DAVID EVANS BAILEY

SYNCHRONOUS REALITY

PLACE AND MEMORY IN VIRTUAL INSTALLATION

An exegesis submitted to Auckland University of Technology in fulfilment of the requirements for the degree of Doctor of Philosophy

School of Art and Design

01 ABSTRACT

This practice-led research reanimates my own place-based memories; placing participants in an immersive installation to conjure sensorial recollections, both physical and virtual. Visual, aural, kinesthetic, tactile and olfactory perceptual encounters draw the audience into memories of particular interior spaces past. The research asks how personal experiences, in particular intimacy and solitude, can be evoked and intensified in a virtual space, over a duration of time. The term *Synchronous Reality* was developed to describe the simultaneity of multiple spaces and temporalities in a coherent virtual and physical installation that generates poetic-sensory interactions.

Through a series of installation events using the *HTC Vive* technology in gallery, lab and theatrical sites, I have explored the feeling of 'being there', through embodied experience. The primary methodology is autoethnographic, including creative stages of self-reflection, diaristic entries, photography and animation. I consider the kinds of intensive art experiences that can be generated through emergent VR technologies, at the interface between physical objects and virtual rooms, or psychological landscapes. The confined interior of a caravan has become a key figure where virtual objects conjoin with their physical counterparts in an installation form.

The research has expanded to consider whether a sense of intimacy could also be fostered in audiences to bring about a connection with their own past. Through focus groups and interviews this study investigates whether a recreated, personal memory in an immersive artwork could also resonate with participants and, in turn, allow them to recall their own place-based narratives. Philosophers explored by the practice suggest that we can relive our daydreams; synchronous reality in art

practice indeed revives my own memories, yet the research also indicates that embodied, durational encounters with virtual spaces can evoke place-based memories in others.

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04 ATTESTATION OF AUTHORSHIP

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

SIGNED

DAVID EVANS BAILEY

JULY 2019

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06 ETHICS APPROVAL

Auckland University of Technology Ethics Committee (AUTEC)

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28 June 2018

Janine Randerson
Faculty of Design and Creative Technologies

Dear Janine

Re Ethics Application: 18/216 Place and memory in virtual space

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 27 June 2021.

Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through http://www.aut.ac.nz/researchethics.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through http://www.aut.ac.nz/researchethics.
3. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form: http://www.aut.ac.nz/researchethics.
4. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

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AUTEC grants ethical approval only. If you require management approval for access for your research from another institution or organisation then you are responsible for obtaining it. You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries, please contact ethics@aut.ac.nz

Yours sincerely,

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07 INTRODUCTION

> …in the daydream itself, the recollection of moments of confined, simple, shut-in space are experiences of heartwarming space, of a space that does not seek to become extended, but would like above all still to be possessed. (Bachelard, 1994, p. 10)

This research sets out to explore how memories of place can be experienced through installation art in an immersive environment. Over the process of producing several installations, including an empty room from a house I once lived in, I began to develop versions of a caravan located in the English Midlands that I inhabited for two years. An early ambition was to explore solitude and intimacy as connective conditions between the remembered spaces of the audience and the maker, and the figure of the caravan serves this purpose well. As the project developed, my focus expanded to include the sensory elements of the physical installation to investigate how they might enhance the virtual elements. As the coincidence between the sensory parameters of the physical and virtual parts of the installation increased during the research, the project moved into emergent territory for virtual art environments.

My interest in place and memory was investigated through the immersive headset technology of the *HTC Vive*. This system was the prevailing consumer technology at the time the research was conducted and has provided a suitable immersive virtual environment to work in, while I also attended to biophysical aspects of the installation. As the research progressed, I began to ask how the connection between the physical and virtual elements of the installation might amplify the affects of immersion. This introduction will outline the aims and questions that drive the research, including the methodological approach. I examine aspects of virtual space

in relation to the ideas of philosophers Gaston Bachelard, Henri Bergson and Brian Massumi.

This research offers the term *Synchronous Reality* in order to define the concerns that have emerged from my creative experimentation in my installations *Empty Room* (2016) and *Caravan* (2017-2019). The phrase *Synchronous Reality* reflects the production of a multisensory environment which binds physical and virtual elements; enabling the sensing of the virtual scene at the same time as biophysical sensations such as hearing, touch and scent in a temporally unfolding environment. The art experiences I have developed place the participant within a memoryscape which they can explore physically and virtually once in *Synchronous Reality*. Throughout this study, the author's own creative writing and thought processes are presented in grey italic text.

07.01   METHODOLOGICAL FRAMEWORK

This study has been carried out using autoethnographic methods, within the broader paradigm of iterative, practice-led research. Drawing on author Tony Adams (2015), my research turns inward to my own memories and creates a sensory narrative that combines the virtual and biophysical environment. My practice aims to evoke a memory about a place and time through accumulated points of reference, using both sensorial cues, computer-generated landscapes and physically constructed interiors. Since the implicit energy for the work comes from within myself, the potential of autoethnography lies in its engagement with my own experience. This research has focused upon two particular states, solitude and intimacy, both of which attempt to engage participants with my own memories. In turn, I aspired for participants to find some wider relatable context within themselves and their own experience. The immersive quality of the experience was aimed at giving the

participant the feeling of being there, first hand, within a place-based memory. A number of autoethnographic methods have been used in this research, including photographic exploration, journaling and emotive writing, which have been brought together in the practice-based exploration.

This thesis is situated in a practice-led research paradigm where my art practice is the primary vehicle for conducting the research. Practice-led research is succinctly defined by Richard Lyle Skains as follows:

> Put simply, in practice-based research…the creative act is an experiment (whether or not the work itself is deemed 'experimental') designed to answer a directed research question about art and the practice of it, which could not otherwise be explored by other methods. (2018, p. 86)

Skains views the act of creation as something experimental regardless of the intention of the artist. No matter how planned a piece of artwork is, the very nature of creating it invokes some level of experimentation. My own experience of working in virtual space is peppered with accidental discoveries about the medium and how it works. The artwork is developed through a process of inductive creation, whereby the artist discovers through artistic 'experiments' the potential answers being sought. The inductive creative process leads to discoveries where another method would not. Author and artist Shaun McNiff comments on the relationship between studio-based methods and the ensuing results for practice saying, "Theoretical explanations, practical applications, and comparisons to work of others will emerge naturally from experimental work in the studio" (1998, p. 147). Like Skains, McNiff believes the action of experimental creation produces explanations and ideas as a natural course of events. He refers to the method of inductive inquiry where hypotheses, conclusions, and more general principles are established through experimentation and observation.

However, the art practice was not only a solitary mode of studio-based work, and I also invited feedback through qualitative interviews with participants, and through critiques and focus groups in gallery sites throughout the research. Since my creative practice centres around memory and perception in the medium of virtual space, and the properties of immersion and presence as individual experiences, I needed others to understand the qualities of sensations, feelings and meanings the work was generating. A dichotomy may be perceived to exist between the revisiting of my own memory-place in virtual form (an act that is implicitly personal), and the openness of the artworks to recollections and experiences about place from others. However, to engage in such a paradox is part of the experimental nature of practice-based research. In pursuit of sensory understandings of my medium, I have drawn on aspects of phenomenology, largely as a conceptual lens rather than a specific methodology. To test the limits of perception and how we experience place became central to my practice-led research.

07.02   EVOLVING QUESTIONS

My overarching research question began with this: How can personal experiences, in particular of intimacy and solitude, be evoked and intensified within the context of a virtual immersive artwork? Initially, the theme of isolation was explored, rather than solitude, however, participant feedback from the installations indicated the positive connotations of the word 'solitude' were more appropriate to the experience of my works. My question was reframed several times over the course of the research to closely echo the direction the practical work was taking.

Further questions emerged, during the process, about temporality, duration, sensation and memory, which also began to shape the direction of the research. One of these questions was to ask and examine what kind of art experiences can be

generated through emergent VR technologies in the interface between physical and virtual space. Although we are always standing or sitting in a 'real' physical space while experiencing Virtual Reality in a headset, this is often an incidental space to the interior experience. In an art installation in a gallery site, we generally enter the artwork when we enter the room. As part of this progression the research became more directed towards the question: Could the immersive quality of the created installations be enhanced by combining virtual objects with physical counterparts?

The redirection of our conscious perception into a simulated, virtual space through a headset platform, whilst remaining conscious of the biophysical environment, was a generative contradiction to me. Many conventional VR environments, particularly games, lack points of reference to the physical setting of the player and focus exclusively on the virtual environment inside a headset. Virtual setups are often simply an empty space and the physical void is immersively filled by virtual objects. There is often nothing a participant can actually touch, smell or feel which resembles the visual content. I became interested in joining the physical and virtual conditions so that the virtual space and physical space each provide orientating points of reference, through the tactile, proprioceptive, aural or olfactory senses. I wanted to examine whether I could enhance the immersive experience to include physical sensations in order to create a deeper connection with my installations over a particular duration. Rather than relying on virtual space alone, it became clear that embodied physical conditions could become a vital part of the virtual experience. Informed by my reading of Gaston Bachelard's *The Poetics of Space* (1994), the research has sought to investigate another question: can a sense of intimacy generated by the artist through the exploration of solitude also be fostered in a participant to bring a sense of connection with events of the past?

07.03   THE PHILOSOPHICAL TERRAIN

My philosophical exploration of virtuality to inform my practice began with philosopher Jean Baudrillard (1981), who considered theories of simulation well before Virtual Reality as a technological platform was explored with any significance. I also gravitated toward three other philosophers of importance to this study: Gaston Bachelard, a philosopher of science with a phenomenological orientation, who links our recollections of a dwelling to its psychological manifestations; Henri Bergson, another Continental philosopher, who explores the relationship of mind and body, and examines the insubstantial nature of memories and the internal nature of time; and finally philosopher and social theorist Brian Massumi, who discusses the virtual nature of the mind and the imperfection of memories themselves.

To grasp how early understandings of the virtual developed a language of simulated realities, Baudrillard's *Simulacra and Simulation* (1981) became an early guide. He opens with the argument that simulation becomes the new truth and replaces any previous versions, when he writes, "The simulacrum is true" (1981, p. 1). To bluntly transfer this idea to the emergent domain of Virtual Reality, one could suggest that computer simulation becomes the new reality for the person experiencing it. Baudrillard also considers an image to be subject to successive phases which range from reflecting the actuality of reality to ending up as a complete departure from reality. He writes:

> Such would be the successive phases of the image:
> it is the reflection of a profound reality;
> it masks and denatures a profound reality;
> it masks the absence of a profound reality;
> it has no relation to any reality whatsoever;
> it is its own pure simulacrum. (1981, p. 6)

If simply translated to Virtual Reality as a technological platform, Baudrillard's phases could be applied to a spectrum of simulations ranging from an attempt to imitate physical reality to those which are a complete departure from any known physical universe. At first, I used Baudrillard's phases of reality as a benchmark to position the simulations I created in relation to the landscapes of my memory. Yet as the study progressed my understanding of the virtual developed, to the point where the virtual could be understood as a memory, a daydream, or a perception in the mind, as Henri Bergson (1988) has argued, beyond the virtual space as defined by the limits of a technological platform. Baudrillard's dystopian vision of a completely simulated virtual environment is impossible when we remain in our own bodies and our everyday physical reality, tethered to a headset. We always bring our bodily 'selves' into virtual platforms, complete with memories and visceral sensations. As the project continued, I increasingly experimented with a means to foreground an embodied experience of physical reality even while orientating my work towards memories of place in immersive VR.

Philosopher Jan Westerhoff (2011) negotiates the fraught philosophical and scientific terrain of defining the 'real'. To define physical reality is necessary for this thesis as it is twinned throughout the thesis with the notion of 'the virtual'. Westerhoff suggests five definitions of 'reality', including the following definition popularised in the narrative of the film *The Matrix*, (Wachowski & Wachowski, 1999): what is real is what appears to your senses; what you can taste, smell, hear, feel. While Brian Massumi (2002) suggests the classically empirical view of 'reality' is defined by the act of "conscious object-recognition" where 'reality' is defined as what we can sense and recognise externally to ourselves (Massumi, 2002, p. 240). However, like Baudrillard, Massumi expands this definition further by arguing that the 'real' includes the remaking or simulation of something already in existence (1987). He draws a fine line between the real and the simulation, suggesting that everything, simulated or otherwise can be understood as 'real'.

For the purposes of this study, I have used the term 'physical' and 'biophysical' to describe the spatial conditions of the lab, gallery and theatre sites, where the constructed environment and multi-sensory atmospheres conjoin with the *HTC-Vive* platform. The 'physical' or 'biophysical' refers to substantially built structures as well as the visible and invisible qualities within our reality that exist in a room's sensory environment.[1] This includes light, temperature and the proprioceptive and haptic sensations that orientate the human organism along with the computer simulation within the headset. The existing walls of the room, the furniture in it, the humidity and the sounds which vibrate through the medium of air, or the aroma molecules or smells which emanate from material things circulate even while we are immersed in VR. In Westerhoff's terms, if it can be sensed, whether virtual or physical, then to us it is 'real'.

Henri Bergson's consideration of the nature of experience, memory and perception is important to this research. He argues that projections in the mind are merely insubstantial constructs of matter, yet they are as important as scientific rationalism in understanding human experience. Once again, to make a simple parallel, Virtual Reality is a computer-generated construct, where the objects have no real substance except where they produce bodily affects and stir up memories. Yet Bergson suggests that psychological perception and the virtual are inextricably linked to the actual world, where memories connect with the object that is being perceived. As I discuss further in Chapter One, his understanding of virtuality has advanced my understanding of the digital sphere.

In addition to Bergson's early understanding of the virtual, French dramatist Antonin Artaud (1958; 2004) uses the phrase 'virtual reality' in relation to the theatre,

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[1] Mark Hansen (2006) also uses the terms "physical" and "virtual" when referring to Mixed reality platforms, See p. 26 of this thesis.

describing the theatre as a mirage. There are compelling parallels between the contemporary experience of VR as a technological platform, and his discussion of theatre as an illusory world where what was once a real condition becomes a 'virtual reality', created by all the paraphernalia which goes into a dramatic performance. My installations are theatrical in their construction and makeup; they are incomplete, a physical shell, providing a stage for the virtual environment to perform. The virtuality of an immersive VR installation, despite the physicality of some of its elements, is still a constructed illusion. Much as Artaud notes that theatre is "a fictitious and illusory world" (2004, p. 49) which ultimately dispenses with reality altogether, a virtual installation could be regarded to be estranged from the physical world. Yet my project aims to draw the doubled conditions of real and virtual closer together through sensory immersion in *Synchronous Reality*.

Philosopher Gaston Bachelard's study *The Poetics of Space* (1958; 1994) became a central text to this sensory orientation. Bachelard's discussion of memory, and how spaces trigger recollections, engendering a feeling of intimacy, led me to pursue spatial memories more closely in an immersive VR installation. The following sentence of Bachelard's, regarding solitude, resonated with me:

> And all of the spaces of our past moments of solitude, the spaces in which we have suffered from solitude, enjoyed, desired and compromised solitude, remain indelible within us, and precisely because the human being wants them to remain so. (1994, p. 10)

Solitude, more specifically felt as isolation, is something that I have experienced through much of my life. I immediately identified with the suggestion that these moments remain indelible within us. There are defining moments associated with particular spaces or places and when I examined such spaces or memories, it was my isolation which first came to mind. Bachelard helped to signpost the direction in which I was to travel with my practice. However, I also wanted to investigate the

affective power of the virtual as both a technological space and an imaginative realm. Massumi (2002) examines 'affect' in *Parables of the Virtual* (2002). For Massumi, the connection between sensation and articulation is central, and sensation assumes primacy in virtual encounters. Over the course of this thesis, I focus on aspects of sensory experiences of tactility, smell and hearing for their affective power. In Chapter One, I return in more depth to concepts developed by Bachelard, Bergson and Massumi on place, intimacy, memory, simulation and perception. These philosophers and theorists have guided the path of my research.

07.04   VIRTUAL REALITY AS A RESEARCH TOOL

My interest in Virtual Reality, as an artistic platform, began in earnest in 2014 with some of the products that were being produced for the medium, such as Google Glass.[2] Although I selected the *HTC Vive* as my research tool, I was initially interested in a future where we might be continuously immersed in virtual space. I pondered whether Virtual Reality products, immersive or otherwise, could achieve the same kind of ultimate ubiquity as the smartphone and how this would affect social life. American computer scientist Jaron Lanier (1992) is often credited with bringing the term Virtual Reality into common use in computing. Lanier argues Virtual Reality was the recreation of a sensory environment by the use of computer technology. His assertion was it required three things: a high-speed computer capable of generating 3D graphics and sound effects, a headset of some type, and a sensory glove (Lanier, 1992).

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[2] A pair of glasses connected to the internet via a smartphone seemed to open a vista of complexity about our relationship to the virtual. According to Blascovich and Bailenson (2011) the technology of Virtual Reality (VR) is not new, displays were being developed as early as the 1960s to accommodate the idea of being able to view a virtual environment as if you were part of it.

