended. If we look closely and the different camera heights used in this VR experience, we can see that purposefully the makers wanted the place the spectator in different positions and relate with the scene and the characters in different degrees. From floating high in Sidra's house (with the perspective too height for being 'natural') to be inside the 'computer gaming lab' where you are at the same physical level as the characters, and you get recognised by them. *Clouds over Sidra* play with different types of being inside the scene that not all are voyeuristic. However, I felt always as a tourist, as a foreign visiting the camp. They never intended for the spectator to feel as if they were part or a member of the camp.

¹⁶⁰ *Clouds over Sidra* + min 3.35

¹⁶¹ *Clouds over Sidra* 2016: min 6.37

process. Young girls are playing with and around 'you.' Therefore, your body is filling the 'gap' left open by the 'filmmaker.' You can feel immersed because there is a missing piece of the experience, and in this case is materialised in the absent body of the maker.

It is imperative to mention that this 'gap' is not always that the maker's body is not there, but an 'absence' the spectator needs to complete. I am aware that there is no VR created without the agency of a maker, there is always some(body) making choices like where to put the camera, how to record, where to make the cuts, the colour palette, among others. Like liveness in immediacy, *Clouds over Sidra* raises a claim that the spectator needs to accept. As a component for VR immersion, immediacy is not only of non-mediation in the sense that the technological apparatus does it all without human intervention, but that there is some(body) unacknowledged. It raises the claim that there is a 'gap' left open by the absence of some(body).

Hypermediacy: steps for rethinking and refashioning VR immersion

Foundational notions of hypermediacy as a part of remediation

As mentioned in this chapter's introduction, Bolter and Grusin theorise hypermediacy as the opposed ends to the illusion of immediacy. In other words, hypermediacy produces immediacy; the repurposing, combination and refashioning of different heterogeneous media produce the feeling of a non-mediated experience.¹⁶² In photomontage, for example, hypermediacy describes the fracturing of the picture's space and its elements. Hypermediacy is the hyperconscious recognition of the different media that give shape to the mediated event.¹⁶³ In other words, with hypermediacy, we can perceive and describe the process of media articulation and refashioning, which give shape to a congruent mediated event. Hypermediacy expresses itself as multiplicity; it emphasises the processes and the performance of different media and complicates their tangible differences and categories. Therefore, a medium or media product like photomontage can be approached from two different perspectives. On the one hand, as an

¹⁶² Bolter and Grusin. *Remediation*. 2002: 5

¹⁶³ Bolter and Grusin. *Remediation*. 2002: 38

articulated and coherent medium or media product, and on the other hand, as the irreducible multiplicity of media and sources which shape it. For Bolter and Grusin, both are differentiable approaches towards almost any media experience, namely digital media.

To continue with the integration, I will elaborate a process similar to the previous sections. As I demonstrated, immediacy serves not only as a bridging concept, but it also sheds some light over the issues and promises of VR immersion. In the last section, the promise of VR immersion which followed immediacy was questioned. So, continuing this same string of thought, I propose looking into hypermediacy to integrate an interdisciplinary theory of VR immersion further. For this reason, I will approach remediation mainly through hypermediacy. Hence, challenging remediation's teleological approach based on immediacy.

It is essential to state that there are no political intentions behind shifting the focus of remediation to hypermediacy. This argument does not have an exact positioning with the ongoing disciplinary discussions around the ontological and empirical differences between the live and the recorded.¹⁶⁴ This shift is a coherent process in this argumentation and will allow me to further and more fully integrate the different approaches to VR immersion.

Therefore, I am not suggesting that we should disregard immediacy and transparency from VR image spaces. Approaching VR through immediacy has proven useful in different areas and disciplines. For example, they are helpful in the training and prediction of a 'real' situation. Flight simulations or simulated surgical procedures are useful to train professionals without the 'real' risks, which could put human lives in danger. However, this does not mean that transparency should be the main aim of VR immersive experiences; I believe that such a promise does not account for the complexity of the situation that allows and is created with VR immersion.

An expanded approach towards hypermediacy

Before continuing with this argument and the integration process, I think it is paramount to delineate my hypermediacy approach. First of all, Bolter and Grusin explain that hypermediacy depends on our ability to compare both earlier media with our previous

¹⁶⁴ See further: Dixon, *Digital Performance*. 2007

experiences of mediated environments.¹⁶⁵ This statement is followed by a series of examples that sustain the argument that media experiences are not contained within their material limits. They are part of a network of other media and non-media. Bolter and Grusin explain that from this approach, each 'media' (which is part of a constellation of other 'media') responds to, redeploys, competes with and reforms other media.¹⁶⁶ However, they understand this constellation of media from a broad scope.

Each medium and mediated experience exists and is refashioned by the comparative experience and existence of 'other' media and non-media. Therefore, traditional media categories do not restrict the process of remediation through hypermediacy. Bolter and Grusin explain that media also becomes and is experienced as part of their physical, social, aesthetic and economic circumstances. Through hypermediacy, Bolter and Grusin treat societal forces and technical forms as two aspects of the same phenomenon and part of the same network or constellation.¹⁶⁷ From this perspective, to explore digital technologies is to explore a hybrid material which horizontally articulates and refashions technical, material and economic aspects and objects as part of the network of remediation.

Furthermore, Sarah Kember and Johanna Zylinska support that the remediation dynamics network should not have a teleological approach. For them, as technological convergence, remediation allows understanding the relationship between media and non-media as a process in which the 'new' does not replace the 'old,' while refashioning and transforming one another. Their approach to remediation support that 'new' media does not replace 'older' or 'other' media; it does not cut the present from the past.¹⁶⁸ Therefore media and non-media entities coexist and refashion one another but they do not replace or stand for other entities.¹⁶⁹

In the upcoming lines, this approach to hypermediacy, thus to remediation, will guide my thoughts and the process of integration. Echoing the previous section, this take on remediation will serve as an integration point between two main aspects of VR

¹⁶⁵ Bolter and Grusin. *Remediation*. 2002: 167

¹⁶⁶ Bolter and Grusin. *Remediation*. 2002: 55 [my own emphasis]

¹⁶⁷ Bolter and Grusin. *Remediation*. 2002: 77

¹⁶⁸ Kember, Sarah, and Joanna Zylinska. *Life after New Media. Mediation as a Vital Process*. 2012: 8

¹⁶⁹ Conversely, theorists like Lev Manovich and Friedrich Kittler have claimed that since sound, image, text, and other associated media can be converted to code, and experienced through the computer; there is now only one media: the digital computer. Remediation is a counterpoint to the tendency of regarding computer as the ultimate solvent, amassing other media and its uses into itself. (Hayles, Katherine. *My Mother Was a Computer. Digital Subjects and Literary Studies*. 2005: 31)

immersion. Firstly, that remediation involves both media and non-media elements, thus complicates their differences. I will expand this approach towards other apparent dichotomies to suggest the real and virtual intermingle in VR immersion. Secondly, the ideas around the suggestion that media products do not replicate 'reality' but co-produce it, which means that media and non-media elements become part of a horizontal network or constellation. The concept of liveness will help me explain the possibilities of hypermediacy as a bridging concept. Similarly, Sarah Bay-Cheng's ideas around the importance of treating performance as part of media theory and history will also clarify and expand the complicated situation that allows or is created through immersive experiences.

Hypermediacy: Media (a)liveness and the 'reality' of media

The complicated relationship between the 'live' and the 'mediated'

In a similar string of thought as the suggestions that arose from the psychological immediacy, hypermediacy mediated images can be theorised and experienced as a 'live' events. However, hypermediacy problematises the apparent ontological or material difference between media and non-media. For Bolter and Grusin, hypermediacy suggests no difference between the 'live' and the 'recorded.' For them, current events framed as 'live' rely on the recorded or the pre-recorded to create or maintain its category of liveness.¹⁷⁰ This way, liveness can be approached from two perspectives. The first is that it helps to define the particularities of media when they seek to produce the feeling of non-mediation. In other words, when the spectator feels they are co-present with the performers. The second complicates the difference between media and non-media objects or events. This issue can be extended towards the differences between the live and recorded and, the real and virtual.

For Bolter and Grusin, the events we catalogue and experience as live are partially or fully produced by recorded or mediated elements. This approach complicates the spectrum of the mediated and the real because they raise claims we need to accept, while

¹⁷⁰ Auslander. *Liveness. Performance in a Mediatized Culture*. 2008 [1998]

the 'mediated' gives shape to 'live' experiences. This argument can be determined by their experiences and reflections of rock music concerts as 'live' events.¹⁷¹ Supporting their ideas on Auslander's work, they state that rock concerts (as many other 'live' event) despite claiming they are 'live,' rely on 'mediated' elements. More than often, live performances incorporate different media and mediated elements to the point that those mediations provide and sustain the experience's liveness. For example, the giant television screens, and the amplified sounds through powerful speakers, provide a sense of liveness to all the spectators. In this situation, every spectator experiences some level of mediatisation; sound systems mediate the music through speakers and microphones. Furthermore, the spectators are often watching a big screen instead of watching the performers. Despite all of this, we can still affirm that even the spectator sitting in the back row of a Rolling Stones concert is experiencing a live performance.¹⁷²

Therefore, through hypermediacy and liveness, it is possible to start understanding the live and the mediated not necessarily as opposing concepts. Hypermediacy and liveness provide us with a lens to consider that live and media entities coexist and construct one another but not in opposition. Not everything live is not recorded, and vice versa. Thus, not everything real is not virtual. This approach makes it possible to argue that media and non-media categories and objects are flexible, and they do not preexist our situated experience. We base our experience, and we 'decide' that a Rolling Stones concert is live because of the claim it raises. At the same time as it remediates other media and other non-media entities equally. This situation resonates with Bolter and Grusin's analysis of broadcast television through immediacy. However, through hypermediacy, the focus is not on how media products replicate the original event. It is how much different media produce the event as much as all its 'real' or non-media elements. This approach allows me to suggest that ever-changing, hybrid and intermedial products are created through and in mediated events. Moreover, if I extrapolate this to VR immersion, virtuality and reality can be positioned inside the same frame, as fluxing categories become part of the same constellation. From this perspective, I argue that the categories and experiences of real and virtual are flexible and situated.

¹⁷¹ Bolter and Grusin. *Remediation*. 2002: 42

¹⁷² Auslander. *Liveness. Performance in a Mediatized Culture*. 2008 [1998]: 25

The complicated relationship between the 'recorded' and the 'live' extended towards the 'spectator's' location in VR immersion

From this approach, hypermediacy allows reexamining the relationship between the 'real' and the 'virtual.' Echoing the mediated and the live, the virtual and the real also do not have stable and concrete differences. This approach suggests a fundamental shift in how immersion can be theorised. The confusion and unstable condition between the real and the virtual allow reexamining the promise that VR creates an illusory world independent and a replica of reality. Therefore, if we cannot differentiate the real and the virtual during immersion, it is not that the virtual fully imitated reality, but that virtuality and reality coexist and become together. This alternative approach to understanding the interaction between the 'real' and the 'virtual' serves to integrate and rethink the argued multiple positioning, location and sensuous becoming of the 'spectator' in VR immersion.

First of all, this resonates with Grau's argument that VR immersion is not an either-or between critical distance and being inside the image space. This statement suggests that despite the spectator being mentally triggered by the image and relocated in it, the spectator remains safe and distant in the immersion process. For Grau, the spectator is, in a way, doubled; one dwells and participates in the image space, and the other remains distant from it. In this same vein, Barthes argues for the existence of two 'bodies,' the perverse and the narcissistic. Both 'bodies' are not physical, but two ways of being a spectator. For Barthes, during a movie, the spectator exists doubled inside and outside of the moving image. The narcissistic body exists projected in the image, hypnotised by its mirroring and empathic qualities and in the darkened room, in their situated embodiment. The perverse body relies on perceiving everything that exceeds the image, thus in the situatedness of the experience. Reading Grau and Barthes alongside Fried, allowed me to suggest that two 'bodies' are required to experience immersion: a negated, darkened that stays in the 'real' world which is everything that exceeds the image; and another that is imagined and projected inside the image. This way, a spectator is ever fully inside, or entirely outside the image space.

Similarly, Jarvis theorises a spectator who is never entirely inside virtuality, nor fully outside reality either. During VR immersion the audience-participant's body is half-in-half-out. Therefore, they are in the 'physical' room and their 'normal' body while incorporating a virtual 'other.' For Jarvis, this action is motivated by the promise of becoming with the body of another and experience as if you were somebody else. However, the audience-participant does not stop experiencing their 'normal' self. In this same vein, Machon

explains that she never stopped being herself during the immersive experience she co-created with Howells. Although she felt touched and transformed by being bathed by Howells, she did not become some 'other' but a different version of herself. Her observations also state that in a way, she was half-in-half-out the experience but not physically like Jarvis. In its place, her liminal condition was between her real-fictional hybrid present and her past, her memories and normalcy.

