

The Relationship between the Body of the Viewer and the Virtual Reality Film *Alteration*



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The Relationship between the Body of the Viewer and the Virtual Reality Film *Alteration*

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Abstract

Virtual reality films are characterised by their ability to provide an impression that viewers are physically present in a virtual space. At the same time, it is often assumed that the body of the viewer remains immobile while the viewer's mind wanders the virtual world. This approach to the experience of virtual reality effaces the role of the body of the viewer in the process of watching virtual reality by looking at the viewer as a disembodied traveller. This study explores the relationship between the body of the viewer and the virtual space of the VR film *Alteration*. Thus, it looks at multiple ways the viewers of *Alteration* experience the film through their bodies foregrounding the performative aspect of the process of viewing. Drawing on the concepts of intermediality and imagescapes, this research provides an analysis of the experience of the viewers of *Alteration*. Furthermore, it concerns with not only bodily reactions of the viewers in the virtual space but also with the importance of their own creative abilities in the process of viewing. With this study, I suggest that the VR experience of *Alteration* is based on the way the viewer navigates in the virtual space and reflects on what he or she sees on the screen. This study offers a new approach towards the analysis of the experience of VR films which can help to explore the subjective experience of the viewer in connection to the body.

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CHAPTER 1: INTRODUCTION

1.1. Research Question

“I’m going to count to three and you’ll dive back in... One, two, three,” says a woman in a virtual reality film *Alteration*. After these words, you may want to hold your breath because in a few seconds you will dive into the pool which will bring you into an old house inside the water (Figure 1.1). The scene involves the viewer to be in a new sensory environment. The body of the viewer interacts with this virtual space in different ways by moving the head or holding breath. At the same time, the viewer’s body not only reacts to the virtual reality film but it is also actively involved in the whole process of perception. This thesis aims to explore the interrelation between the viewer’s body and the virtual reality film *Alteration*.



Figure 1.1: A screenshot from the virtual reality film *Alteration*

In recent years, virtual reality (VR) films have become the new blooming media. With the introduction of more accessible VR headsets from market leaders such as HTC, Google, Apple, Amazon, Sony, and Samsung, virtual reality films have been increasingly applied and have become the new agendas for film festivals. The Sundance

Film Festival's Senior Programmer and Chief Curator for New Frontier¹ Shari Frilot in the conversation with Hoday King, Professor of History of Art and Film Studies at Bryn Mawr College argued that virtual reality technologies may have a huge impact on our perception of the world on the level that the invention of the printing press or cinema had (Frilot and King 56).

Virtual reality is defined and implicitly characterised by its ability to imitate some aspects of the real world, particularly in ways that create a sense of presence or a belief that the viewer is physically present in the virtual environment. It is also important to mention that the term "VR" is referred in this research to media technologies that allow to experience a virtual environment. At the same time, the research uses the term "virtual reality" interchangeably with the notion of "virtual world" which refers to an environment that gives an impression of the 'real'. The media scholar Ken Hills notices that "VR" is a hybrid term (Hills xv). He points out that VR means an "individual experience constituted within technology", and, at the same time, it refers to the world of technology and its ability to represent the real world (Hills xv).

According to the digital heritage researcher Sarah Kenderdine (2007), virtual reality technologies build upon the idea of panoramic vision that embraces the history of perspective and representation from as early as cave paintings, through the painterly illusions of the Baroque and Renaissance, on to the machinery of the Great Exhibitions in the nineteenth and twentieth centuries (Kenderdine 303). The term "virtual reality" was initially introduced by Jaron Lanier, the founder of VPL Research, one of the first companies that developed virtual reality products (Giraldi, Silva, and Oliveira). The VR film *Alteration* challenges the viewer's ability to visually differentiate physical and virtual realities. Images that are created in the process of perception give an impression of a new reality in which the viewer is engaged.

According to psychologists Craig Murray and Judith Sixsmith, dominant discourses around virtual reality often treat it as a medium that separates the viewer from his or her bodily experience (318). Such discourses describe the body as docked and immobile at the interface, while the viewer's mind wanders the virtual space (Murray and Sixsmith 318). For example, Murray and Sixsmith cite Bogard (1996) who

¹ New Frontier is a programme and an exhibition at the Sundance Film Festival. It showcases new storytelling technologies, including interactive VR experiences and immersive installations.

talks about the viewer as the disembodied traveller and astral projectionist in cyberspace (Murray and Sixsmith 318). Moreover, the notion of ‘cyberspace’ proposed by William Gibson in his novel *Neuromancer* and applied in virtual reality research has been used as a geographic metaphor for disembodiment (Kellerman 505). The main protagonist of the novel was “jacked into a custom cyberspace deck that projected his disembodied conscious into the consensual hallucination that was the matrix” (Belting 60). However, the experience of watching virtual reality films is a process that is closely connected to our body. The media theorist Lev Manovich speaks in the case of the virtual reality of a fundamental break with the tradition of a cinema screen whose observer is immobile and passive. He argues that VR establishes a radically new type of relationship between the body of the viewer and an image (Manovich 22). The spectator can move around the physical space in order to experience the movement in virtual space (Manovich 22). Moreover, the German art historian Hans Belting argues that even though the consciousness is guided by images to an imaginary place where the body cannot follow, imagination is a corporeal activity, even when it means “leaving the body” (Belting 60).

This thesis revolves around the concept of “intermediality” that emphasises the importance of our body in the experience of an image. The concept was introduced by Hans Belting in his book *An Anthropology of the Image* (2011). Belting’s theory builds upon the German tradition of visual studies “*Bildwissenschaft*” (Image Studies). This tradition focuses on the German word “*bild*”, which has no equivalence in the English language and its meaning includes the image, picture, figure, and illustration (Bredenkamp 318). First taking place in German art history, *Bildwissenschaft* embraced a whole field of images beyond the visual arts and took these objects seriously (Bredenkamp 318). According to Belting, intermediality is “at the bottom another facet of the interaction of image with media, a relation that bears on the mystery at the heart of the image; namely that of being vs. appearing” (32). The concept of intermediality implies that images do not exist only on the wall (or on the screen), nor do they exist only in our heads (Belting 4). Images need media (or VR headset, in the case of virtual reality) in order to become visible to us, while our bodies receive and process them (Belting 5). Therefore, images are not simple objects, nor mental constructions. They exist as the process of the interrelation between the body and media. The aim of this thesis is to explore the experience of the body of the viewer in the virtual environment of the film *Alteration*. This thesis aims to answer the following research question: **In**

what ways the relationship between the body of the viewer and the virtual reality film *Alteration* can be explored through the concepts of intermediality and imagescapes?

The subquestions that will help to answer my main research question are:

1. In what ways the relationship between the body of the viewer and the VR film *Alteration* can be explored through the concept of intermediality?
2. In what ways the relationship between the body of the viewer and the VR film *Alteration* can be explored through the concept of imagescapes?
3. How do the analyses of the experience of *Alteration* through the concepts of intermediality and imagescapes relate to each other?

The first question helps to answer the main research question because it focuses on the analysis of the data through the concept of intermediality (Chapter 2). While the second question addresses the relationship between the body of the viewer and *Alteration* through the concept of imagescapes (Chapter 3). The last chapter (Conclusion) focuses on the comparison of the two analyses and summarises the findings from the previous chapters.

I have chosen to examine the virtual reality film *Alteration* as an example of a new blooming technology of visualisation because it is a productive case study that explores the possibilities of 360-degree films. *Alteration* involves the body of the viewer in a unique virtual environment such as water environment and forest. Moreover, it provides a new sensory experience by the direct interaction of the characters in the film with the viewer as the main protagonist. For example, the viewer is immersed in the scene where the memory of the protagonist tries to wake the main character who is in a dream because of the experiment. In order to do this, he takes a large stone and strikes the head of the main character (the viewer) (Figure 1.2).



Figure 1.2: The main character ‘attacks’ the viewer

By providing a new sensory experience and aiming to show the experience of being in 'the body' of AI, the VR short film *Alteration* engages the body of the viewer in intense and physical ways. The film deals with the sensual and emotional matter of losing control over your body and mind. It embraces the interrelation between the body and images that are addressed in the research question of this thesis.

1.2. Research Object

In my research, I focus on the virtual reality film *Alteration* directed by Jérôme Blanquet. This short film is written by Yann Apperry and presents the story of a man who volunteers for a dream recording experiment, in which an artificial intelligence (AI) named Elsa is not only interpreting his dreams and memories but feeding off of them. The film is produced by OKIO Studio that creates interactive and non-interactive virtual reality content, Arte France, and Saint George Studio with the participation of the CNC. *Alteration* world premiered at the Tribeca Film Festival in 2017 and was awarded the “best narrative design” prize (Robertson).

Alteration shows the near future, where the scientists test artificial intelligence’s abilities to produce new memories on human beings. The main protagonist, Alexandro (Bill Skarsgård), is volunteering to test the new technology on himself. Haunted by

memories of his past and memories produced by the artificial intelligence named Elsa, he starts to lose control over his own memories. The story progresses through scenes representing Alexandro's memories, the AI always hovering nearby. His girlfriend, Nadia, who is one of the central characters of the film, opposes Elsa's presence, leading Alexandro to quit the experiment — with disastrous results. Alexandro tries to quit the experiment but fails to do so. Instead, Elsa takes control over his mind, which consequently leads to his death.

In order to represent the process of alteration visually, Blanquet used the algorithms that the AI researchers at Facebook had developed for style transfer, the visual method for transforming images into the style of other images. Blanquet explains the use of this method in the film's narrative, "Elsa wanted to take the place of [Alexandro's] wife, through the style of her paintings" (Terdiman). The film gives the viewer a sense of what it is like to be an AI. This specific technique was also used because of the immersive nature of virtual reality films that strengthen the effect that pictures in the film have on the viewer. The film's executive producer Yelena Rachitsky who works at Facebook-owned Oculus argues that "it [the film — author] wouldn't have the same impact if it was a traditional film, because you're not immersed in it. Things shift and change, but then it kind of captures you all around. It just changes your feeling of what you experience in the space" (Terdiman).

Although *Alteration* is a 360-degree film, it can be considered a virtual reality experience. There are multiple differences between a virtual reality and 360-degree film experience. The majority of 360-degree films are shot with a static camera, while the viewer is given the opportunity to explore the virtual space by moving his or her head. However, *Alteration* is an excellent example of using non-static camera placement in a 360-degree film, for example, in the scene where the main character dives into the pool (Figure 1.3).

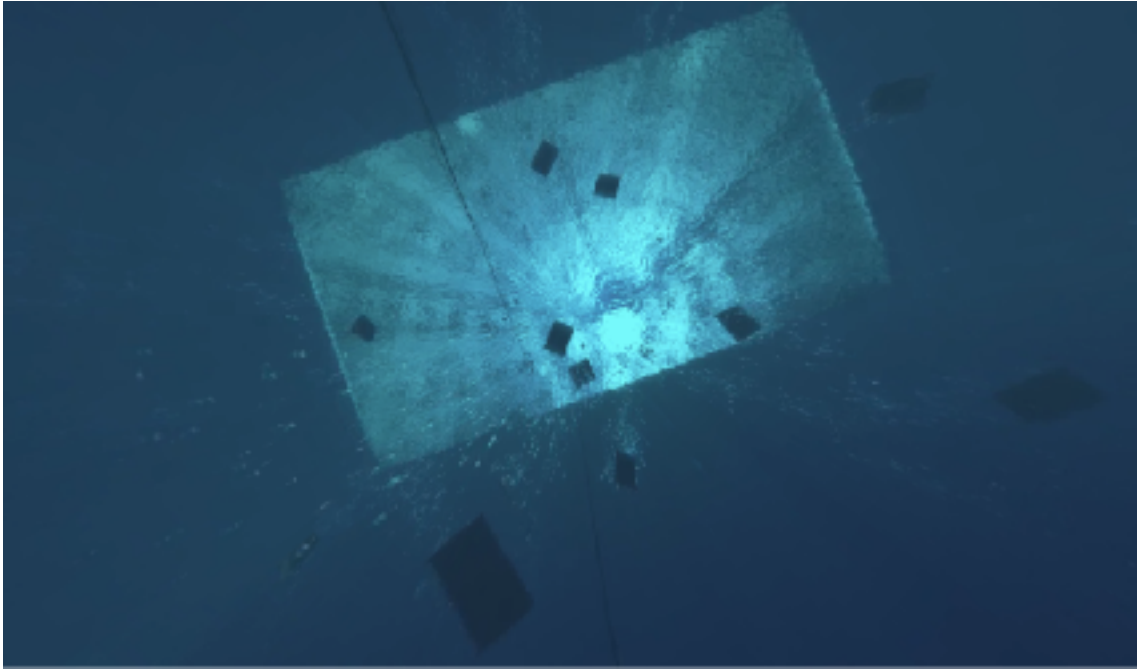


Figure 1.3: The view of the pool from the inside, while the viewer is plunging deep into the water

Moreover, in a 360-degree film experience, the viewer does not have the opportunity to get closer to an object on a screen to engage with the surrounding environment through a free-reign agency (White). In a virtual reality, the film can progress through a series of events or a user can freely explore the virtual environment, whereas the timeline in a 360-degree film is created by a filmmaker. But the storytelling of both VR and 360-degree film is completely different from traditional film storytelling. The viewer is given much more freedom to observe the virtual environment and to develop the story as he or she wants. In *Alteration*, the director gives different clues to navigate the viewer through the story, although some scenes that are minor for the story are left without clues such as the scene of the old house inside the water where the main protagonist of the film lived (Figure 1.4).



Figure 1.4: The scene of the old house, film *Alteration*

The narrative point of view in the film is constantly changing because the main idea of the film is to show the alteration in the character's consciousness as a result of AI manipulations. The film mainly presents the first-person narrative, although the viewer can also see through the eyes of other characters (Elsa and Alexandro's wife) and from the third-person point of view. Moreover, the short film uses mixed media techniques in order to embrace the story. For example, Blanquet argues that "coming up with the mise en scene must necessarily embrace several worlds, especially theatre and gaming" (Ramachandran).

To recap, the short VR film *Alteration* is an example that shows that there are more similarities between virtual reality and 360-degree experiences such as using the VR headset, multi-directional navigation, and immersive nature. *Alteration* provides an intense sensory VR experience that engages the viewer's body through the flexible storytelling that gives the viewer an opportunity to explore the virtual environment of the film.

1.3. Theory

The theoretical framework of my research includes most notably visual studies. In order to answer the research question, the concepts of *intermediality* and *imagescapes* are

used in my analysis. This section introduces these concepts and relates them to each other, as well as to the object of my research.

The notion of intermediality is the central concept for answering the main research question. This concept is formulated by Hans Belting in the book *An Anthropology of the Image*, which is the result of his twenty-year project to identify the general theory of image functions. Intermediality revolves around the interrelation between the triad image-medium-body. Belting proposes his own interpretation for these three notions.

Belting's understanding of images builds upon the German tradition of visual studies *Bildwissenschaft*. Belting draws on the methodology of *Bildwissenschaft* which enables the study of iconic media not based on texts (Belting 2). *Bildwissenschaft* was heralded by W. J. T. Mitchell (1986), who introduced it as a new *iconology* (Belting 2). Mitchell argues that the distinction between external and internal images which is widespread is a wrong view (De Bruyn). Belting agrees with Mitchell and explicitly criticises authors who neglect mental images, as well as iconophobic critics who prefer mental to visual images (De Bruyn). Belting argues that the image is a phenomenon that is both internal and external (Belting 9). He argues that we should not distinguish between "internal" and "external" representation (Belting 4). He also gives his interpretation of the duality of the concept of *bild*, in contrast to those concepts where either a material or a mental component is preferred. Belting emphasises the whole *process* of the act of perception: images are created through the constant interaction between the body of a spectator and the medium. Instead of focusing on internal and external images, he suggests studying the relationship between images and the medium. According to Belting, this relationship is "ever-changing", as the medium changes its form through history (Belting 16). In different eras, it can be a wax figure, a statue, a canvas, photograph, or a virtual reality. Therefore, focusing on the medium of virtual reality, this thesis explores the relationship between images and this new medium.

Why does Belting use the term intermediality when talking about the triad image-medium-body? According to Belting, the body of a viewer is a *living medium* itself as opposed to fabricated media (Belting 3). Intermediality of images thus means the interrelation between two media: the living body and the physical medium. Images realise their physical presence through media, while the act of perception is only

possible by involving the living body. Images are embodied in the medium, and, therefore, one cannot be studied separately from the other.

The concept of media in Belting's theory is closely entwined with the body and images. According to Belting, "the medium is to be understood not in the usual sense but in the sense of the agent by which images are transmitted, while body means either the performing or the perceiving body on which images depend no less than on their respective media" (Belting 302). Belting refers neither to media nor to the body as such. Images do not exist only in different media, for example, in painting, but also in our heads. At the same time, images acquire visibility through their media (Belting 19).