While the technology may have advanced since this loose set of parameters, the name, Virtual Reality, has remained as an effective label for computer-generated environments in three dimensions. Films such as *The Lawnmower Man* (Leonard, 1992) brought broader exposure to VR and the idea of computer-simulated sensations in a three-dimensional created environment. Media theorist Melanie Chan (2014) notes this film reveals important notions of subjectivity, temporality and memory in VR, by representing the VR world as so compelling that the main character, Jobe Smith, jettisons his physical existence for a virtual one. While the media at first sensationalised the concept of VR far beyond its technological capabilities, on a practical level, Stanford academics such as Jeremy Bailenson (2011) began researching into the psychological effects of VR during this period, including how VR could affect perceptions or feelings. For instance, Bailenson tested how feelings of inferiority versus superiority might play out in VR. Although I am concerned with affective conditions in VR, I explore place-based memories using an artistic approach, combined with an autoethnographic methodology, rather than from a behavioural psychological standpoint.

With advances in computer hardware and technology, VR has become a commercially viable proposition, with major manufacturers supplying VR technology to the public (i.e., HTC, Oculus, Microsoft, and Sony platforms) for entertainment, services, simulations of dangerous environments, as well as for application in art, design and architecture. The increasing accessibility of immersive VR technology drove my early enquiry into how the VR environments might amplify a sense of isolation or solitude, which gradually led to a questioning of the assumption that VR might force a technological divorce with our physical reality. To feel isolated is an emotional condition that recurred at several periods during my life, and I wondered if virtual artworks might intensify this emotion. At the outset of this research, my examination of a sense of isolation at first used only the medium of Virtual Reality, with little attention paid to the surrounding physical environment. The research

became a journey that started in the virtual realm and ended with the intertwining of the virtual and the physical spheres to support the body while experiencing a solitary place, rather than to dwell on the isolation of the subjective self.

To contextualise VR research further, the work of Mark Hansen (2006) on embodiment in Virtual Reality in the sphere of art is relevant to my project. His conceptual focus on the interaction of the body with VR has helped to orientate the direction of my practice toward the sensory, physical body. Hansen focuses on the body and its sensory mechanisms as the medium through which a person perceives a VR environment, where the body is the primary vehicle of experience. Hansen views all reality as mixed reality, including VR (2006, p. 1). His expansive view of mixed reality differs from technical definitions of VR (which are more precisely defined in the next section). He writes:

> Bluntly put, the new mixed reality paradigm foregrounds the constitutive or ontological role of the body in giving birth to the world. For today's researchers and artists, virtual reality serves to highlight the body's function as… a "primary access to the world," the "vehicle of being in the world." (2006, p. 5)

Hansen points out that the body is the primary way through which a participant will access Virtual Reality. The body, as he says, is the means of knowing the world in which we live. However, even as augmentation to that world has increased in terms of technological additions through various forms of VR, the body has remained the entity through which these can be sensed. Given the primacy of the body in processes of accessing the world, it is possible to suppose that attention to the sensory dimensions of a physical environment could enhance the virtual experience. Hansen's assertions in relation to the virtual environment where the body is the sensory vehicle later helped to situate some of my own creative experiments. In the early phase I tried to situate the virtual experience in physical rooms with a textural resemblance to the virtual room (see *Empty Room* in Chapter Three). In the latter

part of this research, I became more concerned with generating details from the virtual environment in the physical environment to the point where they registered with the virtual environment. For instance, in the later versions of my major project *Caravan*, participants sit down and experience the texture of the squab material and the 'give' in the squab cushions (see Chapter Four). With this method of fusing virtual and physical realities, I have attempted to enhance the virtual experience through bodily sensation.

In relation to the tactile dimension as a foundational consideration of embodiment in the virtual environment, Hansen writes:

> A further corollary of the functionalist perspective of mixed reality follows closely upon this focus on the ontological or constituting function of embodiment: the role of self-movement as the bodily — or better, the tactile — face of perception. Insofar as it yields a doubling of perception, this tactile dimension serves to confer a bodily — that is, sensory — reality on external perceptual experience (whether it is "physical" or "virtual"). (2006, p. 5)

The mixed reality paradigm, for Hansen, contributes to a sense of embodiment as we move and respond to an environment through tactile or other senses' external perceptions, whether these are virtual or physical. Hansen's observations support the way I would later simultaneously draw together physical and virtual sensations in *Synchronous Reality* environments.

Building on Hansen's arguments, media theorist Melanie Chan (2014) contends that technology cannot completely replace some of the physicality that a body can experience. She states:

> Whilst our sense of embodiment or embodied habits may change due to our interaction with technology, there are still some aspects of human relationships that cannot be fully technologically replicated, such as the sense of smell or touch. So even in the second decade of the twenty-first century human relationships are still

connected to embodied bio-chemical markers. On this basis there are still important ontological and epistemological distinctions to be made between the virtual and the real, especially in relation to embodiment, since real bodies feel pain, suffer and die. (2014, p. 183)

According to Chan, the physical world and our own complex biochemistry provides the most authentic olfactory experience of a scent, for instance, and also provides meaning to our social selves. She argues certain senses cannot be replaced by simulation and this insight later orientated my decisions around the production of haptic and olfactory dimensions in *Synchronous Reality* installations. She suggests the person *as a body* is important in art in virtual spaces because it individualises the experience of these spaces (2014, pp. 134-135). With *Caravan,* I attempt in part to overcome the suppression of the unique qualities of a biophysical environment. The final iterations of *Caravan* need to be experienced in a specific site, rather than any location whatsoever with only a VR headset.

07.05   A LANGUAGE FOR COMBINING VIRTUAL AND PHYSICAL REALITY

In order to understand my research terrain at the outset of my study, I investigated how Virtual Reality is described in words and how this terminology could assist my practice-led methods. One of the most succinct working definitions of the term Virtual Reality (VR), as applied to computing, is as follows: "a three-dimensional simulated environment created by computer software and rendered in real-time according to the behaviour of the user" (Loeffler & Anderson, 1994, p. xiv). The simulations produced within such virtual environments can vary from the hyperreal to fairly low-resolution graphics. There are different ways in which these

environments can be experienced; most often by using a computer screen or some type of Head Mounted Display (HMD).

VR is often associated with the term immersion or immersive, which is described by Murray (1997) as being similar to the feeling when one is immersed in water, the sensation of being surrounded by one's environment. Slater (2003) notes that immersion delivers the sensory modalities of the real world within a VR environment, and the more it achieves this the more immersive it can be said to be. Immersive VR is normally viewed by the user with an enclosed HMD or otherwise from within a CAVE (Cruz-Neira, Sandin, & DeFanti, 1993) (a three-dimensional projected environment in which the participants stand). When wearing such a headset, the participant is immersed in the virtual environment and, in most cases, the desired effect is to feel as if they are actually in this environment; as they move their head around, their view of the environment changes. Skarbez, Brooks, & Whitton (2017) also indicate that immersive environments produce a feeling in the user of actually 'being there' which is also known as 'presence'; this is further discussed in the Review of Knowledge (Chapter One).

Another form of Virtual Reality is Augmented Reality (AR) which Kipper and Rampolla (2012) define as taking digital or computer-generated information and imposing it in some way on the physical environment. In essence, Augmented Reality relies on a marker in the physical environment to trigger the software to place a virtual object in the virtual environment where the marker is. It is thus more correctly described as a method of adding to or augmenting using simulated imagery. This augmentation can be accomplished simply by adding simulated objects of scenes when a device such as a mobile phone is pointed at the physical world. Alternatively, a semi-transparent HMD can be used, which still allows the participant to view the physical world they are in but adds virtual three-dimensional objects to it. The key point of Augmented Reality, however, is the added object

cannot be manipulated and if a physical thing, such as a hand, blocks the view of the marker then the object will disappear. The augmentation only extends as far as seeing the object and not to the interaction of the object with the physical environment.

A more technically integrated version of VR with our physical reality is Mixed or Merged Reality. The term *Mixed Reality* was first introduced by Milgram and Kishino (1994), who defined it as a merging of real and virtual worlds, an environment which contains a mixture of both physical and virtual objects. The most common technology for viewing such an environment would be a semi-transparent type of HMD, as above, so that the physical environment can be viewed through it. It is, in effect, an AR-style of environment where virtual objects are added to a physical space, as opposed to overlaying or mapping a virtual object onto a physical one. The key point about a *Mixed Reality* environment is that the physical environment can be tracked (this is the way it is currently defined according to *Microsoft*). Therefore, virtual objects can be manipulated, by a person's hand for example. A virtual object can also become hidden behind or under physical objects.

Many other terms have arisen to serve specific aspects of VR or its presentation to a user to negotiate between the virtual and a physical site. Shapira and Freedman (2016) introduced the concept of *Reality Skins*, where HMD technology would scan the physical room and overlay a texture upon it. In this way, the physical and virtual environments would function in real-time so that the user was able to effectively navigate around the space and obtain some tactile feedback from the physical objects. However, the tactile sensations would not necessarily directly coincide with the virtual simulation of the objects. Mann, Furness, Yuan, Iorio and Wang (2018) suggest *Multimediated Reality* as way technology can extend the mind, body and interaction with the world through its use; these technologies include immersive and augmented types of VR. This definition provides for the cross-sensory and multi-

sensory experiences among others using varying degrees and types of technological implementation. It is a non-specific term encompassing a multitude of different applications and technologies.

Milgram, Takemura, Utsumi and Kishino (1994) formulated the concept of the *Reality-Virtuality (RV) Continuum* which viewed the Real Environment and the Virtual Environment as two poles of a spectrum. They saw it as somewhat of a sliding scale, where the degree of importance of physical or real-world objects and virtual or virtual-world objects would change by moving along the scale. Figure 1, taken from Milgram et al's research paper (1994, p. 283) illustrates this sliding scale. At one end the emphasis would be entirely upon the 'real environment' and thus exclude any virtual elements. On the other end, the importance would be the virtual environment and thus would exclude any physical elements. As the importance of these respective environments changes along the scale, one has the potential for various forms of Augmented or Mixed Reality environments which could, in theory, be plotted at positions along it. I will return to this diagram in reference to my emergent term *Synchronous Reality.*
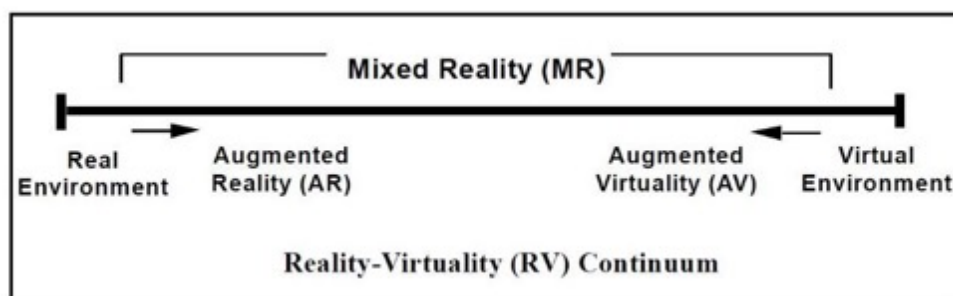
Figure 1. Simplified representation of an RV Continuum. From "Augmented Reality: A class of displays on the reality-virtuality continuum", by Milgram, P., Takemura, H., Utsumi, A., and Kishino, F., 1994, *Telemanipulator And Telepresence Technologies*, 2351, p. 283.

07.06   SYNCHRONOUS REALITY

Synchronous Reality is a term that has emerged through this research to describe the drawing together of the virtual immersive experience in an *HTC Vive* and a physical site in a durational art installation. *Synchronous Reality* offers sufficient sensory information to increase immersion and the feeling of being part of a remembered environment. In my research, this is achieved by encouraging physical sensations through elements of the actual room where a virtual encounter with an installation transpires, without attempting to mimic the virtual environment, (if we return to Baudrillard's first phase of the image). The spaces register in such a way that there is a coincidence of the visual sense (primarily experienced through a Head Mounted Display) and the auditory, tactile, proprioceptive and olfactory sensations which emerge from a particular biophysical location. At first, I used the term *Conjugated Reality* as a working concept to describe the conjoining of physical and virtual. I finally arrived at *Synchronous Reality*, after a review of current VR terminology, as a suitable phrase to foreground the temporal dimensions of the installations I created.

The word 'synchronous' is defined by the *English Oxford Living Dictionaries* (2019), as "to occur at the same time or rate" and derives from the mid-seventeenth century late Latin synchronous (from Greek 'sunkhronos', from sun 'together' and khronos 'time'). The companion word 'synchronise' means to "agree with something else" or "coordinate; combine" and derives from the Greek 'synchronízein', to be contemporary with. The two environmental conditions co-ordinate the physical with the virtual. While they don't precisely mimic each other, they are in agreement; they have a form of mutual coherence. They are in 'sync' to the extent that a participant in *Caravan*, for instance, can rest on a seat which is in the same place as it appears in the virtual world, and watch the shifts in the virtual sun's light. The essence of this

definition made it impossible to resist introducing the passage of the sun into the work.

Synchronous Reality is also concerned with temporality. In *Synchronous Reality*, the passing of time is suggested by the passage of light within the virtual environment, which is not necessarily related to 'real-world' time, or our own, inner sense of time. The virtual and physical environments occur at once, and in both core artworks in this thesis, *Empty Room* and *Caravan*, I have composed the light from the sun's path to orientate the viewer over a duration of time in the virtual scene. Yet the temporal rhythms differ in physical and virtual space. While in time by the clock a participant may only be in the installation for ten minutes, according to the sun's light we may have experienced an entire day in the virtual scene. Bergson asserts, "The duration lived by our consciousness is a duration with its own determined rhythm" (1988, p. 205). Digital media researcher Timothy Scott Barker (2012) notes that with digital artworks we place ourselves between the time in the present and the aesthetic images and processes of the past, thus providing an intersection between the memory of what was and what is. When I recreate a memory in the virtual world, I combine it with objects physically present in the 'now', in a juxtaposition of multiple temporal zones.

Sounds and other sensory elements in my *Synchronous Reality* artistic research attempt to coordinate with the composited landscapes or interior rooms in the virtual space. VR researcher Mel Slater (2009) refers to sensorimotor contingencies (SC) as actions we know to carry out in order to perceive. *Caravan* seeks to offer an alternative to the lack of sensory feedback in virtual spaces. Slater notes that whilst the tracking of head movement is very common and thus affects the virtual environment in a realistic way for the participant, other forms of sensory feedback are not:

> With today's generally available technology, participants will not experience a virtual reality system with generalized haptics, so that this dimension of SC will always fail if tested – for example, if a participant in a virtual reality touches some arbitrary virtual object they would feel nothing. The whole aspect of physicality is typically missing from virtual environment experiences – collisions do not typically result in haptic or even auditory sensations. (2009, p. 3550)

The physicality of the virtual environment is generally absent and will not produce the expected sensations from say, touching an object. The participant lacks the feedback which relays a realistic impression of the virtual environment beyond the visual cues they can see.

The use of the emergent term proposed here, *Synchronous Reality*, distinguishes such installations from Mixed or Merged Realities, which rely upon augmented technology or haptic devices such as gloves to simulate the physical elements. Mixed Reality places virtual objects within a physical environment and the participant simultaneously sees both and can manipulate them or have the virtual objects react to the physical world – hence the term 'mixed' – which effectively mixes the two environments together. In contrast to this, my aim is less to utilise haptic types of technology than rather to amplify the sensory apparatus of the body in coordination with actual physical elements, such as touch and smell, in order to try and heighten the affective and immersive nature of the art installations.