Delving deeper into Machon's suggestions, the undefined location and category of the audience-participant reiterate the suggestions triggered by hypermediacy. When she reflects on her immersion experience, she instantly breaks the boundaries between the fictional or the dramatic and the real. Once she becomes part of the performance, she is neither real nor fictional; the experience is a combination of both. During immersion, Josephine Machon cannot be separated from the experience, from the way Howells bathed her, from the water that touched her skin. The same way as she could not be separated from her memories, from how she was bathed, or she bathed somebody else. Machon brings the questions of immersion to her own experience and how it affected her body and her experience of her body. In a similar vein, Alston suggested that immersive experiences promote introspection. Therefore, Machon contributes to the conversation around immersion two fundamental aspects. One is that during immersion, the hybrid condition of the audience-participant is constant. Thus, the fictional experience is not complete without her participation and presence. The other is that the experience touches back the audience-participant transforming them sensuously. The audience-participant is half-in-half-out reality, as much as they are inside and outside their present self.

Machon's reflections complement Jarvis' because she theorises a liminal state which encourages transformation. For Machon, being a part of the performance entails that the performance is also a part of her. Hence, it transforms her. Unlike Jarvis, who suggests that the audience-participant's liminal state is between their real here, and the virtual there, Machon's liminality is also between different moments or states of herself. Therefore, immersion has an inherent sense of transformation in and by liminality. The process of getting bathed affected and transformed the ways she remembered being bathed in the past and probably how she will bathe in the future. If we analyse Machon's experience through Jarvis's reflections, the 'other' that Machon is becoming with is not a specific distant 'other.' More than making her become somebody else, or relocating elsewhere, immersion is inciting introspection and self-reflection. Machon is not becoming with, or expanding towards some 'other,' but a different version of herself. As she suggested,

immersion is transforming her sense of normalcy. Josephine Machon is herself and not herself at the same time.

Machon's approach sheds new light over Jarvis and Grau's reflections which resonate with hypermediacy's complicated situation of the real and the mediated as it complicates their limits and differences. This complication guides the articulation between Jarvis and Grau. Both suggest that the audience-participant becomes in a state of indeterminacy between inside and outside of the virtual. In other words, for both of them, immersion is guided by logics of location, of places that partially overlap and integrate. However, Machon's ideas push further the liminal and hybrid situation between the real and the virtual inside and outside the VR. In her analyses, being half-in-half-out, it is not a matter of location, but of self-transformation. When Howells bathed her, she was inside and outside herself, between the virtual-real action and her memories. Her liminal condition incited change, not a change towards some specific other but the transformation of her fundamental conditions of being. She is half-in-half-out because she exists as a real-virtual, past-present-future chimaera, another part of her remains the same. She lives as a virtual and real, as here and there, as now and before.

Therefore, in VR immersion, the fact that audience-participant is half-in-half-out is not a matter of location, of being doubled. It is a status and process of existing and becoming in diversity. This way, hypermediacy, allows theorising for an audience-participant partially inside and outside; thus bringing some new light to the discussion. The argument that media and non-media elements are equally creative and that they horizontally affect one another is relocated to the debate of VR around the real and the virtual. In VR, the virtual world's ontological differences inside the HMD and the real world outside collapse. The virtual and real overlapping also entails memories and already established paradigms for perception. Machon points out to the fact that they interact and transform one another. The audience-participant is a hybrid body regarding their type of agency and their composition with the experience. Hypermediacy strengthens the case that we should approach immersion around the horizontal transformation and refashioning between the 'real' and the 'virtual.' It is a promise that combines the expansion of the self with some 'other' that is not a replica, but an active and creative part of hybrid worlds.

Further suggestions offered by the liminal location of the 'spectator' in proposing a common vocabulary to address the hybrid condition of the virtual and real

Through an approach to hypermediacy that suggests that media and non-media elements are equally creative and horizontally affect one another, I can sustain the argument that in and because of VR immersion, hybrid entities emerge, bringing together the real and the virtual. The audience-participant is inside and outside the VR experience, suggesting that the virtual and the real become horizontally in VR immersion. During immersion, different 'bodies' exist in and because of the real and the virtual, merge and are equally relevant for the experience.

This approach questions the way reality and the virtual are conceptualised. If the real and the virtual are no longer opposite, but they coexist and co-create one another horizontally, the way we refer to these concepts cannot remain untouched. Briefly going back to how the authors I am discussing conceptualise reality, I can state that most of them address it as a set of laws and pre-given truths that allow and give shape to fiction or the virtual. For instance, Grau suggests that *simulations* reference the *factual* or what is possible under nature's laws.¹⁷³ Therefore, the non-simulation (reality) is understood as a set of preexisting 'natural' rules that behave as given facts and give shape to 'human' activities. Furthermore, Dogramaci and Liptay argue that the material difference between the virtual and reality prevents the viewer from confusing reality with the illusion of representation. Thus, they are ontologically and materially different.

Nevertheless, through remediation Bolter and Grusin theorise a reality defined in terms of the viewer's experience in a particular moment through a particular mediated experience.¹⁷⁴ They state that *the real* is what evokes an immediate emotional response. This approach resonates with Machon's understanding of this concept or situation. She does not discuss reality, but of *normalcy* - not a 'world' with preexisting rules outside the *dramatic space* but the histories and embodied habits from which the sense of *reality* is shaped. She does not discuss an ontological or material difference between the fictional and the real experience, but an embodied standpoint from which we can articulate and, give coherence and meaning to different media and non-media entities. Her suggestions align with remediation and liveness allowing me to sustain that during VR immersion whether we refer to our sense of *reality* (as an 'outside' and a distant world) or of *normalcy* (the habits and the embodied approach towards *reality*), is paramount to position it as a

¹⁷³ Grau, *Virtual Art*, 2003: 15

¹⁷⁴ Bolter and Grusin. *Remediation*. 2002: 53

perspective towards how the audience-participant constructs their perception and give meaning to their experiences. Regardless if it is real or virtual, as they both constructed by and transform our experience during being immersed in VR.

As a result of this, I propose to use Baudrillard's theory of simulations and the hyperreal as a theoretical vocabulary. Instead of referring to the real and the virtual as distinct, I propose to use *simulation*. Even though Baudrillard is not talking about VR immersion, I suggest that this approach can prove useful in providing a theoretical vocabulary when describing and analysing VR immersion theory and experience. For Baudrillard, a simulation encompasses both virtual and real entities as their differences are blurred. Therefore, reality and virtuality are equal, which are now part of the *hyperreal*. Thus, for Baudrillard, the hyperreal is the liquefaction of all referential.¹⁷⁵ Simulations may exist without a concrete point of reference as they are in the constant circulation and transformation of signs. Therefore, 'reality' is not a non-mediated and unconstructed 'truth.' It is a network of continuous circulation and articulation of media and non-media. It is a network of simulations.

Hypermediacy opened the door to position VR immersion as an experience that is part of the simulation's realm. In VR immersion, either real or virtual entities and stimuli should be addressed as equal, and I believe Baudrillard's *simulation* accounts for this. This way, the reality is not a matter of truth but ongoing and relational construction. The order of the simulation destroys any sense of illusion because the real is no longer possible either.

With this, I am not claiming that the differences between the *virtual* and the *real* will cease to exist. Nevertheless, in and through VR immersion, they inevitably overlap as their differences cannot be sustained. Through this theoretical exercise, I am not trying to suggest how media and mediation relate to reality in every situation. It is an approach to think the promises and theories differently when audience-participants are immersed in VR.

¹⁷⁵ Baudrillard, Jean. *Simulacra and Simulation*. 2007 [1929]: 2

Hypermediacy: a *heterarchical* networked ecology of in-between experiences

The complex network where simulations become together

Another aspect to hypermediacy that is important to address is that media products besides coexisting and being equal to non-media exist in a network or constellation alongside other simulations (borrowing and applying Baudrillard's vocabulary). Bolter and Grusin observe that when they experience a film, "when we look at what happens on the screen (in a darkened theatre), we can see how film refashions the definition of immediacy that was offered by stage drama, photography, and painting. However, when the film ends, the lights come on, and we stroll back into the lobby of, say, a mall theatre, we recognise that the remediation process is not over. We are confronted with all sorts of images (posters, computer games, and video screens), as well as social and economic artefacts (the choice of films offered and the pricing strategy for tickets and refreshments). [...] We must be able to recognise the hybrid character of the film *without claiming that any aspect is more important than the others*."¹⁷⁶

In this quote, Bolter and Grusin observe that media product theorised as independent, which relate linearly, constitute a hypermediated environment. In this same vein, Auslander suggests that live performances exist within the economy of extensive 'repetition' to either promote mass-produced cultural objects (like CD's, DVD's, YouTube videos, Instagram posts and others) or to serve as raw material for mediatisation.¹⁷⁷ Here, he implies that 'live' events do not end when we stop experiencing them but continue remedying other materials and spaces. Additionally, Auslander argues that the mediatised 'versions' of the event are so intertwined with the 'live' performance that the spectators are modelling their responses towards the live event on expectations created by 'its' recording.¹⁷⁸

For instance, performers like Lady Gaga established to repurpose their work as 'live performance' alongside YouTube videos, online streaming of music and merchandise like vinyl records. All of these elements exist in a constellation or a network affecting and co-constructing one another. Therefore, during one of her concerts, you are probably expecting the music to be as similar to the 'mediatised' versions of the songs you heard

¹⁷⁶ Bolter and Grusin. *Remediation*. 2002: 67 [my own highlight]

¹⁷⁷ Auslander. *Liveness*. 2008 [1998]: 28

¹⁷⁸ Auslander. *Liveness*. 2008 [1998]: 27

before, or at least you will comparatively judge them. This echoes with Vincent Canby's argument that the use of sound systems and digital mixing techniques in live performances from Broadway musicals encourage the audience to assess live performances in terms of their resemblance to their mediated versions.¹⁷⁹ The 'perfect' live performance is the one that somehow seamlessly references its mediated version (and not the other way around). Therefore, through hypermediacy, we can argue that media and non-media are flexible categories and objects that coexist in a network or constellation, equally influencing how we judge, experience and catalogue an event and its parts.

To explain this further, the concept of *heterarchy*¹⁸⁰ suggested by Katherine Hayles is useful. When theorising around remediation, she indicates that different 'media' and 'non-media' are part of an extensive and horizontal process of feedback and feedforward loop in the network of remediation. Media and non-media (which includes objects that are perceived as not being mediated and the immediate context these objects and events are part of), transform one another in a chaotic relationship and process. Therefore, as a *heterarchy*, it will be nonsense and impossible to understand Lady Gaga's music apart from all other simulations that exist articulated to it in a particular context. Appreciating and analysing Lady Gaga's production solely from the perspective of her music would be incomplete.

In this spirit, Sarah Bay-Cheng's analysis of Marina Abramović's piece *Relation in Time* (1977) elaborated and shown as part of the exhibition *The Artist is Present* (2010) at MoMA sustains that the relationship between 'media' and 'non-media' are horizontal. The exhibition, apart from featuring the famous work giving the name to the exhibition, showed a series of *reperformance* pieces – "a remaking of a performance that highlights the tension among performance history, live re-enactments, and digital documentation as confluences of past occurrences and present events."¹⁸¹ *Relation in Time* was part of these

¹⁷⁹ Canby, Vincent. "Look who's talking on Broadway: microphones." *New York Times*, 22 January 1995: 4-5 in Auslander. *Liveness*. 2008 [1998]: 35

¹⁸⁰ Katherine Hayles uses this concept to propose an alternative approach to the relationship between media and its immediate context. She proposes to use intermediation instead of remediation. A term adopted by Nicholas Gessler which sees media within an infinitely variable network of connections of media and other elements outside media. In this context she states that intermediation does not create a relationship based on hierarchies but of dynamic *heterarchy*. She uses this term as it distinguishes its degree of complexity and non-linear interaction. It acknowledges that different levels are continuously in-forming and mutually determining each other. Furthermore, she explains that: "Humans engineer computers and computers reengineer humans in systems bound together by recursive feedback and feedforward loops, with emergent complexities catalysed by leaps between different media substrates and levels of complexity." (Hayles, Katherine. "Intermediation. The Pursuit of a Vision." 2012: 105)

¹⁸¹ Bay-Cheng, Sarah. "Theater is Media. Some Principles for a Digital Historiography of Performance." 2012: 3

reperformed pieces. According to Bay-Cheng, although originally it was a performance, its video recording significantly influenced how the piece was reperformed. In the exhibition, the performers were placed behind a cut-out wall replicating the video recording frame. It was designed to frame the performers like a photograph that hung alongside.¹⁸² For Bay-Cheng, this process was not a re-enactment of the performance, but a video's reperformance.¹⁸³ The process of (re)construction of this piece (photo, video or performance) shows that the video produced to 'register' the performance is affecting not only how MoMA decided to remember and recreate *Relation in Time* but also how a video transforms the performance 'it came from' in a feedback feedforward loop.

This example showed that a 'live' performance does not exist or should be assessed in isolation but one simulation among many. Echoing the example of a Lady Gaga concert, an experience belongs to an ecological media system that remains and changes as multivalent and simultaneous phenomena. For Bay-Cheng, the myriad of media reproductions and exchanges, re-enactments, reperformances and receptions are all 'the' performance as well as its history.¹⁸⁴

The heterarchical network extended towards VR *simulations*

From this perspective, I can integrate and problematise the suggestions from immersion concerning the embodied experience's multiplicity. Following the previous section, this upcoming integration process will start because, in immersion, simulations bring the VR experience into existence. Nevertheless, following hypermediacy and Bay-Cheng's suggestions, VR immersion produces and is produced by a transformative network of simulations. In other words, different simulations (virtual and real, spectator and image) coexist and transform horizontally during the experience of VR immersion.