Belting proposes anthropological grounds for studying images. By anthropology, he means cultural anthropology which embraces the Kantian definition of a human being and of a human nature in general (Belting 2). Belting builds his theory on the anthropology of the German philosopher and sociologist Helmut Plesner, and as the leitmotif of his project chooses a phenomenon of death, which, in his opinion, helps to understand the nature of the visual (De Bruyn). The main premise for creating first images, which were masks taken from a deceased person to preserve his or her memory, was the desire to overcome the spatial and temporal limits of the person's existence through an image that is beyond the control of time. Funeral images are installed in the place of the *missing body* of the dead (Belting 3).

The notion of intermediality is central for my research question, as it draws on the triad image-medium-body. The interrelation between the medium of virtual reality and the body of the viewer can be productively assessed by the notions of media and body in the theory of intermediality. Belting's concept shows that images are not static objects, but they are formed through the process of interaction between the viewer and medium.

Another concept that is used in my research is the notion of *imagescapes* introduced by the media theorist Ron Burnett. The term "imagescapes" aims to capture the complexity of interactions between the viewer and new technologies of visualisation such as virtual reality. Burnett uses the term *image* "to refer to the complex set of interactions that constitute everyday life within the image-worlds" (Burnett xviii). Imagescapes provides a way of mapping the relationship among a variety of different processes that are located in the combined time of creation and interaction (Burnett 40). Burnett emphasises the processes of creativity and interpretation in experiencing virtual

reality. Moreover, like Belting, Burnett emphasises the connection between images and the human body. He writes that “to see an image” does not necessarily mean that “it” is outside of or beyond the human body — no sooner seen than a part of the “seer” (Burnett 75). He is convinced that humans are as much *within* images as they are creators of images. According to Burnett, “arguments that overlook how mediation, images, and experience are unified generally marginalise both the inventiveness of projection and the creative dominance of the imaginary” (77). Burnett has the same view as Belting that the duality between the “internal” and “external” images should be breached (Burnett xx). He points out that “virtual reality as an experience seems to overcome distinctions among images, perception, feelings, and thoughts” (Burnett xx).

The notion of imagescapes is a productive concept for my research because it complements the concept of intermediality. It provides the theory for analysing the complex relationship between the viewer and the medium. Burnett specifically focuses on virtual reality and emphasises the active function of the viewer in the process of experiencing VR.

To summarise, both notions of intermediality and imagescapes are connected to my research question and can be applied to the analysis of the relationship between the viewer’s body and medium in the experience of watching the VR film *Alteration*, as the concepts foreground the idea of images that are entwined with the body and a medium.

1.5. Methodology

In order to test out the theory of intermediality and imagescapes and answer the main research question, the methodology includes grounded theory. According to Beuving and De Vries, grounded theory results from a procedure that revolves around the construction of abstract categories from observable phenomena (48). Grounded theory is useful for my research because the main research question approaches the relationship between the viewer and the medium of virtual reality. The experience of viewers is central for answering the research question. Based on the experience of viewers, it is appropriate to construct abstract categories using the concepts of *intermediality* and *imagescapes*.

The main methods of data collection in my analysis include questionnaires and a thick description introduced by the anthropologist Clifford Geertz. In the first part of my

research, I conduct questionnaires with the viewers of the VR film *Alteration*, as well as assess my own experience after watching the film. Questionnaires are essential for my research because they reveal the experience of watching the VR film *Alteration* in relation to the body. Thick description is used in my research in order to collect information about the context of viewers' experience of watching *Alteration*.

The questionnaires are designed to elicit basic information about interviewees, with eight open-end questions aimed to explore the experience of the body in relation to different scenes of the film that they watched, as well as their overall sensual experiences after watching *Alteration*. Fifteen questionnaires were conducted in a two-day period, during which I used random samplings. The interviews were conducted right after the interviewees watched the selected film. The location where interviews were undertaken was the LUX Studio where the screening of the VR film *Alteration* took place as a part of Go Short festival — International Short Film Festival in Nijmegen. I have also assessed my own experience by answering the questionnaire and describing my experience after watching the film. The film was shown as one of the parts of the festival's program. The programme included four 360-degree films with different thematics. Additionally, I conducted a thick description of viewers' behaviours while watching the film. It helps to answer the main research question because it shows the sensory reactions of viewers during the interaction with the virtual environment of the film.

During the second part of my research, I analysed the received data. The analysis of the data is divided on two parts. The first part analyses the questionnaire through the concept of intermediality, while the second part focuses on the received data through the notion of imagescapes. Based on the questionnaires, the codes related to the research question were constructed in order to structure the received data and connect these codes to the concepts of intermediality and imagescapes. Similarly, the answers on closed questions are organised into graphs for their quantitative analysis. In addition, the questionnaire assesses the information about viewers' age and gender. These questions allow knowing more about viewers' background which is an important part during the process of watching *Alteration*. Moreover, there is a direct connection between age and bodily reactions on VR, for example, in the experience of nausea and dizziness during watching VR. According to the VR researchers Laura L. Arns and Melinda M. Cerney,

cybersickness effects such as dizziness and nausea tend to increase with age (Arns and Cerney, 268).

Chapter 1 discusses the research question and introduces the object of my research, the theoretical framework, and methodology. In chapter 2, my research focuses on the concept of *intermediality* and explores how the use of a triad of image, body, and medium can be productive in the analysis of the experience of the VR film *Alteration*. This chapter also analyses the spatial characteristics of the film *Alteration* in connection to the body. Chapter 3 analyses the received data through the theory of intermediality by applying the concepts of reverie, hybridisation, and visualisation to the experience of the viewers. It foregrounds the importance of viewers' imagination and creative abilities in the process of watching *Alteration*. Finally, Chapter 4 summarises the finding of the previous chapters and tries to look at differences and intersections in data analysis.

CHAPTER 2: INTERMEDIALITY

2.1. Introduction

The previous chapter discussed the research question of this thesis and argued the reasons the concepts of intermediality and imagescapes are used in the analysis of the experience of *Alteration*. It introduced the film *Alteration* as the research object and highlighted its flexible storytelling and its connection to a VR experience. The previous chapter also described the methodology of the research and presented the questionnaire as the main method of data collection. In this chapter, I analyse the experience of the VR short film *Alteration* through the theoretical framework of *intermediality*. This framework builds on the idea of the creation of images through the interaction between two media: the body as a living medium and as the physical medium.

This chapter will discuss virtual space as an abstract and immersive space that is not only culturally constructed but also perceived by the viewer through his or her embodied experience. The chapter tries answer the question: In what ways the relationship between the body of the viewer and the VR film *Alteration* can be explored through the concept of intermediality? It will look at the experience of the participants of the questionnaire and analyse their experience of different virtual places in the film *Alteration*. It will highlight the connection between the body and VR in different aspects and address the phenomenon of “cybersickness”. Thereafter, the relationship between virtual reality and the viewer’s identity will be discussed. Finally, the chapter will make the connection between virtual reality and dreams. By exploring the link between dreams and the experience of VR, it will show the close connection between the body of the viewers and *Alteration*.

2.2. Virtual Space

The concept of virtual space is essential for understanding the experience of the VR film *Alteration*. According to the media and technology scholar Ken Hills, the concepts of space, place, and landscape are central for the construction of virtual worlds, as VR constitutes a meaningful place or places (61). A meaningful place supposes that a virtual

space relates to the living spaces in the real world since it should be recognised by viewers and make sense for them. Virtual spaces are constructed and based on our experience of the real world, including our sensory experience.

Belting notices the struggles in our terminology to distinguish between the concepts of *space* and *place* (43). There are different definitions and concepts of the term “space”, Belting provides his own understanding of the idea of space. He underlines that space is inherently heterogeneous and discontinuous in its organisation (Belting 43). Space is not fixed in one place and can be addressed as an area which possesses a certain quality that defines space. In the VR film *Alteration*, it is relevant to address virtual spaces, as they are experienced through the medium of virtual reality.

Alteration constitutes a virtual space that can be easily perceived and recognised by the viewer. A virtual space is also an abstract space (Burnett 77). This space exists only as a construction that is based on a certain idea of what space should look like. Moreover, a virtual space is also constructed to represent an absolute space. It refers to a space which parameters do not change. Absolute and abstract space is constructed as a place that contains symbolical elements and communicates certain ideas. For example, the elements of Nadia’s room are created to carefully represent the artist’s bedroom (Figure 2.1).



Figure 2.1: The view of Nadia’s room

The viewer can observe abstract paintings, a sculpture of a head, cans of paint, books, and a rolled canvas in Nadia's room. All of these elements are not strictly structured and seem to appear as what can be called a 'creative chaos'. This virtual space is both ideal and abstract because it is based on the Western ideas of an artist and creativity. It has the features of what believed to be an artistic creative environment in the Western culture. In 2013, physiologist Kathleen Vohs and her colleagues conducted an experiment on the influence of a disorderly environment on creativity and concluded that environmental disorder stimulates creative practices (Vohs et al. 1862).

The hypothesis of the research was based on the idea that "a disorderly state should encourage breaking with convention, which is needed to be creative" (Vohs et al. 1862). According to the American psychologist Keith Sawyer, the belief that creativity is more likely when you reject convention belongs to the Western cultural model of creativity (Sawyer 12). He argues that people who live in the Western world share a set of assumptions about creativity (Sawyer 12). The virtual space of Nadia's room is an abstract and ideal space that represents the artistic environment according to the beliefs in the Western culture of what this space should look like. The space of Nadia's room is also comprehensible and meaningful for the viewer, as it contains certain recognisable elements of an artist's studio. In addition, the viewer experiences the film from a first-person point of view. The psychologists Craig D. Murray and Judith Sixsmith point out that VR is a cultural and gendered space. It is developed in an ocular-centric way that might occur because of the emphasis on vision above other senses in Western culture (321).

Although a virtual space is absolute and the image has an effect on the viewer, the viewer also has an effect on the image he or she receives through the engagement with the virtual space of the film (Hills 77). The perception of the artist's room is possible not only because of certain symbolic meanings of represented elements on the screen but also because the viewer has assimilated the ideas related to artistry and creativity. For example, the reality show *Work of Art: The Next Great Artist* presents a studio where artists can work on their projects. The studio space is shown as a chaotic but highly creative environment. This representation of creativity influences the viewers who watch the show and gives them an idea of a creative environment. According to Hills, a virtual environment is a representational space that relies not only on absolute

space but also on the relational concept of space (Hills 73). He argues that virtual environments merge absolute and relational concepts of space (Hills 77). In relational space, things exist by virtue of their interdependency with other processes and things (Hills 76). The experience of the image of the room as an artistic environment is possible because of the received cultural ideas that the viewer is able to read through the medium of virtual reality. A virtual space's experience is a dual process that involves both the technology of virtual reality and the viewer. In the example of Nadia's room, the viewer interacts with a virtual space which makes the perception of the image possible. As Hills mentions, "in a virtual environment, something is seen, but the image could not exist except as an idea or vision to the 'mind's eye' without humans engaging the technology's materiality" (101).

Belting argues that images should not be separated from nor confounded with media technologies (15). The elements of the virtual space such as paintings, cans of paint, a rolled canvas, and the disorderly room initiate the perception through the collective symbolic meaning of these elements. While the viewer also has his or her own cultural background that helps to recognise these symbolic meanings that images were build to represent. The dynamics between virtual space and the viewer is an ongoing process of the perception of images.

A virtual space is constructed to provide an immersive experience for the viewer. Most of the questionnaire participants indicated that they felt that the film *Alteration* was immersive enough to be realistic. But the perception of pictures as symbols is not enough for the viewer to see a virtual space as a 'living environment'. In order to provide an immersive experience, the medium should be sensory transparent to the viewer. Belting believes that "the less we take notice of a medium's presence, the more we are captured by the image until it seems that the latter exists by itself" (Belting 16). Media theorists Jay Bolter and David Grusin have a similar idea about the medium of virtual reality. They claim that in order to come as close as possible to our daily visual experience, virtual reality aims to make digital technology "transparent" (Bolter and Grusin 23). The transparent interface of virtual reality erases itself in order to make the viewer "no longer aware of confronting a medium and have an immediate availability to the content of that medium" (Bolter and Grusin 24). The medium of virtual reality is less noticeable because a head-mounted display immerses the viewer in virtual space so

that it is literary “in the viewer’s face” (Bolter and Grusin 22). Moreover, the interaction with a virtual environment is close to the interaction with the real environment. Kenderdine cites the German art historian and media theoretician Oliver Grau, who argues that “in virtual reality, the panoramic view is joined by sensorimotor exploration of an image space that gives the impression of a ‘living’ environment” (Kenderdine 314).

The film experience of *Alteration* allows the viewers to explore a virtual 360-degree space through a head-mounted display. The ‘invisible’ interface of the VR technology in the film allows the viewer to experience it as living environment (Kenderdine 315). Thus, for example, the questionnaire shows that a virtual space looks real enough for the viewers to threaten them. During watching the film *Alteration*, fourteen out of fifteen respondents replied that they felt threatened to different degrees (Figure 2.2). The impression of being physically in the virtual space of the film provides the viewers visceral and intense experiences. The viewers believed that they were physically present in virtual reality. Bolter and Grusin write that virtual reality can disappear as an interface and give the viewer the same emotions that he or she would feel in the real world (165). Hills also agrees that the viewer might forget or chose to forget that he or she is interacting with simulations (Hills 177).

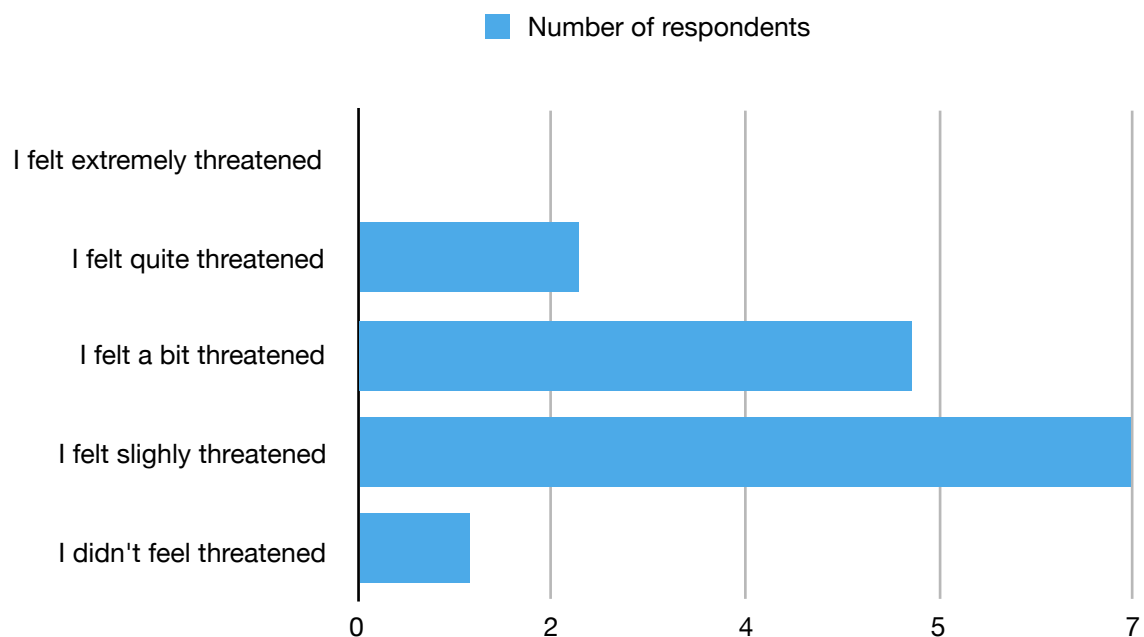


Figure 2.2: The chart presenting the experience of watching *Alteration*

According to Belting, the virtual reality of images comprises a space, created by technology, that is different from and outside our world (Belting 43). *Alteration* provides an experience of living in a different kind of world. According to the psychologist Sherry Turkle, “virtual reality is not ‘real’, but it has a relationship to the real. By being betwixt and between, it becomes a play space for thinking about the real world. It is an exemplary evocative object” (Turkle 364). The perception of images through a virtual space excludes the images of places that are recognisable by the viewers. For example, in *Alteration*, the image of our world is countered by an image of the world with AI, which reestablishes the reality of our world with new parameters.

To sum up, there is a duality in the nature of a virtual space that shows the interaction between the viewer and VR. On the one hand, a virtual space is constructed as an abstract space based on the real world and aims to deliver a meaningful virtual environment for the viewer. On the other hand, virtual spaces are radically different from the real world. At the same time, a virtual space is based on the viewer’s experience and memory of real places but it changes this experience by providing a new kind of experience and shifting the relationship between the viewer and real spaces.

2.3. Virtual Place

As I explained in the previous section, the notion of space is a more abstract concept than the concept of place. This section focuses on certain virtual places in *Alteration* that constitute the VR experience of this film. The film provides a sensory experience of imaginary places that constitutes the plot of the film. The results of the questionnaire help to address the sensory experience of the viewers of *Alteration* because it provides data on their emotions and bodily reactions to different virtual places, such as a pool and an old underwater house.

One of the questions in the questionnaire is “How did you feel when you dived into the water?”. Twelve participants answered this question. The answers can be divided into two themes: the first theme presents bodily reactions of the participants, while the second one shows the spectrum of emotions the viewers experienced. Three participants replied that they did not feel much: “I didn’t feel much”, “nothing really”, “nothing”.