Neither does *Synchronous Reality*, as described above, fit into Milgram et al.'s (1994) Reality-Virtuality (RV) Continuum in Figure 1. Their axis focuses on the degree of the mix of real and virtual objects in a display of any kind. So whatever technology one views the world with, it attempts to evaluate the mix between real objects and virtual ones. Milgram et al. represent the spectrum from the 'Real Environment' to the 'Virtual Reality' in a linear form which does not take the environment as an encompassing whole into account. *Synchronous Reality* relies

upon an immersive environment which emphasises the biophysical elements of an environment and uses our various senses as guides within the virtual environment. The participant's body is always surrounded by the biophysical world even while our heads are immersed in a virtual one, and, as Massumi argues, both are equally 'real'. Although I originally attempted to produce a version of Milgram et al's (1994) diagram which would fit a *Synchronous Reality* scenario it became clear that this would be too multidimensional and thus complex to achieve pictorially. It is not really possible to define where *Synchronous Reality* sits within Milgram et al's spectrum because, in a way, it spans the whole. Therefore, instead, I have tried to formulate a simpler and more holistic diagrammatic approach to visually represent how *Synchronous Reality* works. In my diagram (Figure 2) I attempt to represent the virtual computer simulation and biophysical environments as an immersive whole rather than as a binary, as well as the porous way our senses guide us. While my diagram inevitably also simplifies, it suggests the difficulty of the endeavour of describing how the multiple conditions of *Synchronous Reality* operate in installational form.
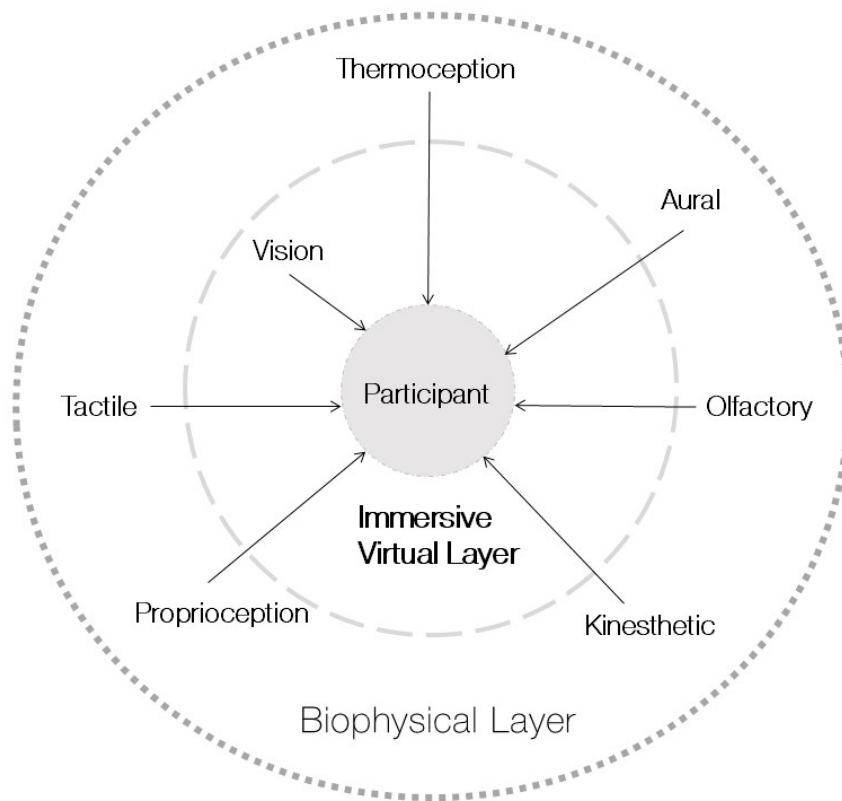
Figure 2. Multiple sensory modes in a Synchronous Reality installation where both the simulation and our biophysical reality are equally 'real'.

In Chapter Four, my major project, *Caravan*, is examined in detail, and I present the findings and analysis of the qualitative phase of my research with participants and focus-group sessions. I suggest that the convergence of the senses in an immersive scene and physical sites such as a gallery or theatre facilitates a *Synchronous Reality* whereby physical and virtual elements coincide with our perceptions over time. The way we perceive, as sensing beings, is much more complex in nature than a simple diagram (Milgram et al.'s or mine) can express. My experimental term *Synchronous Reality* offers an alternative language and a practical case study in the sphere of VR research that may be useful to other artists or media researchers. In summary, my thesis proposes that embodied, place-based memories converge in

virtual and physical experiences in *Synchronous Reality* and offer a mode of solitude but also a certain experience of intimacy.

CHAPTER 01
REVIEW OF KNOWLEDGE

C1.01   INTRODUCTION

A primary concern in this study is to examine how place-based memories in virtual space might provide an intimate connection with the past. This review of knowledge frames the use of immersive virtual space for artistic practice through the philosophical thinking of Gaston Bachelard, Henri Bergson and Brian Massumi. These thinkers are important to this PhD research for several immediate reasons: Bachelard suggests there is an intimacy to recollections of place; Bergson discusses how perception and memory are co-dependent; Massumi examines affect and how perception shifts to articulated emotional response. All three share understandings of memory, recollection and perception, and provide a contextual framework to my practice of exploring memories in a virtual and physical installation. A number of researchers have shown that immersive VR is affective due to the factors of immersion and presence. I have found, through a review of contemporary art practice, that only a few examples examine memories using the medium of virtual space. This chapter examines these artistic precedents, as well as the philosophers, to contextualise my research, rather than to position my practice as illustrative of the theory. However, at times poetic descriptions of interior conditions resonate quite literally with my process of working across built and simulated environments.

My artistic research, drawn from rooms I have inhabited, along with the interior spaces of the mind has deepened through reading philosopher Gaston Bachelard's poetic writing on the home. In *The Poetics of Space* (1994), he discusses

remembered dwelling places and the intimate connections these memories engender with the past. He values daydreaming, as well as an interpretation of the psychological spaces of a home – such items as drawers, chests and wardrobes. Continental philosopher Henry Bergson's work *Matter and Memory (*1988) addresses the nature of memory and perception, and the way these intertwine. He suggests a perception is always accompanied by the recollection of memories; the two are inextricably linked. Bergson develops his philosophical view of the 'virtual' as it relates to mind. This century, in *Parables for the Virtual* (2002) philosopher and social theorist Brian Massumi foregrounds the virtual aspect of perception in the time interval between receipt and registration of a sensation. The concept of affect, which I extend to artworks in virtual space, is introduced through a reading of Massumi. Both Bergson and Massumi contribute to an understanding in my practice where theories about the 'virtual' as imagined, psychological space converge with virtual space, as a technological platform for art-making. In the latter part of the chapter, I review the terms 'presence' and 'immersion', as they are orientating concepts for contemporary writing on virtual experience.

Artists working with immersive VR are becoming more numerous. With the increasing availability and accessibility of this type of consumer VR technology, it is becoming more widely available as an artistic medium.[3] Recently developed tools such as *Tilt Brush*,[4] which allow the user to paint within a 3D environment, appear to

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[3] Writer Molly Gottschalk in discussions with contemporary artists in the field of immersive VR, for *Artsy Magazine*, indicates a significant investment from certain artists in creating work, as she terms it, "exclusive to a platform whose wide adoption is yet unproven" (Gottschalk, 2016). She is referring to leading-edge technologies, and arguably 'leading edge' is axiomatically something new and thus not yet mainstream.

[4] *Tilt Brush* is a 3D tool from Google which is used in conjunction with immersive hardware such as the *HTC Vive*. The artist is able to navigate in virtual space and, using various brushes and textures, construct three-dimensional artworks. https://www.tiltbrush.com/

be opening the way for more painterly artistic expression in virtual space.[5] Artwork precedents that explore similar territory to my own include American artist Nicole Stenger's *Dynasty* (2007-2009) and *Chambers* (2018), which explore isolated places in immersive VR; American composer Anne Deane Berman's immersive VR installation *Ashes to Ashes* (2009), which evokes the memories of 9/11 survivors; Canadian Diane Gromala's *Mobius Floe* (2014) (Pain Studies Lab, 2014), designed to assist patients with chronic pain symptoms; American Michael Naimark's 360-degree photography works like *Incredible* (2016), a hyperimage with a composite set of shots of the same person; while artist Rachel Rossin, born in Florida, constructs virtual artworks that are immersively viewable and reproduced in two dimensions. The artist most akin to my own investigation is American Sarah Rothberg who has produced a memory-based VR piece entitled, *Memory/Place: My House* (2014-2015). In this chapter, I interweave both artistic precedents and authors in a review of textual and practice-based knowledge.

C1.02 INTIMACY OF PLACE

The artworks in my study hinge around the memory of a place, such as a familiar room. In my final work, I revisited the memory of my caravan and its surroundings where I had lived for several years, two of which were in the English Midlands. In Bachelard's (1994) terms, a familiar room would be one which had been lived in for quite some period of time. The person would have built up memories about the room

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[5] Eugene Chung (2018), founder and CEO of Virtual Reality start-up Penrose Studios states, "You have to basically define the medium as you go, it's almost like you're trying to create the paintbrush while trying to create a painting." He alludes to the way artists create their ideas within a toolset and technology that is evolving and does not contain an effective set of instructions. There is not only an engagement with the medium to facilitate the notions of the artist, but an obligation on the artist to determine how these can be realised by the technology. (Gottschalk, 2018)

and the house in which it was located as a place of familiarity, and may also have felt a sense of comfort there. Bachelard writes about the idea of 'reading' a room, and my contention is that within an immersive artwork one is doing just that. However, when recalling a room, one is seeing it in the mind's eye and even remembering certain sounds and smells. In virtual space, these things can be created in such a way that it is not just a recollection, but a real-time experience through the physical senses of the body. With Bachelard, this crucial component of lived experience, this act of recalling the familiar room which unlocks memories in the reader, is one of the aspects of intimacy my practice seeks to explore. Bachelard writes:

> …from our standpoint of a philosophy of literature and poetry [it makes sense] to say that we 'write a room,' 'read room,' or 'read a house.' Thus, very quickly, at the very first word, at the very first poetic overture, the reader who is 'reading a room' leaves off reading and starts to think of some place of his own past. You would like to tell everything about your room. You would like to interest the reader in yourself, whereas you have unlocked a door to daydreaming. The values of intimacy are so absorbing that the reader has ceased to read your room: he sees his own again. (1994, p. 14)

Bachelard describes what happens when we 'read' a room in a piece of prose or poetry. The act of reading imparts a feeling about the room, what it looks like, what it contains, what events may have occurred within it that we automatically relate to our own experience. Soon the recollection of a familiar place of our own engulfs the room the poet is trying to describe. Similarly, with a room encountered in an artwork, the 'reader' might become lost in their own daydream and thus no longer really attending to the room's details provided by the artist. The reader is absorbed by the intimacy of the room in their mind and not the poetic description of the room in a book or represented in an artwork. One of the ambitions of my research was to ask: would a VR medium engage a 'reader' the same way a poem or piece of prose would do, as Bachelard describes? *The Poetics of Space* interweaves the memories

of previous dwellings that a person has inhabited, and the impossibility of imparting a narrative of a room without provoking recollections of other rooms in the minds of the audience. In my medium of immersive *Synchronous Reality*, the participant is placed within the digital and sensory space of a physical room itself. The experience, rather than a poetic account, becomes something to be sensed at first hand. Yet my qualitative research suggests it is still possible to become lost in reverie, even as the participant engages with their own memory of a room while exploring a physical and virtual room built in a gallery site (see Chapter Four).

Place and memory are expressed in art, film and photography, but these themes are less common in virtual space. Sarah Rothberg produced an immersive work entitled *Memory/Place: My House* (2014-2015) in which she recreated her childhood home using excerpts from her personal movies, diaries, and photographs. The Virtual Reality headset, including sound, was situated in a physical installation combining past and present technologies. It featured furniture contemporary to her childhood and a cathode-ray-tube-style television showing images of the virtual home. The virtual house in the artwork sits within a featureless landscape surrounded by hills but otherwise devoid of trees or other landmarks. The house contains furniture and artefacts from the author's past occupancy. Large panels placed within the rooms feature video footage from the author's past. There is a sense of detachment and isolation within these disconnected memories of the artist.[6] The soundscape features bird song exterior to the house and crickets inside the house, as well as soundtracks from videos which can be viewed within it. The house is the instrument through which Rothberg creates a setting designed for intimate contact with the experience of her past. The setting at once becomes personal and intimate to the

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[6] The choice of a house in which to place her virtually recreated memories aligns with Bachelard's premise cited at this chapter's beginning, "The house, quite obviously, is a privileged entity for phenomenological study of the intimate values of inside space" (1994, p. 3).

creator and perhaps to the audience participant whose perception of it may recall other moments to mind. Rothberg chose, in her piece, to create a physical setting of a room in which the participant sits whilst experiencing her work. In this way, she has created interaction between the physical world and the virtual world to which it relates. This work connects to my own endeavour to increase the physical and virtual interplay within my own practice. Another relevant aspect of Rothberg's art piece to my research is the amount of herself she chooses to reveal within it. Personal photographs and videos are intimate types of memories and, as an artist, one must consider this aspect. At what point does the artwork become too personal, or too revealing?

Figure 3. Rothberg, S. (2014-2015). *Memory/Place: My House.* Sarah Rothberg. [Photograph]. Retrieved from http://sarahrothberg.com/memory-place-my-house.

Rothberg's choice of a series of rooms in a house to play out her recollections echoes through the writing of historian and architect Edward Hollis in *Memory Palace* (2014). He writes:

> Interiors do not just remind us who we are, where we're from, or how to behave. They remind us to remember. In fact, the story of memory always begins with a room, or at least it begins with the end of one. (2014, p. 15)

Like Bachelard, Hollis centres memory around a dwelling, drawing mainly upon the house of his grandmother. He uses the device of his grandmother's abode, its rooms and their contents to connect to his own past and memories of her. One might equate the unfolding of memory to a sequence of Russian dolls each within the other, each revealing something new but somehow related to the doll that contained it. "A house," writes Bachelard in a similar vein, "is our corner of the world. As has often been said, it is our first universe, a real cosmos in every sense of the word. If we look at it intimately, the humblest dwelling has beauty" (1994, p. 4). For Bachelard, the house remains with you regardless of your future habitation, like a mental bedrock, as an anchor to the past.

C1.03   A DAYDREAM OF PLACE

While further discussing the effects of memory, Bachelard describes daydreams of a childhood home which in turn become dreams of a refuge such as a hut or a nest. What is clear is the dreams are removed from the actuality of the present room. The recollection leads down a path to elsewhere. In this way, he indicates the daydreamer lives in a region which is beyond human images, existing physically in one space whilst being engaged in recreating memories of another space in the mind. Daydreaming removes the focus of attention away from the physical room and into some other place (Bachelard, 1994, p. 30).

The experience of immersive virtual space is also a simultaneous dual engagement; the physical environment the person is in and the environment in virtual space encountered through an HMD (Head Mounted Display). Media theorist Mark Hansen addresses it differently, when describing two particular artworks in his book *Bodies in Code*:

> [Artworks] facilitate the actualization of the organism's potential to extend its bodily boundaries and to expand the scope of its bodily agency…the viewer is technically enabled to utilize the excess of the body schema over the body image to increase his agency as an embodied being. (2006, p. 20)

The body of the participant extends itself into virtual space through the agency of the technology, whilst retaining its agency and awareness within the physical space. From that point, the participant may connect with the artwork, via the body as Hansen notes, in virtual space and their own recollections may be stirred by what they encounter.

Artist Diane Gromala focuses on the cultural, visceral, and embodied implications of digital technologies to manage chronic pain, to create a different place through Virtual Reality. Her artwork *Mobius Floe* (2014), set in an immersive virtual space, has been designed as a tool to help patients with chronic and acute pain to lower discomfort and anxiety. Patients are immersed in a virtual wintry setting where they hike through snowy paths and trails while experiencing various encounters. Patients are captivated in such a way that they feel as if they are inside or part of the white snowbound world. Tasks stimulating the patients' working memory and seeking their constant attention are included to draw focus away from physical pain. Bachelard describes the associations of snow:

> As a result of this universal whiteness we feel a form of cosmic negation in action. The dreamer of houses knows and senses this, and because of the diminished entity

of the outside world, experiences all the qualities of intimacy with increased intensity. (1994, p. 41)

Bachelard introduces the idea that large uniform expanses, such as the whiteness of snow, perceptually negate the features of the external landscape. The person finds themselves more intensely focused upon the interior, such as a house. Their intimacy with those familiar internal surroundings is intensified. The snow in Gromala's artwork heightens the intense intimacy of the artwork. The expanse of whiteness forces the participant to focus more specifically upon objects and encounters. A pertinent aspect of this piece is the way the immersive virtual space draws the participant's attention into it, to such a degree that they can temporarily disassociate from their own bodily discomfort. It endorses the affective power a well-constructed immersive work can have.

There are parallels in my own use of fog or mist in my artwork *Caravan*, a device where the mist diminishes the landscape and focuses the participant upon the interior, and immediate surroundings. In this way, the participant can experience more intimacy with the memory.

Figure 4. Gromala, D. (2014). *Mobius-Floe*. Diane Gromala. [Screenshot]. Retrieved from
https://medium.com/uxxr/vr-for-pain-distraction-939b7a5b912d

C1.04   MEMORY AND PERCEPTION

Henri Bergson conflates perception and memory in *Matter and Memory* (1988). He notes; "there is no perception that is not full of memories. With the immediate and present data of our senses, we mingle a thousand details out of our past experience" (1988, p. 33). This suggests memories are never far away from our immediate perceptions, as if one colours the other. We see and we experience, but we also recollect in a simultaneous feedback loop. He continues, "In most cases these memories supplant our actual perceptions, of which we then retain only a few hints, thus using them merely as 'signs' that recall us to former images" (1988, p. 33). In Bergson's view, perception fades and effectively leaves a memory roadmap. Relating to this experience, Massumi writes: "The 'pure' field of vision is a virtual field. No matter how carefully an experimental setup approximates it, actual 'impurities' will sneak in. For there will always already have been experience" (2002, p. 155).