In this spirit, Barthes discusses the location and situation in which a spectator experiences a film. As part of this experience, he suggests that the perverse body is a lifeboat to the image's hypnotising powers. It is a security mechanism to keep the spectator safe from the moving image's influence. This 'mechanism' requires the spectator to acknowledge and be

¹⁸² Rudd, Scott. "Opening Reception for Marina Abramovic: The Artist Is Present." *flickr.com*. 9 March 2010. <https://www.flickr.com/photos/themuseumofmodernart/4423324910/in/photostream/> (accessed July 2020)

¹⁸³ Bay-Cheng. "Theater is Media." 2012: 5

¹⁸⁴ Bay-Cheng. "Theater is Media." 2012: 13

marvelled by everything that exceeds the image, yet is still part of the experience. Therefore, I argue that Barthes is complicating the film event's limits besides creating a dichotomy between the image and what exceeds it. Not solely the image shapes the film; it expands towards other media and non-media entities, objects, subjects and contexts. The texture of the seat, the sound, and the theatre's darkness are part of the process of spectatorship. Paying attention to those things gives shape to the perverse body while acknowledging an extended material composition of the cinematic experience.

This example is the only that clearly echoes the suggestions by Bolter and Grusin and Bay-Cheng. However, what is relevant to integrate with Barthes' approach is how, during immersion, the concept of the contained image space and audience-participant-maker dissolves as a part of a network of sensuous becoming. Understanding immersion through hypermediacy supports the idea that both the 'image' and the 'spectator' are no longer coherent and contained entities. They now exist, behave, and become part of a network.

The ideas around the concept of audience-participant, who is also a maker, resonate with this approach. The audience-participant-maker describes a spectator that, besides responding and participating holistically, establishes a horizontal exchange with the fictional experience. By articulating Machon, Alston and Jarvis, I can suggest that the audience-participant-maker is a material and creative element part of the somewhat 'inside and outside' experience. In other words, the audience-participant-maker becomes half-in-half-out the experience and reality. Echoing Barthes, this situation to which the spectator is subjected, suggests a multiplicity of embodied relationship with the experience. The audience-participant-maker gives shape to the immersive experience by articulating different elements inside and outside, real and virtual. The couch they sit on affects the experience as much as the virtual entities they interact with, and the memories and contextual influences they have when making sense of the experience. Simultaneously, these elements or entities (simulations) affect the other elements or entities with which they share the network.

However, I suggest that through hypermediacy, the approach to the multiplicity of embodied presence and agency is drastically different from Barthes' and sheds some new light over the becoming half-in-half-out theorised by Jarvis. Supposing the audience-participant-maker is and becomes, during immersion, in a state of liminality that transforms them. Can we still refer to being half-in-half-out in the same spatially-based logic as Jarvis? Being half-in-half-out is firstly a matter of speech as there is no way to affirm that they are half in and half out. They partially coexist and become with the virtual.

Secondly, it is an embodied extension process based on transformation and suppression, as suggested by Jarvis.

It is an issue of transformation because the audience-participant-maker, not only experiences the virtual and the real equally and under the category of simulation; they also become and transform as simulations themselves, partaking in the ecology of the network. In and through immersive experiences, there is a horizontal transformation between the audience-participant-maker and the image space. They transform and disintegrate together. As VR demands being touched, it touches back. Following Giannachis' suggestions, in VR immersion the information and the flesh are partially and temporally merged, yet they exist separate. Therefore, being half-in-half-out is not necessarily an issue concerning the audience-participant-maker in two places or locations simultaneously. Becoming partially in and partially out denotes the audience-participant-maker's liminal state and experience that comprises the articulation of different simulations that coexist and transform one another. It means that audience-participant-maker had merged, transforms and responds to the image space the same way as the image space responds and emerges from them.

In immersion, the audience-participant-maker does not jump into another place or another body. They are transformed by the network of simulations as much as they transform as part of that same network. The image space is no longer a location where they cross over, but a novel sense of normalcy and reality construction.

Moreover, through this approach, the perverse body is not precisely a concept that allows the spectator to be grounded in 'reality,' or being physically and mentally distant from the experience. However, it still corroborates that image and spectator never fully merge. As hypermediacy had shed some new light on the real and the virtual nature, it also transforms how they relate and become together. The perverse body exists independent of the image, the spectator and the image are ontologically different. However, through hypermediacy, the perverse body coexists with the image as part of the same network. Being comfortably on the seat does not mean the audience-participant is wholly different and 'safe' from the image space. It does mean that their differences are partially sustained.

A good example is an experiment elaborated by Martini, Perez-Marcos, and Sanchez-Vives exposed throughout the paper called *What color is my arm?*¹⁸⁵ This experiment successfully

¹⁸⁵ Martini, Matteo, D Perez-Marcos, and M.V. Sanchez-Vives. "What color is my arm? Changes in skin color of an embodied virtual arm modulates pain threshold." 2013

demonstrated a perceptive correlation between the body's colour represented in VR and the participant's heat pain feeling. They showed that changing the 'skin' colour of the embodied virtual body affects the participants' pain threshold. Specifically, when participants saw the virtual limb becoming blue, there was a significant increase of pain threshold (meaning they tolerated higher temperatures before they felt or expressed the feeling of pain) compared to when they saw it getting red or green.¹ This VR immersive experience resonates with hypermediacy and Bay-Cheng's argument. It demonstrates that the experience involves a heterarchy of simulations that transform and become together. The way we experience and construct our feeling of reality is a process that emerges from the articulation of different simulations. Like Machon's immersive experience, this experience shows that becoming with a simulation is a horizontal process that refashions our sense of reality and normalcy as much as we bring that experience into emergence.

Expanding VR's network of simulation to the theorisation of hypermediacy

These suggestions towards VR immersion resonate with the idea to include Baudrillard's simulation in the theoretical vocabulary. I suggest that these new logics and concepts oblige to transform the concepts and action around mirroring in immersion. As all entities are networked simulations, concepts like *replication*, *remake*, *mirroring* and *recreation* have to be left aside. First of all, they sustain an ontological difference between the real and the virtual. Secondly, because through them, immersion is conceptualised as a space-based action. Immersion is a scenario that exists due to two worlds or realities with a linear or hierarchical relationship. They are indeed entangled, but through mirroring, the real will always have more importance. The virtual as a mirroring will always depend on the reality of the bases for their existence. However, as previously shown, when experiencing or theorising VR immersion, referring to a virtual 'inside' and an actual 'outside' could be inaccurate in linear terms.

Therefore, in mediated events, the articulation of different media does not necessarily seek to reproduce reality but shapes how we perceive and construct reality. Hypermediacy provides new insights to VR immersion, allowing us to consider both the audience-participant-maker and the image space, now more a network-like entity, as in a horizontal and heterarchical flux of becoming.

Furthermore, this approach also refashions how hypermediacy relates to the concept of immediacy and performs within remediation. Following the ideas exposed in this chapter's introduction, integrating the different VR immersion approaches through remediation required the change of remediation's inner dynamic and overall goal. In other words, hypermediacy is not assessed by how immediate it is, now it is an approach to the way different media and non-media elements articulate and refashion one another. For remediation, hypermediacy is a goal in itself. It guides it towards horizontal transformations and hybrid becomings.

In this same spirit, hypermediacy is also no longer guided by *opacity*. Bolter and Grusin theorise immediacy and hypermediacy as transparency and opacity, respectively. On these terms, opacity is the process by which the world or reality is deformed by mediation. Mediation is a process through which 'reality' hides behind or is blurred by mediation.¹⁸⁶ However, this discussion allowed me to understand immediacy as the process that articulates media through a creative impulse. Different media stand by themselves as creative of reality as any other non-media.

Therefore, being immersed in VR is not an experience that separates from reality, seeking to replicate or replace it. They (we) and the other media or non-media elements stand not as representing something else, but as independent yet networked simulations. Therefore, through this approach, immersion is not an issue solely of replica or reproducing 'reality.' It is about how virtuality and reality are onto-relational parts of the same constellation. They both coexist under the same conditions.

Conclusion

As we have seen in this chapter, immediacy is a concept through which I could bridge and integrate the different disciplines discussed in the first chapter. Immediacy incorporates their suggestions around the desire to replicate, simulate, remake, mirror, recreate 'reality' or 'normalcy.' Through complex multi-sensorial experiences, VR can produce a mental and physical feeling of immersion, of being in some other place or body. It is not merely through VR's technical possibilities but, as liveness allowed me to show, immersion is created through situated claims raised by the network-like event. The

¹⁸⁶ Bolter and Grusin. *Remediation*. 2002: 70

audience-participant-maker must accept these claims to give coherence to simulations' multiplicity and feel physically or mentally immersed. Therefore, immersion through immediacy is a feeling theorised as a process that relies on the event's technical capacities and the ever-changing affective and situated relationship the spectator has with the technology that mediates the event.

This integration and analysis also provided important insights about this promise and prepared the ground for further debates around VR's technological goal. Understanding immersion through immediacy also suggested that to produce the feeling of immersion, a bodily agency and subjectivity had to be negated. A body that in some cases is the audience-participant's, and other the maker's. At first, this may seem like a paradox because to produce the feeling of immersion, VR stimulates the body it is disregarding. However, my VR immersion approach complicates that 'body,' which are 'its' parts, 'its' limits, and 'where' it enacts and feels. Through VR, the actor-participant-maker has multiple shifting roles in numerous and shifting positions. Therefore, to produce immersion, the 'same' body is not negated and stimulated, but one body, which is multiple bodies, is partially stimulated and negated. The audience-participant-maker is diversified.

I suggest that the promise and process of VR immersion have to be guided and supported by hypermediacy, a concept that little has to do with the feeling of being somewhere else or in some other body. It facilitates a promise that echoes with Machon's analysis of immersive theatres. The performance stands as her 'normalcy' to transform her current, past and future feeling of normalcy. This perspective cannot fully sustain the promises of feeling as if you were somewhere else or in some other body; hence how we address VR experiences like *The Body of Another* has to change. As Giannachi suggested, the approach towards VR is not about its capacity to make the spectator feel as if they were in a 'real' event that replicates reality, but about experiences that blur the limits between the real and the virtual, the spectator's normalcy and sense of reality are transformed.

Furthermore, following my final thoughts around immersive theatre, approaching immersion as a hypermediacy problem complicates the promise posted by immediacy. Through hypermediacy, the opposition between the 'life' and the 'recorded' are blurred. Likewise, I extended this logic other dichotomies like the real and the fictional, real and the virtual, the media and the non-media, the actual 'here' and the virtual 'there.' These concepts were initially separated and opposed, are intertwined and become ontologically. As components of a heterarchical network of simulations.

Approaching VR immersion through hypermediacy sheds new light on the ideas around the ever-shifting location of the audience-participant-maker's body concerning the networked experience of the image space. Becoming with VR immersion is a process in which partially different entities and simulations articulate and transform one another generating an alternative and momentarily sense of reality and normalcy. In other words, during immersion, you enter into a state of liminality between your networked self and another version of that networked and hybrid self. The experience is not a matter of being or not being here not there, nor being yourself or someone or something else. You are yourself while you are a refashioned version of yourself, your reality and normalcy are the product of interrelated virtual and real, here and there.

Therefore, if your 'body' is not entirely yours in VR immersion and it is not 'here' nor 'there,' nor it is entirely human or non-human; paradoxes do not give shape to immersion but a heterarchical feeling and transformation. The audience-participant-maker is never safely separated from the image nor fully a part of it, but they are part of the same network. VR immersion does not entirely negate the body because it is not at one 'place' and is not one whole and stable 'body.'

This way, VR immersion is not the experience of the promise of fully simulating 'reality,' but of the temporal dissolution and transformation of the borders that no longer give shape to coherent wholes. It is not a process of plunging into a different location or body, but a temporal transformation of perceptual processes. We feel immersed because we can be part of the experience, and the experience can be part of us. We feel immersed because we 'touch.'

Immersion is not a process of relocation but a temporal and perceptual transformation. It is an open network with which we become part of and bring it into appearance with our embodied and emotional participation. The experience is not precisely incomplete, but it is an open event that requires active partaking. This way, in a VR experience, you cannot truly nor fully feel as if you were some(body) else. Not because it is mediation, and mediation is an opaque version or translation of 'reality,' but because it requires that emptiness. It is an incompleteness that feels untouched which the audience-participant needs to fill in.

VR promises that the audience-participant-maker's experience theoretically and empirically becomes with the network of simulations. This process of partaking is what brings the experience into existence. Those are promises that cannot have immediacy at its centre. This approach has served to integrate the different theories around VR

immersion coherently. On the one hand, the other 'bodies' and locations, these bodies have. Hypermediacy amasses from the spectator's doubled body to being partially inside and outside the experience. However, these bodies are not solely independent and can stand as reality, but they can articulate a novel reality. Like the question of if Josephine Machon stops being herself when being in that immersive experience, VR relies not on replacing or creating a world or a body that neither 'simulates' nor 'replaces' another. It depends on 'bodies' that stand in a network as actual and creative. Therefore, virtuality is never 'standing' for an entire 'other,' but it creates an alternative 'other' that transforms the network this 'other' and 'myself' are part of, together and apart.

In this spirit, the upcoming chapter will comprehensively integrate a theory of immersion using remediation as a base. After I have argued that remediation indeed is a bridging concept, the next step is to envelop the approach of the different disciplines I have discussed through remediation with a clear focus on hypermediacy.