Among the bodily reactions that the participants mentioned were descriptions such as “holding my breath”, “I felt a pressure on my chest, like if I would be in water”, and “It took a couple seconds to realise that I could in fact safely breathe”. All these answers relate to the bodily experience of the virtual place. According to Hills, we experience a place as embodied human beings (167). As it follows from the questionnaire, the viewers experienced not simply images as a representation of a water environment but they experienced the virtual space through their sensory organs of their bodies. It shows that images that they experienced are not only signs that refer to something in the real world but they are closely connected to the body. Belting suggests that “technologies transfer images to other places, while our corporeal memory is a born locus of images where images are both received and generated” (45). He underlines that our body is the natural locus of images (37). In the case of the underwater scene in *Alteration*, the viewers’ body thus contains the memory of diving into the water. When the body is immersed in a virtual space that shows pictures of diving into the water, it reacts as if it is a real underwater space because the body can create and store its own images of once experienced real places. During the process of watching *Alteration*, these mental images of being in the water become entwined with physical images that shown on the screen. Belting argues that “our bodies possess the natural capacity to transform into images the places and things that the passing of time takes from them; these images the body stores in memory and can recover through remembrance” (Belting 44). The participants who reacted as if they dived into the water in the real world have an embodied memory of diving into the water in real places. According to Belting, “instead of physically entering places, it is the places that come to us — in images” (42). As a result, images remain tied to the body, even in the virtual world (Belting 61). The viewers were not just visually perceiving the images of a virtual underwater world, but also “holding a breath” and “feeling a pressure as if in the water” because of how they experienced these images through their bodies.

Belting notices that today the relationship between imaginary and real places is becoming rearranged: the more real places turn into images, the more viewers are exposed to these images (Belting 42). When watching *Alteration*, each viewer had his or her own set of headsets and headphones. Although the viewers experienced the film simultaneously and looked at the same scenes, each of them transformed what they saw into their personal images. Belting argues that “our mental images cannot be clearly

distinguished from those that reach us through the technology that produces the fictional images of the film” (Belting 52). What the viewer sees on the screen is in a constant interplay with mental images of the viewers. For example, when looking at the scene of being in the underwater house, the viewers received different mental images even though they observed the same virtual space. One of the participants felt as if she was floating in the water (“floaty”), while another noticed that she “felt as if in a shipwreck”. The way these two viewers experienced the same scene shows that there is no clear boundary between the fictional images of *Alteration* and the images that the viewers receive.

Another example that shows the interaction between the viewers’ bodies and a virtual place can be found in the experience of the scene in which the main protagonist ‘attacks’ the viewer with a rock (Figure 2.3).



Figure 2.3: Alexandro ‘attacks’ the viewer

The questionnaire asked the viewers “What was your reaction when a man in the film attacked you with a stone”. While the minority of participants paid a special attention to the artificial nature of the scene and did not show bodily reactions (“Not much. I knew I would not get hurt”, “I had to think it’s not touching me”, “I hadn’t a specific reaction”, and “I saw it coming so it was okay. Not a lot of emotion”), most of the participants felt

intimidated and scared (“I felt scared, and I moved away from the man even if I knew that he was only in the VR world.”, “I felt intimidated but not scared I was aware that it wasn’t real”, “A bit scared”, and “Scared”) and reacted on the actions of the attacker (“I flinched a little bit”, “I disconnected with the film”, “I turned away so I did not have to watch it”, “Back up!”). The viewers reacted in this way not only because of the immersive nature of VR but also because their bodies are closely connected to images. Although the viewers interacted only with the virtual environment, their strong emotions such as being scared or intimidated as well as bodily reactions show that their bodies reacted on images as if they experienced the event in the real world. The images that the VR film provides only come to life and have their effect when they are experienced by and through the body. The interaction between the body as a living medium and VR shows that images are constituted in the connection to both living and physical media. This is the reason Belting calls this interaction intermediality.

It is also important to mention that the viewer brings his or her own understanding of the real world into a virtual space. One respondent, for example, wrote that she felt inconvenient while watching *Alteration* because “the figures came too close to [her — V.M.]”. It is an interesting comment because it indicates that her experience was not only cognitive but also embodied. She brought her embodied cultural experience of interpersonal distance to the virtual space of the film. As Murray and Sixsmith point out, during the experience of VR, not only our bodily senses are transported to virtual reality but also our history and our social and cultural context (320). They give an example from the study of how people navigate through a virtual cityscape (Murray and Sixsmith 320). The virtual space allowed viewers to progress anywhere they want, while the participants still remained ground- and road-centred and avoided obstacles such as trees and buildings (Murray and Sixsmith 320). In both cases, the viewers experienced virtual reality through the embodied sociocultural patterns of behaviour that exist in the real world.

Another facet of the interaction of the body and a virtual place can be examined by looking at the two scenes in the film that capture the experience of time in different ways. The first scene is the scene where the viewer observes the underwater house. The viewer experiences the scene as swimming or sinking inside the water. For example, one respondent describes her experience of this scene as feeling “as if in a shipwreck”.

The viewer experiences the speed of the virtual body which is also the speed of the camera. During this scene, time is experienced as a dynamic flow and is connected with the surrounding space which is rapidly changing. A very different experience of the time is offered in the first scene of the film where the viewer stands still and observes a beach (Figure 2.3). The viewers are able to see these scenes differently not because they were shot at different camera speeds, but images that they experienced refer to different embodied experience of time.



Figure 2.4: The viewer stands still

To sum up, the viewers had strong sensual reactions on the virtual space of *Alteration*. This is possible because of the corporeal memory of physical places that the viewers once experienced in the real world and saw them as virtual places in *Alteration*. It was argued that the body of the viewer is a locus of images because it creates and collects mental images of real places which then collide and intertwine with what they see on the screen. The results of the questionnaire show that the viewers of *Alteration* bring their embodied cultural experience of interpersonal distance to the virtual space. The viewer brings not only embodied sociocultural patterns of behaviour when watching the film but also his or her individual experience.

2.4. Cybersickness

The connection between the body and VR is the most apparent when the viewer experiences *cybersickness*. It is a bodily reaction that can occur while experiencing VR and is similar to motion sickness. The symptoms of cybersickness include a sense of physical discomfort such as nausea or dizziness. The questionnaire addressed whether the viewers of *Alteration* experiences cybersickness.

There are several factors that can trigger cybersickness. According to the French engineer and VR researcher Andras Kemeny and his colleagues, there are several theories that aim to explain the causes of cybersickness (48). The sensory conflict theory suggests that “cybersickness is caused by a mismatch between sensory systems involved in motion perception” (Kemeny et al. 48). This theory states that a dissonance between what your eyes see on screen and the kind of motion your body feels can lead to disorientation and feelings of nausea. For example, the viewer may experience walking in a virtual environment, while, in the real world, he or she does not move. Another approach to explaining cybersickness is the ecological theory which states that “the simulator sickness is caused by a prolonged period of postural instability during travel” (Kemeny et al. 48).

The question that the viewers of *Alteration* answered was “Did you feel nauseous or dizzy after watching the film?”. The majority of respondents indicated that they did not feel nauseous or dizzy during watching *Alteration* (Figure 2.5). Virtual reality developers aim to provide an immersive experience that is close to a real world experience. It means that they try to reduce any symptoms of dizziness or nausea. The absence of the symptoms of cybersickness can be also explained by the prevalence of static scenes in the film. Although two viewers indicated that they felt nauseous and two viewers confirmed that they felt slightly dizzy after watching the film. When experiencing images of diving into the water or walking while physically sitting on a chair, the viewers felt a dissonance between their bodily reactions and what they see on the screen.

The study of the VR researchers Laura L. Arns and Melinda M. Cerney showed that there is a direct connection between the age of the viewers and their susceptibility to cybersickness. Their analysis of the data from the experience of the virtual

environment in the cave automatic virtual environment (CAVE) revealed that cybersickness symptoms tend to increase with age (Arns and Cerney, 268). Furthermore, the study showed that the symptoms were found to higher for the participants of the study whose age is 50 and older (Arns and Cerney, 268). The majority of the viewers of *Alteration* are younger than 35 years, while there is only one viewer who is older than 50 years. Despite the research results of Arts and Cerney, the questionnaire showed that the viewer who is 50 years old did not feel the symptoms of cybersickness such as dizziness and nausea.

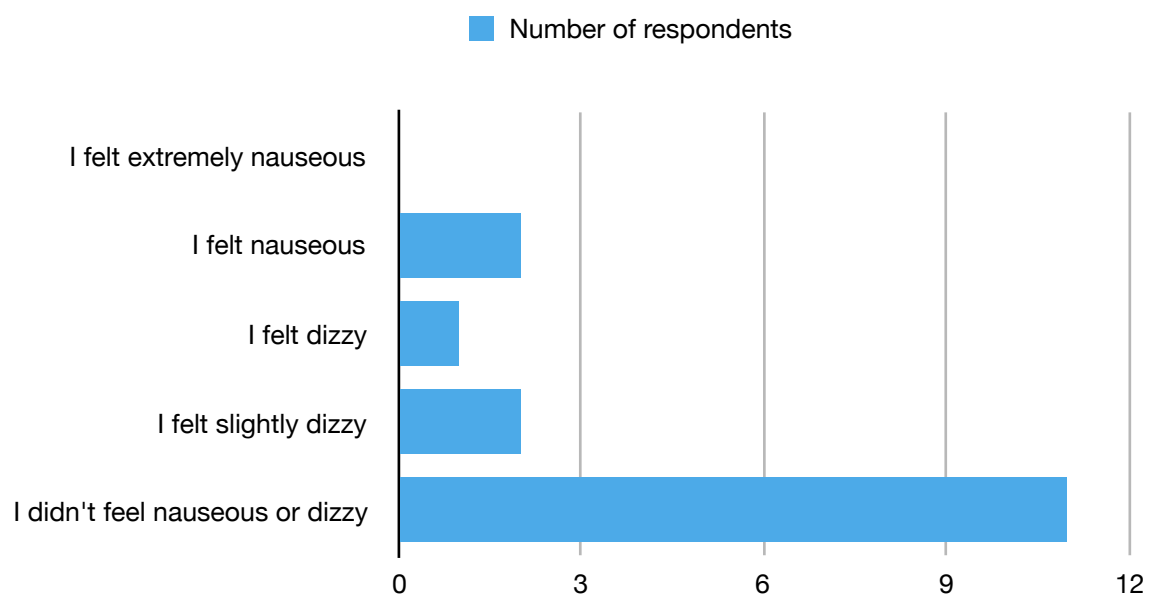


Figure 2.5: The chart of responses about cybersickness

The experience of cybersickness emphasises that images belong not only to the sign world but also are a part of viewers' bodies. The phenomenon of cybersickness shows that images that the viewers of *Alteration* experience such as diving into the water provide physical feelings of movements. At the same time, the physical body does not move in the real world which leads to a struggle between what the viewers feel when experiencing images and what their physical body does. Corporal experiences of the viewers are directly related to their identity because the way the viewers experience their bodies is closely connected to how they perceive themselves. The next section addresses the identity of the viewers in the virtual environment of *Alteration*.

2.5. Virtual Space and Identity

A virtual space is able to provide experiences that the viewer never received in the real world which makes the viewer feel that he or she is turning into beings of a different kind. This feeling closely relates to the identity of the viewer. This section looks at the connection between the experience of the VR film *Alteration* and how viewers identify themselves.

Alteration shows the possible future of the relationship between a human and a machine. It provides an experience of being the protagonist Alexandro was put to artificial sleep in order to conduct the experiment with the AI. At the same time, the viewer is invited to follow the AI named Elsa as she takes over memories of Alexandro. *Alteration* thus aims to provide an experience of two identities: the machine identity of AI and the identity of the protagonist Alexandro.

Identity refers to the characteristics determining who or what a person or thing is (Oxford Dictionary). According to Hills, “VR can be seen to support the fragmentation of identity and render proliferating individual sub-identities and their experiences into commodity form” (Hills 164). Moreover, “a virtual environment also provides a space of performance, a multipurpose theatre-in-the-round for the many components of the self” (Hills 164). Hills points out the performative aspect of one’s identity. He notices that “VR becomes the immaterial realm that offers a multiplicity of stages for the performance of multiple self-identities” (Hills 180). The science writer and curator Margaret Wertheim has a slightly different idea. She tries to pinpoint the value of virtual space not in providing us with the ability to become “multiple selves” but in encouraging more fluid and expansive visions of one’s self (Wertheim 251). VR allows viewers to expand their identities through images that they receive during the interaction with a virtual environment.

The director of the film, Jerome Blanquet, says that “*Alteration* is a story about the possible future of human and machine’s interactions — and more precisely about how our dreams and emotions, which make us human, are assimilated and interpreted by an artificial intelligence” (Oculus VR). The viewers of *Alteration* identify themselves with the protagonist Alexandro who is experiencing the effect of AI on himself. As

Alexandro, they can feel and see the presence of the AI Elsa, because she alters Alexandro's memories (Figure 2.6).

But the AI Elsa is present in the film only in Alexandro's mind and the viewer experiences her as a part of Alexandro's identity. According to the results of the questionnaire, viewers had intense and disturbing feelings while watching the film because of the struggles between two identities: the AI identity of Elsa and the human identity of Alexandro. The questionnaire showed that the majority of the viewers felt unsettled and confused after watching the film. For example, some of the answers to the question "How did you feel after watching the film *Alteration*" included replies such as "Bothered by the sad ending. It felt like a warning for the 'future'". One of the participants noticed that she "felt like [she — V.M.] experienced something new", she experienced several emotions in one being "excited and a little bit scared about the future and AI". While one of the comments on the question "Did you feel any inconvenience while watching the VR film *Alteration*" was: "Yes, I felt bothered by Elsa and her in my brain." This shows the disturbing feeling of experiencing the non-human machine identity of AI. The viewer identified herself with Alexandro who experienced the AI altering his memory. She assessed her experience as if she herself was exposed to the influence of AI.



Figure 2.6: AI Elsa (on the left) alters Alexandro's memories

The virtual space of *Alteration* allows the viewer to step into the realm of fantasy and experience a new identity which Belting calls putting on “digital masks” (Belting 59). Belting argues that “cyberspace provides a site where participants play a Self from the one they must play in the real world” (60). Even though, he addresses the Internet when talking about cyberspace, he also means images because “the participants in Internet dialogue erect in their minds imaginary images of one another” (Belting 60). In VR, viewers acquire imaginary images of themselves. The viewers of *Alteration* identify themselves with both the AI Elsa and Alexandro during the interaction with a virtual environment.

2.6. Virtual Reality as Dream

The storyline of *Alteration* is placed in Alexandro’s dreams and shows his most vivid and dear memories, such as losing his beloved dog when he was a child or finding out that he is going to be a father. But the connection between dreams and virtual reality is reflected not only in the storyline of the film: there are also similarities in how experiences of VR and dreams relate to the body. This section tries to foreground the connection between the body and images by drawing parallels between the process of dreaming and the experience of virtual reality.

Dreams are among the most evident phenomena that show the body as a *locus of images* (Belting 48). Belting suggests when we dream we leave the body we know, and yet at the same time we dream only in our bodies, because “the body is the source of our images” (Belting 48). Belting calls our dreams the images that our bodies produce without our will and awareness (Belting 48). When dreaming, one experiences a completely different world, yet this world is mostly visual and is created by the dreamer. The body, in this case, can be clearly seen as a living medium through which we perceive images. It does not control the images that it produces but “it subject to memories and visual experiences” (Belting 49).

The most evident connection between dreams and VR is that the body is the locus of images not only when we talk about dreams but also when we experience virtual reality. The viewers ‘travel’ to places where they experience virtual reality, and at the same time, they create these places by themselves because they experience it in their

bodies. Similarly, dreams show imaginary places that are a result of our own creative abilities. The body of a dreamer produces and stores images that it then shows through the process of dreaming. Dreams are based on dreamer's body because we are dreaming not only through the body but the body itself produces images that the dreamer sees. The VR experience of *Alteration* is also based on the ability of viewer's body to generate images of its own. Thus, VR is a medium where our bodies can be experienced as the true locus of images.

Moreover, the VR experience can be compared to dreams because it provides an immersive experience where viewers and dreamers are involved in a visual world that appears real. In an interview for the Oculus blog, the director of *Alteration* highlights that he deliberately chose to show the nature of dreams in VR, because he finds a lot of similarities between this medium and dreams. Blanquet says:

Dreaming, by definition, implies that you become a simple observer of your own imagination and memories. I was also very interested in depicting the visual essence of a dream: elliptical visuals made up of blocks, broken up, disconnected. If we draw a line from there, VR and dreams obviously have a lot more in common. Both feel real — they engage and move us. (Oculus VR)

In both VR and dreams, one is disconnected from the real world. But if the immersion of the medium of virtual reality can be explained through technical devices such as a head-mounted display, the immersion in dreams occurs because the body is the only medium and the locus of images.