Vision does not act alone, one cannot have purity of vision in the 'now' since it is impinged upon in a waking state by other things. Massumi suggests the impingement is 'experience', our previous acts of vision and perception which are drawn into the current act. For Bergson, memories are recalled by the action of perceiving. Both authors express a similar notion; every time we perceive we cannot help but also remember. Experience, as Massumi describes it, is recalled through perceptually presented cues. All our senses, not only vision, combine with experiential recall. For Bergson and Massumi memory is imperfect, it is diluted not only by current perception, but by other associated memories. Memory does not necessarily present itself as a chronological timepiece, but as a perceptual collage of numerous times and associations. Composer Anne Deane Berman's real-time

immersive VR installation *Ashes to Ashes* (2009) could also be described as a 'perceptual collage' where participants experience the memories of 9/11 survivors using visual, audio and musical narrative. Sound appears to be the motivating force of the work. The virtual space consists of abstract visuals such as falling ash and multiple virtual eyes. The artwork brought together fragmented memories, marrying the audio narrative to a series of visual scenes. The storyline followed the events through the eyes of a firefighter, Billy, with subsequent multiple narratives of other survivors. Memories were recreated and evoked which are perhaps only echoes or small fragments of more substantive recollections. The memories are intimate to those survivors and, as both Bergson and Massumi suggest, may engender feelings of loss in the audience who identify with their trauma. *Ashes to Ashes* is based on memories within an immersive VR environment and foregrounds the auditory senses to create emotive content and narrative. Unlike other VR pieces, this work is useful to my research by foregrounding how sound has an important part to play with an immersive artwork in virtual space.
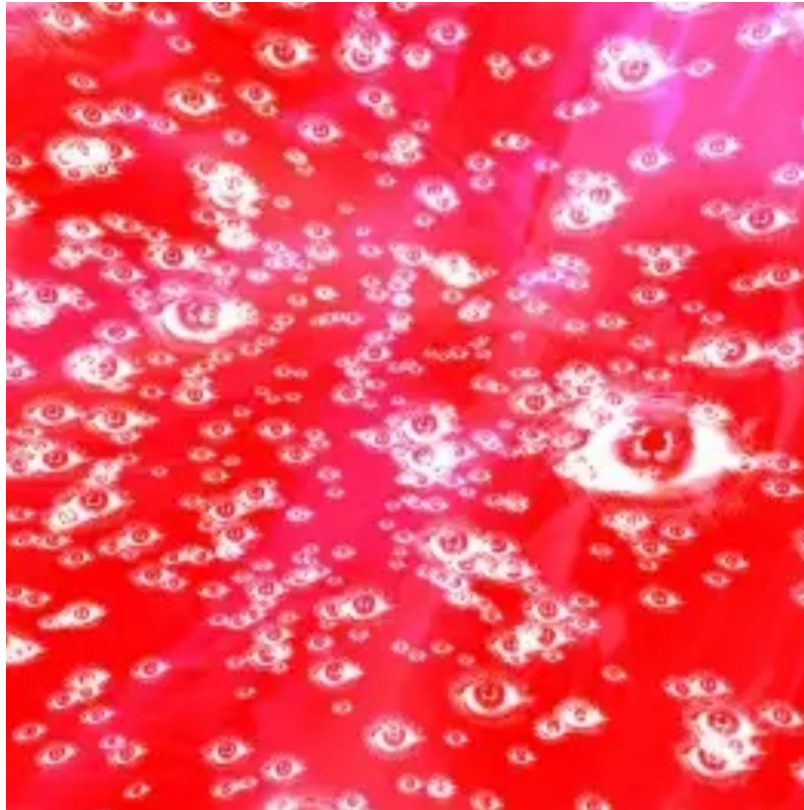
Figure 5. Berman, A.**,** Berman, S. L., Cruz-Neira, C., and Tuch, L.   (2002). *Ashes to Ashes*. Anne Deane Berman. [Image]. Image kindly provided by Anne Deane Berman

C1.05 MEMORY AND SIMULATION

Jean Baudrillard considers simulation in *Simulacra and Simulation* (1981)*.* Using the analogy of maps, he expounds on the way the real becomes replaced by a simulation of reality. Simulation is relevant to my practice where virtual space is created through the use of computer simulations of a 'real' room. In my installation, *Caravan*, the virtual simulation maps partly onto the physical objects in the gallery space. Baudrillard writes that the map of the territory precedes the territory, the simulation comes first and the territory it simulates becomes the reality:

> …today it is the territory whose shreds slowly rot across the extent of the map. It is the real, and not the map, whose vestiges persist here and there in the deserts that are no longer those of the Empire, but ours. The desert of the real itself. (1981, p. 1)

Bergson's understanding of memory is premised on the destruction of the 'real', where physical perception becomes a vestige of memory. Baudrillard, in the same vein, notes the real is subsumed by the simulation and only fragments of what the simulation represented remains. I have always felt, when I recreate or reconstruct a memory in virtual space, the simulation becomes a 'desert of the real'; emptied of its original meaning. The 'real', caravan in which I once dwelled, is long gone and, of the world I was part of when I lived there, only a shell of a memory remains.

This idea is also explored by Hollis, who reflects the theme of imperfection and reconstitution in a narrative. Remarking on the Parthenon's [447BC] reconstruction:

> As they laboured over their heap of broken fragments in the heat of the day, the restorers of the Parthenon had forgotten these things. Their rebuilt Parthenon might have looked very like the original Parthenon, but it was not perfect; and because it was not perfect, it was not the Parthenon. (2010, p. 34)

Hollis situates the Parthenon as a physical embodiment of a memory, a memory of itself now broken and fragmented. The attempted reconstruction could not supplant

the original or ever become it. In my practice also, I can never recreate an interior in virtual space identical to my mental recollections.

American artist Nicole Stenger has produced a number of works in VR using immersive technology such as *Oculus Rift*. These installations could be seen as pure simulations in Baudrillard's terms, with only a representation of the physical world. Two of Stenger's immersive works are situated in isolated settings: *Dynasty* (2007-2009), where a house stands alone, remote and isolated; and *Chambers* (2018), a large metal structure with box-like rooms sits mid-ocean. Deserted and disconnected locations are a feature of Stenger's work. In *Chambers,* the rooms contain different contextual narratives such as 'despair' and 'stagnation'. Unreachable ships sail past the windows. The psychological subtext evokes a very personal journey of the artist. The structure might be viewed as a prison, an impression that is conveyed by its very fabrication.

Figure 6. Stenger, N. (2018). *Chambers*. Nicole Stenger. [Image]. Image kindly provided by Nicole Stenger.

The use of place as a platform for the work is evident. The location of these places, surrounded by the uniform colour of a seemingly endless expanse of blue or grey ocean, recalls Bachelard's sketch of an isolated house in the snow. The ocean, in Stenger's work, is like Bachelard's 'cosmic negation' (1994, p. 41); the blue featureless ocean forces the participant into an intimate connection with the rooms of the artwork. Bachelard argues, in the case of snow, these featureless expanses focus attention on the interior details of the house, and the interior condition of the mind. This 'cosmic negation' engenders an increase in connective intensity with place. Later I would endeavour to compose an external expanse of fields in *Caravan* (see Chapter Four) as a sign of psychological isolation, or contemplative solitude.

C1.06   SELECTIVE MEMORIES

My work could be viewed as a highly edited, even nostalgic, personal history, rather than an accurate recounting of the past. Historian Margaret Higonnet argues for the romantic roots of Bachelard's writing in her article *Bachelard and the Romantic Imagination* (1981). His writing on memory bears out her argument in the following phrase:

> We must comfort ourselves by reliving memories of happiness…Memories of the outside world will never have the same tonality as those of home and, by recalling those memories, we add to our store of dreams; we are never real historians, but always near poets and our emotion is perhaps nothing but an expression of a poetry that was lost (Bachelard, 1994, p. 6).

Bachelard's focus is the home, which equates to happiness for him, he draws an analogy to the idea that emotion is an expression of poetry. Nostalgia is forged within memories of the home, and this is the way I approach my own memories.

According to Bachelard, we primarily remember the good times. While I remember times of both pain and happiness, what I choose to convey in my work is never historically accurate to these feelings. We are never real historians in an autobiographical mode, just as Bergson argues that memory becomes a series of signs or hints rather than the full-blown technicolour experience which perception can be (1988, p. 33). We edit our past to exclude unwanted material, as opposed to the way a historian might narrate everything which occurred.

Bachelard refers to daydreams as a reassembly, analogous to a rerun of old movies that become re-edited versions of themselves. He writes: "Therefore, the places in which we have experienced daydreaming reconstitute themselves in a new daydream" (1994, p. 6). He intimates a memory can change, altering the size and original perception of things remembered. He refers to the attic as an exemplar: "in memory recaptured through daydreams, it is hard to say through what syncretism the attic is at once small and large, warm and cool, always comforting" (Bachelard, 1994, p. 10). The attic becomes what we desire and not its actualisation, and in this way, he encapsulates our transformation of the past to our emotional inclinations, "Thus we cover the universe with drawings we have lived. These drawings need not be exact. They need only be tonalised in the mode of our inner space." (Bachelard, 1994, p. 12). His reference to the tonality of inner space calls to mind how we colour our own memories literally and even emotionally. This phrase resonates literally with my process of compositing virtual space with layers in Photoshop, which alters the colourisation or focus of an image. I employ mood and tonality to colour a virtual space with form and texture as elements of an emotional landscape. My exploration of memory in virtual space avoids exactness, but instead is 'tonalised' through the lens of my inner space.

Another artist who investigates an edited version of her personal history is Rachel Rossin. Rossin's virtual artworks are recreated on physical canvas and on Perspex,

in addition to using virtual space and accompanying technology to experience them. Art writer Molly Gottschalk describes her own foray into Rossin's memories created in virtual space as follows: "Up a staircase I float, weightlessly, into a baby blue world littered with the frames of burnt-out buildings and fragments of the artist's memories – vignettes of her home and tiny studio" (2018, n.p.). In a recent interview, Rossin indicates her images are autobiographical in nature although not all personally meaningful to her. They contain objects of importance to her, recreations of her studio, life and home. Her artistic intention appears to emerge from her memories and related objects of places of association, although her work also seems to place these objects in a nebulous abstracted virtual world (Pinkerton, 2018, p. 1). This strategy is relevant when I think about my own work, where everyday objects also have a place because they played an important part in my daily existence. The kettle, toaster and mug, which I would use for my tea and toast, were part of my solitary existence in my caravan. Rossin's work also follows Rothberg's in bringing into view the dilemma an artist has in revealing themselves to the participants in their art. In an immersive virtual world, the impact of personal revelations, whether simply implied or more fully drawn out, in my experience, can be greater because of their immediacy and presence.

Figure 7. Rossin, R. (2017). *Scrubbing 1, Maquette*. Rachel Rossin. Retrieved from
https://www.artsy.net/artwork/rachel-rossin-scrubbing-1-maquette

C1.07   VIRTUAL SPACE

Many philosophers contend the mind itself is virtual. For Massumi the virtual is somewhere the past, present and future almost coexist; it is, in effect, a moment without time (2002, p. 30). Massumi identifies a delay whilst a sensation traverses the body to an instant where that sensation undergoes examination and articulation. He writes, "This requires a reworking of how we think about the body. Something that happens too quickly to have happened, actually, is virtual. The body is as immediately virtual as it is actual" (2002, pp. 28-30). Massumi implies that in spite of the structural nature of the body, the receipt of a sensation is not entirely down to structure alone. There is a mechanical aspect to the impulses received through the nervous system but nevertheless, in the mind, there is a gap. The gap is between the body processing the sensation and the realisation this has occurred. This gap is followed by an articulation or reasoned interpretation of what that sensation might be.

Virtual space, in a digital sense, is also timeless, it is created by lines of code and is theoretically instantaneous. However, the delay described above in registering a sensation in the body equates to a similar digital time lag that occurs in response to a computer input during which the code executes its instructions. These gaps are infinitesimally small but nevertheless exist, both in the universe of the body and that of virtual space. Bergson relates the perception of matter and its mental representation to the conversion of an image which is constantly in motion and changing. He writes, "the distance between these two terms, presence and representation, seems just to measure the interval between matter itself and our conscious perception of matter" (1988, p. 35). Bergson notes matter is always present but our perception of it requires a focus, a zoning in and isolating one part from the other parts. There is a period of time for this to become a conscious

recognition of something, such as an object or sensation. This recognition translates to a virtual representation in the mind.

Bergson further suggests that matter changes and virtual representation of matter, in the mind, is matter's simplification (1988, p. 35). Matter in the mind becomes something hollow, and the memory is simply an impression of a surface. He continues: "So to transform its existence into a representation it would be enough to suppress what follows it, what precedes it and also all that fills it, and to retain only its external crust, its superficial skin" (1988, p. 36). This concept is richly suggestive of the virtual space in a digital platform, which reduces matter into an artificial software skin, manufactured from light and texture, controlled by underlying computer code.

Like myself, Michael Naimark, Google's first resident Virtual Reality artist is an artist intrigued by the simulated artificiality of virtual space. Naimark has worked in several different areas of immersive Virtual Reality. His work *Incredible* (2016) represents one person as many people at once, in VR, in what he terms a 'hyperimage' (Naimark, 2016). The image consists of a concatenation of several different shots of the same individual, put together almost like a collage. The photograph can be viewed immersively, thus taking the viewer through a short time-lapse of one person. Since each photograph is taken at a different time and shows a different aspect of the subject, conventionally they would normally be viewed individually, one by one in what would then become a serial timeline. However, when put together in one single 360-degree shot, the different moments of the person are viewed together. If each was taken as a memory of the person, then one might also view it as a snapshot of several memories frozen in an instant and viewed in 360 degrees. Seeing all these instants at once begins to create a narrative about the person. Each of these images or snapshots is a virtual representation and reduction of the person's physical

presence into an impression of the person, an image, a superficial skin, to follow
Bergson (1988, p. 36).

Figure 8. Naimark, M. (2016). *Incredible*, hyperimage composite. Micheal Naimark.
Retrieved from https://medium.com/@michaelnaimark/vr-cinematography-studies-for-
google-8a2681317b3

C1.08   IMMERSION AND PRESENCE

The concept of immersion is aptly described by researcher Janet Murray in her book *Hamlet on the Holodeck* (1997). Murray opens her chapter on immersion by saying:

> A stirring narrative in any medium can be experienced as a virtual reality because our brains are programmed to tune into stories with an intensity that can obliterate the world around us. (1997, p. 98)

Her argument, which is frequently cited, according to a review of definitions of immersion (Nilsson, Nordahl, & Serafin 2016), is that human experience of any kind of story can be intensified if the medium by which it is conveyed effectively subsumes the world that contains our physical presence. She continues:

> The experience of being transported to an elaborately simulated place is pleasurable in itself, regardless of the fantasy content. We refer to this experience as immersion. Immersion is a metaphorical term derived from the physical experience of being submerged in water. We seek the same feeling from a psychologically immersive experience that we do from a plunge in the ocean or swimming pool: the sensation of being surrounded by a completely other reality, as different as water is from air, that takes over all of our attention, our whole perceptual apparatus. (Murray, 1997, p. 99)

Thus, Murray construes the mere fact of being placed in a simulated place is a pleasurable experience. She indicates that we often associate immersion with an experience of water. Her implication is that when in an aquatic environment we are sufficiently removed from our normal circumstance and the water commands our full attention. Using water as an analogy, Murray implies the same effect can be

experienced in a virtual environment where the participant is completely surrounded by virtual space. Hence, they are immersed, they have belief in the space.[7]

Nilsson, Nordahl and Serafin suggest that a more technically focused definition of immersion is to be found in *A Note on Presence Terminology* (2003) by researcher Mel Slater:

> Let's reserve the term 'immersion' to stand simply for what the technology delivers from an objective point of view. The more that a system delivers displays (in all sensory modalities) and tracking that preserves fidelity in relation to their equivalent real-world sensory modalities, the more that it is 'immersive'. (2003, p. 1)

Slater contends a medium must deliver an environment which is to a greater or lesser degree perceptively equivalent to the physical world (what he describes as the real world). If it can effectively fool the perceptions to a sufficient degree then it becomes immersive, and the more it can do that the more immersive it is. In an immersive virtual environment, one expects to see objects as if they are solid and as one moves, the proximity and view of those objects changes; just as it does in real life, outside of the simulation.

Immersion can engage at different levels, according to Ermi and Mayra (2005) who indicate experience can be defined in relation to immersion; one of these being 'aesthetic', consisting of immersion with passive participation. Thus, an immersive artwork might focus primarily on the aesthetic, without active participation. They propose three types of immersion: challenge-based, sensory and imaginative. Sensory immersion tends to overpower and focus the participant on the immersive environment. Challenge-based, as expected, presents challenges in an immersive

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[7] But such an experience of enhanced belief does not come automatically from putting on a VR headset, or from the designer's photographing the actual world in 360-degree fidelity. Like all deep narrative engagement effects, it is the result of deploying carefully crafted medium-specific conventions of representation (Murray, 2015).

game scenario. Imaginative offers the chance to use the imagination and enjoy the fantasy of the environment. This project is both sensory and imaginative, the participant becomes immersed in their own interior narratives, rendering the challenge element unnecessary. To be immersed also implies 'presence', becoming part of the virtual space.