Chapter Three

Introduction

Now that hypermediacy has proven useful for integrating different aspects of immersion, thus shedding new light on VR immersion, it is fundamental to delineate crucial elements of the interdisciplinary theory of VR immersion I propose. This theory and approach is the product of the integration, comparisons and discussion I elaborated throughout the previous pages. In this upcoming section, I will trace back and articulate the different arguments I developed using remediation as a bridge to provide the reader with a comprehensive overview of my argument and to prove its potential uses. With this, I do not wish to undermine or negate the different disciplinary approaches. To theorise interdisciplinarily is an ongoing volatile process that offers novel and parallel approaches to describe, analyse and create objects. These suggestions are additions to the panorama without seeking to negate or undermine other approaches and theories.

This chapter will explain this theory or approach through three subsections in a manifesto-like structure which are: its technological promise, its understanding of the image, and its approach to spectatorship. These subsections or artificial divisions will inevitably overlap. Avoiding this is impossible. Doing it would be counterproductive for the theory's overall desire that, like hypermediacy, emerges from the interaction and the in-betweenness of its different elements. Finally, an additional section will prove my suggestions' potential uses by applying them in a final case study.

Proposing an interdisciplinary theory of immersion

its technological promise

I suggest that VR immersion is not based on the user's relocation in a highly real-like space or body; on the contrary, it creates simulations that are part of reality and transforms reality. This theoretical approach suggests that VR promises to refashion different simulations within a network with other simulations. During a VR experience, the audience-participant-maker can feel they are distant or in another body. However, this feeling is not propelled by relocation, but by relational and networked transformations and re-articulations. Therefore, VR immersion does not promise relocation, but relational,

physical, mental and perceptive change. Participating in a VR experience allows for and is allowed by the emergence of new realities or feelings of normalcy, giving a sense of relocation.

To bring some light into this promise, I will look again into Jarvis' reflection on *The Machine to be Another*. This approach to VR immersion complicates the idea that in this experience, Jarvis could eventually feel as if he was the refugee woman, and become with her story through her body. I suggest that Jarvis cannot feel entirely as the 'other,' although he feels he was. Even though Jarvis felt he was becoming through another's defined body and appropriate the performer's story, he was instead becoming with a networked experience.

Even if we assume that this network exists as a complete replica of the performer's body and experience, Jarvis is still becoming partially inside and partially outside. In other words, even if the experience could offer a full replica of how the performer felt and was, Jarvis never stopped being Jarvis. During a VR immersive experience 'his reality' and the 'other's virtuality' coexist and behave as networked simulations refashioning each other. The experience, together with Jarvis, his immediate surroundings, his habits and memories amass as simulations in a network. In other words, Jarvis cannot fully feel like somebody else because he never stops being himself. But partaking in the network transforms his sense of reality and normalcy.

As an audience-participant-maker, Jarvis is exposed to a complicated situation as 'reality', and 'virtuality' cannot be concretely delimited. He becomes in both simultaneously. Jarvis becomes in feedback and feedforward loop between the different simulations that give shape to the experience, thus creates a new sense reality which transforms his sense of reality. Simultaneously, the image space becomes in a feedback and feedforward loop between different simulations that give shape and bring the experience into existence. Therefore, experiences like *The Machine to be Another* are not solely about their possibilities to make the audience-participant-maker relocate in a concrete 'other.' They are experiences that remediate different simulations giving shape to alternative hybrid realities.

Moreover, through this interdisciplinary theoretical approach, the limits and composition of the audience-participant-maker's 'body' are complicated. Like a simulation partaking in a simulations network Jarvis' bodily integrity and identity, in *The Machine to be Another* are shaped, and momentarily co-produced by the experience. During the immersion, Jarvis does not feel like himself anymore, but he does not feel like the refugee

woman. He becomes simultaneously 'inside' and 'outside' the VR experience. It is a simultaneous becoming between his actual self and the virtual other. Jarvis's previous experiences and stories affect how the experience is brought into existence and how he becomes with otherness. Physically and emotionally, Jarvis is part of the networked experience as much as it is part of him. During VR immersion, different simulations are refashioned and overlap.

Once the audience-participant-maker becomes with *The Machine to be Another*, the image-space and the audience-participant-maker transform each other in a feedback and feedforward loop shaping new associations and new codes within their networks. When Jarvis is touching the experience while it is touching him back, he does not suddenly become this concrete other. Everything he becomes with is a networked simulation that transforms his reality. I suggest that *The Machine to be Another's* most significant contribution concerning VR immersion is that it demonstrates that immersion produces a new sense of normalcy; thus, it creates an alternative and hybrid reality.

By approaching VR immersion through this theory, I can suggest that it is not fundamentally recreating some other body or place. Through immersion, otherness does not exist elsewhere, but it comes into existence through the network of simulations. Therefore, the idea that a 'relocation' grounded on the full recreation or representation is shaped by the onto-relational becoming of the audience-participant-maker with the image space's networked experience. Although the spectator may feel as if they were there, experiencing somebody else's story through their body, the fundamental promise of VR is the horizontal refashioning and remediation of different articulated simulations. Through this approach, VR is not reproducing reality, but expanding towards it, creating it.

its 'images'

This interdisciplinary theory sheds new light on the way images or image spaces are conceptualised in and for VR immersion. Naturally, this new approach follows the logics propelled by hypermediacy. Throughout the second chapter, I suggested three qualities of VR immersion's 'images.' The first one is that they behave as if they were three-dimensional. The second is they do not necessarily represent anything, and the third is they are 'incomplete.' However, I further complicated these suggestions following the integration elaborated under hypermediacy.

Firstly, VR experiences are not flat, framed and distant fictional objects. They are three-dimensional not because they replicate the experience of a specific and alternative location but because they intermingle in and with the 'real,' refashioning it. They are three-dimensional because they create a new spatial and embodied experience by combining and refashioning different sensuous, emotional and intangible simulations. Therefore, this VR immersion theory does not support the idea that it allows us to jump into 'other' space. It creates a novel spatial and sensuous experience transforming the 'spectator's' spatial and embodied experience.

Following the promise that VR does not reproduce reality, but creates it; image spaces are simulations that shape and transform the network of simulations with which the audience-participant-maker participates. This way, during immersion, image spaces have spatial characteristics, as they are experiences we feel we can dwell. However, that spatiality is created by the articulation and refashioning of 'real' and 'virtual' simulations. In other words, 'image spaces' are more like *networked experience* that includes different stimuli produced through the HMD and outside of it (or other devices that give shape to the experience. For instance, *Bridly* (2013) consists of a broader and more complex device to stimulate the audience-participant's body and imagination in different ways¹⁸⁷).

Secondly, we behave towards VR experiences, and they react towards us as if they were 'alive.' Following the concept of liveness, we relate with the now *networked experience* as if it was a real event not representing some other event. This way, 'mediated' or 'media' elements co-create our understanding of reality. They co-produce reality as much as any other object, emotion, event or experience. Therefore, we behave towards them, and they react to us as if they were alive because, partially, they are.

They are ecologies of simulations that, by being hybrid simulations, it transforms the audience-participant-maker's sense of reality in different levels. Their hybridity is the product of the overlapping between living and mediated, real and virtual, here and there. These experiences respond to us, and we respond to them as if they were alive. It is because they are the product of the combination and refashioning of partially alive and real simulations. They are experiences we can become part of; thus, they can become part of us. They create new ways of life and new ways of reality, and we accept their claims of

¹⁸⁷ Michael Friedman explains that: "*Birdly* incorporates a rotating chair with mobile panels attached to either side. [...] Users lie on their stomachs with their arms spread out and strapped to the panels while wearing an HMD. Now they are ready to "fly" over San Francisco or New York City, beating their "wings" by using both panels while images on the HMD screen synchronise to the chair's motion." (Friedman, Michael. "Head-Mounted Display Screens: A (De)Construction of Sense-Certainty?" 2016)

being alive and being real. Claims that stand for creating a momentarily new reality product of a hybrid and networked experience.

This approach does not presume that the differences between the networked experience and the audience-participant-maker will overall collapse. Being part of the same network and becoming onto-relationally, suggests that their differences are situated and will overlap to create a new sense of reality during and perhaps afterwards the VR immersion. The networked experiences stand distinct from the audience-participant-maker and other simulations; there is indeed a possible experience within the HMD. However, when they touch each other, they become and live together.

Thirdly, VR experience as an 'incomplete' experience, can be supported and further problematized by the ideas that VR cannot be coherently delimited. Following the argument around new media events like a Lady Gaga song, VR experiences are simulations that partake in a networked experience. In other words, they become into appearance as they expand and articulate with other simulations. This approach complicates the limits of a VR experience as now it is the articulation of different simulations, including the audience-participant-maker's body, emotions, memories and context. VR is no longer a mediating 'object' within a media network (like a song or a music video). I argue for the diffusion of VR experiences.

During immersion, the different constitutive parts, either virtual or real, inside or outside, present and past overlap, transform and articulate giving a feeling of coherent unities. Therefore, the audience-participant-maker brings the experience into existence with their bodily and affective partaking. These networked experiences are never concrete nor enclosed units; they are networks that the audience-participant-maker brings into existence. Which is why referring to VR experience as incomplete is unprecise. They are open networks willing to accept embodied and emotional participation. To partake with VR through immersion is not a process of completing, but of activating, bringing it into existence. Therefore, a VR experience has no specific 'gaps' that the audience-participant-maker needs to complete. It is not like an incomplete jigsaw puzzle. VR experiences are spaces of possibility and transformation processes that require the activation and partaking of the audience-participant-maker.

Finally, another aspect of VR 'images' is that they are not only visual-based and tools, but they sensuously and bodily become with the audience-participant-maker. Following Jarvis' ideas, VR is indeed an experience of sensuous becoming. Unlike pens and hammers, we can feel networked experiences like part of the audience-participant-

maker's body, and different from traditional 'images,' they are not only audio-visual experiences. Therefore, we relate to VR images somatosensorially, and we incorporate them into our body and reality.

However, my approach differs from Jarvis'. My suggestions around the sensuous becoming with the 'other' simulation is not a matter of hyper-extensions of the skin, as if the audience-participant-maker can feel some other object somewhere else. The category of a concrete 'other' is an onto-relational and affective claim raised by the networked experience and accepted by the audience-participant-maker. Therefore, the process of sensuous becoming enabled by the networked experience is a sensuous and perceptive transformation of the audience-participant-maker's sense of embodied normalcy.

In conclusion, networked experiences cannot exist independently but as a place of possibility. They are always a latent and flexible possibility about to become. We can indeed conceptualise them as the 'world' inside the HMD, inside the computer, but that approach is partial. The networked experience can only come into existence when activated and co-created by the audience-participant-maker. Networked experiences do not have a physical frame but a temporal one. They horizontally merge, overlap with, and create the new and hybrid realities through immersion. They present to us as experiences that produce their own worldliness, it is created by and transforms us and our reality. Simultaneously, they maintain their differences from other simulations. VR networked experiences stay different from the audience-participant-network, but they also need to overlap with each other to come into existence.

its 'spectator'

This approach and theory of VR immersion also problematises the sensuous boundaries and agential capacities of the audience-participant-maker. In a similar logic as the networked experiences, the audience-participant-maker participates and activates the experience, but they are a fundamental part of it; thus, they are transformed in return. For this to happen, the audience-participant-maker are in a constant state of indeterminacy. Their agential possibilities are partially an audience-participant's and a maker's, and their bodily feelings as they are partially feeling and becoming with another 'body.'

As mentioned previously, the audience-participant-maker and the networked experience exist and transform each other horizontally. The audience-participant-maker brings the experience into existence by projecting themselves into the experience, through becoming a part of it. The audience-participant-maker is understood as a material and affective part of the experience that, without it, the experience cannot exist. They bring the experience into existence by becoming part of the network. It does not mean that the audience-participant-maker is the only creator nor the only component. Through immersion, the categories of participant, audience and maker are no longer fully divisible.

As part of this process of becoming with the networked experience, the audience-participant-maker has to project themselves into the experience; they need to be remediated by it. The experience becomes a whole compound of different simulations that interact circularly. It is a kind of dance between the 'user' and the 'system' in which one responds to the other through continuous feedback and feedforward loops. This situation offers the possibility of digital transformation and hybrid becomings. It provides the opportunity for becoming outside the 'traditional' network or system of simulation; creating new sets for alternative perceptions and vicarious acts of self-transformation.

The current situation, in which the audience-participant-maker is a part of the experience's existence, echoes with them being 'inside' and 'outside'. This state of indeterminacy complicates the differences between reality and the virtual. At the same time as describing that, as part of the experience, the audience-participant-maker partially stops being themselves. In other words, during immersion, Liam Jarvis is himself and not himself simultaneously.

Once the audience-participant-maker is immersed and becomes with the VR networked experience, the differences between their immediate 'here' and the distant 'other' are blurred. Their sense of normalcy is refashioned; their experience of reality is transformed and becomes by partaking in the networked experience. Immersion in VR could mean a series of mistaken, erroneous perception and sensuous feelings. However, it shows our physical ability to adapt and the flexible materiality of our bodies.