The experience of watching *Alteration* itself can be compared to dreaming because of its structure of the storyline. In dreaming, one may experience different visual blocks that are disconnected. The viewer is immersed in the dreams of Alexandro that are disrupted and shown as flashbacks that are not connected with each other. For this reason, most of the viewers found the storyline of the film a bit unclear (Figure 2.7). The questionnaire showed that the majority of the viewers found the storyline unclear to some extent. It is also interesting to notice that no one responded that the plot of the film was absolutely clear.

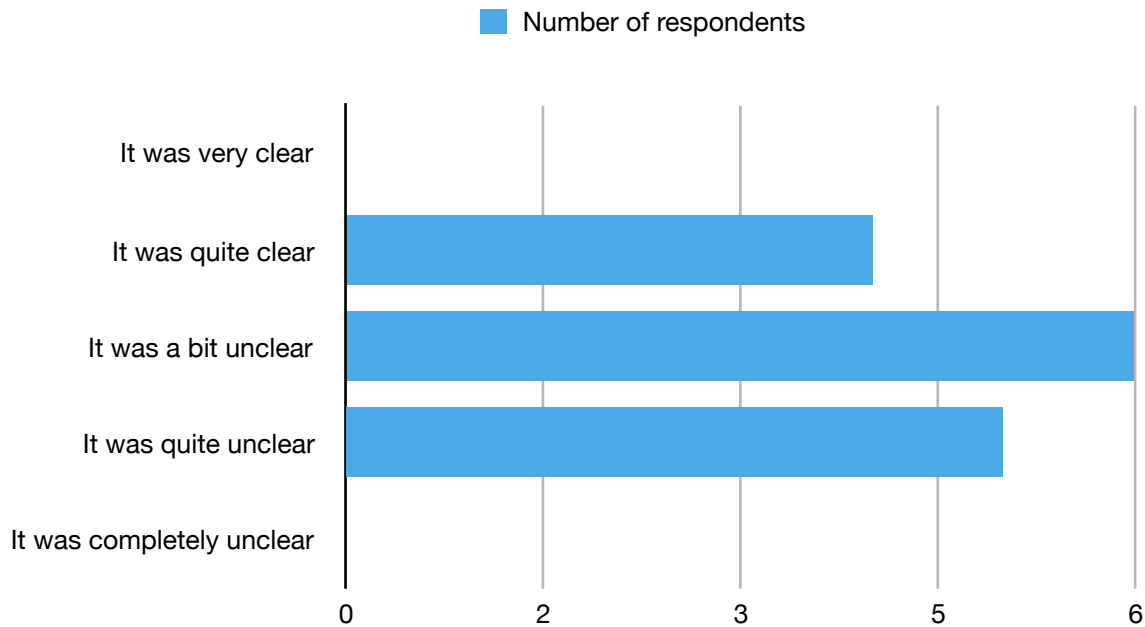


Figure 2.7: The chart of responses about the storyline of *Alteration*

Moreover, one of the participants noted that she felt inconvenient while watching because she was “not understanding the whole plot”. The storyline of the film is difficult to follow because it has a non-linear narrative structure. Thus the film can be analysed as a “puzzle film” which the film scholar Warren Buckland refers to a film that “rejects classical storytelling techniques and replaces them with complex storytelling” (Buckland 1). In a puzzle plot, the events of the film are not simply complex and interwoven between each other but they are perplexing and entangled (Buckland 3).

Looking at the connection between a virtual experience and dreaming, this section argued that virtual reality provides an immersive experience of ‘leaving’ the body in order to engage the viewer in a virtual dream-like world, and yet the viewer experiences virtual reality in his or her own body. Both virtual reality and dreams seem real and provide images that are created through the viewer’s body.

2.7. Conclusion

As it has been so far discussed, the experience of watching the VR film *Alteration* shows that the viewer’s body and VR are connected in different ways. Images are produced through the constant interaction between the body of a viewer and a virtual space. This interaction is fostered by the ‘transparent’ technology of VR. In the VR

experience, the screen becomes invisible in order to provide direct interaction between the viewer and a virtual space. It allows the viewer to experience a virtual space as a living environment. Moreover, the interaction between the body and virtual space is tied to the experience of the real world.

The viewers of VR transfer their embodied experiences to a virtual space. The questionnaire showed that the participants reacted on the virtual experience of diving into the water as if they experienced it in the real world. These reactions are possible because the viewers have an embodied experience of being in a real water environment. Through the immersive nature of VR and an 'invisible' display the viewer's body reacts on a virtual environment the same way it reacts in a real world. The viewers transfer their embodied sociocultural and individual experiences of phenomena such as time and interpersonal distance to a virtual space.

In addition, VR offers a different experience of the self because it extends the viewer's identity, allowing the experience of new identities in a virtual world. *Alteration* allows viewers to experience multiple sub-identities during a VR experience. When watching *Alteration*, the viewer obtains two sub-identities: the identity of Alexandro and the identity of the AI named Elsa. This combination of different identities provoked feelings of unsettlement and confusion among the viewers because of the struggle between Alexandro's human identity and the AI identity.

Finally, virtual reality can be connected to our experience of dreams. Both dreams and virtual reality disconnect the viewer from the real world and immerse the observer in a new and seemingly real visual environment. At the same time, the viewer experiences dreams and virtual reality in and through his or her own body. The body is the source of all images that the viewer receives both when dreaming and when experiencing virtual reality.

CHAPTER 3: IMAGESCAPES

3.1. Introduction

The previous chapter discussed the relationship between the body and VR in *Alteration*. It analysed the received data through the concept of intermediality and focused on a virtual space and virtual places as well as the phenomenon of cyberickness, foregrounding the connection between the body of a viewer and VR. The questionnaire showed that the viewers of *Alteration* brought their cultural and personal embodied experiences to the virtual space of the film. The previous chapter also argued that VR extends individual's identity while the viewer is immersed in a virtual space. In addition, it showed how the process of dreaming is connected with the VR experience in terms of the close relationship between the body and images in both of these experiences.

In this chapter, I would like to look at the collected data through another concept: imagescapes. This chapter answers the question of this thesis: "In which ways the relationship between the body of the viewer and the VR film *Alteration* can be explored through the concept of imagescapes". It helps to focus on the relationship between the body of the viewer and *Alteration* on multiple levels because it addresses the bodily experience of the viewer of *Alteration* not only on a sensual level but also on a cognitive level. The notion of imagescapes compliments the analysis of the data through the notion of intermediality by looking at different ways of interacting with the virtual environment of the film that depend on such processes as viewer's imagination, reflections, and expectations. It highlights the complexity of relationships that appear between the body of the viewer and the virtual environment of the film.

I examine how imagescapes can be connected to the experience of the film *Alteration*. This chapter begins with the exploration of the collected data, followed by the concept of imagescapes and its relation to the experience of VR. After that, the chapter approaches different components of the concept of imagescapes such as the concept of *reverie* that focuses on the interplay between different processes that are involved in viewing. Thereafter, the chapter argues that the relationship between the viewer and VR can be seen as hybridisation where both the viewer and a virtual

environment depend upon each other. Finally, the chapter focuses on the relationship between images and human creativity in *Alteration* and foregrounds the concept of visualisation.

3.2. Imagescapes: The Review

The experience of watching *Alteration* is based on the individual actions of the viewers and the way they interpreted and navigated themselves in the virtual space of the film. One of the most dynamic scenes in the film is the scene where the main character Alexandro finds out that the AI Elsa invades his memory and tries to quit the experiment by attacking the viewer (and himself) with a stone. When looking at the answers of the question “What was your reaction when a man in the film attacked you with a stone”, it could be noticed that the participants reacted in multiple ways and reflected on this situation differently. Some of the viewers did not show any visible reactions explaining that they knew it was not real. One of the participants noticed that she “had to think it’s not touching [her — V.M]”, while another said that she felt “intimidated but not scared”, since she was aware that it is not real. It is interesting to look at these experiences because the viewers were aware that it is not real but could observe themselves being intimidated or scared. This awareness gives the viewers’ opportunity to distance themselves from their reactions and reflect on their experiences. The medium of VR gives the viewers more space for their self-reflection because it involves them in an environment that looks similar to the real world which allows the viewers experience it as if it is real. At the same time, the viewers are aware that they are in a virtual environment. The viewers of *Alteration* reflected on this situation by assuming that what they saw was not dangerous for them. While some of the participants tried to move away from the man attacking them or “flinched a bit”. One of the viewers noticed that she did not have a lot of emotions because she expected it to happen. These different reactions are possible because they reflected on what they see in their own ways. Each of the viewers experienced different images because he or she interacted with the virtual environment of the film differently. These multiple experiences of looking at images can be productively analysed through the concept of imagescapes introduced by Ron Burnett. The concept highlights the performative aspect

of a visual experience. The notion of imagescapes is important for my analysis because it provides a theoretical framework for explaining multiple experiences that the viewers have while watching the VR film. If the concept of intermediality points out the importance of the viewer's body for the existence of images, the notion of imagescapes tries to situate multiple ways in which images are experienced. By introducing the notion of imagescapes, this chapter tries to underline that viewing is an active process that involves the viewer in multiple interactions.

Burnett suggests moving from images to imagescapes in order to show the shift in the relationship between viewers and images. He criticises the assumption that images are only what they were created to display. Instead, imagescapes are fluid and are not only about what has been intended or constructed to display (Burnett 41). Burnett also emphasises that one of the most important features of imagescapes is that "the relationship among viewers and images means significantly more than the actual status of images themselves" (Burnett 54). He uses the relationships between the computer game *Myst* and gamers in order to illustrate the concept of imagescapes. Gamers can enter the game by solving what Burnett calls "a series of imaginary loops" (Burnett 55). By resolving logical quests and interrelated puzzles, users explore the game and engage with it. The whole gaming process is based on quests that are created by both the inner structure of the game and the performative relationships of gamers who use their computers in order to engage with the game. The game does not provide any explicit goals such as eliminating enemies or finding something. The gaming experience directly depends on the way users act in the interactive world of the game. Burnett claims that the game is built on the shared intelligence between gamers and the creators of the game (Burnett 55). This example shows that imagescapes are about the shared intelligence and are based on the process of interaction. Burnett argues that his use of the notion of images highlights "the performative relationship among viewers, sight, and comprehension" (Burnett 54). In the case of *Alteration*, the experience of the film is also about performative relationships that the viewers develop through the use of a head-mounted display. The VR film can be experienced only by engaging with its virtual environment, moving a head towards the location that they want to see. In the scene where Alexandro is in Nadia's room and is talking to her, the viewer can experience the scene only by engaging with it by turning his head and exploring the virtual space around. The first thing that the viewer can see is Alexandro

sitting on a bed in Nadia's room (Figure 3.1). By moving his or her head, the viewer can see Elsa and the rest of the room.



Figure 3.1: Alexandro sitting on a bed in Nadia's room

Viewer's movements are fundamental to the scene and its experience. The virtual room is designed by creators who put their intelligence into its creation and, at the same time, the experience of the film also depends on the intelligence of the viewers who engage with the virtual space. The importance of the inner structure of the film especially can be noticed when in the beginning of the scene Nadia asks Alexandro: "How do you like my home?", which provokes the viewer to look around the virtual room. Moreover, Nadia is constantly moving during the scene from the left side to the right side of the room, removing the fabric from the sculptures and showing them to Alexandro. While showing the last sculpture, she asks again: "Do you like it here?" (Figure 3.2). Thus, the structure of the scene involves the viewer in his or her engagement with the virtual environment. The viewer follows Nadia's movements in the room and reacts on her questions by looking around the room.

Additionally, the storyline of the film has a non-linear structure which allows the viewers to connect one scene to another. The storyline is about creating the imaginary connections between the scenes of the film and structuring the pieces of the story. It means that the performative relationships between the viewers and the virtual space of *Alteration* are in the core of the VR film. Imagescapes are not objects but rather a

constant experience of engagements between images and viewers. According to Burnett, “the experiences of seeing images are always founded upon a series of engagements” (Burnett 13). The inner structure of the film involves the viewers in a constant engagement with the film by encouraging them to move their heads or imaging and reflecting on the connection between the scenes. Thus the experience of the film storyline is as much about the creators’ design as it is about the performative relationships between the viewers and the virtual space.



Figure 3.2: Nadia showing her sculptures

In addition, imagescapes are “places that encourage direct and unmediated experience” (Burnett 41). This is possible because multiple interactions between the viewer and images allow people with different backgrounds and needs to engage with images. It is fruitful to look closely at the two answers that were given by the participants on the question “How did you feel when you dived into the water”. The first participant noted that “it took [her — V.M.] a couple [of — V.M.] seconds to realise that [she — V.M.] could in fact safely breathe”. While another participant responded that she “felt really good” because she likes diving. These two different reactions of the same scene reveal how different backgrounds and reflections of the same virtual environment influence the way the viewers experiences images. The first participant connected the virtual space of the film with her own experience of being inside the water which resulted in her reaction of holding a breath and not realising for some seconds that she

could breath. While another viewer also imagined being inside the water but her reaction on the images she experienced during the interaction with the virtual space was very different. Because of her positive experience of diving, she felt good when imagining being in the water. The concept of imagescapes provides more agency to viewers as creative participants in the process of viewing. “The intersections of creativity, viewing, and critical reflection are fundamental to the very act of engaging with images in all their forms” (Burnett 13). These two different experiences that the viewer had are possible because of their ability to imagine being in a water environment and connect what they see with their personal experiences. Imagescapes are not about the tension between what the creators of pictures are trying to express and what the viewers are experiencing. Instead, they focus on creative abilities of viewers and their own reflections on what they see. These two experiences of the same scene show that the process of interaction between images and viewers is more important than the element of depiction. Viewers’ ability to imagine themselves diving into the water and reflecting on this experience through their own backgrounds allowed them to experience the images in their own ways.

In the concept of imagescapes, it is important to highlight that Burnett considers images not as separated entities but in relation to the viewer. He argues that images belong to both the outside world and viewer’s mind and body (Burnett 33). What the viewer sees cannot be separated from what he or she thinks about it in the moment of viewing. Burnett’s idea of an image is similar to Belting’s understanding of an image which does not exist in a medium, nor in the viewer’s body but is situated in the relationship between them. Similarly, Burnett supposes that “viewers, in a metaphorical sense, move into images and outside of them” (Burnett 48). It means that viewers simultaneously are in the processes of viewing, imagination, and reflecting. Burnett argues that the experience of images seems to be embodied and disembodied at the same time (Burnett 48). Even viewers seem separate from images, they are closely related to experiencing images (Burnett 48). This argument also applies to the experience of VR. The experience of *Alteration* gives an impression of being in a different reality and, at the same time, the viewers are engaged with images on multiple levels by reflecting on what they see. This process of interchange between the viewers of *Alteration* and what they see when enter the virtual environment raises the question of the relationship between internal and external images. Burnett claims that “internal

and external images meld together as soon as they interact” (Burnett 54). Internal and external images cannot be studied separately because images depend on the observer and his thinking.

To summarise, the concept of imagescapes focuses on the process of viewing within which the viewer obtains multiple experiences. The collected data showed that during the scene in which the viewer gets attacked by Alexandro, the viewers experienced different images because of their own reflections and imagination, resulting in multiple bodily reactions. This is possible because of the interaction between images and viewer’s imagination, his or her reflection and cultural background as well as other factors. Because of the constant interplay between these elements, images cannot be situated as an object. Thus, the imagescapes of *Alteration* are about the experience of the viewers rather than what the creators of the film try to show.

3.2.1. Imagescapes in Virtual Reality

The VR film *Alteration* shows one of the possibilities of a future world where AI takes over a human mind and allows the viewer to experience it from the first person perspective. One of the participants of the questionnaire noticed that she felt “like [she — V.M] experienced something new” after watching the VR film. This comment shows that the experience of VR is more than just seeing a picture or what is shown on the screen. This is the reason why the concept of imagescapes seems more evident when looking at the experience of VR. Virtual reality allows for viewers’ interaction with a virtual environment in multiple ways. It is able to create virtual worlds that not only immerse viewers in creators’ fantasy but also foster viewers’ own imagination and creativity. According to Burnett, “interactivity is as much about awareness as it is about fantasy” (Burnett 101). Although the concept of *interactivity* is one of the central concepts in the analysis of virtual reality, Burnett suggests moving its focus from the technology of VR to viewers. Virtual reality stimulates viewers’ imagination by allowing them to interact with both realistic and phantasmagoric environments. For example, the director of the Institute for the Exploration of Virtual Realities in the University of Kansas Mark Reaney mentions that the main goal of the modern application of VR technologies is to create a virtual environment as realistic as possible

(Reaney 184). By doing so, VR can be used for commercial purposes such as training pilots, ship captains, surgeons and mechanics, prototyping new machines and developing new architecture (Reaney 184). At the same time, many VR projects offer new experiences that are different from ones we receive in a real world. For instance, the project *In the Eyes of the Animal*² allows viewers to imagine how the world looks like in the eyes of different animals such as a mosquito, a dragonfly, a frog, and an owl (Figure 3.3).