In a succinct definition of presence in virtual space, Skarbez (Skarbez, Brooks, & Whitten, 2017) uses the words 'being there'. When one is fully 'present' in a virtual space, put simply, the participant feels completely immersed in it; the two are co-dependent. My aim with my practice is to place the participant present within it, as opposed to externally experiencing it. Slater also uses this description, to feel 'present' is a response to being immersed, he writes:

> If immersion is analogous to wavelength distribution in the description of colour then 'presence' is analogous to the perception of colour. Presence is a human reaction to immersion. (2003, p. 2)

Slater indicates presence is primarily dependent upon the individual being subject to immersion. He says presence is different in that it represents the individual's reaction to being immersed. Presence must also be defined in its own right. Researchers Mathew Lombard and Theresa Ditton present perhaps one of the more comprehensive reviews of presence in an article *At the Heart of It All: The Concept of Presence* (1997) in which they discuss in detail several different types of presence. They propose six different types that can be achieved by a medium. In reality, some of these separate factors can also combine as part of the feeling of presence overall. Presence as social richness is one where, they note, a medium is perceived as "sociable, warm, sensitive, personal or intimate" (p. 9) when used to interact with others. An example of this would be some form of social media or chat. The most relevant definition of presence to my practice, drawn from Lombard and Ditton, is where they describe presence as immersion: "in the most compelling

virtual reality experiences, the senses are immersed in the virtual world and the person's perceptions are thus submerged to a greater or lesser degree into the environment" (Lombard & Ditton, 1997, p. 20). They summarise their findings into a more comprehensive overall definition of presence as an "illusion of nonmediation". An "illusion of nonmediation" occurs when a person fails to perceive or acknowledge the existence of a medium in his/her communication environment and responds as he/she would if the medium were not there (Lombard & Ditton, 1997, p. 32).

The idea they propound as central to any immersive VR experience is that a person responds to the virtual environment as if that environment did not exist. Their reactions are the same as or similar to those that a 'real-world' or physical-world encounter would elicit. To the participant, the virtual world becomes the real world, in effect, for the duration that they are in it. Slater synthesises the perceptual experiences at play in presence as follows:

> When you are present your perceptual, vestibular, proprioceptive, and autonomic nervous systems are activated in a way similar to that of real life in similar situations. Even though cognitively you know that you are not in the real-life situation, you will tend to behave as if you were, and have similar thoughts. (2003, p. 2)

The concept of presence as a sensate illusion of 'being there' is relevant to my practice, and when coupled with immersion, the participant is enabled to become a constituent in a place-based memory. To increase sensory interaction with a virtual environment later became a key ambition, in order to extend the feeling of presence in my research. To return to the work of artists such as Stenger, artworks magnify their emotive quality through the twin factors of immersion and presence. When the participant feels part of the work instead of outside it, they increase the narrative immersion.

C1.09   AFFECT

Finally, I consider the role of affect in the virtual work. My understanding of the affective condition is framed by Massumi's *Politics of Affect* (2015). He states:

> By 'affect' I don't mean 'emotion' in the everyday sense. The way I use it comes primarily from Spinoza. He talks of the body regarding its capacity for affecting or being affected. (2015, p. 3)

So the body, in Massumi's terms, is a vessel which is able to be affected or to affect something. Massumi's focus on affect is applicable when examining virtual space. In my art practice, the body is placed in an immersive virtual environment and receives perceptions from that environment. The body will react as if it was a real environment. The body acts in reaction to a perception then forms an articulation of that reaction into an emotion. The research hinges on the potential of an artwork in virtual space to do this; to engender an affective state.

In more detail, the body is 'affected' in ways that increase or attenuate its ability to act. This is found in the 'flight or fight' reaction. Intensity is an indicator of the power of an affect. Massumi contends the strength and duration of an image's effect upon a body is a measure of its intensity. He notes that an experiment on subjects who were shown different versions of a film indicates a body exhibits a reaction to image perception on areas such as the skin. Massumi further refers to heart rate and breathing as autonomic reactions which were also affected by imagery in the experiment described. He contends these reactions may have some relation to expectation, as to what might be coming next. The autonomic reaction achieves a conscious level where it is open to narrative expression. Thus, a physical reaction is then articulated into conscious thought. The skin response, for example, of 'goosebumps' to something fearful translates into the idea 'I am afraid' (Massumi, 2002, pp. 24-25). Massumi further distinguishes affect as discrete from emotion:

> Emotion is qualified intensity, the conventional, consensual point of insertion of intensity into semantically and semiotically formed progressions, into narrativizable action-reaction circuits, into function and meaning. It is intensity owned and recognized. It is crucial to theorize the difference between affect and emotion. If some have the impression that affect has waned, it is because affect is unqualified. (2002, p. 28)

Affect is the intensity of an autonomic physical reaction to something that is perceived or, more simply put, a bodily reaction to a stimulus or image. The affect is articulated and transmuted, eventuating as a corresponding emotion. Emotion is thus the co-conspirator of affect. The two act in accord and thus may often be conflated: in my early intent to manipulate emotion via a sense of isolation in a VR environment, I focused on emotions rather than relational affects. According to Massumi, emotion is the label that we place upon the feeling engendered by the physical affect. Massumi also concludes that affect without determination remains merely a stimulus.[8] If the reaction cannot be identified then it has no meaning and becomes merely a response without a name. For the purposes of this work, the naming of the response is part of the fulfilment of the research question.

Bachelard's, Bergson's and Massumi's reflections on virtuality, perception and affect, combined with the contemporary writers on presence and immersion, provide the framework for my research into place-memories in my practice. The perceptual affects in an immersive virtual environment that recall an embodied understanding of

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[8] Direct action with the virtual environment removes the notion of some form of agency, such as a computer screen. The participant becomes an actor in the scene, included in it, not set apart from it. Direct action does not necessarily imply engagement, it could simply mean being in the environment and observing it. Witmer and Singer (1998) contend a lack of commonality with other media in that respect. Direct action should lead to an emotional response. A study that explored the idea of 'relaxed' versus 'anxious' forms of virtual environments revealed participants experienced the appropriate emotional response (Riva et al., 2007). Negative images such as spiders and snakes also found corresponding elevated reactions in immersive virtual space environments (Estupinan, Rebelo, Noriega, Ferreira, & Duarte, 2013). An attempt to manipulate the gaze of participants immersed in virtual space by virtue of negative and positive emotional content was successful in gaining an emotive reaction (McCall, Hildebrandt, Hartmann, Baczkowski, & Singer, 2016).

a familiar place are central to my study. Bergson and Bachelard conceptualise how the act of remembering engenders recollections and imaginative associations, which in later chapters I will explore through the differing temporalities we experience in *Synchronous Reality*. I have argued that immersion and presence are the two factors which distinguish the production of artwork in a virtual medium. In addition, I have shown how the tropes of memory and place are starting to be investigated in the innovative work of artists such as Rossin, Rothberg, Gromala and Stenger in immersive virtual environments; my research builds on this emergent territory.

C1.010 INSIGHTS

In the concluding section of this chapter, I examine how the insights gained from the Review of Knowledge have informed my design practice. The concept of intimacy of place as discussed by Bachelard was the inspiration for a more in-depth exploration of my own memories through the extension of these into virtual reality (Bachelard, 1994, p. 41). It became apparent to me that the immersive quality of the medium might produce a deeper type of engagement when it became the means for another to experience these memories. Bachelard's writing inspired me to centre 'the home', in this case, my caravan, as the focal point or hub around which the reconstructed memories were formed (Bachelard, 1994, p. 6). I found the idea of placing an audience participant within a virtually reconstructed memory was intriguing and would deliberately propose an environment which could be experienced as opposed to being challenging (Ermi & Myra, 2005). Bergson's proposal of the mind as a virtual construct where the objects in it are merely created by a superficial skin, likewise, echoed the fundamental superficiality of virtual objects themselves. It was almost as if the mind, or at least its memories could be translated, in Bergsonian terms, into a virtual space and bear the same qualities

(Bergson, 1988, p. 36). Thus, I felt as if I was creating a virtual representation of the memories in my mind. Massumi indicated the primacy of affective sensation which may or may not be articulated by the person receiving it (Massumi, 2002, p. 28). However, I discovered that providing sensory input in a synchronous reality installation created an affective response which many audience participants expressed in my interviews or observations that reflected their memories (Chapter Four, C4.06) as comments or more subtly as feelings.

Sensory experience assumed great importance throughout my research in the creation of *Synchronous Reality* installations. Rather than honing in too finely on one particular type of sensation, it was the combination which seemed more affecting for participants as I discuss later in Chapter Five (C5.01). Participants might articulate differently as to the sensory experiences which they had felt most affective, see Chapter Four (C4.06.04-09). For example, participants noted similarities between places they had stayed in terms of aural, and visual elements, or even becoming reminded of a caravan they had spent holidays in, or perhaps the thermoceptive sensation of the sun rising while sitting outside a cabin in the bush.   Finally, Hansen pointed the way to the body being the conduit in a virtual installation. It is the central point which channels the sensory input regardless of whether the virtual body is visible or not (Hansen, 2006, p. 20). This also enabled me to pursue the use of sensory inputs which the body could register in some way, as the core driver for the practice particularly from the *Caravan* installation onwards. Physical senses combining with the virtual space itself became of increasing importance through the practice work aligning with feedback received from participants. Hansen's work endorsed this approach for me as a viable method which was borne out in the subsequent results as described more fully in Chapter Four.

The exploratory work of Rothberg in her installation *Memory/Place: My House* (p 42), was the closest use of some form of physical coherence with the virtual space

presented from the artists whose virtual reality artworks I studied. Her work gave context to the participant by providing a space and objects, such as the armchair and television which would have engendered at the very least a sense of time and space relating to her memories. There would also have been some sense perhaps of the smell of the fabric, its tactile properties and so forth. However, the objects did not directly relate the virtual scene in the way that a *Synchronous Reality* would do in my own installations. Other artists such as Stenger, and Gromala provided virtual based installations only accompanied by musical soundscapes. So, again, these were not exploring the territory I had chosen in terms of *Synchronous Reality*. These works and those of the other artists, Rossin, and Naimark, served to indicate that I was working in an emergent territory alongside a handful of other artists. The idea of conjoining and synchronising the physical and virtual spaces, of layering them together, was furthered in *Caravan*. My intention was always less to mimic in some way what had been done already, but to create something new. To explore new territory in the field and test a different way of experiencing virtual installations.

The very well-defined field of immersion and presence, which has ample definitions by Slater (2003, p. 1), and others, also set a benchmark for my virtual installation. It would need, by definition, to be immersive and create a feeling of presence. The deeper this immersion could be, then the more likely the feeling of 'being there' or presence would be enhanced. Although it was never my aim to test this directly, it was a necessary component of the work. Creating this depth of immersion should result in correspondingly more resonant affective responses to the work. The audience participant should engage more thoroughly with the installation and this in itself might create the conditions of 'reverie' which would bring about a connection to the past (Bachelard, 1995, p. 6). As will be shown from the findings of the research, (Chapter Four and Chapter Five) the *Synchronous Reality* installation did achieve excellent levels of immersion and consequent presence for the participants.

The Review of Literature guided the Design of the Study (Chapter Two) where through progressive experimentation and development of the work, the inspiration gained from Bachelard as a key philosopher, with Bergson and Massumi helped to shape the future direction of what became an intensely personal journey.

CHAPTER 02
DESIGN OF STUDY

C2.01   INTRODUCTION

My research is an exploration of the affective conditions of solitude and intimacy in installations created in *Synchronous Reality*. This chapter introduces the autoethnographic frame for my research and the practical methods that I have developed in a heuristic, practice-orientated research process. The starting points for my research are fragments of memory of significant places of my past, where autoethnographic methods such as self-reflexive writing have aided the development of my practice. In this chapter, I also discuss the various practice-led processes I tested, including photographic exploration, online journaling, modelling, texturing, testing, scripting, collaborating with a sound composer, and short pieces of self-reflexive writing on my WordPress Weblog and Adobe Journal. Qualitative research with participants also became a means of expanding my approaches to the medium. These methods enabled the development of three installations in Virtual Space and located in a gallery space, a room and a theatre.

My initial goal was to simply recreate elements of a particular memory in virtual space, but over the course of this research, the aim expanded to a phenomenological exploration of sensory perception and virtual elements within an

installation, opening up the methodological frame still further. I began, in early tests, with a specific idea of evoking a sense of isolation based upon my own past experience. The *Cube* enabled me to test interaction and avoidance, simple navigation, textures and motion in virtual space. The Virtual Reality installation *Empty Room* encouraged interaction with a room which held some poignant recollections. The final piece, *Caravan*, developed from a period in my life that I spent living in a caravan with two cats. By the time I created *Caravan* I realised the participants were seeking contemplative solitude and sensorial comfort through my work, so the methodologies and questions evolved accordingly along this journey.

C2.02   A PRACTICE-LED RESEARCH PARADIGM

Before I turn to a discussion of auto-ethnography, I situate my practice in a research paradigm of practice-orientated research. Practice-led research (Sullivan, 2006) is the overarching frame for the diverse methods which emerge through the contingencies of artmaking. As Skains (2018) noted, there is an element of experimentation inherent within creating work in any medium, and VR is no different. In my medium, my studio is a domestic space with a laptop, not a room filled with large-scale artworks and materials; the tools and materials are contained within my laptop's software of a virtual three-dimensional creative studio environment, sound studio and image programs. This environment is extended by the sensors, and the *HTC Vive* headset as the key tool I employ in an iterative process of experimentation. By the adjustment of parameters within the software and the 3D scene, subtle changes can occur. Features buried within the program come to light, often by accident, and add to or enhance the making of my work in an ad hoc process. In *The Studio Reader*, the editor, American curator Mary Jane Jacob (Jacob & Grabner, 2010), states, "The postmodern studio,…is analogous to

bricolage, ad hoc and fractured, no longer the sole site of artistic enterprise" and that "artists work where they can, and how they can" (Jacob & Grabner, 2010). As appropriate to this study, a room in the intimacy of my home became my studio to experiment with VR, while I constructed physical elements in the AUT workshop and textile design lab. The lab, gallery and theatre spaces became the public sites of the presentation and testing of the artworks with others.

My virtual home studio contains the paraphernalia of VR: motion-capture sensors known as *lighthouses* on the walls. The controllers and the HMD are attached as needed to the laptop. My studio is also moveable, relocatable to another room or the gallery for the final installations. The installation site is where the virtual and physical come together as one, where I construct the physical set which meshes with the virtual space in parts. The gallery or installation becomes an externalised studio, the site of the *Synchronous Reality*. However, although the elements of VR are moveable, they are still constrained by the limitations of technology; the maximum distance of the lighthouses, the need to wear an HMD. These things may place physical limitations on the operating environment, and the software also has limits within the virtual environment. Part of the work is harnessing these limitations and using the constraints productively. As an example, the immersive VR setup is in itself a constraint. Only one person at a time can use the headset and experience the installation. In general, artworks can be viewed or experienced by many people at once, but the VR headset forces a single-person encounter with my work. This is productive as it focuses on the individual perceptual experience, akin to looking through the eyes of the maker, although each participant will bring their own memories and associations to the site, as discussed in Chapter One.

Another question, which often arises with respect to practice-led research, is where the new knowledge lies. Artist and educator Graeme Sullivan (2006) writes, "The artist is the key figure in the creation of knowledge that has the potential to change

the way we see and think" and he goes on to describe the studio-research as a form of imaginative yet robust enquiry which can lead to knowledge and understanding (2006, p. 78). Sullivan places the artist at the centre of the research, proposing they create new ways of looking at the world or ideas through their art. Immersive virtual space offers a new way of experiencing where a participant enters the world within it. To return to artist Rachel Rossin (see p. 58), her work *I Came and Went as a Ghost Hand (Cycle 2)* (2015) explores the potential of virtual space quite literally as a medium to create studio-based knowledge. A review in *Apollo* magazine describes the work as follows:

> Rossin has purposefully taken the scans of her studio and altered them, pulled them apart. This is because, as is perhaps the case for any good artist, Rossin's use of VR technology is driven by a fascination with and desire to explore the medium itself – to test its limits and potentials, to find its capacities for communicating ideas and experiences through its specific mode of representation. (Schwarz, 2018, p. 1)

Schwarz notes that Rossin expands our understanding of how an experience of her traditional studio can be conveyed through a new medium. Rossin's studio, as portrayed in her virtual work, is a room one would normally expect of an artist, containing the accoutrements of artmaking: a table, materials, artwork on the floor of the material part of her practice. This work reflects on how emergent media and traditional media of artmaking collapse temporally into one. This type of creativity in virtual space resonates with Sullivan's assertion, "The artwork carries its own status as a form of knowledge" (2006, p. 80). The path of my own practice work started from a virtual setting and progressed to focus upon the material and sensory elements which could augment the virtual experience. Coupled with qualitative feedback from participants, I acquired more knowledge about how this combination affected the immersive quality of the work. I also discovered how a passive, rather than task-based or challenge-based (Ermi & Myra, 2005) immersive environment could also be engaging for the participant. A practice-led research paradigm relies

on experimentation, trying out ideas, progressing them and gaining subjective feedback from others: this led to a deeper understanding of the medium and the way I chose to express the concepts within it.