When the audience-participant-maker is immersed, they partially stop being themselves. Becoming partially inside and outside also affects the 'spectator's' ontology as it is also onto-relational. Through immersion, the audience-participant-maker's body and sense of self and normalcy are transformed by the multiplicity of networked simulations with which they are partaking. Existing and becoming partially inside and outside suggests a series of transformations that produce alternative epistemologies that expand and

distort. This VR immersion approach compromises the audience-participant-maker's integrity; they exist momentarily through entities outside of their usual self. Neither inside nor outside can be experienced entirely. In other words, VR immersion complicates the limits and experience of the audience-experience-maker, its coherency and integrity. Therefore, the immersed body is not only negated and projected, but it is diversified.

Both interior and exterior space, being and becoming merge and transform osmotically through the immersive experience. It is impossible to speak of immersive virtual spaces or VR networked experiences without acknowledging the body's diversification. Although the networked experience is theorised with horizontal and equally transforming simulations, its very experience depends on having the body as its centre of being. It is the body which brings it into existence as an incarnated experience. It is only through our living organic body that we can give shape to the reality co-produced during immersion. However, that same body gets moved aside, transformed and negated by the experience it is activating.

In this sense, to conceptually address the spectator through this interdisciplinary theory of VR immersion means to account for an embodied experience that exists and becomes in and because of the overlapping and refashioning of different networked simulations. The audience-participant-maker, just like the networked experience, is not a concrete and stable agential category nor embodied experience. It concerns different perspectives at different moments during immersion and perhaps also afterwards.

The audience-participant-maker nor the networked experience are in their 'normalcy' as they are now partially part of each other, part of a network. VR is starting to realise its onto-relational promise of simulations being and becoming together, intertwined yet separate. This overlapping and refashioning negate and reproduce the audience-participant-maker horizontally in the VR and the VR in the audience-participant-maker. This argument does not suggest that they are equated, but they exist and become in their differences.

final thoughts

To end this section and before further applying this approach to analyse a case, it is necessary, to sum up, the overall approach to this interdisciplinary theory of VR

immersion. As shown through this theory, we can only determine the limits between immersion's different constitutive parts through a situated approach. This theory's main contribution lies precisely on that; on the indeterminacy of ontologies and experiences and their relational becoming. Therefore, VR immersion's promise is based on the fact that as a networked experience of simulations, despite being a 'mediation,' it does not stand up for, or translate other simulations. They transform and co-create reality. New realities emerge, but not as replicas. This way, VR immersion is not about relocation, but about temporary refashioning and transformation. During and perhaps after immersion, novel forms of being and becoming are produced. It is a new reality that refashions our construction and experience of normalcy and sense of reality. It cannot be mainly about the feeling as if we were somewhere else or in some other body, but about how our preconceptions of bodies and places are rearticulated and refashioned through it.

The hybrid and complex agency and sensuous becoming between what was previously conceptualised as the 'image' and the 'spectator' is another fundamental process and promise of VR immersion. As now bodies and images, reality and virtuality are conceptualised as simulations, thus as part of several overlapping and refashioning networks; there is no one specific immediate 'here' and a distant 'there' to where VR immersion is relocating us. As simulations, bodies, and images become together in a constant negation, refashioning and transformation process. The audience-participant-maker is 'inside' and 'outside' the networked experience and the networked experience is inside and outside the audience-participant-maker. They shape a hybrid experience where the categories of inside and out, me and other, real and virtual are temporarily suspended.

Likewise, the spectator is as much a participant as a maker as a spectator. The audience-participant-maker's material and emotional contribution is fundamental for the experience's existence; they are part of the networked experience's open and horizontal situation. Once theorised as opposed and distinct, dichotomies become part of one network and process through VR immersion. The smoke and mirrors of VR are neither real nor virtual but are part of the transformative relationship in the network of mediated (re)presentations. The virtual does not become through the real, nor the real becomes through the virtual. They become with each other.

The promise of the transformation of VR immersion: *EYESECT* as a process of not becoming the non-human

Initial approaches to *EYESECT*

As proposed throughout this thesis, this interdisciplinary theoretical approach to VR immersion promises that VR produces and is produced by the sensuous and agential transformation of the network of simulations 'both' the audience-participant-maker and the networked experience partake. In brief, through this approach, immersion is not solely the feeling of diving into the image, into virtuality. It is about how, during immersion, both reality and virtuality cease to exist as separate categories. They become and transform in a heterarchical network of simulations. Therefore, the feelings of relocation, extension or appropriation are guided by the collapse of the real and the virtual.

VR immersion is not propelled by the promise of becoming some specific other, but by the process of becoming a new other. As a decisive case study, I propose to look into is *EYESECT* (2013 -) by the collective *The Construction*. According to different sources, this is a wearable installation that attempts to make the spectator perceive (mainly see) like an insect, a chameleon;¹⁸⁸ or other non-human beings.¹⁸⁹ Nevertheless, I suggest that *EYESECT* exemplifies the approach towards VR immersion I articulated.

As I already expressed, my approach to VR is non-exclusive. As I believe VR resists fixed categories, it is a medium that is not defined solely by computer-generated graphics. Perhaps, *EYESECT* is not understood as a VR experience as it does not offer a 'world' entirely created through digital tools, (like *Sonaria*). However, as I hope it has been evident throughout my thesis, my understanding of VR is far-reaching and non-exclusive. In this thesis, I sought not to restrain my take of VR to some digital graphics specificity. Therefore, if considering *EYESECT* as a VR experience allows me to question the limits of VR, why not do it?

As a methodology, I will rely on others' experience because I have not experienced this piece myself. I will enrich my analysis of these sources by the experimental methodology I call *speculative experience*.¹⁹⁰ Because bodily feeling and sensing the

¹⁸⁸ Shubber, Kadhim. "EYEsect: see the world through the eyes of a chameleon." *The Guardian*, 5 February 2014

¹⁸⁹ Piatza, Sebastian, Christian Zöllner, Julian Adenauer, and Jens Beyer. "The Constitute." *EYESECT*. n.d. <http://theconstitute.org/eyesect/> (accessed October 2020)

¹⁹⁰ Different from reading and analysing, I am proposing an affective and virtual positioning of my own body within the installation, although I have never and probably will never see and feel it. Reading and

experience is a fundamental element of VR, and I have not been able to do so myself, I propose to speculate how I would have experienced it. This speculation will be guided and sustained by the different sources I examined. As primary sources, I will utilise texts, video recordings of the experience in various festivals, the makers' written claims and video interviews (namely on YouTube and Vimeo) will prove useful. Also, Liam Jarvis and Michael Friedman's analyses will enrich how I construct my experience as they will serve as secondary sources.

I will approach *EYESECT* through the interdisciplinary theory I have elaborated, so I can ground it in a concrete case while raising questions and limitations for this theory. *EYESECT* will illustrate how VR immersive works' networked nature creates a transformation within its form, function, and sensuousness. It is a transformation that responds to the unique becomings between each participating simulations.

EYESECT as the process of bringing Albertian's window into existence

EYESECT is a wearable installation that through Jarvis' perspective, is a VR experience that produced the sense of an expanded *umwelt*. For him, being inside or behind this installation adapts human sensations to non-human others. It generated ways of existing and channels forms of knowing that our bodies have no access to; thus, we can become a particular non-human other. In a similar line, but without the possible ethical accountabilities, Krekhov and colleagues' research explored the possibilities of producing animal avatars' feeling of ownership. Namely, the nuances of becoming a bat, a lion and a spider in a virtual world.¹⁹¹ Both *EYESECT* from Jarvis's perspective and Krekhov and colleagues' research suggested that a VR experience can offer to relocate in and experience experiencing through another's body. Although neither is actively arguing that the 'user' will entirely become an animal, they suggest that VR can relocate the user's body or experience into some other's.

interpreting have too much of a semantic and "language-like" taint, and I would like to approach this installation not as a text but as an experience with which I can bodily think with and through. Not as a text to interpret and give value, but an experience that triggers and produces embodied thoughts and emotions.

¹⁹¹ Krekhov, Andrey, Sebastian Cmentowski, and Jens Krüger. "VR Animals: Surreal Body Ownership in Virtual Reality Games." *CHI PLAY '18 Extended Abstracts*, October 28–31, Melbourne, VIC, Australia. 2018

In *EYESECT* this relocation was achieved through the way the headset altered the 'user's' sight. It provided them with two external mobile camera modules attached to an HMD headset, which transmitted two separate images displayed in two screens inside the headset, one for each eye. Extension cords attached both moving cameras to the headset allowed the users to move them with their hands. These cameras could also be placed anywhere on the headset, grating the user with an unfamiliar 'view' of the 'world' induced by a constant change of perspective, which arguably replicates the ways an insect or a chameleon see.

However, I suggest that through *EYESECT*, the desire to relocate the user's experience in a specific other's body is not its main achievement. It exemplifies the theory I developed, showing that VR immersion is a horizontal and momentary transformation by different simulations. *EYESECT* is not trying to relocate or even transform our body into a body that replicates an insect. In and through *EYESECT*, the world, the user's body, their memories, and the 'images' experienced in or through the HMD converge equally and merge as part of one networked experience. It is a networked experience that amasses reality and virtuality as simulations transforming reality (as an 'external' construction) and normalcy (as the embodied process that reality is given shape) positioning the user as an audience-participant-maker.

Furthermore, I argue that *EYESECT* is not different from any other VR experience that arguably seeks to place the viewer inside a fully realised virtual space. For me, it points to the VR's undeniable nature which amasses and overlaps both 'inside' and 'outside' as simulations. Even if the VR experience 'replaces' 'reality' or 'simulating' a new one, like in *Sonaria*, the articulation and transformation of different simulations is the fundamental issue for VR immersion. In both situations, the audience-participant-maker becomes with the networked experience through liminality. They are partially inside and outside from each other, and during immersion, they horizontally produce and shape one another. Through *EYESECT*, the networked experience is no longer distant and different from the audience-participant-maker's body, emotions, and perceptions. The audience-participant-maker, in conjunction with the device and interface, creates and brings the experience into existence. This emergence process is limited or guided by the capacities and formal qualities of the interface and the device (the HMD with detachable cameras) and the audience-participant-maker's embodied experiences and memories.

In *EYESECT*, the spectator is partially the maker as they bring the experience into existence. The experience does not exist without their bodily and emotional partaking.

When they place their head inside the HMD and dwell, all the simulations articulate creating a unique experience driven by the VR's formal characteristics and the audience-participant-maker's bodily and affective actions. Therefore, their body is an intrinsic part of the experience. Without it, the helmet and the images captured by the cameras will never take shape. The experience is not contained within the limits of the HMD. The way the audience-participant-maker moves the cameras, and dwells and explores with their body brings the experience into existence. They project themselves as part of the experience and giving its particular and unique shape.

When the audience-participant-maker is looking through the cameras and moving their entire body to dwell in a particular space, let us say a city square. Their experience is only solely 'virtual,' or 'inside' the HMD. The 'image space' is composed by the cement the audience-participant-maker is stepping on, the wind they feel on their skin, the sounds of cars and people passing by, the way their body becomes unstable. Every simulation the audience-participant-maker is experiencing, and co-creating brings the networked experience into existence.

Therefore, immersion is not jumping into a window. The audience-participant-maker brings that window into existence. Without the participation and experience of the audience-participant-maker, that window cannot exist as a VR experience. I suggest approaching immersion as the ways that 'window' is articulated with, and transforms the myriad of simulations originally though as outside that 'window.'

Re-exploring how I become with my body with and through *EYESECT*

From the moment the audience-participant-maker puts on the *EYESECT* helmet, to when they start slowly but steadily exploring a (new) 'reality' they thought they already knew, they realise they are also exploring their own body. With *EYESECT*, the audience-participant-maker also re-explores how they exist and perceive immersed compared to how they usually perceived. I suggest that the experience is charged with a heightened transformation of their sense of self or normalcy. The detachable pair of new 'eyes' produces an instant change in their everyday practices of seeing with their eyes and body. How they deal with their surroundings has transformed, but their bodies and how the world is shaped and become. I suggest that his experience will ask audience-participant-maker introspective questions about how they usually experience sight, space, movement

and contact. I can assume this not only because of the experience's formal qualities but also because they were fundamental inquiries for The Constitution when designing it. The question of 'how do we see?' led to the development of this device¹⁹² which allowed the audience-participant-maker's hands and arms to become eye-muscles to experience space and their bodies in new ways.

Like two eyes, the audience-participant-maker's hands hold up two cameras while being attached to their arms, attached to their torso. Through *EYESECT*, we recognise seeing as a full-body action; as a process that requires and is affected by motor qualities. In other words, *EYESECT* is transforming the audience-participant-maker holistically, although it is only actively altering sight. It is refashioning how they exist and interact with the world, not just how they look at it.

By using this device, you can take the way you see into your own hands. When you use your hands to move your arms, it is a radically different movement that you will typically do, but it is somewhat similar to how you use your head to move your eyes. The difference is that you are more used to doing the latter. Following Machon's ideas, this experience redefines normalcy and makes the audience-participant-maker to have an active and reflexive approach to how they experienced normalcy in the past. The everyday action of seeing was rendered and elevated as extraordinary. It showed the many ways we cannot perceive. By altering sight, *EYESECT* transforms how we become with the world and with ourselves. When each eye becomes independent through independent cameras, it changes how an audience-participant-maker knows and explores the world. For example, one of the audience-participant-maker's during the 2013 *Cybernet Art Festival* in Dresden exposed that: "This head-mounted object creates a distinct spatial impression automatically. I can't divide between the front and the back. Between here and there."¹⁹³ For this person, *EYESECT* is offering new ways of exploring the world, but it is also enabling them to explore themselves in the world differently.