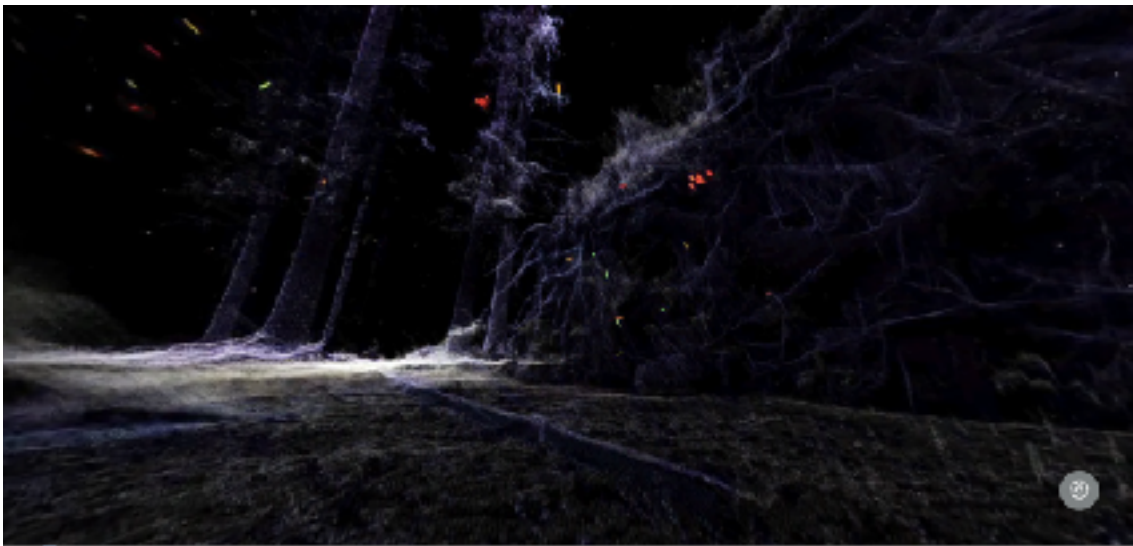


Figure 3.3: The viewer can see a forrest from the eyes of a frog

Moreover, the focus on the interaction between viewer's imagination, reflections, and his or her background also suggests that the intention to make the experience of virtual reality more realistic does not lead to a more immersive experience. Burnett cites the game designer Chris Crawford who argues that "the effort to create images that are 'photorealistic' miss the point. More realism doesn't necessarily mean better communication. More realism also doesn't mean a better relationship between audiences and images" (Burnett 101). According to Burnett, "virtual experiences also take a great deal away from reality, yet at the same time can bring participants to the point of seeing in a new way with no direct connections to the conventions of everyday life" (Burnett 101).

² The project is developed by the creative studio Marshmallow Laser Feast. The main website of the project *In the Eyes of the Animal*: <http://iteota.com/experience/welcome-to-the-forest>. Accessed 26.06.2018.

One of the participants of the questionnaire noticed that felt afraid to be scared when she experienced the scene of walking through the water in an old house (Figure 3.4).



Figure 3.4: The underwater house

She felt frightened because she *expected* that she would get scared even though this did not happen during the scene. One of the most common concepts for the analysis of VR is the notion of *immersion*. It is assumed that viewers are in a control of their VR experience due to the immersion in what they see (Burnett 73). But Burnett suggests that viewers do not fully control their VR experience because there is a constant struggle between viewers' expectations and what they see in virtual reality (Burnett 73). Participant's expectations to get scared struggle with the actual scene of the film. It also shows that "experiences within imagescapes are contingent and shared" (Burnett 73). The experience that the viewer of *Alteration* had is shared between what the scene shows and what the viewer sees. It can be also said that there is no clear distinction between where the experience of the viewer starts and where it ends. According to Burnett, "in a contingent environment it is not clear where and when the message begins and to what degree meaning has been shared" (Burnett 73). The experience of viewing thus consists of a constant flow of interactions between the viewer and a virtual environment.

Alteration provides the viewers with not only the ability to see a new virtual world but also experience it with different senses. In the scene where Alexandro attacks the viewer with a stone, the focus is put on the tactile sense. The viewer not only sees the attacker but also experiences it on a sensual level. While in the scene where the viewer explores the underwater house, the sound of the scene directly influences the way this scene is experienced. The participants could hear the splash of water in the moment he or she dives into the water in the virtual space. As the viewer moves along the underwater house, he or she hears soft music that sounds as if it is heard underwater. Moreover, the the speed with which the music is played follows follows the speed with which the viewer moves in the virtual space. The experience of this scene depends not so much on what the viewer sees as on the sounds and dynamics of the scene. VR technologies, as it was argued in the previous chapter, put an emphasis on vision as the ocular-centric view of the world dominates in Western cultures. While the concept of imagescapes tries to shift this emphasis from vision to other senses such as tactile sensations. Indeed, a virtual environment is able to provide an experience that emphasises other senses in the process of viewing. For example, the work of the contemporary artist Char Davies named *Osmose* (1995) is based mostly on viewer's breathing and balance. The work challenges the role of the viewer in a virtual space. The installation incorporates such natural human acts as breathing and balance in the process of navigation within a virtual space on top of a head-mounted display (Figure 3.5).

In addition, the sounds in the installation transform depending on the location of the viewer-participant in the space. Professor of literature at Duke University Mark B. N. Hansen notices that *Osmose* “compels the viewer-participant to reconfigure her sensory economy, such that (at the very least) vision becomes thoroughly permeated by tactility and proprioception” (Hansen 110). The experience of *Osmose* shows that the relationship between the viewer and images can be driven by the intuitive processes of a human body. For Burnett, images are “an integral component of everything that one could define as sensual” (Burnett 75). At the same time, he is not trying to equate the process of seeing to human senses. Rather, similarly to Belting's view, he considers this process a part of the viewer (Burnett 75). Thus imagescapes can be seen as a process where different human senses collide with each other.

In her interview, Char Davies talks about her concerns regarding new technologies of visualisation that have become available with the invention of VR. She points out that “if we create a model of a bird to fly around in virtual space, the most this bird can ever be is the sum of our (very limited) knowledge about birds — it has no “otherness”, no mysterious being, no autonomous life. What concerns me is that one day our culture may consider the simulated bird (that obeys our command) to be enough and perhaps even superior to the real entity” (Rafferty).

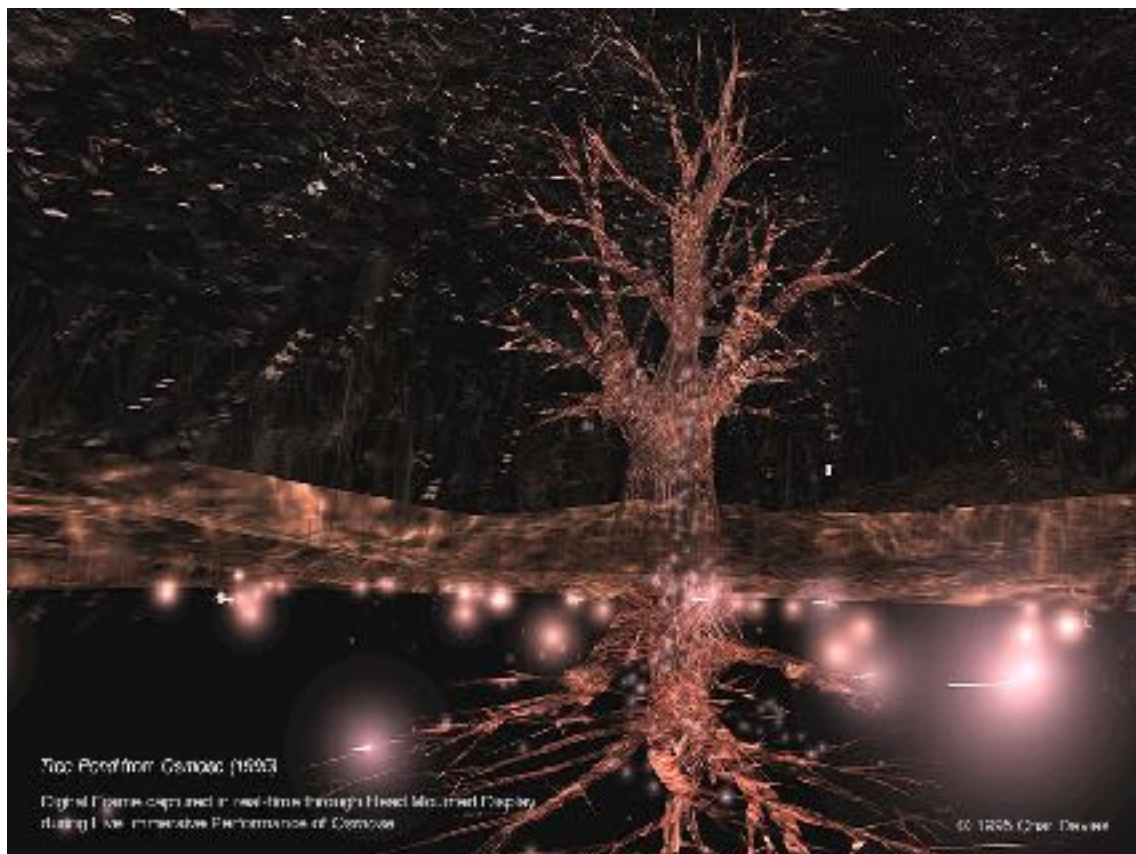


Figure 3.5: The capture of the virtual space of *Osmose* (Cher Davies, http://www.immersence.com/osmose/os_treepond.html, accessed 04.07.2018)

The concept of imagescapes tries to overcome this issue because it argues that the experience of images is open to viewer’s interpretation (Burnett 77). The questionnaire shows that the viewers had very different experiences of watching the same scenes. For example, when experiencing diving into the water some viewers felt uneasy and scared, others indicated that they felt excited and “really good”. By interpreting the scene in their own ways and bringing their personal experiences, the participants experienced not only different feelings but also the opposite. Indeed,

Burnett emphasises that images are never simple representations of the real world, nor do they represent what creators want to show (Burnett 89). Thus the capacity of virtual reality representing the exact copy of a real thing and even replacing it is not possible because the experience of VR is always open to viewer's own reflections and interpretations.

To sum up, the analysis of data through the notion of imagescapes shows that the viewers of *Alteration* interact with the virtual environment of the film in a number of different ways. This section looked closely at such interactions between the viewers and the film as the struggle between viewers' expectations and what they see, the interplay between different senses, as well as the relationship between viewers' personal experiences and a virtual environment. Although a virtual environment is based on the conditions of the real world, it provides experiences that are not directly connected to a human everyday environment. VR stimulates viewers' imagination by involving them not only in a realistic environment but also providing them new phantasmagoric experiences. *Alteration* creates a virtual world where AI is powerful enough to take over humans. In addition, the experience of immersion in virtual reality assumes not a complete control by viewers over their experiences but the struggle between their expectations and what they see on the screen. Finally, the experience of imagescapes in *Alteration* is based on the interplay between different senses such as the tactile sense, sight, and hearing.

One of the most central concepts of the theory of imagescapes is the notion of reverie. The theory of imagescapes highlights the performative aspect of the connection between the body of the viewer and the VR film, while reverie shows multiple ways in which internal reflective processes of the body interacts with each other and the film. Thus, the next section analyses the received data through the concept of reverie.

3.2.2. Reverie of Imagescapes

The answers of the viewers of *Alteration* showed that the viewers interacted with one virtual space in different ways. The questionnaire revealed that the viewer experienced the scene with the underwater house in a number of unpredictable ways and their reactions are not only different but sometimes completely opposite. The answers to the

question “How did you feel walking inside the water” showed that the emotions of the participants divided equally between negative and positive. While some viewers felt “relaxed”, “excited”, “eerily peaceful”, “intrigued”, and “good”, others indicated that they felt “scared”, “threatened”, “anxious”, and “confused”. These answers suppose different modes of interaction with a virtual space. These multiple ways of interacting with the virtual space of *Alteration* can be analysed through the concept of reverie. Reverie is an important notion in the concept of imagescapes. Reverie is a reflective concept that allows for what Burnett calls “waves of interaction” that refer to the “complex movements of waves on a beach as viewed by human subjects” (Burnett 204). This metaphor is chosen by Burnett to indicate the process of viewing because, on one side, the waves have some regularity in their movements, on the other hand, some waves have more intensity and height than others depending on external factors. The process of viewing has both predictable and unpredictable outcomes, as viewers interact with what they see “in any number of ways from gazing at them to touch and immersion” (Burnett 204). Burnett provides a distinction between gazing and looking. He argues that *gazing* refers to scanning, whereas *to look* means that “an effort has to be made to focus on some features of the environment being observed” (Burnett 204). When experiencing the scene of walking through the water, the interaction between the viewers of *Alteration* and the virtual space can be referred as *gazing* because the participants felt “relaxed” or “eerily peaceful”. While the feelings of excitement or threat suppose that the viewers engage with a virtual space more intensely. This way of engagement with a virtual environment can be referred *to looking* because the viewers concentrate on what surrounds them in the virtual space. When feeling the threat, viewers focus on a virtual environment more because they expect to be involved in a potentially dangerous or frightening situation. Different experiences of the scene showed that reverie leads to unpredictable relationships between viewers and images.

Burnett argues that “reverie is a crucial concept that explains how the experiences of interacting with images and stories of all sorts connect to listening and daydreaming” (Burnett 204). If the notion of imagescapes supposes that relationships between the viewer and an image are more than the relationship between what is shown and what is experienced by the viewer, the notion of reverie helps to foreground the idea that viewing is an active process.

Burnett describes reverie as “the interplay among thoughts, daydreams, listening, and viewing, and it is a part of a continuum into which some images fit and others don’t” (Burnett 48). Reverie thus cannot be separated from other experiences that the viewer receives in the moment of seeing an image. Burnett notices that “the continuity of experiences here means that imagescapes are just one element in a continuous flow of exchanges that are never discretely separate (Burnett 48).

Reverie is also referred to as a process that permits and encourages empathy (Burnett 53). This is clearly shown in the experience of *Alteration*. One of the last scenes in the film shows how the AI Elsa takes over Alexandro’s mind completely which leads to his tragic death (Figure 3.6). According to the questionnaire, the majority

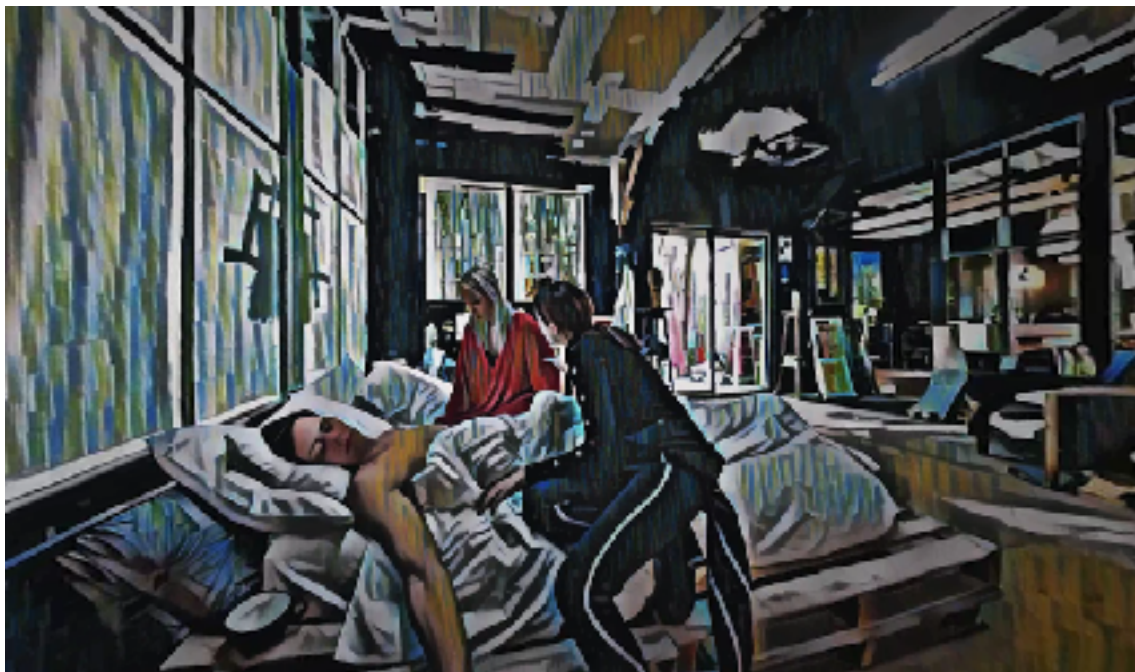


Figure 3.6: Dr. March (on the left side) tries to convince the AI Elsa (in the centre) to disconnect from Alexandro’s mind.

of the viewers of *Alteration* felt sad and confused after watching the film. For example, one of the viewers noticed that she was "bothered by the sad ending" and that "it felt like a warning for the ‘future’". Burnett notices that “reverie is about giving in to the viewing experience, being entertained, as well as being able to recognise the extent to which one has to be in the mood to confer so much power to images and sounds” (Burnett 48). The viewers of *Alteration* were involved in the VR film and sympathised the main character who dies which is shown through their reactions such as

feeling doldrums, sadness, and being confused. The sympathy for the protagonist is possible because the viewers were involved in the experience of the film and transform what they see on the screen into their own experiences and feelings. There is an interplay between a virtual space and viewers' emotions as well as their thoughts and imagination about the future of the world where an artificial intelligence has the same ability as in the film. The emotions and thoughts that the viewers had after watching *Alteration* and show that the viewers were involved in the experience of reverie. Reverie makes the experience of viewing *Alteration* immersive, as it involves not only the 'representation' of what film's creators intended to show but also viewer's own imagination and reflective process.