C2.03   AUTOETHNOGRAPHY

My practice is driven by accumulated memories about a place, a former self, and an affective pull to return there. Since the implicit energy for the work comes from within me, it is appropriate to have to turn to autoethnography as a methodology. The strength of an autoethnographic approach lies in the potential for an engagement with one's own experience to generate insight into the human condition for us all. Author Tony E. Adams' (2015) main contention is the engagement of personal experience allows us to examine facets of ourselves or other people, including cultural, political and social elements. He writes:

> Autoethnographic stories are artistic and analytic demonstrations of how we come to know, name, and interpret personal and cultural experience. With autoethnography, we use our experience to engage ourselves, others, culture(s), politics, and social research. (Adams, Holman Jones, & Ellis, 2015, p. 1)

Adams maintains that accounts of personal experience have wider implications for social life and behaviour. Autoethnographic experience does not have to be confined to stories or the written word; experiences of the self are often conveyed in art practice including through virtual space, as Rossin's example above demonstrates, along with my own research. I open up a memory-narrative as visual image and sensation through qualitative research with participants. Capturing the essential parts of a memory in an immersive virtual environment brings others into the space and time of a memory. To convey perceptually but also autoethnographically, in my research, requires a narrative within the virtual

environment that is created through sensory perceptions which augment sight: the auditory, olfactory, proprioceptive and haptic.

For Adams, autoethnography is a qualitative method which focuses on human intentions of a very specific nature, rather than more general statements about individual or social behaviour. It focuses upon particular events or times, which are narrated or otherwise imparted, to draw some type of interpretation from them that is applicable more widely (Adams, Holman Jones, & Ellis, 2015, p. 2). Adams (2015) implies autoethnographic work contains much personal investment on the part of the researcher. The researcher reveals personal details and events they feel are worthy of further scrutiny and then extrapolates on them. My research puts two particular affective states under the microscope: solitude and intimacy. This methodology allows me to create a sensorially-oriented narrative which exposes aspects of my own life to my audience, allowing them in turn to enter my own histories. Yet the work also creates a receptacle where visitors can bring their own visions and interpretations. I noted this as a seeming dichotomy in the introduction, however, it is implicit in the nature of the autoethnographic method to reveal one's personal world for others to extrapolate into their own experience. It suggests a level of personal disclosure is needed to provide a provocation in order to activate the memories of another.

Author Carolyn Ellis discusses the narrative aspect of autoethnography in her book *The Ethnographic I* (2004). She indicates a narrative or story is an important component in conveying experiences and concrete moments of life that are the essence an artist-researcher wishes to convey; particular times or events that impinge more upon our consciousness (Ellis, 2004, p. 30). I have also had my own 'concrete moments', including the times I spent alone in my caravan. If I contracted them into a single setting, a snapshot, of space and time containing elements of many of those moments, then this would be my installation, *Caravan*. A space in

which the participant can become immersed and experience the narrative of those moments at first hand. There is an immediacy to the communication in an immersive virtual environment which notably lends itself to the autoethnographic mode.

C2.04   CREATIVE WRITING

Creative writing has formed part of my autoethnographic process; fiction, self-reflexive prose writing, and journal articles. I recorded some of my recollections of events related to my practice, enabling me to bring in some of those elements. With *Caravan*, I chose to write pieces of significance to me, to aid the process of remembering. It was useful to form my ideas and shape my thoughts to subsequently articulate into the narrative. The following pages are sections of self-reflexive prose writing (2017), first produced for my documentation blog to reflect on my experience of living in a caravan. Further recollections can also be found in Chapter Four.

Choices are something that we live by, whether we want to or not. We make choices every day and every choice we make has some kind of consequence. I chose to live in a caravan in the wilds of Yorkshire. I chose that isolation and to a degree that discomfort of loneliness punctuated by my cats as constant furry companions, visits from and to my children, and visits to my family.

Figure 9. Bailey, D. (2007). My caravan at the site in Yorkshire. [Photograph].

Choices are things you do every day. However, some of them carry deeper consequences than we realise at the time, and we should remember that. Impetuosity carried me into caravan living and my isolated existence. I justify it by telling myself that I learned some valuable lessons, the lessons of how to be alone and how to stand up for myself on my own, at least to a degree.

Figure 10. Bailey, D. (2007). My caravan against the barn at the site in Yorkshire.
[Photograph]

I learned that I can spend time by myself, although having cats is a huge mitigating factor and it helps. I became comfortable in my own skin, perhaps more than I ever had before. The caravan became my world, it delineated my existence. This was all I had, apart from what was left in storage from the house. I had divested myself of much.

Figure 11. Bailey, D. (2007). Foggy day at the site in Yorkshire. [Photograph].

The life that I had built, dismantled in a short space of time, and the joy of giving those keys away finally as a token of the burden the house had become was unmitigated. You build something and work your whole life to create it and then something occurs, and you have to let it go and start again. During that journey of starting again, of recreation, I learned to become more self-sufficient, to make do with less

Figure 12. Bailey, D. (2007). My cat looking out from the interior of my caravan at the site in Yorkshire. [Photograph].

Living as I did was not all sadness or even joyless. There were many 'concrete moments' of joy and just appreciating the landscape. When the sun rose over the fields and left that patina of gold, when the mist was coloured by the shafts of morning light. The crispness of the frost on the ground. The birds and feeling of just being there, in that space absorbing it and being part of it. These are things I learned from my little mobile house in the middle of nothing

Figure 13. *Bailey, D. (2007). My caravan interior. [Photograph].*

I have regrets, for sure, and they are many, but one cannot live a life based upon that. So that is why I look for the silver lining, what I obtained out of the experience rather than what it took away from me. In the end, I can blame nobody but myself for what I did; becoming a caravan dweller was very much my own decision. Moving to Yorkshire, again my own decision. Isolation, my own decision. We live, we learn and, hopefully, if we make mistakes then we don't make them a second time.

Figure 14. Bailey, D. (2007). My caravan at the site in Yorkshire with mist. [Photograph].

C2.05   PHENOMENOLOGY AS A RESEARCH FRAME

My writing is an internal, autoethnographic process of developing an idea. For the purpose of this research, my interest in perception and the body is not primarily positioned as a phenomenological investigation. A phenomenological approach is implicit my methodology in as far as my research concerns perceptual, embodied experience in the encounter with an artwork. However, my research framework fits well with Stephan Käufer's description of the phenomenological approach as "empirically and conceptually investigating affordances, or the role of our bodies in perception and cognition, or action as a condition for maintaining a sense of the self" (Käufer & Chemero, 2015, p. 7).

Bergson and Bachelard, two of the key authors who orientate my practice (see Chapter One), have been influential to the development of a phenomenology across many fields since the early twentieth century. Bachelard describes the task of the phenomenologist as to seize upon the essential essence of the space, the "original shell" as he terms it (1994, p. 4). For him, *The Poetics of Space* (1994) is a study of the intimacy of an "inside space" (p. 3). In my work, the memory of a place is created as an 'inside space' in the form of a technological construct of the interior of a virtual room. I have attempted to distil the essence of my place-memories into my installations to open them for others. The intimate value is a durational interaction with a site which allows a visitor to my work to dwell in their own recollections.

In addition, philosopher Shaun Gallagher (2012) provides a pragmatic definition of phenomenology which is appropriate to my research framework; as a study of experience from the point of view of living through that experience. Gallagher's view that we live our lives based on our own perceptions and experiences resonates with both a phenomenological and autoethnographic approach to research. Conscious knowledge is of prime importance to a phenomenologist, according to Gallagher. He notes, "the phenomenologist thinks that consciousness (the way we experience

things) is of more interest than the way things actually are in reality" (2012, p. 8). Experience on a conscious level is important to my research, yet my practice-led approach is more permissive than Gallagher's account. The conscious participant's experience in my installation, and their encounters and observations, are important, yet their own memory-narratives are also of concern, as I discuss further in Chapter Four. The qualitative feedback from my participants teases out a little of the phenomenological encounter with my artwork, but I am also interested in the narrative aspects of their own recollections. Autoethnography as a method has a generative synergy with a phenomenological approach in the realm of an art practice. In my research, I have become an autoethnographer and, to some degree, an experiential observer of life, a phenomenologist too.

C2.06   METHODS IN ACTION

C2.06.01   PHOTOGRAPHIC EXPLORATION

I engaged in photography as one of my primary tools at the outset of my research. My experience as a photographer led me to photographically investigate the feelings and experiential conditions framed in my research questions. The subject of isolation or solitude in landscapes or empty rooms lends itself to photographic study. Photographs can induce reminders of the past, familiar places and spaces. I experimented with solitary dwellings in vast landscapes or empty places in colour and black and white media. On my blog (2016) I wrote:

I am fascinated by empty or limitless spaces, stark buildings and shadows, and my photographic work offers a sense of isolation and hard contrast of light. I play with the contrast in photographs, attempting to match the mood of the picture with tones. I often try to enhance the emptiness and starkness in the photograph, connecting with my own feelings about solitude. In a similar way to my recreated memories being 'tonalised' or coloured by my inner space, my photographs are also coloured in some way with moods or emotions, and perhaps outwardly reflect this. Empty buildings with stark shadows fascinate me and this is why I am drawn to Bachelard, who writes of buildings and memories. I like to photograph buildings that are empty while the sun makes harsh contrasts of light and shadow, emphasising the isolation of the place.

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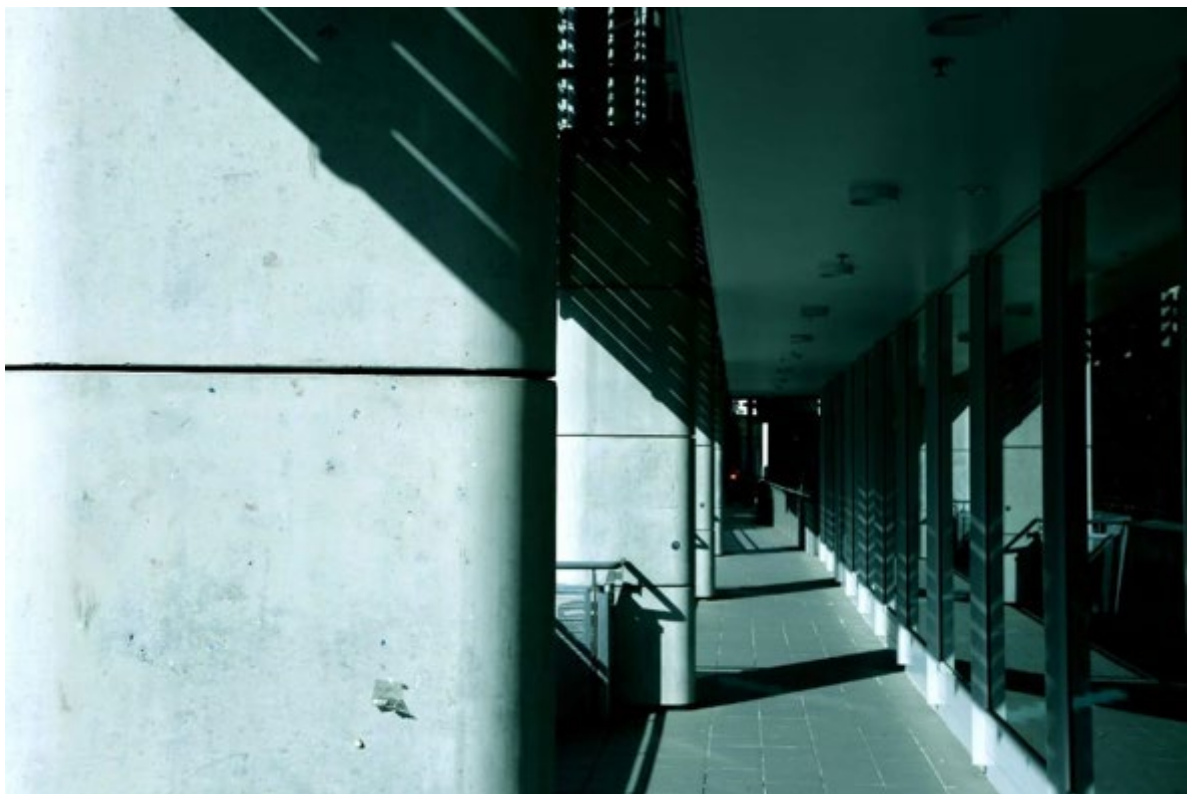
Figure 15. Bailey, D. (2016). *Pillars*. [Photograph].

Journeys through Waikato bring to mind empty spaces and vast expanses. Like Yorkshire where I once lived but not so flat, the landscape rolls away, punctuated by a few houses. The light in New Zealand can be quite hard and creates stark contrasts in the landscapes. I love the far horizons and the feeling of space. As the landscape flashes by I try to freeze the moment with my camera. It is almost as if I am freezing a fleeting memory to look back on and recall the rushing wind, the heat of the sun and harsh light on my face.

Figure 16. Bailey, D. (2016). *Waikato*. [Photograph].

There is a house I can see from the view on our deck, which is reminiscent of Edward Hopper's love of lone houses with stark light. A shot taken at the close of day with the rainbow was an added bonus. It symbolises the thought that we are always chasing rainbows in our dreams.

Figure 17. Bailey, D. (2017). *The Rainbow House*. [Photograph].

Everyday and sometimes mundane subjects can become fascinating when the light falls in a particular way. This is something I tend to notice, as I am very aware of light and shadows. The ordinary can be transformed into something more just by the use of light, and the absence of people in the pictures speaks of solitude to me. I like the way shadows fall through windows, creating bars of light in a room. It somehow infuses the room with an atmosphere. It speaks of stillness and emptiness.

Figure 18. Bailey, D. (2017). *Interior.* [Photograph].

The autoethnographic approach I have taken involves the examination of personal experience through my artistic expression. Experience can also encompass the use of literature and references which help to augment it in some way. These references feed back into the process and influence the approach to the work, thus becoming part of the overall engagement and interpretation of those experiences chosen for inspection. Literature and references form an important element of the methodology.

My photographic choices in this study have been highly influenced by the work of American artist Edward Hopper (1882-1967) specifically *Empty Room.* Writer Olivia Laing, in *The Lonely City* (2016*)*, discusses Hopper's work at some length; she writes, "What Hopper's urban scenes also replicate is one of the central experiences of being lonely: the way a feeling of separation, of being walled off or penned in, combines with a sense of near-unbearable exposure" (2016, p. 17). Laing pinpoints Hopper's talent for depicting loneliness even when a person is surrounded by people. His pictures often show, as Laing says, the idea that the person is separated, internalised and almost walled off from others. Laing suggests the person seems almost to not want to be there, as if they are unable to bear their 'exposure' to others. Even though the wall she describes is not physical it is palpably present in their demeanour. Her summary of Hopper's work is very incisive regarding an atmosphere of isolation. Some of his paintings seem to engender those feelings and Hopper's paintings also often have a strong sense of light, shade and colour, which Laing describes with respect to one of his most famous paintings, *Nighthawks* (1942), shown in Figure 19.

> Green shadows were falling in spikes and diamonds on the sidewalk. There is no colour in existence that so powerfully communicates urban alienation, the atomisation of human beings inside the edifices they create, as this noxious pallid green.... (2016, p. 21)

This starkness of light and shadow also somehow mirrors the thoughts that might be imagined in those nameless individuals. They appear in an almost anonymous existence as people lost within their own personal space and seemingly almost oblivious to their surroundings. It is, however, the light and shadow that attracts me most; in my own works *Empty Room* (Figure 21) and *Caravan*, the cycle of the sun moving across the sky also creates stark shadows, an effect that leaves one also feeling as if one was a nameless individual in an empty room.

Figure 19. Hopper, E. (1942). *Nighthawks*. [Painting]. Retrieved from
http://www.edwardhopper.net/nighthawks.jsp#prettyPhoto

Many of Hopper's paintings include figures, but some reveal an empty space, such as *Sun in an Empty Room* (1963), Figure 20. This painting depicts a room devoid of contents; strong light falls through the window, creating heavy shadows, a feature of Hopper's work. The light creates an atmosphere without the need for explicit narrative. The walls contain a texture which is mixed with the tinge of green mentioned by Laing. The window gives out onto foliage that in itself obscures the view, almost hemming one in; a feeling of seclusion.

Figure 20. Hopper. E. (1963). *Sun in an Empty Room*. [Painting]. Retrieved from
http://www.edwardhopper.net/sun-in-an-empty-room.jsp

Figure 21. Bailey, D. (2016). Screenshot from *Empty Room*. [Screenshot].