Moreover, and going back to the initial claims that *EYESECT* does not replicate the way of seeing from an 'other,' Friedman suggests that the moving cameras indeed do not imitate other forms of animal or non-human vision. For him, the body-eye-cameras are not replicating how an insect and a chameleon move their eyes.¹⁹⁴ For Jarvis, it does not

¹⁹² Piatza, Sebastian, and Christian Zöllner. Electronic Language International Festival. 2014. https://file.org.br/metro_sp_2014/file-sp-2014-metro-7/

¹⁹³ It's Automatic. "EYEsect vs User." vimeo.com. 2014. <https://vimeo.com/85704917>

¹⁹⁴ Friedman, Michael. "Head-Mounted Display Screens: A (De)Construction of Sense-Certainty?" 2016: 134

reproduce the mosaic-like sight argued for most of the insects.¹⁹⁵ Also, if we assume that seeing is an action that requires the entire body, to see like some 'other,' your whole body needs change. In other words, to reproduce 'seeing' as an insect, the user will have to become that insect entirely, and this is not the situation with *EYESECT*.

Although there are indeed multi-sensuous and whole body transformations as many prior users express their perceptual confusion and uncertainty,¹⁹⁶ only sight is being actively stimulated. Therefore, the 'insect' the makers want the users to perceive like, is contained concretely in their visual qualities. Qualities that do not resemble an animal's or a non-human's. For this reason, I argue that this VR experience is closer to a speculative transformation of perception, of how we produce and become with reality and virtuality simultaneously as part of the same network of simulations. In *EYESECT*, immersion is not a matter of relocation, of feeling, being or becoming some 'other,' but a process of becoming and transforming with an 'other' through acts of eccentric perception.

Echoing *The Machine to be Another*, through *EYESECT*, the audience-participant-maker also becomes 'half-in-half-out' or partially inside and outside. However, becoming inside and out is not an issue of location. As explained before, although immersion requires a 'gap,' it is not an issue of something being incomplete. The 'gap' is a status of the VR experience as an open network which requires the audience-participant-maker's active partaking. Therefore, the networked experience is co-created by the humanness and the human experience of the 'user.' *EYESECT* demonstrates that being partially inside and outside is an issue of heterarchical transformation and hybrid becoming. It is not an issue of moving somewhere else or an experience where two different locations overlap; for *EYESECT*, becoming immersed in a moment in which the difference between the real and the virtual collapse. There is no inside or outside. You can only experience and be transformed by a hybrid 'now' composed and articulated by simulations.

Although the potential of an experience inside the HMD can only come into existence through the audience-participant-maker's physical and emotional participation, I could not affirm a virtual world exists inside VR awaiting me to go in. It is more a series of potential simulations that will transform by reality and normalcy. It will ignite the process of bringing the networked experience into existence. In other words, VR immersion, as in *EYESECT*, is an issue of multiple stimuli and simulations articulating. During immersion,

¹⁹⁵ Jarvis, *Immersive Embodiment*. 2019: 117

¹⁹⁶ It's Automatic. "EYEsect vs User." 2014

their differences collapse, producing a hybrid experience with bodied and objects that are complex.

This new reality created through the articulation of collapsed categories is a temporal becoming. Although the categories collapse into simulations, the audience-participant-maker brings in their previous experiences. They know that what they are experiencing is a momentary transformation; thus, most of these simulations will most unlikely remain. Simulations collapse their differences, in the situatedness of VR immersion. They are complicated, but as Baudrillard suggested, most of these categories will remain, but the objects they describe will change. As a result of this, I believe that 'inside' and 'outside' collapse during immersion, yet they remain separate. They are onto-relational, and immersion complicates their differences while staying independent, without dissolving their differences.

Furthermore, *EYESECT* shows that for and during VR immersion, when the audience-participant-maker projects themselves to bring the experience into existence, the experience affects them back. Hence, the audience-participant-maker cannot be their 'normal' self anymore. In the analysis of Jarvis' experience in *The Machine to be Another*, I suggested that he partially stopped bringing himself when becoming with the networked experience. He is now a part of the experience. Similarly, during *EYESECT*, the audience-participant-maker stops being themselves as their reality and normalcy are being transformed. It is through this transformation that immersion can come about. When sight is bifurcated, and their sense of space is altered, they did not merely transform. Like the networked experience, the audience-participant-maker is opened up becoming themselves in hybridity. They stop being fully themselves and change to new ways of experiencing. These modes alter past and present perceptions, and perhaps, future ones.

Punctuating the promises of VR immersion with *EYESECT*

Finally, I would not say *EYESECT* is an installation or just a device for different ways of seeing. I would propose to think of it as a materialisation of how to approach VR networked experiences. It shows that a new approach towards VR immersion is possible and re-theorises the relationship between 'images' and their 'spectators.' It positions the composition of reality and virtuality, inside and outside as onto-relational. In this context, immersion is modifying experiences rather than relocating in some other's experience.

EYESECT supports my argument that all immersion's underlying principle promises to transform how we utilise (perform) and feel our body(ies). This idea questions the technological desire to reduce the distance between the image and the observer.

This theory and approach suggest an alternative promise for VR immersion which comprises a momentary transformation of our sense of reality and normalcy. Categories and experiences of the real and the virtual, the inside and the outside collapse and articulate as simulations. They partake in the experience's integrity and the 'spectator's' 'body' co-creating each other. In this sense, the promise of immersion is not of moving your body from one location to another (bodily or spatial) but a transformation. It is a promise of becoming with the possibilities enabled by technology.

EYESECT shows that VR immersion is a process in which the audience-participant-maker brings the networked experience into existence with their physical and emotional participation; they become horizontally with the experience. It creates new ways of becoming with the world and with ourselves. Therefore, I suggest that VR immersion transforms our sense of self, of reality and may raise questions about how these normal processes came and are still coming about.

Conclusions

Zooming out

Immersion is undoubtedly a complex concept. As complex as the theory, technology, or experience I have analysed in these pages. According to Google Books Ngram Viewer, immersion appears in texts since the 1800s.¹⁹⁷ From religious texts that define baptism as an immersion, as the administration of God's grace by immersing in holy water;¹⁹⁸ to describe classroom experiences, integration in a foreign country, the user's experience in a fictional space and others. In short, immersion has had and still has extensive uses.

In this thesis' context, immersion follows its etymological root from the Late Latin that refers to any act or experience of plunging or being plunged into some fictional environment. However, different media generate different "types" of immersion. We can say that a viewer feels immersed while watching a movie; an audience-participant feels immersed in the dramatic space, and an *audience-participant-maker* feels immersed when experiencing a VR *networked experience*. However, these three versions of immersion are different in their theoretical and empirical processes. What brings them all together as immersion, is that they diminish the distance between the observer and the observed, increasing the emotional and physical involvement with the event. These qualities exist in different degrees in different media and contexts. Immersion is not an intrinsic possibility embedded in the medium's technical attributes. It is a situated experience created by articulating a myriad of formal, affective and contextual elements.

The two strings of thought I evaluated and integrated during this thesis address two different approaches to immersion. On the one hand, from a media perspective, immersion is the change or passage from one mental state to another. As the image or image space is distinct and separated from the spectator, they can only become immersed through imagination. Theorists like Grau, Barthes and Dogramaci and Liptay theorise that although the spectator feels in a different place, it is an illusion. Even if immersion is the process of going into a mirror or being pressed against the screen, it only requires imagination.

¹⁹⁷ Google Books Ngram Viewer. Google. n.d.

https://books.google.com/ngrams/graph?year_start=1800&year_end=2019&corpus=26&smoothing=7&case_insensitive=on&content=immersion&direct_url=t4%3B%2Cimmersion%3B%2Cc0%3B%2Cs0%3B%3Bimmersion%3B%2Cc0%3B%3BImmersion%3B%2Cc0%3B%3BIMMERSION%3B%2Cc0#t4%3B%2Cimmer (accessed October 2020)

¹⁹⁸ Newman, William. "Google Books." Baptismal immersion defended by Christians of all denominations: in a letter to a Paedobaptist. 1819.

<https://books.google.nl/books?id=ui1cAAAAQAAJ&pg=PA10&dq=%22immersion%22&hl=en&sa=X&ved=2ahUKEwj37cC3ovDsAhURLewKHxKSBjsQuwUwAXoECAUQBw#v=onepage&q=%22immersion%22&f=false> (accessed October 2020)

Interaction is indeed needed, but the fictional world reacts back only vicariously. The image and the spectator interact as a frame within a frame.

The other string or discipline I evaluated comes from performance studies. In this case, immersion involves the physical incorporation and participation of the audience-participant. This new approach to spectatorship understands the 'spectator' as an active and material element for the performance. Therefore, the feeling of immersion comes with becomes a part of the experience. This approach has two fundamental considerations; the first is that the fictional experience is never complete; it requires a 'gap' for the audience-participant to fill in. The second is that the fictional world reacts back and transforms the audience-participant. In other words, the virtual and the real coexist horizontally. Immersion from this perspective acts as a threshold experience to transport and transform unrehearsed audience members mentally, emotionally and physically inside a particular Spatio-temporal space or body.

Overall contribution to the discussion of VR immersion

The approaches I discussed in chapter converge in their promise of relocating the audience-participant's experience into a virtual and coherent other. This promise involves that immersion relies on experiencing some concrete 'other' own worldly-ness. However, positioning and analysing VR immersion as a remediation problem problematizes this promise; hence new strategies need to emerge.

Through remediation, thus immediacy and hypermediacy, I integrated both strings of thought to suggest a new theoretical approach and promise of VR immersion. Unlike the ones it emerged from, it does not have at its centre the desire to fully replicate reality within the virtual, but that both reality and virtuality coexist bringing the VR experience into existence. This new approach promises that during VR immersion images are not distinct from reality, they are open networks produced simultaneously by real and virtual entities. Therefore, immersion is a transformation process and the creation of a new reality and normalcy. Hypermediacy opened the door to start approaching the concepts of the image and the spectator, and the virtual and the real as flexible and situated categories. In

other words, as *simulations* - entities that are both real and virtual, and exist and transform part of a network.

In this spirit, I proposed the concepts of *audience-participant-maker* and *networked experience* to further delve into this theoretical approach towards VR immersion. Through them, we can support the idea that VR immersive experiences shifted from being a metaphor or a representation to a metonym or entities that co-produce our sense of reality. These concepts allow us to simultaneously collapse and sustain the differences between image and spectator, the real and the virtual. From this perspective, what we perceive and theorised as inside and outside the VR becomes part of a network. Immersion is when virtual entities and experiences intermingle with reality, generating a new and hybrid reality.

During immersion, the audience-participant-maker's body is no distinct or opposed to the networked experience; they both react and transform together. Not because the audience-participant-maker is experiencing as the 'other' (human, non-human or space), but because VR generates strong affective responses. Nevertheless, the virtual other is not fully standing for something else; it transforms how the audience-participant-maker feels reality and themselves.

This integration is not negating that approaching VR as a potential full replica of reality can be useful. However, assuming that the central promise and goal of VR is that we can experience as if we were entirely in some other place, or experiencing through some other body, is insufficient. VR experiences are not only incomplete spaces the audience-participant-maker 'completes.' But, as networked experiences, they are temporal onto-relational becomings and transformations of how we construct a hybrid sense of reality during immersion. Thus, the 'maker' component of the audience-participant-maker is not an issue of 'completing' the experience, but of bringing it into existence. Networked experiences are not spaces or spaces-like experiences but temporal transformations.

Some limitations

This thesis showed the possibilities of rethinking VR immersion's promise and what it can bring to the theorisation of the ontologies and relationship between images and spectators. Although I only theorised through VR immersion, I believe in the potential of

applying these ideas and approaches to rethink VR further. Perhaps this could prove useful in the process of designing VR interfaces and devices, or in integrating different disciplinary approaches to VR. Unfortunately, I had spatial and temporal limitations restricting me from exploring the whole scope of possibilities around my suggestions and producing broader and more complex interdisciplinary approaches. Besides being limited by forty thousand words and a six-month time frame, I had to deal with a series of methodological limitations across this project. In the upcoming lines, I will delve into three.

Firstly, VR is an incredibly new and unstable object or phenomenon.¹⁹⁹ The idea of VR as a mounted headset device, accompanied by a series of other prostheses that 'transport the spectator into a different reality' is relatively new. It was not until 1965 when Ivan Sutherland referred to a head-mounted display device as the 'ultimate display'²⁰⁰ or until 1987 when Jaron Lanier coined the term 'virtual reality.'²⁰¹ Therefore, the language to describe and analyse these experiences and technologies are still unstable and scares. Recently, in 2019, Chris Bevan and colleagues suggested one of the first typologies for non-fiction VR experiences. However, as I showed in this thesis, it still is an ongoing process. This typology does not contemplate some qualities of some of the experiences I examined or used as examples.