At the same time, it is important to notice that immersion is only possible if the viewer *agrees* to participate in this process (Burnett 77). For example, some of the participants of the questionnaire indicated that they refused to participate in the process of watching when experiencing the scene where Alexandro 'attacked' them with a stone. One of the participants said that she "disconnected with the film" during the scene, while another replayed that she "turned away so [she — V. M.] did not have to watch it". Although viewers are able to refuse to participate in immersion, reverie involves both conscious and unconscious processes (Burnett 48). These processes are entwined with each other and have no visible boundaries (Burnett 48).

Reverie is about *waves of interaction* that combine both conscious and unconscious processes and may lead to the creation of an unpredictable meaning. It was shown that the viewers of *Alteration* experienced a virtual environment in different modes of engagement such as looking and gazing. Reverie is also closely connected to the feeling of empathy. Viewers' imagination and reflections make it possible for them to engage with the storyline of the film and connect with its characters. This section showed that the body of the viewer and the film are not only interact with each other on multiple levels, while the next section illustrates the interdependence between the viewer and the virtual space of *Alteration* through the concept of hybridisation.

3.3. Hybridisation

As it was argued in the previous sections, the concept of imagescapes foregrounds the experience of images as a complex process. This section focuses on the concept of hybridisation that explains multiple interactions between images and the viewer. Hybridisation is the concept that shows that the viewers' of *Alteration* and the virtual space of the film are not only in the constant interaction between each other but also depend upon each other. There is an "intersubjective context of engagement, a collective and hybridised space of interaction" in the experience of images (Burnett 55). The concept of hybridisation is closely connected to the concept of imagescapes and reverie. If the concept of reverie highlights different levels of engagement in the virtual reality of *Alteration*, the notion of hybridisation helps to explain how the viewer and the virtual environment of the film cannot be separated from each other during the process of watching.

According to Burnett, hybridisation is a process that "produces a result that is greater than the parts" (Burnett 55). During the process of interaction between images and the viewer, a greater unexpected meaning is created. The concept of hybridisation suggests that the process of interaction between an object (an image) and a subject (the viewer) is based on a shared intelligence — the intelligence that went into the creation of an image and the intelligence of the viewer. In the experience of virtual reality, the process of hybridisation is especially evident as viewers closely interact with a virtual space and the experience is fully dependent on the relationship between the viewer and a virtual reality. Burnett argues that a "virtual reality is evidence of the power of this hybridised space of intelligence, exchange, and communication" (Burnett 55). Thus, the relationships between VR and the viewer consequently can be seen as the process of hybridisation. Burnett describes hybridisation as the process of moving beyond subject/object relationships (Burnett 176). In the case of *Alteration*, the VR experience is only possible if the viewer interacts with a virtual space. At the same time, the virtual space of the film depends on the viewer who experiences it.

The entire VR experience is based on viewer's movements: when the viewer moves a head in order to explore the virtual space of the film, he or she changes the way the storyline of the film is unfold. For example, in the scene where young

Alexandro finds out that his dog is dead, the viewer can obtain two different experiences depending on where he or she is looking and how he or she is moving a head during the scene.



Figure 3.7: Young Alexandro is trying to wake up his dog

The first experience can be obtained by looking at how the antagonist is trying to wake up his dog (Figure 3.7). At the same time, if the viewer turns his head, he or she can see AI Elsa who is looking at desperate Alexandro and playing on swings (Figure 3.8). By observing either Alexandro or Elsa, the viewer obtains two different experiences. The only element that combines these experiences is the sound of the scene: the viewer can hear both Alexandro's and Elsa's voices. If the viewer is looking at Elsa, he or she sees that the AI is not able to interpret Alexandro's emotions and feelings because of her non-human origin. The viewer sees that Elsa, just like a child, is playing on swings and seems detached from young Alexandro's feelings. Her face does not show any emotions. As a result, the viewer can understand better AI Elsa as a character and see the storyline in a different way than if he or she only looked at Alexandro. Thus, the viewer, the film, and its virtual space provide the foundation for the process of hybridisation.

The viewer influences the way he or she experiences the film by interacting with the virtual space of the film through his or her movements. At the same time, the film

allows the viewer to explore its virtual space. In addition, the film provides a framework in which the viewer can alter his or her experience and see the storyline differently.



Figure 3.8: The AI Elsa is playing on swings next to Alexandro

To sum up, a virtual environment is a hybridised space where both the viewer and virtual reality depend upon each other. The process of hybridisation in the experience of *Alteration* shows that the viewer not only engages within constraints of a virtual space but is also able to create his or her own experience of the storyline by moving in a virtual space. The next section approaches the imagination of the viewers as one of the central components in the process of watching *Alteration*.

3.4. Visualisation

The issue of viewer's creativity is central to the concept of imagescapes which is based on the abilities of viewers to imagine and create during the process of interaction with images. This section looks at the ways the viewers of *Alteration* reflect on images highlighting the process of imagination and viewers' creative abilities.

The viewers of *Alteration* go through the process of watching the film to the process of image creation. When answering the question "How did you feel when you dived into the water", some of the participants of the questionnaire commented that they

were feeling as if they dived into the water in the real world. One of the participants noted that she “felt a pressure on [her — V.M.] chest, like if [she — V.M.] would be in [the — V.M.] water”, while another said that she was “holding [her — V. M.] breath”. These viewers *visualised* that they were present in a water environment. The notion of visualisation is about “the relationship between images and human creativity” (Burnett 14). The viewers used their creative abilities to imagine how it feels to dive in the water. By creative abilities of the viewers I mean what Burnett refers to “the role of viewers in generating what they see in images” (Burnett 14). The image of being inside the water is not a static representation, but it has a complex connection to the viewer. The viewer, metaphorically speaking, brings into life the image of diving into the water by visualising what he or she sees on the screen. As a result, the participants could experience the virtual environment of the film similarly to the real experience of diving.

Visualisation can be processed in many forms (Burnett 203). It combines different processes such as “perceptions, thoughts, daydreams, and projections” (Burnett 204). By daydreams, Burnett means here fantasies. Moreover, “the combination of reverie, empathy, and the need to give meaning to sight encourages the process of visualisation” (Burnett 41). The creative engagement starts once the viewer enters into the relationship with images (Burnett 32). The notion of visualisation highlights that the process of viewing is a creative act and, therefore, the viewer obtains a unique experience. In the case of *Alteration*, one of the viewers noticed that she felt inconvenience whilst watching the film because she was bothered by “Elsa in [her — V.M.] head”. The image of Elsa in the viewer’s head was created by viewer’s own imagination when she engaged with the virtual space of the film. Her perceptions, reflections on the storyline, as well as immersion in the film encouraged the process of visualisation. It evoked not only a unique image of Elsa being in the viewer’s head but also allowed her to experience physical feelings of inconvenience. The viewer creates an image in the moment of viewing by reflecting on what he or she sees. Visualisation as a concept helps to move from depiction to viewers’ creative acts in the process of viewing. This approach towards images tries to look at the “various and complex ways in which a subjective basis for visualisation can be analysed” (Burnett 14).

Although visualisation highlights the role of a viewer and his or her subjectivity in the process of viewing, it does not suggest that the analysis of images is a completely subjective and relative act (Burnett 15). The experience of *Alteration* shows that the

inner structure of the film and the way the storyline is designed lead the viewers to engage with the virtual space in a certain way. For example, every time Elsa appears in the scene, the visual environment of the scene starts to change which is shown in the form of changing a scene colouring or changing the voices of characters. This gives the viewer an impression of an altering environment and provokes him or her to look around and focus on Elsa's actions. Burnett argues that the experience of images is not an entirely subjective act: the overall organisation of images contains certain common conventions and codes (Burnett 15). By changing the visual elements of the scene, the creators of the film design certain cues in the scenes that aim to navigate the viewers in the virtual space. Moreover, there are common conventions that are based on the organisation of a space in the real world. Burnett claims that images are based on a "shared agreement among viewers and a fairly structured set of conventions" (Burnett 17). The activity of engaging with multiple images that constitute a virtual reality means that viewers, at a minimum, "share the psychology of viewing with each other even if they have very different experiences" (Burnett 203). Additionally, the motivation of the viewer to participate in VR experience is the basis of the VR experience. The moment the viewers put on their headsets, they choose to let go and experience the film. The experience of *Alteration* is a collaborative act which is based on viewers' motivation to experience VR and the creators of the film to show it. Thus visualisation concentrates on a collaborative process of viewing images.

Burnett argues that one of the ways of visualisation is the moment of mediation of represented events "by everything from the medium of expression to the imagination of the individual viewer" (24). The viewer bridges an event and a depiction mentally (Burnett 24). Thus the viewer constructs a space and the story through his or her imagination. Burnett calls this process a "dynamic daydream" (24). He tries to situate the concept of visualisation as an opposition to the concept of *representation*. Representation suggests that the creator of an image is able to control the outputs of his or her creation and "viewers generally respond in kind" (Burnett 14). The notion of representation focuses on whether what images show depicts the reality the images are meant to represent (Burnett 15). While visualisation takes into account the process of interaction between what is shown and what viewers experience. The notion of visualisation highlights the tension between different "discursive efforts" (Burnett 14). By discursive efforts Burnett means different meanings that clashed with each other. On

the one hand, the creators of *Alteration* put a certain meaning in what they create. On the other hand, the viewers create their own meaning when watching the film. These different meanings are in a constant struggle between each other which produces a new meaning.



Figure 3.9: The underwater house

This dynamism of different meanings and interplay of several forces in a virtual environment can lead to the emergence of an unexpected meaning. The relationship between the viewer and the virtual space in the film *Alteration* becomes especially interesting when there is the unexpected exploration of the virtual space that is outside the constraints that this virtual space sets. For example, one of the participants of the questionnaire noticed that when experiencing the scene with the underwater house (Figure 3.9), she “felt threatened, and [she — V. M.] was looking around to see where is the girl with blond hair [Elsa — V. M.] and to not to miss if something happening around [her — V. M.] or come to [her — V. M.] direction”. Irrespective of the storyline, this viewer expected someone to come to her direction in order to scare her. She *visualised* that someone is hiding behind the walls of the house to scare her, and, in doing so, her own images based on what she sees. She had a unique experience by imagining things that other viewers cannot see. While some participants felt “eerily peaceful” and “relaxed”, she experienced the opposite emotions such as being

threatened. Burnett claims that “visualisation allows creators and viewers the chance to share each other’s passion, which is why audiences can become so profoundly engaged with the stories they hear or watch or the games they play” (Burnett 213).

The imagination of an invisible ‘enemy’ behind the walls allows the viewer to experience the virtual world and the storyline of the film in a more intense way. By visualising someone who can scare her, the participant provoked herself to constantly look around and check if an ‘enemy’ is coming towards her.

To summarise, the notion of visualisation shows the importance of imagination and human creativity in the process of viewing. The results of the questionnaire showed that viewers visualised their presence in a water environment and reacted as if they were themselves navigating through water and explored the underwater house. The concept of visualisation as opposed to the notion of representation. Representation suggests that the creator of images is able to control the results of interaction with these images. While visualisation is about the tension between several forces such as viewer’s reflections, imagination, unconscious processes, as well as his or her expectations. All these processes create new unique experiences when watching *Alteration*. It opens up a space for the emergence of an unpredicted ways of exploring the virtual space of the film. This section looked closely at how one of the participants visualised an invisible ‘enemy’ and experienced completely different emotions than other viewers. Moreover, it analysed dissimilar reactions of the viewers to the same scene of exploring the underwater house, highlighting the role imagination during the process of watching.

3.5. Conclusion

This chapter focused on different aspects of the concept of imagescapes such as the notions of reverie, hybridisation, and visualisation. It tried to look at the experience of watching *Alteration* through these notions. The concept of imagescapes highlights multiple engagements between the viewer and images foregrounding a performative aspect of images that the viewers experienced when watching *Alteration*. Imagescapes in virtual reality focus on the agency of the viewer in the process of interaction between the viewer and a virtual environment. The viewers of *Alteration* develop performative relationships with the virtual space through the use of a head-mounted display. At the

same time, the film provides a certain structure for viewers' experiences by navigating them through the virtual space and involving them into the storyline. The non-linear storyline of the film is based on viewer's ability to connect the scenes to each other. The viewer recreates the storyline of the film by making sense of what he or she sees.

The results of the questionnaire showed that the participants experienced the same virtual space in unpredictable ways and engaged with it in different modes of interaction. This is possible because of the interplay among reflexive thoughts, imagination, as well as personal backgrounds of the viewers whilst watching *Alteration*. The notion of reverie tries to map these multiple experiences and look at both predictable and unpredictable results of interactions. One of the ways of interaction between the viewer and the film is the struggle between what the viewer expects to happen in the virtual space and what he or she sees. Additionally, it was argued that the process of reverie encourages empathy because the viewers give in to their viewing experience and transform what they see on the screen into their personal feelings.

It was also argued that the virtual environment of *Alteration* is a hybridised space where both the viewer and a virtual space depend upon each other. The entire experience of *Alteration* is based on the way the viewer interacts with a virtual space through a head-mounted display. The experience of a virtual environment and the storyline of the film depend on viewer's movements and the way he or she explores a virtual space.

Finally, imagination plays a huge role in the process of watching *Alteration*. The viewers of *Alteration* experienced virtual environment as if it is real. The effect that the virtual space in the film *Alteration* has is possible because of their ability to visualise this space and bridge the depiction of an event with their real experience. Moreover, the process of visualisation allows for unpredictable exploration of the virtual space making the experience of the viewer unique.

CHAPTER 4: CONCLUSION

3.1. Introduction

The second and third chapters discussed the experience of the VR film *Alteration* through the concepts of intermediality and imagescapes. Both of these concepts looked at the received data and the experience of watching *Alteration* from different angles. The second chapter focused on the analysis of the received data from the perspective of the concept of intermediality. While the third chapter addressed the experience of watching *Alteration* through several concepts of the theory of imagescapes such as the notions of reverie, visualisation, and hybridisation. The previous chapter argued that the viewers of *Alteration* were involved in the process of reverie which include an interplay among their thoughts and reflections, as well as unconscious processes. In addition, the third chapter addressed the virtual space of *Alteration* as a hybridised space where the setup of the film and the viewer are dependent upon each other. Finally, it was argued that the experiences of *Alteration* are highly dependent on viewers' creativity and imagination.

This chapter aims to answer the research sub-question: How do the analyses of the experience of *Alteration* through the concepts of intermediality and imagescapes relate to each other? The main aim of the comparison of the two case studies is to reevaluate the received data and rediscover the results of my analysis in order to answer the main research question which is: In what ways the relationship between the body of the viewer and the virtual reality film *Alteration* can be explored through the concepts of intermediality and imagescapes? The comparison of two case studies of intermediality and imagescapes helps to answer the main question because it shows different angles of the relationship between the body of the viewer and the virtual environment of the film.

First, the chapter approaches different understandings of images in these two concepts. It is important to look at the way images are approached because images are the basis for the interaction between the viewer and the medium of VR. Then the chapter looks at the assessment of the data in previous chapters and compares the ways

the body of the viewer was engaged in the experience of *Alteration*. Lastly, it focuses on the limitations of this research and suggests possibilities for the further research.

3.2. Images

The term of an image is the central notion in the concepts of intermediality and imagescapes. Although there are some common principles in the way both theories interpret the notion of an image, there are also several distinctions. It is important to look at the definitions and different meanings of the term of an image because both theories of intermediality and imagescapes revolve around the concept of an image and the process of viewing. The understanding of the meanings of an image influences the way the received data is assessed and provides the fundamental difference between the two concepts. This section looks at the way the viewers receive images when watching *Alteration*. It compares the term of an image in both theories of intermediality and imagescapes and reflects on how the collected data is analysed based on different understandings of this term.

Both Belting and Burnett focus on the term of an image but approach it from different perspectives. An image is seen by the authors as a performative relationship between the viewer and what is represented through media rather than an object. The analysis of the experience of *Alteration* showed that the images that the participants received are an integral part of both the viewer's body and the film *Alteration*. The second chapter looked at the interaction between the body as the locus of images and the medium of VR. The body of the viewers converted the experience of diving into the water into their internal images. The interaction between internal images of the body and images of *Alteration* resulted in the viewers' feelings of being physically present in the water environment. The images that the body produces and images of *Alteration* blend together the moment the viewer sees the film and cannot be clearly distinguished. Thus, images cannot be outside the body of the viewer. Belting, following the German tradition of visual studies, focuses on the distinction between an image and a picture. An image, in Belting's theory, cannot exist without someone who sees it, it exists only in the moment of viewing. On the contrary, a picture is the "image with a medium" (Belting 10). Belting sets images apart from pictures; "pictures are physical

images” (Belting 12). He cites Mitchell who refers to pictures as “representational objects in which images appear” (Belting 12). As it has been shown in the analysis of the experience of *Alteration*, images of diving into the water exist only in the moment of watching the scene.