Bachelard speaks of the moments of solitude which remain indelible within us, and this sense of solitude can be found in many things. When I reflect on these photographs, I find an individual who wants to preserve solitude in some way through recording moments and places. My own experience of solitude is even a healing adventure, and a sense of 'being alone' permeates my work. The resulting sense of calm from such an experience is something I have tried to convey in my VR installations such as *Caravan*. We seem to live in an increasingly lonely and

detached world, and our physical space is subsumed by the virtual space of our phones and our computers. Yet, bearing in mind the lessons of autoethnographic reflection, I have found solitude may be comfortable rather than detrimental.

C2.06.02   JOURNALING

Journaling is part of the process I use to track the trajectory of my work, and include commentaries and thoughts. It is the self-reflexive nature of journaling, however, that makes it more useful than experimentation alone. The experiment teaches us to look and feel in different ways, but the reflection gives us a chance to understand the implications of having experimented, and what it means. Authors Maarit Mäkelä and Nithikul Nimkulrat conclude:

> In the context of practice-led research, documentation can function as a research tool for capturing reflection *on* and *in* action. When practitioner-researchers document their practice-led research processes, they consciously reflect on the experiences during the process (*reflection-in-action*) and on the documented experiences after the entire process (*reflection-on-action*). (2018, p. 14)

The process of journaling involves two methods. The first, as noted, is a reflection on the art-making whilst it is being undertaken, and the second a reflection on the work once completed. I used these two methods together to provide information in a form to subsequently be revisited and analysed. This type of data is captured only at the source point, by the artist, during the work itself as well as afterwards, and is invaluable to the artist-researcher for future examination.

Theorising the practice also establishes the thinking behind or beyond the work itself. I began my work on *Empty Room* with a physical journal, reasoning this would supply a feeling of authenticity whilst moving between the analogue and digital. It contained printed images of relevant progressions, and personal reflections and thought processes. I considered such a diary would maintain a tangible archive and enable a different kind of rumination using physical methods as opposed to digital.

The difficulty of a physical journal proved to be the time it takes to update it and the fact there is only one copy. It seemed, on reflection, incongruous I was engaging in a software-driven practice whilst harking back to a physical style of journal. As I started to produce *Empty Room* in its virtual environment, I was unable to put such things as a video into the journal. The physical journal increasingly lost relevance the more the work proceeded. It became a constraining way of working.

Figure 22. Bailey, D. (2016). Pages from the physical project journal. [Scan].

Adobe Portfolio offered another usable medium, instead, for journaling progress. It facilitated a more meaningful record, incorporating different types of media including writing, photographs, images and videos. The portfolio was shareable, with the means to control access. Different project streams allowed various strands of the work to unfold and be diarised. Progress on the main body of work, which would encompass the final installation, could be shown in some detail. Depictions of the work, not only in screenshot form but also with video walkthroughs, was a useful way of illustrating the iterations and some of the conceptualising involved and allowed the work to be revisited at a later date when the virtual environment itself may have been altered multiple times beyond that point.

The nature of a software-based medium implies continued experimentation, since even the subtlest alterations of code can often bring about dramatic changes in the nature of what is produced and perceived. This is also my experience with the development of my work. McNiff asserts that "The process of inquiry shapes the content of thought and the ideas that emerge – yet another reason to keep art-based research open-ended with the primary focus always as the method of investigation" (1998, p. 149). He adds that research requires the assumption of some depth of knowledge (1998, p. 24). What he suggests is that the construction of art can be the passage to knowledge acquisition, through personal inquiry going hand in hand with the making of the art.

Software and digital media are ephemeral, and the loss of work in the process can be sudden and can change the process. Theorist Wendy Chun writes:

> Digital media is not always there. We suffer daily frustrations with digital sources that just disappear. Digital media is degenerative, forgetful, eraseable. This degeneration makes it both possible and impossible for it to imitate analog media…If computer memory is like anything, it is like erasable writing…computer's memory can be rewritten because its surface constantly fades. (2008, p. 160)

Chun discusses the fact that more and more information is constantly stored in an imperfect medium; imperfect in the sense that for all its purported permanency, it may not be permanent. There is a degeneration inherent in the medium, which makes it different from analogue types of media (such as film). Whether this is justified or not, the point to consider is that the portfolio may not always be there.

With immersive technology, the implied presence of the participant within the scene allows rapid experimental changes to be made and easily viewed whilst developing an artwork. The progression of this type of practice is difficult to track without a clear record and journal of what has been done. *Adobe Portfolio* does have its own constraints, as with all software. The software allows for the creation of project areas into which a stream of information, written or media-based, can be placed.

Software also allows for rapid iterative testing of ideas and speeds up the process of change. Unlike the physical making of an object, changes can easily be applied to an entire virtual scene. A texture can be altered multiple times and reapplied, changing the appearance of an object each time. To capture changes in a virtual environment for documentary purposes, changes need to be recorded, screenshots taken, and video walkthroughs made. The documenting of these changes in my online journal allowed for subsequent reflection on these changes to feed into further iterations.

Figure 23. Bailey, D. (2018). Pages from Portfolio site. [Screenshot].

This shows the floor using the second pencil texture. An interesting feature about it is the fact that because I have used the FADE setting on the shader it turns almost translucent at times during the lighting cycle. I actually like this effect a lot. What is also shown here is the thinning of the grain on the cabinet which was accomplished in Unity by tweaking the material tiling effect and also the colour which I think is now nearer to a caravan wood colour. I like this. I also narrowed down the profiling on the door, and I think that looks better too. I shall apply this effect to the rest of the woodwork and I think that will be a significant improvement.
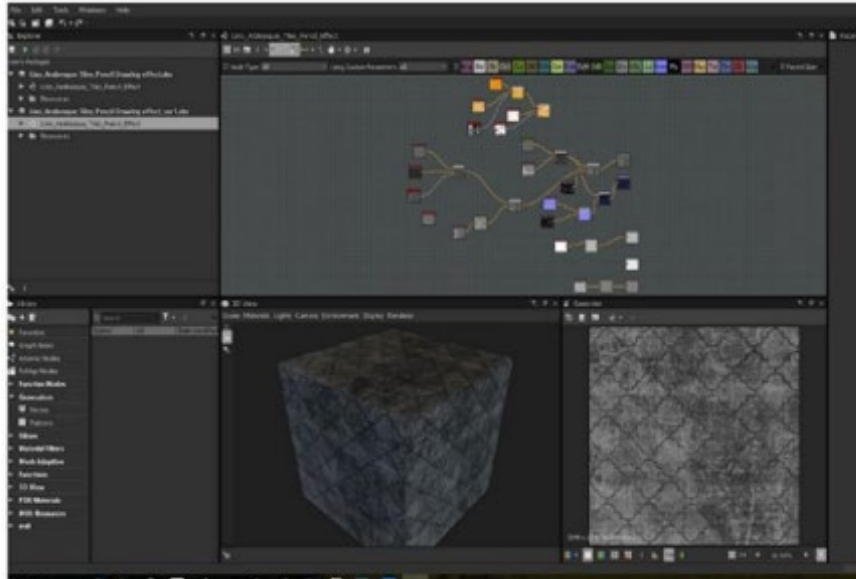
The second attempt I put in a scratch filter and tried also to degrade the grout. This is a better effect overall.

sit ad nauseum. The intervals are randomised between two parameters for each of the walking and sitting so as to give the appearance of random movement. I think it works quite well. It even goes through hedges, etc. I have toyed with the idea of whether I should prohibit it walking though solid objects (supposedly) like tree trunks and the concrete plinth but I have, for the moment, elected to allow it. In a way if it happens to do this then it appears all the more ghostly in a way, and both my cats are now deceased and so that's fitting somehow. Besides, how solid is a memory anyway? I think it's not.

Overall I am beginning to really like the effects I have created so far and the way it's all shaping up. There is more to do but I am happy with progress.
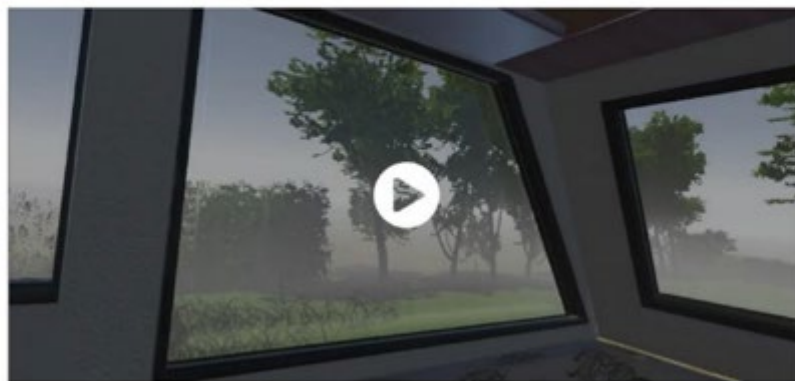
Installation now with the addition of a successful fog effect and also the cat moving somewhat randomly around the scene at intervals

Figure 24. Bailey, D. (2018). Pages from Portfolio site. [Screenshot].

C2.06.03   SCRIPTING

The animation of any object or part of a virtual scene requires that it is scripted; small programs are written governing certain activities. To return to Chun, we can understand computer code in different ways: "Code as logos – code as the machine – is intimately linked to digital design, which enables a strict step-by-step procedure that neatly translates time into space" (2011, p. 137). Chun speaks of the lower-level code that motivates the machine. Logos describes a principle of order, and computer code is an orderly set of instructions. The instructions are executed in order over time and create digital space. In Virtual Reality, this 'space' would consist of something visible to the eye. Chun writes further:

> Software – as instructions and information (the difference between the two being erased by and in memory) – not only embodies the always already there, it also grounds it. It enables a logic of 'permanence' that conflates memory with storage, the ephemeral with the enduring. (2011, p. 152).

The software is impermanent, as it will be held in memory only for as long as the instructions are being executed or the computer is on. The memory stores information which could also be computer code or simply data. Chun says the two become commingled as a concept. The software is ephemeral in nature but enduring by dint of being stored on a hard drive. This idea creates an analogy with autoethnography; experience happens once but memories survive. The simulation in my virtual installation is also not enduring, it disappears when the program is stopped, yet at the same time, the physical parts of it remain. The scripts are the invisible gears which put events and actions into motion in virtual space. Without scripting, it is very difficult to achieve anything but a static scene. In *Empty Room* and *Caravan*, a day/night coded script moved the sun through from sunrise to sunset, with accompanying changes in the shadows it cast. In *Caravan*, the fog was supplied by software, and a cat was animated on its random perambulations.

```csharp
        posy = this.transform.position.y;
        posz = this.transform.position.z;
        // set interval for cat to do various sitting motions
        randnum = Random.Range(Randombottom, Randomtop);
        //set interval for cat first walk
        catendwalk = Random.Range(walkrange1, walkrange2);
}

// Update is called once per frame
void Update()
{

    timecount = timecount + 1;
    cattime = cattime + 1;
    //  print("timecount");
    // print(timecount);

    //walk animation until reaches end of tree
    //Only do the walk animation each time the threshold is reached, that governs the speed of the cat walking
    if (timecount == threshold && switch1 == 1)
    {
        //print(posy);

        //print (timecount);
        //  print("walk");
        this.transform.Translate(0, 0, xaxis);
        Animation anim = cat.GetComponent<Animation>();
        anim.Play("Cat_arm|Walk");
        //  print("cattime");
        //  print(cattime);
        timecount = 0;
        // posx = this.transform.position.x;
        //  print("posx");
        //  print(posx);
        //  print("catstop");
        //  print(catstop);
        //  if (posx >= catstop)
        if (cattime > catendwalk)
        {
            switch1 = 0;
            //set interval for cat to wait until next walk
            randnum1 = Random.Range(sitrange1, sitrange2);
            //set interval for time for cat next walk
            catendwalk = Random.Range(walkrange1, walkrange2);
            cattime = 0;
        }
    }
    // Sit once cat has reached end of walk
    if (switch1 == 0)
    {
        //    print("sit");
        Animation anim1 = cat.GetComponent<Animation>();
        anim1.Play("Cat_arm|sit");
```

Figure 25. Bailey, D. (2018). Section from script which animates the cat in *Caravan*.
[Screenshot].

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C2.06.04   MODELLING

Modelling is viewed as a three-dimensional activity. Artist Casey Alt (2002) describes modelling as a disembodied activity, since the three-dimensional space is generally a visual representation on a computer screen and the participant's body is understood to be physically in a different 'real space'. He also notes there is a popular expectation of hyperrealism in Virtual Reality scenes. However, I contend immersive space is different, and contains an element of embodiment. Hansen supports this assertion:

> This principled emphasis on human embodiment as mediator between computer and world represents something new in the history of our technogenesis: in its role as primary access to a (now) highly technologized lifeworld, embodiment serves to couple body and world, as well as to actualize the potential of digital (virtual reality) technologies to modify the lifeworld (and, thereby, to infiltrate that primary enactive, world constitutive coupling). Embodied enaction is, quite literally, the agent through which technics has an impact on life and the lifeworld. (2006, pp. 28-29)

Hansen describes the body as the mediating agency between the real world (described as the lifeworld) and the virtual world. The body couples the two together and allows the technically created environment of virtual space to affect the body as if it was in a real-world situation. This concept is one I have primarily used in *Caravan*, where the body receives physical sensations, such as tactile, auditory and olfactory physical feedback. The body, in my installation, is the agency supplying the sensation, and effectively combining these physical sensations with the virtual visual scene is an essential part of the *Synchronous Reality*.

Additionally, virtual space contains an element of time; the passage of time is generally part of any virtual space environment whether the time is simulated or actual. This could be held to be the fourth dimension of virtual space. Generally, immersive virtual space constructs often contain time-based changes to objects, the

materiality or the environment thus adding this fourth-dimensional aspect. For example, both *Caravan* and *Empty Room* contain day/night cycles by which the passage of the sun alters the appearance of the textures in the virtual space. The durational changes supply some of the synchronous aspects to these installations.

An immersive virtual space is constructed in three dimensions, with time as a fourth dimension or element. To produce such a space requires a model or series of the same which can be put together to form structures and other objects within the 3D environment. The models are then wrapped with textures which formulate the appearance of the object in virtual space. This textural cloak gives the impression of some form of solidity. The models in my practice have been mainly constructed using a software package known as *Maya*,[9] also the subject of the article by Alt (2002).[10] Simple shapes were also created within *Unity* (the software providing the virtual environment for the work).

For *Cube*, it was merely a matter of constructing simple polygons in *Unity*. *Empty Room* likewise had few complex shapes. One of these, however, was the Lego man and that required working in *Maya*. My father's walking sticks and the candlestick were also similarly modelled in *Maya*. *Caravan* was the most ambitious undertaking and required a number of shapes to be made. My aim was, at first, to make every model. However, once the main caravan structure and interior were completed, I looked elsewhere to source some of the exterior features such as trees, grass and hedges. These assets were generally customisable, and I altered the shape and appearance of them to suit the environment I was creating. These models and

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[9] As defined on *Autodesk* website (2019), "Maya® 3D animation, modelling, simulation, and rendering software provides an integrated, powerful toolset. Use it for animation, environments, motion graphics, virtual reality, and character creation."

[10] "It has often been said that one does not *learn* Maya as much as one attempts to grasp one very small and specific task in Maya and then gradually expand outward from it. In other words, most users do not *globally comprehend* Maya as much as they *locally navigate through specific parts of it* – a process that produces a very unique relationship between digital artists and Maya's graphic user interface (GUI)" (Alt, 2002, pp. 396-397).

assets are representations. A virtual model represents matter as if it was captured at a moment in time, but once placed in the virtual environment it may also programmatically change over time. Bergson discusses matter itself as an aggregate of images. The implication being that objects are in effect always in motion through their own atomic structure and thus continuously changing. To convert an object to a representation requires the act of isolating from its fellows, thus making it a virtual construct (Bergson, 1988, pp, 35-36). Even when a model appears in motion it is still effectively a series of still images, changing programmatically.

The method of progression to virtual models for the *Caravan* started initially from a physical medium. Recreating the memory of the caravan was akin to knitting together recollections and photographs which form a basis for the virtual piece. *Caravan* was initially constructed from memories and pictures. The physical foam-board model I created first was useful, if crude in construction, in that it enabled me to gain an understanding of size and form before commencing on a virtual version. I needed to get a correct estimation of scale and the relationship of the interior aspects. The intention was not to create it exactly but to approximate it using memory as a guide. The point of it was never perfection, but rather some degree of imperfection that accompanies recollection.

Figure 26. Bailey, D. (2018). Model of *Caravan* constructed from foamboard. [Photographs].