Similarly, there is no clear understanding of its interactive structure, visual language, and possibilities. For example, whether it should have narrative or non-narrative structures, or if it is based on telling stories, experiencing or discovering them. Just recently, William Uricchio suggested a new approach towards VR's narrative structure. For him, instead of

¹⁹⁹ This statement can be seen as highly contested and overly simplifying. Several theorists and historians consider the Sword of Damocles, a VR experience designed by Ivan Sutherland and Bob Sproul, as the first VR device. However, some years before, in 1960, Morton Heilig already created and patented a similar apparatus. He invented the "Stereoscopic-Television Apparatus for Individual Use" or "Telesphere Mask." This device has a clear resemblance with current HMD like the Oculus Rift, but it was Sutherland who performed the first wide sets of experiencing with a HMD of different kinds. From a different perspective, Grau theorizes that the early stages of VR are early 20th century immersive scenarios. As I already explained, for Grau experiences like the panorama and the peephole enrich the currently HMD. In this same vein, Stephen Ellis created a simple graph here he tracked some HMD displays or glasses-like viewers over time. For him, the first one is a helmet from the 1613.

²⁰⁰ Sutherland, I. E. "The Ultimate Display." 1965

²⁰¹ Rubin, Peter, and Jess Grey. *The WIRED Guide to Virtual Reality*. 3 August 2020. <https://www.wired.com/story/wired-guide-to-virtual-reality/> (accessed September 1, 2020)

storytelling, he proposed to strive for a 'story-finding' structure.²⁰² In this same vein, Google News lab suggested 'storyliving'.²⁰³

So, what precisely is VR? It has many faces and approaches and, with no surprise, Jaron Lanier offers 52 definitions in his book *Dawn of the New Everything*.²⁰⁴ This multiplicity of signifiers, which can also produce an emptiness or lack of meaning, was one of this thesis's limitations and strengths. This limitation lies in the drastically unstable condition as a field of research and scarce research on VR. However, it is an extraordinary situation to explore new associations and speculative thinking, but it also can be for nothing. It can be a matter of months until a new interface or device drastically changes the area. Also, mapping the field to propose coherent approaches and definitions is an extensive work. The process of defining VR immersion string of thoughts and disciplines is a major exploratory work that can go from 1800s texts to more current sources around digital new media.

For this reason, this thesis' first chapter offers a comprehensive articulation of different approaches from which to construct its object of study and understand this phenomenon. Not all of them are strictly related to VR immersion, but they served to amass useful disciplinary approaches. It is a limitation because it requires exhaustive and extensive exploration and articulation, but this is precisely its strength. As nothing is said, everything is possible.

Secondly, As VR's disciplinary tradition is not defined, it was challenging to carry out an interdisciplinary integration. To articulate a myriad of ideas, objects and approaches within one frame, I had to propose disciplinary standpoints. For example, Jarvis addresses VR from the perspective of theatre and performance studies. Although he integrated neurocognitive studies, media theory and performance and theatre theory, he claims that VR is mainly an issue of performance; thus, this disciplinary standpoint guided his thinking and articulated his sources.

Likewise, through my integration process, I argue that VR is an issue of remediation, thus media studies. Although I demonstrated that remediation, and my interdisciplinary theory, encompasses elements of performance and neurocognitive sciences, my approach is mainly from a media perspective. For instance, I incorporated and integrated many

²⁰² Uricchio, William. VR: Between hope, Hype, and Humbug. 25 June 2018. <https://lareviewofbooks.org/article/vr-between-hope-hype-and-humbug/#>

²⁰³ Greenwald, Michelle. "From Storytelling To VR 'Storyliving': Future Marketing Communications." forbes.com. 31 July 2017. <https://www.forbes.com/sites/michellegreenwald/2017/07/31/from-storytelling-to-vr-storyliving-future-marketing-communications/#44dd4a1335e2> (accessed July 2020)

²⁰⁴ Lanier, Jaron. *Dawn of the New Everything. Encounters with Reality and Virtual Reality*. 2017

theories with a clear disciplinary standpoint and others that do not. Their different disciplinary approaches firmly guided my ideas and processes. However, I articulated them through remediation. So, the way I arrived at conclusions, like Jarvis, is from an interdisciplinary approach, but it has a clear disciplinary standpoint.

This situation echoes with a critique of the interdisciplinary integration methodology from a generalist perspective. Richard Szostak and colleagues reviewed some of the most critical views towards interdisciplinary integration. Namely, their issues with partial integration resonate with my methodology. Partial integration refers to integrating only some aspects of the discipline, applying it only to some parts of the problem or object.²⁰⁵ For Szostak, partial integration should not be the end goal of interdisciplinary integration, but full integration – integrating all relevant disciplinary insights into a new, single, coherent, and comprehensive understanding of the theory with empirical evidence. However, what about objects that are in themselves interdisciplinary? Or like VR that do not have a straightforward and agreed disciplinary approach or history? If addressing a volatile object like VR, I ask myself if it is possible to aim for anything other than a partial integration. Perhaps even assuming that it is possible, the researcher may fall in a state of unaccountability of their disciplinary standpoint.

Therefore, this thesis does not provide one full and comprehensive VR immersion theory that derives from the full integration of different disciplines. It is a contribution to the ongoing discussion of VR. My work is not striving for a single coherent theory to approach the promises of VR immersion. It is one suggestion among infinite possibilities. Besides being limiting and counterproductive, I believe that addressing a phenomenon like VR and seeking to achieve a fully interdisciplinary integration is highly demanding and perhaps even impossible. I think that acknowledging our perspectives and biases as researchers is paramount when carrying out this methodology. Therefore, I propose an interdisciplinary method around VR that bridges disciplines and integrates theories but from a clear positionality. Researchers should look for new theoretical work based on conceptual interactions and empirical manifestations while proposing new concepts from this in-between space.

Although this second limitation did not stop me from elaborating my research, I encountered this issue when applying this method to integrate different VR disciplines. It did not affect my main argument, but it posted limitations concerning the methodology I

²⁰⁵ Repko, Allen F., and Rick Szostak. *Interdisciplinary Research. Process and Theory*. 2017: 380

used. I do not think it is a problem if we assume that full integration is a radical goal that sets researchers in motion. In other words, full integration is not realistic, but aiming for the utopia can allow us to broaden our horizons.

Thirdly, another limitation is the methodological approach I used to analyse *EYESECT* in the last section. VR is highly personal, which calls upon individualism in its sensual experience and analysis. Following Machon's suggestions, I believe that each VR immersive experience is one of a kind as it requires the audience-participant-maker to bring it into existence from their individuality. In other words, the experience I bring into appearance with my participation is potentially really different from the experience of somebody else.

This radical embodied individualism was a limitation when analysing *EYESECT*. In this process, some questions arose around proper ways of accessing a VR experience for academic research. Although I argued that VR analyses require embodied experiences and sensuous transformation, I could not access *EYESECT* in that manner. The audiovisual recordings I could put my hands on guided the way I could experience the piece. As mentioned, I could only access to some primary and secondary sources that explained the experience in detail. However, when it came to the way it refashioned the participant's body, and experience, several elements were missing. When the makers showed how the headset altered sight, they gimmicked it in the explanatory video edition dividing the frame in half, one for each eye;²⁰⁶ or recorded the headset's display.²⁰⁷ These solutions were indeed insightful, but they were highly ocular-centric recreations.

As a possible solution, I invented and suggested a way of speculative experience as a methodology. I believe there is potential in it, especially if VR will continue in this direction. There is a significant limitation for horizontal and inclusive access to VR if we stick to the immersive end sensorially experience as the sole valid experience. Therefore, the speculative experience could guide the way towards an alternative.

²⁰⁶ Archive, AP. "Art collective helmet that gives you animal vision." YouTube.com. 18 December 2017. <https://www.youtube.com/watch?v=jdx72HxUK7s> (accessed August 2020): min 2.30

²⁰⁷ GolemDE. "Der Fühleraugen-Alien-Helm mit Oculus Rift: Eyesect." YouTube. 20 February 2014. https://www.youtube.com/watch?v=AJ8K_xdRW8 (accessed August 2020): min 2.40

Further suggestions and possible associations

Finally, my research, limitations, and possible suggestions build a base to generate new ideas and develop a new approach towards VR, VR immersion and perhaps digital media in general. This integration has allowed me to position VR as part of a hybrid tradition and simultaneously as a revolutionary and new technology. This thesis's scope was narrow, and I think that including other takes of immersion can enrich our theoretical approach towards our VR experiences and theories. For example, the different ways religious texts theorised immersion could open a different approach to our technological stands.

However, I believe that the door that this research allowed me to open can guide a new approach towards the ontology and experience of "media," namely "images." Personally, I would find enriching to position VR as a feminist and radically embodied technology and explore the possibilities for refashioning how we understand images and mediation. While radio and print tell, and film shows; VR embodies. My ideas and beliefs regarding VR, resonate with Donna Haraway's premises around cyborg becomings. It entangles human becoming with technological and virtual processes. For Haraway, we generate ourselves and our experience of reality through the overlapping of technological and natural qualities, of human and non-human entities. During VR immersion, the boundaries between science fiction and social reality are situated and possibly only an illusion.

Therefore, I think that the VR theoretical approach I suggested can allow us to expand these ideas triggered by immersion to the direction of mediation and images. I briefly explored the third chapter's first section. But I believe in the potential of experiencing "images" as networks that spread into the world and the impact this can have in "mediation." From this perspective, space does not define or constrain images, but time does it. "Images" affect the world, possibly as immaterial or trans-material cyborgs. Perhaps they are ubiquitous and latent possibilities; they are like transformative dust, like sunlight or nanorobots. They could be transformative articulations, toxic and expansive simulations, transforming what we assumed as pre-existent and given. Such an approach can also be expanded to other XR technologies like Augmented Reality or Mixed Reality. Hence, I believe that feminist new materialist thinkers like Luce Irigaray, Rosi Braidotti, Eve Kosofsky or Vicky Kirby could guide this way of rethinking the possibilities and ontologies of images.

This way, this interdisciplinary theory of VR immersion could not only lead a theorisation of immersion from a more complex perspective. It could open the door for future associations, future integrations and future speculations.

Bibliography

- Allen, Jennifer. "Einmal ist Keinmal: Observations on Reenactment." In *Life, Once More: Forms of Reenactment in Contemporary Art*, by Sven Lütticken, 19-26. Rotterdam: Centre for Contemporary Art, 2005.
- Alston, Adam. *Beyond Immersive Theatre. Aesthetics, Politics and Productive Participation*. London: Palgrave Macmillan, 2016.
- Andrews, Lew. *Story and Space in Renaissance art: The rebirth of continuous narrative*. Cambridge: Cambridge University, 1995.
- Archive, AP. "Art collective helmet that gives you animal vision." *YouTube.com*. 18 December 2017. <https://www.youtube.com/watch?v=jdx72HxUK7s> (accessed August 2020).
- Clouds over Sidra*. Directed by Gabo Arora and Christ Milk. Produced by Within. 2016.
- Auslander, Philip. "Digital Liveness: A Historico-Philosophical Perspective." *PAH: A Journal of Performance and Art* 34, 3, 2012: 3-11.
- . *Liveness. Performance in a Mediatized Culture*. New York: Routledge, 2008 [1998].
- Automatic, It's. "EYEsect vs User." *vimeo.com*. 2014. <https://vimeo.com/85704917> (accessed October 2020).
- Barthes, Roland. "Leaving the Movie Theatre." In *The Rustle of Language*, by Roland Barthes, 345-349. USA: Editions du Seuil, 1986.
- Baudrillard, Jean. *Simulacra and Simulation*. Ann Arbor: University of Michigan Press, 2007 [1929].
- Baxandall, Michael. *Painting and experience in fifteenth-century Italy: A primer in the social history of pictorial style*. Oxford: Oxford University Press, 1988.
- Bay-Cheng, Sarah. "Theater is Media. Some Principles for a Digital Historiography of Performance." *Theater* 42,2, 2012: 27-41.
- BeAnotherLab. *beanotherlab.org*. n.d. <http://beanotherlab.org/home/work/tmtba/> (accessed September 2020).
- Berger, John. *Ways of Seeing*. London: Penguin Classics, 2008.
- Bevan, Chris, et al. "Behind the Curtain of the "Ultimate Empathy Machine": On the Composition of Virtual Reality Nonfiction Experiences." *CHI 2019 - Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, 2019.
- Biocca, Franc. "An Insider's View of the Future of Virtual Reality." *Journal of Communication* 42, no. 4 (1992): 150-172.
- Biocca, Franc. "Virtual Reality Technology: A Tutorial." *Journal of Communication* 42, no. 4 (1992).
- Bolter, Jay David, and Richard Grusin. *Remediation: Understanding New Media*. Cambridge: MIT Press, 2002.