Burnett also emphasises a performative aspect of an image. In the concept of imagescapes, an image is connected to both the viewer and a medium of VR. But instead of distinguishing between an image and a picture, the theory of imagescapes places the image as an opposition to the concept of representation. An image is not what its creator aims to show but it is a constant flow of interactions between the viewer and what is shown on the screen. For this reason, Burnett addresses the term of an image as *waves of interactions*. An image is a process of constant interactions and an interplay of different forces such as imagination, fantasies, reflective and unconsciousness processes. As the third chapter has showed, the experience of *Alteration* is based on multiple reflective processes such as the viewers’ expectations to be scared by someone or something, their imagination of AI Elsa being in their heads, as well as reflections on being attacked in the virtual space. Moreover, the performative aspect especially evident in the analysis of the viewers’ experience through the concept of hybridisation. This analysis has shown that the way the participants experienced the film directly depends on their movements in the virtual space. By navigating themselves in the virtual environment through the use of a head-mounted display, the viewers can alter the way they experience the storyline of the film.

The analysis of the experience of *Alteration* highlighted not only the performative aspects of an image but also the social. A social aspect of an image means that the experience of an image is closely connected to viewers’ subjective sensual feelings, imagination, and reflections. The analysis of the questionnaire has shown that the viewers brought their embodied cultural experience from the real world to the virtual space of *Alteration*. For example, in the second chapter, it was noticed that one of the participants brought her embodied experience of interpersonal distance to the virtual space of the film indicating that she felt uncomfortable because the characters came too close to her in the virtual space. Another example of the social aspect of images can be found in the third chapter which showed that the experience of the scene with the underwater house was based on her imagination. She imagined an enemy

hiding behind the walls of the house which evoked feelings of fear. The image of an enemy is possible only because the viewer reflected on what she saw and her reflections resulted in the visualisation of an invisible enemy behind the walls. These examples show that images in both of case studies, the viewers' reflections, imagination, as well as embodied experiences are an integral part of images.

Instead of focusing on the concept of representation and looking at pictures as objects or entities, Belting addresses the role of a medium in the process of viewing. Images become embodied through their media. The focus on the medium of VR can be seen in the analysis of the experience of *Alteration*. The second chapter discussed the virtual space and virtual places as the essential elements of VR. The virtual space is an abstract and heterogeneous space reproduces elements of the real world that have symbolic meanings. Moreover, it was argued that the virtual space is also a cultural space which directly influences the experience of VR. The medium of VR is developed in the Western world which is dominated by the ocular-centric ways of seeing. It is reflected in the general focus of the medium of VR on vision instead of other senses. The virtual space of *Alteration* provides an immersive experience because VR aims to hide the screen and be sensory invisible to the viewer providing the sense of being in a living environment. VR tries to eliminate the presence of a physical medium and give the viewer more space for his or her movements in a virtual environment.

Another side of media that the concept of intermediality addresses is the living medium. While the medium of VR embodies images of *Alteration*, the body as the living medium embodies internal images. VR produces images that are developed by the creators of the film, whereas the living medium creates its own images. This is illustrated in the analysis of the experience of the scene which shows Alexandro 'attacking' the viewer with a stone. The viewers' strong bodily reactions such as moving away from Alexandro or disconnecting with the film showed that the participants experienced images through both their bodies and the medium of VR. Moreover, images that are produced by the body and images of VR are in a constant interaction between each other.

The concept of intermediality argues about the interaction between the two media: the body and the medium of VR, while the concept of imagescapes similarly focuses on the interchange between what the viewer sees on the screen and what he or

she experience. At the same time, the analysis of the data through the theory of imagescapes looks at the interactions between different reflective and unconscious processes inside the viewer's body. If the concept of intermediality emphasises the connections between the medium of VR and the body, imagescapes highlights the interplay between imagination, reflections, expectations, and different senses. By highlighting these reflective processes and creative abilities of viewers, Burnett maps the ways internal images are constructed at a variety of levels. The analysis of the received data in the third chapter argued that the viewers experienced the same scene of walking inside the water in not only different ways but also the opposite because they reflected differently on it. For example, one of the viewers felt "good" when experiencing the scene because she enjoys diving, while others felt scared and confused. Thus, imagescapes of *Alteration* are the result of the interlay between reflective processes of the viewer and what he or she sees on the screen, while intermediality focuses more on the body of the viewer.

To sum up, the theories of intermediality and imagescapes do not contradict each other but rather look at the same processes of viewing from different sides. The analysis of the received data through the concept of intermediality focuses on both media of VR and the body. As a result, it foregrounds the sensual reactions of the viewers of *Alteration* and their embodied experiences in the virtual environment of the film. Whereas the analysis of the data through the concept of imagescapes looks at the experience of images as the process that involves creativity of the viewer who visualises and creates his or her own images, as well as reflects on what he or she sees.

3.3. The Body

In order to answer the main research question, this work addresses the experience of watching *Alteration* through bodily reactions of the viewers. The role of the body in the process of experiencing the VR film is emphasised in both case studies. This section summarises different ways in which the body of the viewer is connected to the virtual space of *Alteration*.

The relationship between the body of the viewer and the film *Alteration* can be explored through the concepts of intermediality and imagescapes in a number of ways.

First of all, the viewers had such reactions as holding a breath or feeling the pressure in the chest when diving into the water in a virtual environment. These reactions are possible because the viewers have an embodied experience of diving into the water. The body, as the natural locus of images, contains the memory of diving into the water that comes through images. Additionally, the viewers also reacted on the scene of the man attacking them with a stone as if they were attacked in the real world trying to move away from Alexandro or disconnecting with the film. These experiences show that the viewers had visceral and intense experiences that make them feel not only present in the virtual space but also violated. At the same time, the participants could also reflect on their experiences and acknowledge that what they experience could not hurt them. Moreover, the viewers had an embodied experience of not only reacting to a specific virtual environment that reflects places in the real world but also bring their own understandings and embodied cultural background to the virtual space of the film such as the understanding of the interpersonal space. There is an intermediality between the viewer and the VR film because only by bringing their embodied experiences and connecting their internal images with the images of *Alteration*, the viewers could experience virtual reality. Finally, the most evident connection between images and the body of the viewer that the second chapter addressed was the experience of cybersickness. Even though the majority of the participants of the questionnaire did not indicate the symptoms of cybersickness, some of the viewers noted that they felt nauseous and slightly dizzy. These reactions showed that the viewers' bodies had a close connection to images they experience. The experience of watching *Alteration* is not only culturally embodied but also a physical experience. As a result, the viewers reacted to the virtual space as if they were in the real world because their bodies were tied to the images.

If the case study of intermediality focuses on embodied experiences that the viewers had when watching *Alteration*, the third chapter looked at the ways the viewers imagined and visualised images while experiencing the film. The analysis of the data through the theory of imagescapes puts an emphasis on the process of interplay between the inner images that the viewer creates and what he or she sees on the screen. The case study of imagescapes foregrounds that the experience of the film *Alteration* through the body means not only the sensual reactions but also includes mental processes such as reflections, imagination, creativity, and unconscious processes. The

case study of imagescapes shows that multiple mental processes influence the way the body experiences images. The data analysis revealed that viewers' reflections and different ways of interaction resulted in very different experiences of the same scene of being in the water. These unpredictable reactions are explained by the concept of reverie which emphasises the interplay between different conscious and unconscious processes that are involved in the process of viewing. The viewers of *Alteration* experienced the scene differently because of the different configurations of the process of reverie which is an interplay between viewers' thoughts, daydreams, and different senses.

Another way in which the relationship between the body of the viewer and the film *Alteration* was explored through the concept of intermediality is the struggle between the viewers' expectations and what they see when watching the film. The analysis of the data showed that one of the participants expected to get scared when exploring the underwater house which consequently influenced her experience of the film.

Additionally, the analysis of the data through the concept of intermediality showed that the interplay between different senses such as tactile, vision, and hearing also influenced the way the viewers experienced the virtual environment of the film. The concept of imagescapes highlights not only vision but also other senses which is a productive way to shift the focus of VR from vision (See 2.2) to other senses.

Although the case studies of intermediality and imagescapes have different perspectives on the bodily experience of the viewers, there are some intersections in the analysis of the received data. The first case study (Chapter 2) approached the identity of the viewer in the virtual space of the film. It is important to notice that the experience of a new self is only possible because of the process of visualisation in which the viewer is involved. He or she visualises himself or herself as the main character of *Alteration* who is being exposed to the influence of AI Elsa. Thus, one of the participants was bothered by "Elsa in [her — V.M.] head" because she not only imagined being Alexandro but also visualised that she is influenced by AI. The viewer imagined the presence of the AI in her mind and, as a result, felt uncomfortable. Thus, the processes of visualisation make the experience of a new self possible.

Furthermore, the first case study of intermediality (Chapter 2) showed the connection between the experience of VR and dreams. It was argued that the experience

of *Alteration* is similar to the experience of dreams because the viewer has an impression of ‘travelling’ to different places. At the same time, the viewer experiences the film or dreams through his or her body. Moreover, the second chapter argued that the experience of the storyline of the film is close to the experience of dreaming. The storyline of *Alteration* has a non-linear narrative structure which is the reason the majority of the viewers found the storyline unclear. The connection between the process of dreaming and the experience of *Alteration* can be also explained through the process of hybridisation which was addressed in the third chapter. Hybridisation is the process in which the viewer and the virtual environment of the film depend upon each other. The data analysis revealed that the viewer influenced the way the storyline of the film is unfold and, at the same time, the film provides the virtual space in which the viewer can navigate himself or herself. When looking closely at the experience of the scene in which young Alexandro discovers that his dog is dead, the analysis has showed that the viewer can obtain two different experiences by moving his head either toward the scene which shows Alexandro or the scene that presents playing Elsa. At the same time, the viewers can navigate themselves in the virtual environment only through the use of a head-mounted display. Dreaming is also the process that involves hybridisation between the body of the viewer and his or her dreams. The process of dreaming is only possible through the body of the dreamer, while the experience of watching *Alteration* is tied to the body because the viewers explore the virtual space by moving their heads.

To sum up, the body of the viewer and the VR film *Alteration* are tied to each other in many ways. The case studies of intermediality and imagescapes have similar principles of approaching the body of the viewer. The analysis of the experience of *Alteration* through the concept of intermediality showed that the body of the viewer is closely connected to images and experiences them on multiple sensual and physical levels. While the case study of imagescapes focused on different aspects that influenced the way the viewers received unique and different experiences through their reflections, expectations, imagination, and navigation in the virtual space.

This research has attempted to look at the connection between the body of the viewer and the film *Alteration* from different sides. After conducting the questionnaire and analysing the received data, it has been revealed that there are some limitations of the study. The next section acknowledges limitations that this study provides.

3.5. Limitations

The first limitation of this study relates to the sample size of the questionnaire which was used as the main source of data collection. It is important to notice that the questionnaire assessed the experience of fifteen viewers. Thus, the research used only restricted amount of data and assessed a small number of participants. Additionally, the majority of the participants appeared to be younger than thirty five years old which may also influenced their experiences of *Alteration*. This limitation exists because the study was conducted within a short period of time and the analysis of a greater amount of data was not possible due to the time restriction of the research. Moreover, this study includes qualitative research which assumes that more data do not lead to more relevant information on the research.

The second limitation that is important to mention is the lack of available data. The experiences of the viewers include not only explicit reflections and thoughts but also inexplicit and unconscious reflections that are not possible to assess but important to acknowledge. In addition, thoughts and subjective reflections are difficult to research because the participants of the questionnaire answered only limited amount of questions five of which were closed questions. Closed questions are included in the questionnaire in order to be able to structure the received data. At the same time, it is essential to notice that this type of questions do not provide the viewers with their own measurements of their experiences. This issue cannot be easily solved because a significant part of viewers' experiences are inexplicit.

The third limitation that this research has is the types of measurements that are used to collect the data. The closed questions in the questionnaire use five types of given answers that vary from the strongest reaction to the absence of the reaction. For example, the second question addresses if the viewers felt threatened during the film. The answers that are proposed for this question include:

- I felt extremely threatened
- I felt quite threatened
- I felt a bit threatened

- I felt slightly threatened
- I didn't feel threatened at all

When looking critically at the suggested answers, it was noticed that the suggested measurements might have been interpreted differently by the participants. The suggested responses were organized from the strongest reaction to the least strong reaction where the answer "I felt a bit threatened" expresses more explicit reaction than the answer "I felt slightly threatened".

The next question that could be interpreted differently by the participants is "Did you feel nauseous or dizzy after watching the film". The answers that were proposed in the questionnaire are:

- I felt extremely nauseous
- I felt nauseous
- I felt dizzy
- I felt slightly dizzy
- I didn't feel nauseous or dizzy

The question could be divided into two questions: "Did you feel nauseous after watching the film" and "Did you feel dizzy after watching the film". Since the two questions can be separated from each other, the suggested answers do not provide the whole range of reactions that the viewers might experience. This limitation arises from the way the questionnaire was designed. By changing the structure of the question and dividing it into two questions, this limitation could be solved. Nevertheless, this limitation did not affect the result of my research because the majority of the participants stated that they did not feel nauseous or dizzy after watching the film. Another relatively narrow but important limitation that I realised after conducting the questionnaire is the use of the word "you" in the questions when addressing the experience of the viewers, for example, in the question "How did you feel when you dived into the water". This question leads the viewer to answer the question using the pronoun "I". As a result, when addressing the identity of the viewers in the virtual space of the film, I could not use these data even though the majority of viewers described

their experiences as if they were really navigating in the virtual space using the pronoun “I”.

Finally, the last limitation that is essential to mention is the environment in which the questionnaire was conducted. The film *Alteration* was shown as a part of the VR section at the Short Film Festival in Nijmegen. The programme included two blocks of four short films. The film *Alteration* was shown the third in the block. This might have resulted in the change of the reactions of participants when answering the questionnaire. Additionally, some of the participants indicated that they experienced some issues with the equipment that was provided for watching *Alteration*. One of the viewers noticed that because “some sounds were really weak, [he — V.M.] could not hear Elsa”, while another participant noted that she felt the inconvenience because of the unfocused pictures. These equipment issues might have also influenced the way the viewers experienced the film.

To summarise, there are several limitations of this study such as the small sample size that was used for conducting the questionnaire, the inexplicit reactions that are difficult to address, as well as closed questions that are not able to fully reflect complex reactions of the viewers. The next limitation is related to the way the questionnaire is designed. Lastly, equipment issues and the order of the block in which *Alteration* was shown could influence the experience of the participants.

3.6. Suggestions for Further Research

The initially stated goal of this research is the exploration of the connection between the body of the viewer and the VR film *Alteration* through the concepts of intermediality and imagescapes. I analysed the experience of watching *Alteration* by assessing the received data through the multiple concepts that are related to the main theories of the research. Taking into account the limitations that were indicated in the previous section, there are several suggestions that could be made for the further research of my topic. This section proposes the future research that could extend the findings of this study.

First of all, the findings of this study suggest a new direction for the future research. The research shows that the bodily reactions that the viewers had include both sensual reactions and experiences that appeared due to the interplay between viewers’

reflections, imagination, and unconscious processes. It would be beneficial for the further study of this topic to explore the relationship between physical reactions and their cognitive processes during watching the VR film. The question that could be addressed is: “In what way the sensual reactions are connected to the cognitive reactions of the viewers”. This question is important to address because it will contribute to the quality of the research and explore further the relationship between an image and the viewer. Although methodologically challenging, it would be also beneficial for the study to conduct individual interviews with the viewers of *Alteration* in order to capture their experiences and reactions in a more detailed manner. An interview as the main source of data collection can provide a new set of data that will contribute to already found results. Finally, it would be also beneficial for the future research to involve the findings of psychological studies on the bodily reaction while experiencing VR. This will help to look at the findings of this research from a different angle.

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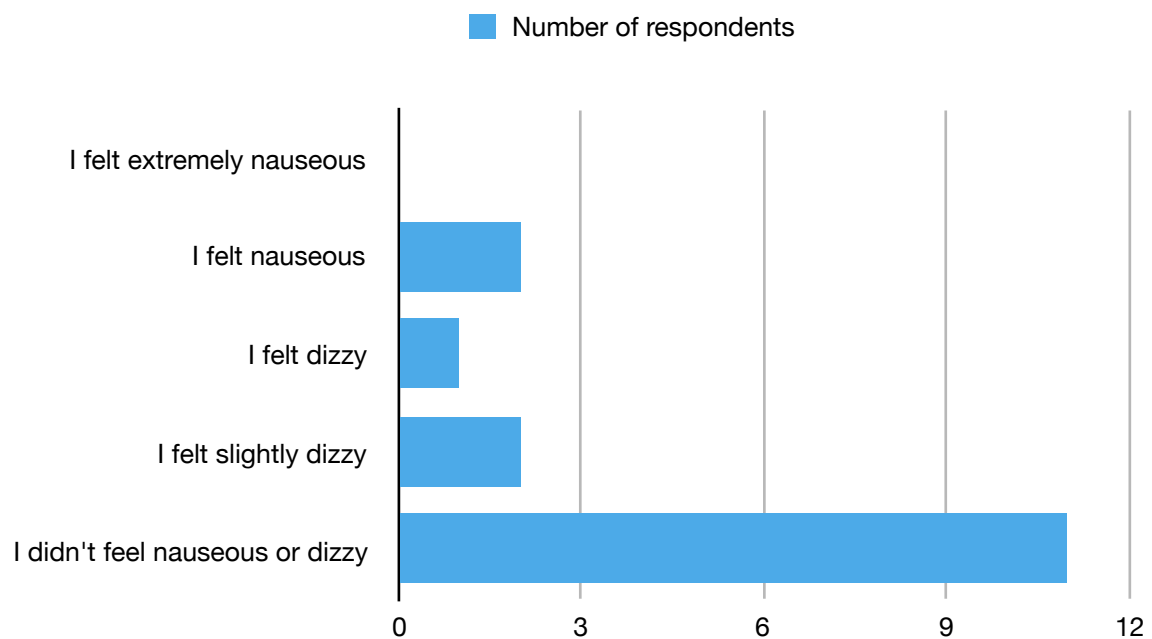
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APPENDIX

Transcript Analysis

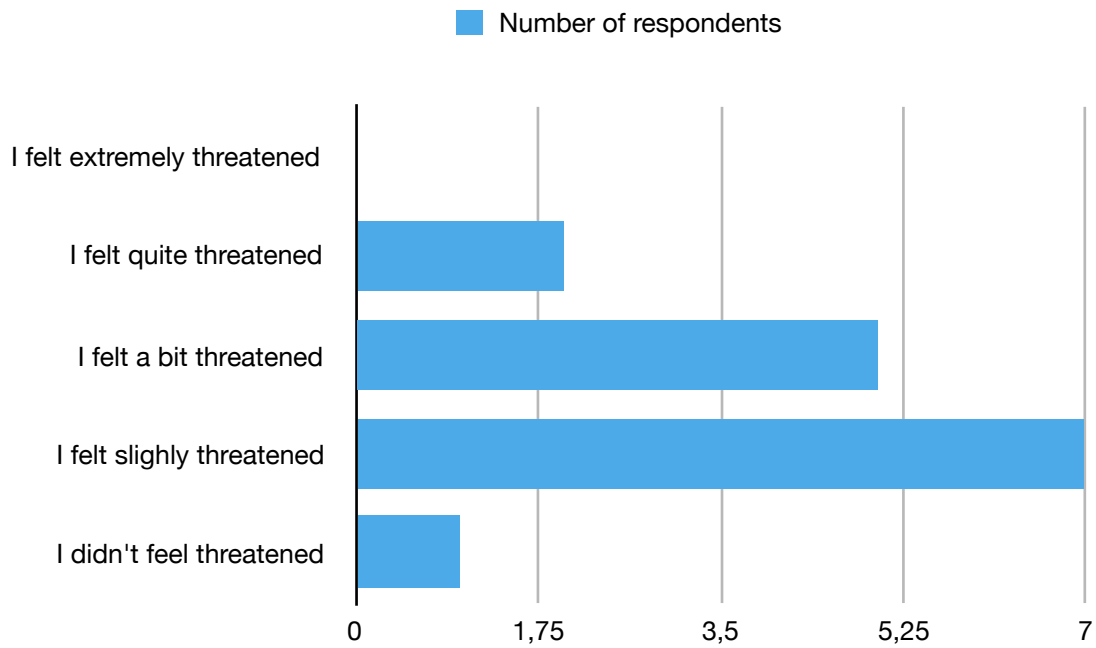
1. Did you feel nauseous or dizzy after watching the film?

- I felt extremely nauseous
- I felt nauseous 2
- I felt dizzy 1
- I felt slightly dizzy 2
- I didn't feel nauseous or dizzy 11



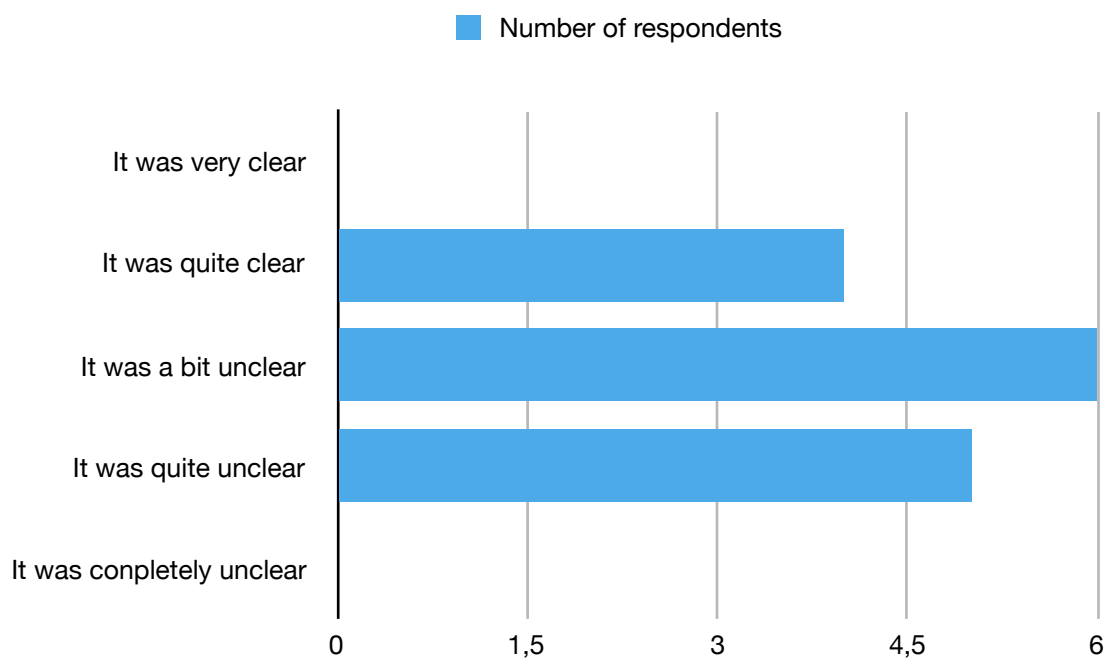
2. Did you feel threatened during the film?

- I felt extremely threatened
- I felt quite threatened 2
- I felt a bit threatened 5
- I felt slightly threatened 7
- I didn't feel threatened at all 1



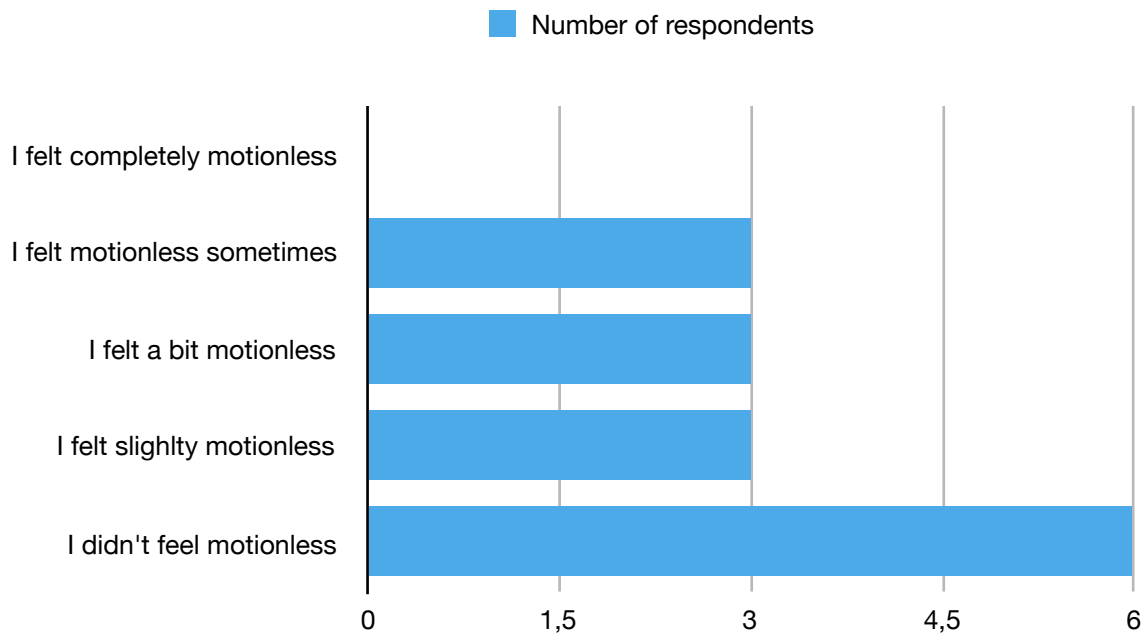
3. Was the timeline of the events in the film clear to you?

- It was very clear
- It was quite clear 4
- It was a bit unclear 6
- It was quite unclear 5
- It was completely unclear



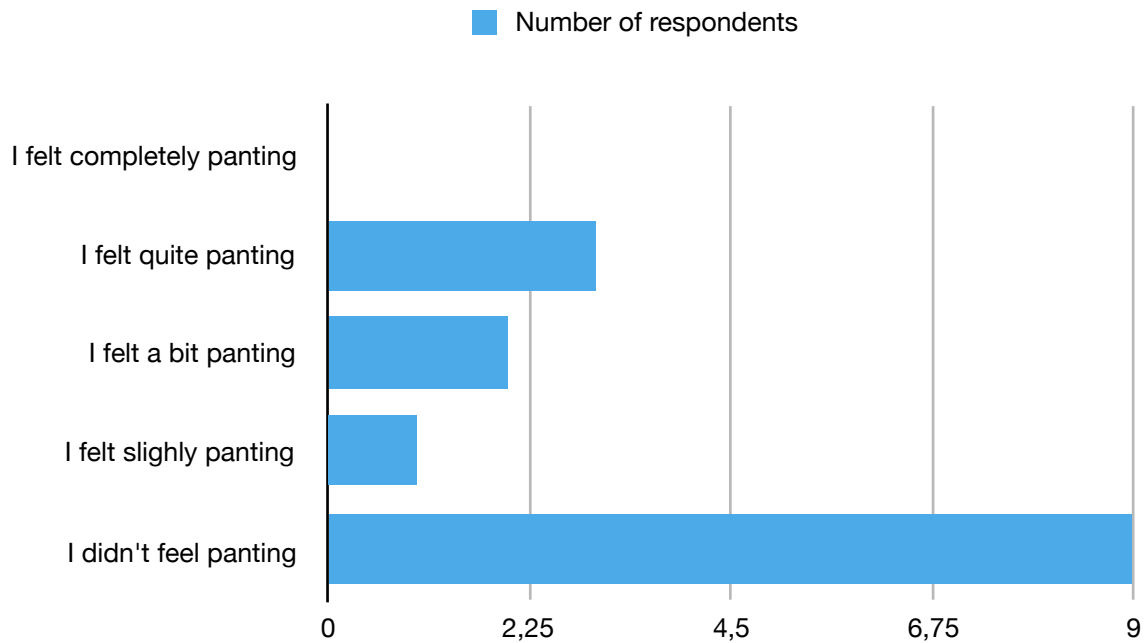
4. Did you feel motionless?

- I felt completely motionless
- I felt motionless sometimes 3
- I felt a bit motionless 3
- I felt slightly motionless 3
- I didn't feel motionless 6



5. Did you feel panting when you dived into the water?

- I felt completely panting
- I felt quite panting 3
- I felt a bit panting 2
- I felt slightly panting 1
- I didn't feel panting 9



6. What was your reaction when a man in the film attacked you with a stone?

1. Not much. I knew I would not get hurt
2. I had [the word is stressed by the viewer — V.M] to think it's not touching me
3. -
4. I felt scared, and I moved away from the man even if I knew that he was only in the VR world.
5. I felt intimidated but not scared I was aware that it wasn't real.
6. a bit scared
7. Scared
8. I flinched a little bit.
9. -
10. I saw it coming so it was okay. Not a lot of emotion.
11. I disconnected with the film
12. I turned away so I did not [have — V.M.] to watch it.
13. I hadn't a specific reaction
14. Back up!
15. -

7. How did you feel when you dived into the water?

1. I didn't feel much
2. holding my breath
3. -
4. I felt a pressure on my chest, like if I would be in water
5. excited to find out what would happen.
6. nothing really.
7. Nothing
8. It took a couple seconds to realise that I could in fact safely breathe.
9. -
10. Scary, I felt uneasy. Yet curious to see what would happen.
11. awe, snel cods visuals [the grammar is kept unchanged — V.M.]
12. I felt really good! I like diving
13. feeling
14. Good, intrigued
15. -

8. How did you feel walking inside the water?

1. Scared or afraid I would get scared
2. relaxed
3. -
4. I felt threatened, and I was looking around to see where is the girl with blond hair and to not to miss if something happening around me or come to my direction.
5. excited.
6. I don't remember
7. Nothing
8. Eerily peaceful
9. normal
10. walking? I didn't experience it as walking. I felt as if in a shipwreck. A bit scared there would be a unpleasant surprise.
11. see above + floaty

12. Good and a bit angxious [anxious — V.M.]
13. -
14. Good, intrigued
15. Moving slowly

9. Did any sounds in the film bother you?

1. No
2. no
3. -
4. Yes. The whole film was frustrating and the music enhanced this feeling more
5. no, but the sound was drastically lower (in general) compare to the previous two films who were shown [not clear - V.M.] before, that was a bit annoying
6. -
7. Yes, the creepy sound of little girl
8. not really
9. Lot of difference in volume
10. No
11. no
12. No
13. Yes
14. nope
15. No.

10. Did you feel any inconvenience while watching the VR film *Alteration*? If yes, in what way?

1. Yes, I felt bothered by Elsa and her in my brain
2. Yes; the figures came too close to me
3. -
4. Yes. Because of the frustrating topic and atmosphere of the film but at the same time it was engaging and interesting topic to think about it afterwards. So I didn't mind the inconvenience

5. See 9. (not the screen)
6. -
7. No
8. -
9. no
10. No. Maybe the focus / sharpness of the image.
11. no
12. No
13. Some sounds where really weak, I couldn't hear Elsa
14. not understanding the whole plot
15. -

11. Do you feel that the VR film *Alteration* was immersive enough to be realistic?

1. Yes.
2. Yes and no
3. -
4. It was for me. That's why I felt threatened and involved in the whole story and atmosphere
5. At times
6. -
7. No, but I think it has more to do with the equipment
8. yes
9. no
10. Yes.
11. quite!
12. It was day
13. no
14. Yes! Great immersion!
15. -

12. How did you feel after watching the VR film *Alteration*?

1. Bothered by the sad ending. It felt like a warning for the “future”
2. Confused
3. -
4. I felt doldrums and I felt an urge to think about the film and it was bad that this film wasn't the last one in the block to have time to (not clear) it.
5. A bit shaking.
6. -
7. Not had
8. -
9. -
10. I felt like I experienced something new. Several emotions in one. Excited and a little bit scared about the future and AI.
11. unsettled
12. a bit bad it was so sad =(
13. -
14. ok
15. Slightly confused

13. Do you want to add any commentary about your experience of watching the VR film?

1. -
2. I found it creepy
3. -
4. -
5. -
6. -
7. -
8. -
9. -
10. I like watching it on a rotating chair. Better headphones might make it more immersive.
11. it was quite amazing!

12. I liked the change of scene and colours

13. -

14. -

15. -

14. What is your age?

1. 23

2. 65

3. -

4. 24

5. 37

6. 37

7. 22

8. 24

9. 24

10. 32

11. 26

12. 27

13. 22

14. 31

15. 26

15. What is your gender?

1. Female

2. Female

3. Female

4. -

5. Female

6. Female

7. Female

8. Female

9. Male
10. Female
11. Female
12. Female
13. Male
14. Female
15. Male

Codes

6. What was your reaction when a man in the film attacked you with a stone?

Emotions

- scared
- intimidated

Bodily reaction

- flinched
- disconnected with the film
- turned away
- get back up
- moved away

Thoughts

- Realisation that it is not real
- “I had to think it’s not touching me”

7. How did you feel when you dived into the water?

Bodily reaction

- Holding a breath

- Pressure on a chest (like if I would be in water)
- “It took a couple seconds to realise that I could in fact safely breathe”

Emotions

- Scary
- Uneasy
- Excited
- Curious
- Awe
- Intrigued
- Felt good

8. How did you feel walking inside the water?

Emotions

- Scared
- Relaxed
- Excited
- Eerily peaceful
- Threatened
- Feeling good
- Intrigued
- Anxious
- Confused

Bodily reaction

- Looking around
- I didn't experience it as walking. I felt as if in a shipwreck.
- Moving slowly

Experience of the film

Feelings

- frustrated
- engaged
- threatened
- involved in the story and atmosphere

Bodily experience

- Figures came too close

Atmosphere of the film

- Engaging
- Interesting
- Frustrating
- Thought-provoking
- Complex plot
- Immersive
- Creepy

12. How did you feel after watching the VR film *Alteration*?

Emotions

- feeling doldrums
- bothered
- confused
- unsettled
- “I felt like I experienced something new”
- scared about the future
- sad

Bodily reaction

- shaking