- Botvinick, Matthew, and Jonathan Cohen. "Rubber hands 'feel' touch that eyes see." *Nature* 391 (February 1998): 756.
- Canby, Vincent. "Look who's talking on Broadway: microphones." *New York Times*, 22 January 1995: 4-5.
- Chapple, Freda, and Chiel Kattenbelt. *Intermediality in Theatre and Performance*. Amsterdam and New York: Rodopi, 2006.
- Culler, Jonathan. *Literary Theory. A Very Short Introduction*. Oxford: Oxford University Press, 1997.
- Davies, Char. "Changing Space: Virtual Reality as an Arena of Embodied Being." In *The Virtual Dimension. Architecture, Representation and Crash Culture*, by John Beckmann, 144-155. New York: Princeton Architectural Press, 1998.
- Davies, Char. «OSMOSE: Notes on Being in Immersive virtual space.» *Immersive virtual space*, n° 9 (1998): 65-74.
- de Vignemont, Frédérique, and Alessandro Farnè. "Widening the Body to Rubber Hands and Tools: What's the Difference?" *Revue de Neuropsychologie, Neurosciences Cognitives* 2, no. 3 (2010): 203-211.
- Dixon, Steve. *Digital Performance. A History of New Media in Theatre, Dance, Performance Art, and Installation*. London: MIT Press, 2007.
- Dogramaci, Burcu, and Fabienne Liptay. "Introduction. Immersion in the Visual Arts and Media." In *Immersion the Visual Arts and Media*, edited by Fabienne Liptay and Burcu Dogramaci, i-iv. Leiden and Boston: Brill Rodopi, 2015.
- Ehrsson, Henrik H. "The experimental induction of out-of-body experiences." *Science* 317, (2007): 1048.
- Elam, Keir. *The Semiotics of Theatre and Drama*. London: Methuen, 1980.
- Foucault, Michel. "Nietzsche, Genealogy, History." In *Language, Counter-Memory, Practice: Selected Essays and Interviews*, by Donald F. Bouchard, translated by Donald F. Bouchard. New York: Cornell University Press, 1977.
- Foucault, Michel. "Of other spaces: Utopias and Heterotopias." In *Rethinking Architecture: A Reader in Cultural Theory*, by ed. Neil Leach, 330-336. New York: Routledge, 1997.
- Fried, Michael. *Art and Objecthood: Essays and Reviews*. Chicago: University of Chicago Press, 1998 [1967].
- Friedman, Michael. "Head-Mounted Display Screens: A (De)Construction of Sense-Certainty?" *MediaTropes eJournal* VI, no. 1 (2016): 114-136.
- Frieze, James. "Reframing Immersive Theatre: The Politics and Pragmatics of Participatory Performance." In *Reframing Immersive Theatre: The Politics and Pragmatics of Participatory Performance*, by James Frieze, 1-26. London: Palgrave Macmillan, 2016.
- Giannachi, Gabriella. *Virtual Theatres: An Introduction*. New York: Routledge, 2004.

- GolemDE. "Der Fühleraugen-Alien-Helm mit Oculus Rift: Eyesect." *YouTube*. 20 February 2014. https://www.youtube.com/watch?v=AJ8K_xdRW8 (accessed August 2020).
- Google Books Ngram Viewer. *Google*. n.d. https://books.google.com/ngrams/graph?year_start=1800&year_end=2019&corpus=26&smoothing=7&case_insensitive=on&content=immersion&direct_url=t4%3B%2Cimmersion%3B%2Cc0%3B%2Cs0%3B%3Bimmersion%3B%2Cc0%3B%3Bimmersion%3B%2Cc0%3B%3BIMMERSION%3B%2Cc0#t4%3B%2Cimmer (accessed October 2020).
- Google News Lab. *Storyliving: An Ethnographic Study of How Audiences Experience VR and What that Means for Journalists*. July 2017. <https://news.google.com/assets/docs/storyliving-a-study-of-vr-in-journalism.pdf> (accessed October 2019).
- Gosztonyi, Alexander. *Der Raum: Geschichte seiner Probleme in Philosophie und Wissenschaften*. Munich: Alber [in Grau 16]. Munich: Alber, 1976.
- Grau, Oliver. *Virtual Art. From Illusion to Immersion*. Cambridge, Massachusetts, London: The MIT Press, 2003.
- Greenwald, Michelle. "From Storytelling To VR 'Storyliving': Future Marketing Communications." *forbes.com*. 31 July 2017. <https://www.forbes.com/sites/michellegreenwald/2017/07/31/from-storytelling-to-vr-storyliving-future-marketing-communications/#44dd4a1335e2> (accessed July 2020).
- Gregory, Sam. "Immersive Witnessing: From Empathy and Outrage to Action." *Witness*. 2016. <https://blog.witness.org/2016/08/immersive-witnessing-fromempathy-empathy-and-outrage-to-action/>. (accessed September 2020).
- Groot Nibbelink, Liesbeth, and Sigrid Merx. "Presence and Perception: Analysing Intermediality in Performance." In *Mapping Intermediality in Performance*, edited by Sarah Bay-Cheng, Chiel Kattenbelt, Andy Lavender and Robin Nelson, 218-229. Amsterdam: Amsterdam University Press, 2010.
- Hansen, Mark. *Bodies in Code. Interfaces With Digital Media*. New York: Routledge, 2006.
- Hayles, Katherine. "Intermediation. The Pursuit of a Vision." In *Between Page and Screen: Remaking Literature Through Cinema and Cyberspace*, by Kiene Brillenburg Wurth, 101-126. New York: Fordham University Press, 2012.
- . *My Mother Was a Computer. Digital Subjects and Literary Studies*. Chicago and London: The University of Chicago Press, 2005.
- Hodges, Larry F, Barbara Olasov Rothbaum, Rob Kooper, Dan Opdyke, James Wiliford, and Thomas C Meyer. "Presence as the Defining Factor in a VR Application." *GVU Technical Report* (Graphics Visualization and Usability Center), 1994: 94-106.
- Sonaria. Directed by Google Inc. Performed by Google Inc. 2017.
- Jarvis, Liam. *Immersive Embodiment. Theatres of Mislocalized Sensation*. Palgrave, 2019.

- Jarvis, Liam. "The Ethics of Mislocalized Selfhood. Proprioceptive drifting towards the virtual other." *Performance Research A Journal of the Performing Arts* 22, no. 3 (2017): 30-37.
- Kember, Sarah, and Joanna Zylinska. *Life after New Media. Mediation as a Vital Process*. Cambridge, Massachusetts, London: The MIT Press, 2012.
- Klich, Rosemary, and Edward Scheer. *Multimedia Performance*. Great Britain: Palgrave Macmillan, 2012.
- Krekhov, Andrey, Sebastian Cmentowski, and Jens Krüger. "VR Animals: Surreal Body Ownership in Virtual Reality Games." *CHI PLAY '18 Extended Abstracts, October 28-31, Melbourne, VIC, Australia*, 2018.
- Lanier, Jaron. *Dawn of the New Everything. Encounters with Reality and Virtual Reality*. New York: Henry Holt and Company, 2017.
- Lenggenhager, B, T Tadi, T Metzinger, and O Blanke. "Video ergo sum: Manipulating bodily self-consciousness." *Science* 317 (2007): 1096-1099.
- Levinson, Paul. *The Soft Edge: A Natural History and Future of the Information Revolution*. London: Routledge, 1997.
- Machon, Josephine. *Immersive Theatres: Intimacy and Immediacy in Contemporary Performance*. Basingstoke: Palgrave Macmillan., 2013.
- Machon, Josephine. "On Being Immersed: The Pleasure of Being: Washing, Feeding, Holding." In *Reframing Immersive Theatre. The Politics and Pragmatics of Participatory Performance*, by James Frieze, 29-42. Liverpool: Palgrave Macmillan, 2016.
- Manning, Erin. *Politics of Touch. Sense, Movement, Sovereignty*. Minneapolis and London: University of Minnesota Press, 2007.
- Manning, Erin. "Taking the Next Step: Touch as Technique." *The Senses and Society* 4, no. 2 (2009): 211-225.
- Martini, Matteo, D Perez-Marcos, and M.V. Sanchez-Vives. "What color is my arm? Changes in skin color of an embodied virtual arm modulate pain threshold." *Frontiers in Human Neuroscience* 7 (2013).
- Maselli, Antonella, and Mel Slater. "Sliding Perspectives: Dissociating Ownership from Self-Location During Full Body Illusion in Virtual Reality." *Frontiers in Neuroscience* 8 (2014): Article 693.
- Melchior-Bonnet, Sabine. *The Mirror. A History*. New York, London: Routledge, 2001.
- Milk, Chris. "How virtual reality can create the ultimate empathy machine." *TED.com*. March 2015.
https://www.ted.com/talks/chris_milk_how_virtual_reality_can_create_the_ultimate_empathy_machine?language=en (accessed October 2020).
- Mulvey, Laura. *Death 24x a Second: Stillness and the Moving Image*. London: Reaktion, 2006.

- Munster, Anna. *Materializing New Media. Embodiment in Information Aesthetics*. Hanover & London: University Press of New England, 2006.
- Murray, Janet H. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. New York: NY: The Free Press, 1997.
- Nash, Kate. "Virtual reality witness: exploring the ethics of mediated presence." *Studies in Documentary Film* 12, no. 2 (2018): 119-131.
- Nash, Kate. "Virtual reality witness: exploring the ethics of mediated presence." *Studies in Documentary Film* 12, no. 2 (2018): 119-131.
- Newman, William. "Google Books." *Baptismal immersion defended by Christians of all denominations: in a letter to a Paedobaptist*. 1819.
<https://books.google.nl/books?id=ui1cAAAAQAAJ&pg=PA10&dq=%22immersion%22&hl=en&sa=X&ved=2ahUKEwj37cC3ovDsAhURLewKHxKSBjsQuwUwAXoECAUQBw#v=onepage&q=%22immersion%22&f=false> (accessed October 2020).
- Nissani, Moti. "Fruits, Salads, and Smoothies: A Working Definition of Interdisciplinarity." *The Journal of Educational Thought (JET)* 29, no. 2 (August 1995): 121-128.
- Perry, Mia, and Carmen Liliana Medina. "Embodiment and Performance in Pedagogy Research: Investigating the Possibility of the Body in Curriculum Experience." *Journal of Curriculum Theorizing* 27, no. 3 (2011): 62-75.
- Pethő, Ágnes. *Cinema and Intermediality: The Passion for the In-Between*. Newcastle: Cambridge Scholars, 2011.
- Petkova, Valeria I, and Henrik H Ehrsson. "If I Were You: Perceptual Illusion of Body Swapping." *PLoS ONE* 3, no. 12 (2008): e3832.
- Piatza, Sebastian, and Christian Zöllner. *Electronic Language International Festival*. 2014.
https://file.org.br/metro_sp_2014/file-sp-2014-metro-7/ (accessed October 2020).
- Piatza, Sebastian, Christian Zöllner, Julian Adenauer, and Jens Beyer. "The Constitute." *EYESECT*. n.d. <http://theconstitute.org/eyesect/> (accessed October 2020).
- Pimentel, Ken, and Kevin Teixeira. *Virtual Reality: Through the New Looking Glass*. New York: McGraw-Hill., 1995.
- Repko, Allen F., and Rick Szostak. *Interdisciplinary Research. Process and Theory*. Los Angeles, London, New Delhi, Singapore, Washington DC, Melbourne: Sage, 2017.
- Rescher, Nicholas. *A Theory of Possibility*. Oxford: Blackwell, 1975.
- Richards, Catherine. "Virtual Body: Statement from the Show Eldorado Centrum." *Emailed by the artist to Liam Jarvis, 19 December 2018*. 1993.
- Rose, Mandy. «Technologies of seeing and technologies of corporeality: Currents in nonfiction virtual reality.» <https://vols.worldrecordsjournal.org/#/01/11>, 2018.
- Rose, Mandy. "The immersive turn: hype and hope in the emergence of virtual reality as a nonfiction platform." *Studies in Documentary Film* 12, no. 2 (2018): 132-149.

- Rubin, Peter, and Jess Grey. *The WIRED Guide to Virtual Reality*. 3 August 2020. <https://www.wired.com/story/wired-guide-to-virtual-reality/> (accessed September 1, 2020).
- Rudd, Scott. "Opening Reception for Marina Abramovic: The Artist Is Present." *flickr.com*. 9 March 2010. <https://www.flickr.com/photos/themuseumofmodernart/4423324910/in/photo-stream/> (accessed July 2020).
- Ryan, Marie-Laure. *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media*. Baltimore: MD: Johns Hopkins UP, 2001.
- Sharir, Yacov. "The Tools." 1999. <http://www.arts.state.tx.us/studios/Sharir/tools.htm>.
- Shaughnessy, Nicola. *Affective Performance and Cognitive Science: Body, Brain and Being*. London: Bloomsbury Methuen Drama, 2013.
- Shubber, Kadhim. "EYEsect: see the world through the eyes of a chameleon." *The Guardian*, 5 February 2014.
- Slater, Mel, and Maria V. Sanchez-Vives. "Enhancing Our Lives with Immersive Virtual Reality." *Frontiers in Robotics and AI* 3 (2016): 1-47.
- Slater, Mel, Daniel Perez-Marcos, Henrik Ehrsson, and Maria V. Sanchez-Vives. "Towards a Digital Body: The Virtual Arm Illusion." *Frontiers in Human Neuroscience* 2 (2008): Article 6.
- Slater, Mel, Maria V Sanchez-Vives, and Bernhard Spanlang. "First Person Experience of Body Transfer in Virtual Reality." *PLoS ONE* 5, no. 5 (2010): e10564.
- Sutherland, I. E. "The Ultimate Display." *Proceedings of IFIP 65* 2 (1965): 506-508.
- The Constitutive. n.d. <http://theconstitute.org/eyesect/> (accessed November 2019).
- Uricchio, William. *VR: Between hope, Hype, and Humbug*. 25 June 2018. <https://lareviewofbooks.org/article/vr-between-hope-hype-and-humbug/#!>
- Weiss, Gail. *Body Images: Embodiment as Intercorporeality*. New York: Routledge, 1999.
- Youngblood, Dawn. "Interdisciplinary Studies and the Bridging Disciplines: A Matter of Process." *Journal of Research Practice* 3, no. 2 (2007): 1-8.