The 3D virtual models making up the caravan in virtual space consist of different parts as opposed to one entire piece. *Caravan* was constructed of several different models put together to form an interior. The sides and floor and roof were all separate. The exterior of *Caravan* was afforded less importance than the interior, like a theatre set or film set. The memory is formed around the caravan interior and the exterior world viewed from within it. I thought initially the participant would never be standing outside looking at the caravan. However, even when they did, the external appearance of the caravan was never remarked upon by participants, other than the absence of wheels. In essence, and as demonstrated by the virtual caravan, the construction of a virtual model to form part of a memory can be made in pieces that relate only by their juxtaposition to form a whole.
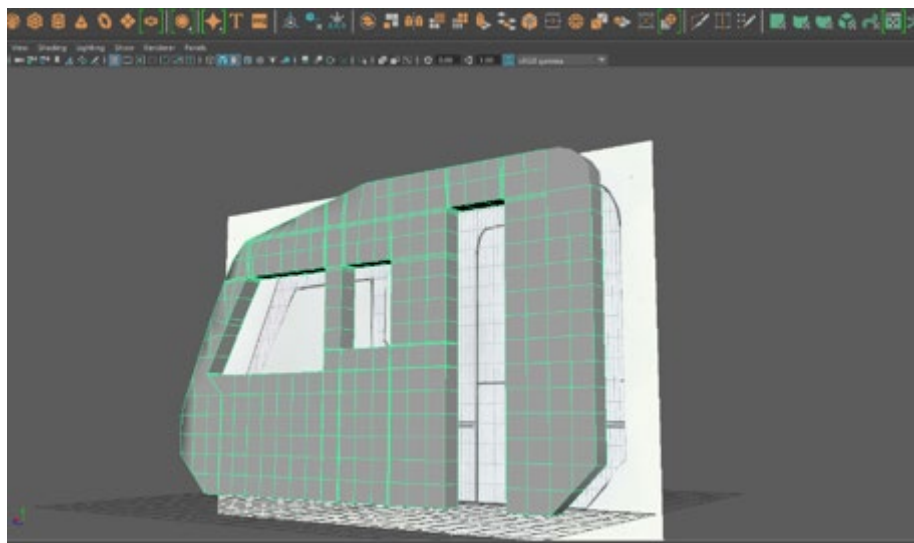
Figure 27. Bailey, D. (2018). Caravan side modelled in *Maya*. [Screenshot].
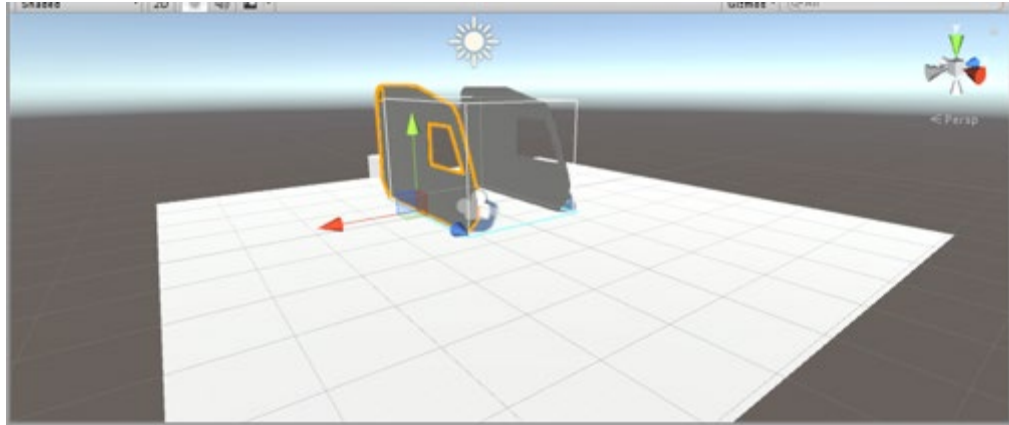
Figure 28. Bailey, D. (2018). *Caravan* sides in *Unity* as caravan itself takes shape. [Screenshot].
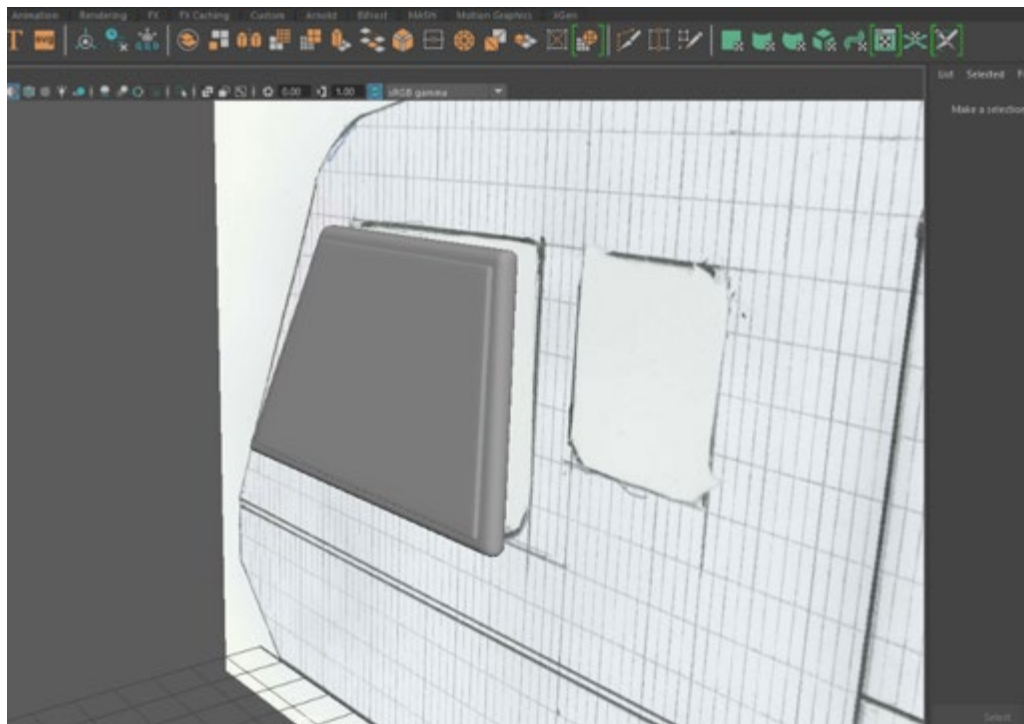
Figure 29. Bailey, D. (2018). Window modelled in *Maya*. [Screenshot].

Figure 30. Bailey, D. (2018). Rubber surround of window modelled in *Maya*. [Screenshot].

C2.06.05   TEXTURING

Textures are the contextual details of the virtual environment. Textures can convey increasing levels of realism. Whether realism is required is a personal choice and, in my work, I am not concerned solely with realism. Alt discusses the idea behind textures in broader terms of significance:

> Rather than merely functioning as an opaque surface that "hides" the "real" inner processes of computers, graphical interfaces are precisely what keep us in the computer-human feedback loop that continues to reconfigure the ways in which digital-media users embody space and time. (2002, pp. 421-422)

Alt's reference to graphical interfaces could equally apply to textures, since these are a form of interface by which one views the virtual world. His reference to embodying space and time describes precisely what textures do within a virtual environment. The texture embodies space, in that it simulates and supplies a

'reality' to the participant in the space, regardless of whether the reality is related to our familiar physical world, or is different.

Textures are created by combining a number of elements, including pattern, colour and normal maps that provide depth and height.[11] The software combines these different elements into a visible texture. Certain parameters and aspects can be altered to give a more shiny or rough appearance, transparency and so on. With increasing levels of detail or sophistication, it is possible to create more realistic or complex textures.

Cube utilised readymade textures sourced from the internet. The results were somewhat unsatisfactory, and I wanted to increase my authorship within the work. With *Empty Room,* I created textures by experimenting with physical patterns on paper using a variety of materials such as oil-based pastels, chalk pastels and watercolour paints. These were scanned and maps were produced, using Photoshop, to give the impression of height and three dimensions. The resulting textures were turned into software-based materials and put onto objects in the scene, like walls and floors. Created textures do not necessarily translate well into *Unity*. Textures need scaling in order to give them a more precise fit within the environment and to convey the right look and feel. Textures also may not wrap an object as precisely as one expects, and in some cases, the scaling produces distortions which lose the detail of the texture. There are often compromises between what one desires as an artist and what one can achieve with any given technique or way of producing a texture.

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[11] As defined in the *Unity Manual* (2019): "Normal maps are a type of Bump Map (simulates bumps and wrinkles on an object surface). They are a special kind of texture that allow you to add surface detail such as bumps, grooves, and scratches to a model which catch the light as if they are represented by real geometry."

With *Caravan*, the application *Substance Designer* was used to create textures.[12] These textures were wholly software-created within the package, although some of the patterning was sourced from pictures of the original caravan, for example, the pattern for the squab material. These textures were much improved in quality of appearance and showed subtle changes within the patterns and three-dimensional aspects. Once a pattern has been created and a texture made in *Substance Designer*, small things can be altered including introducing rust to a metal, or scratches to a surface such as rubber. This allowed me to extend my vision further into the virtual reconstruction of my memory, and to work on the quality and appearance with a finer detail. Figures 31 and 32 show the rubber texture created, before and after scratches were added.

The use of *Substance Designer* is also illustrated in Figure 33. The material for the caravan squabs was made using a created pattern similar to that of the actual caravan. This is shown as three images created by a normal map and combined together for the final texture of the squab. Figure 34 shows the texture mapped onto a squab and reveals how the light creates the illusion of the patterned fabric to the eye.

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[12] *Substance Designer* is a 3D material authoring tool which allows 3D materials and textures to be created and used in a variety of different types of 3D software, including *Unity* ("Substance Designer", 2019).
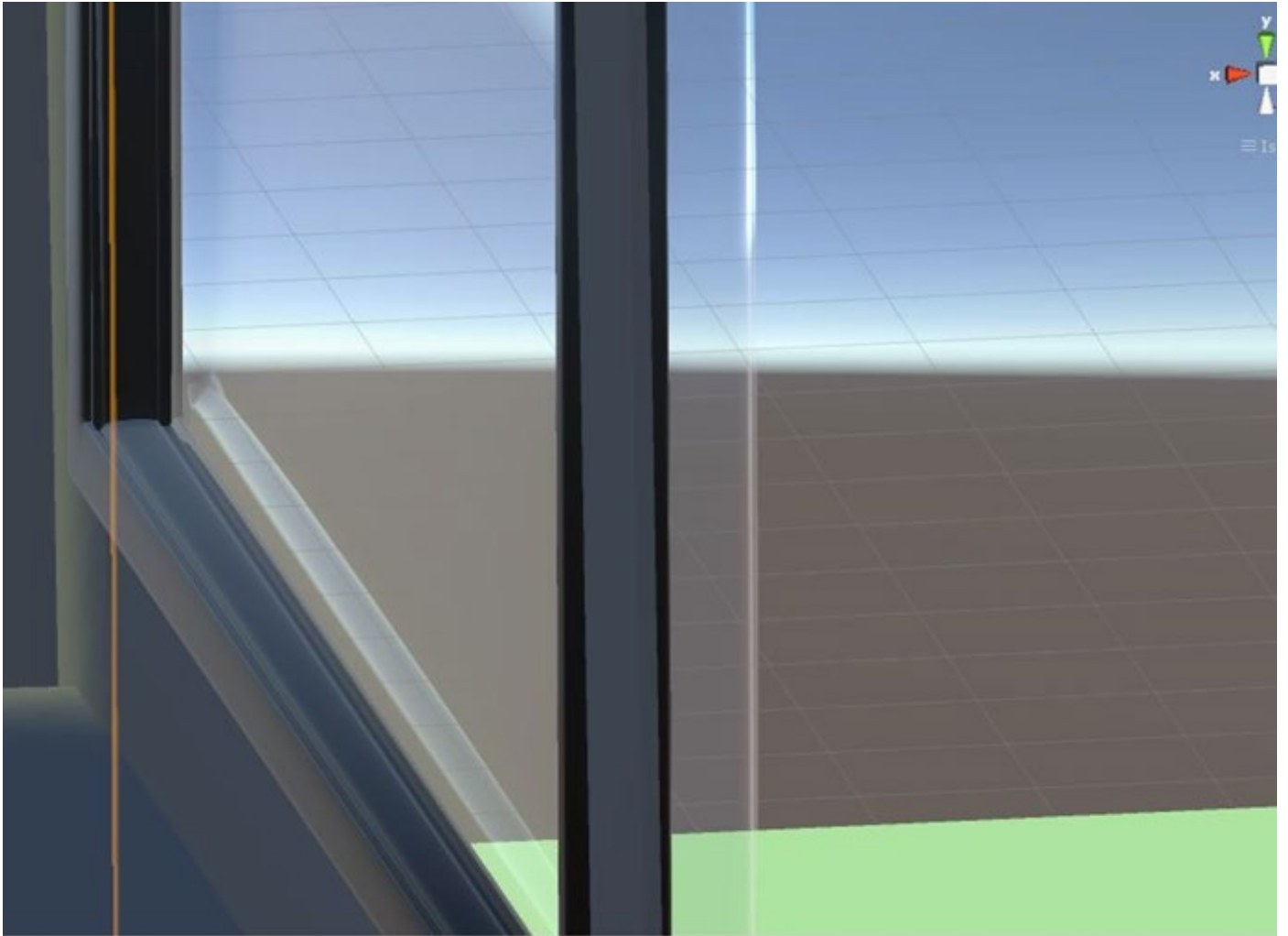
Figure 31. Bailey, D. (2018). Window showing textures added. The rubber and transparent textures for the window Perspex also gives the double-skinned appearance of the actual windows. [Screenshot].
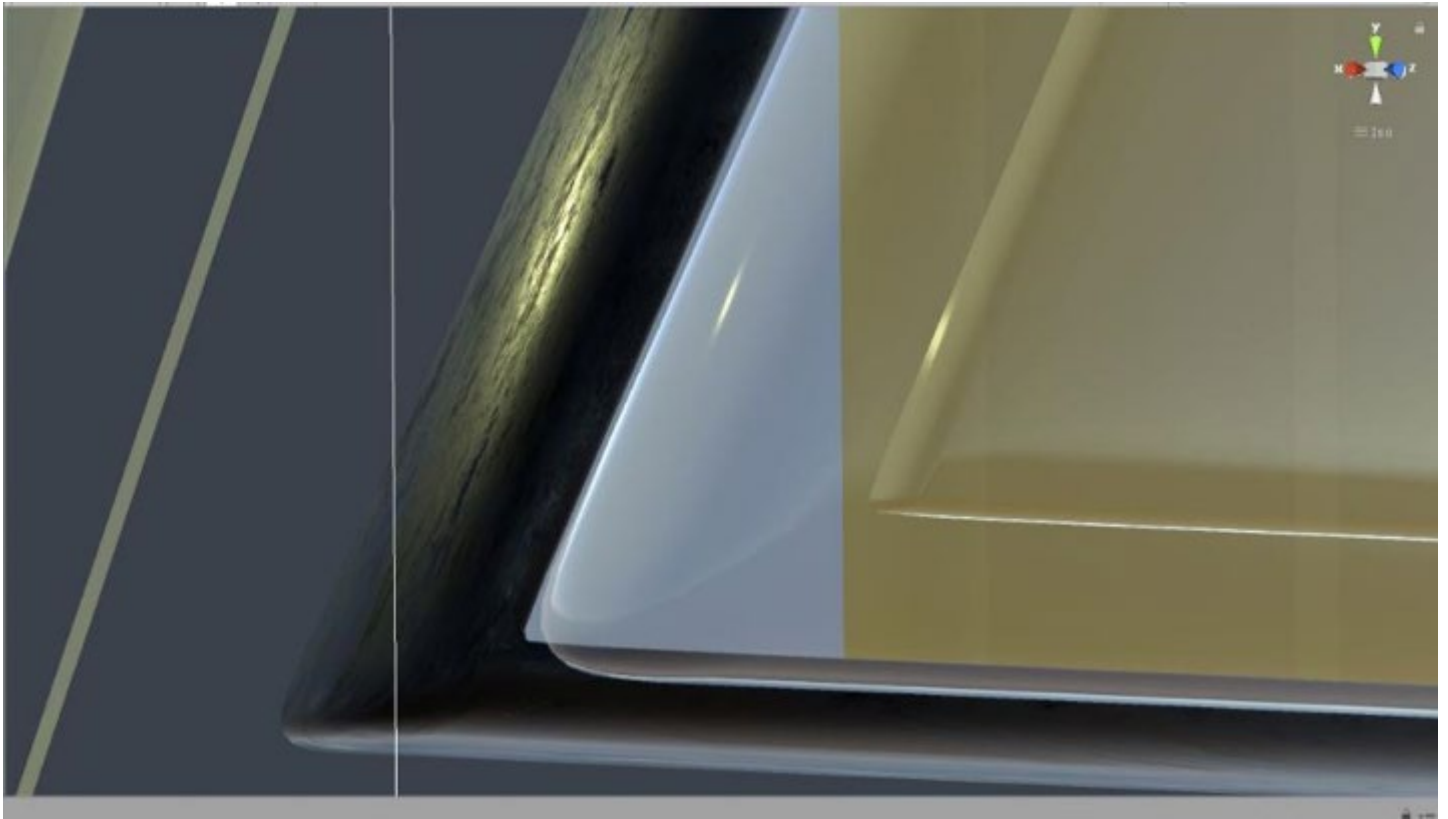
Figure 32. Bailey, D. (2018). Detail of texture, showing scratched rubber effect that was made in *Substance Designer*. [Screenshot].
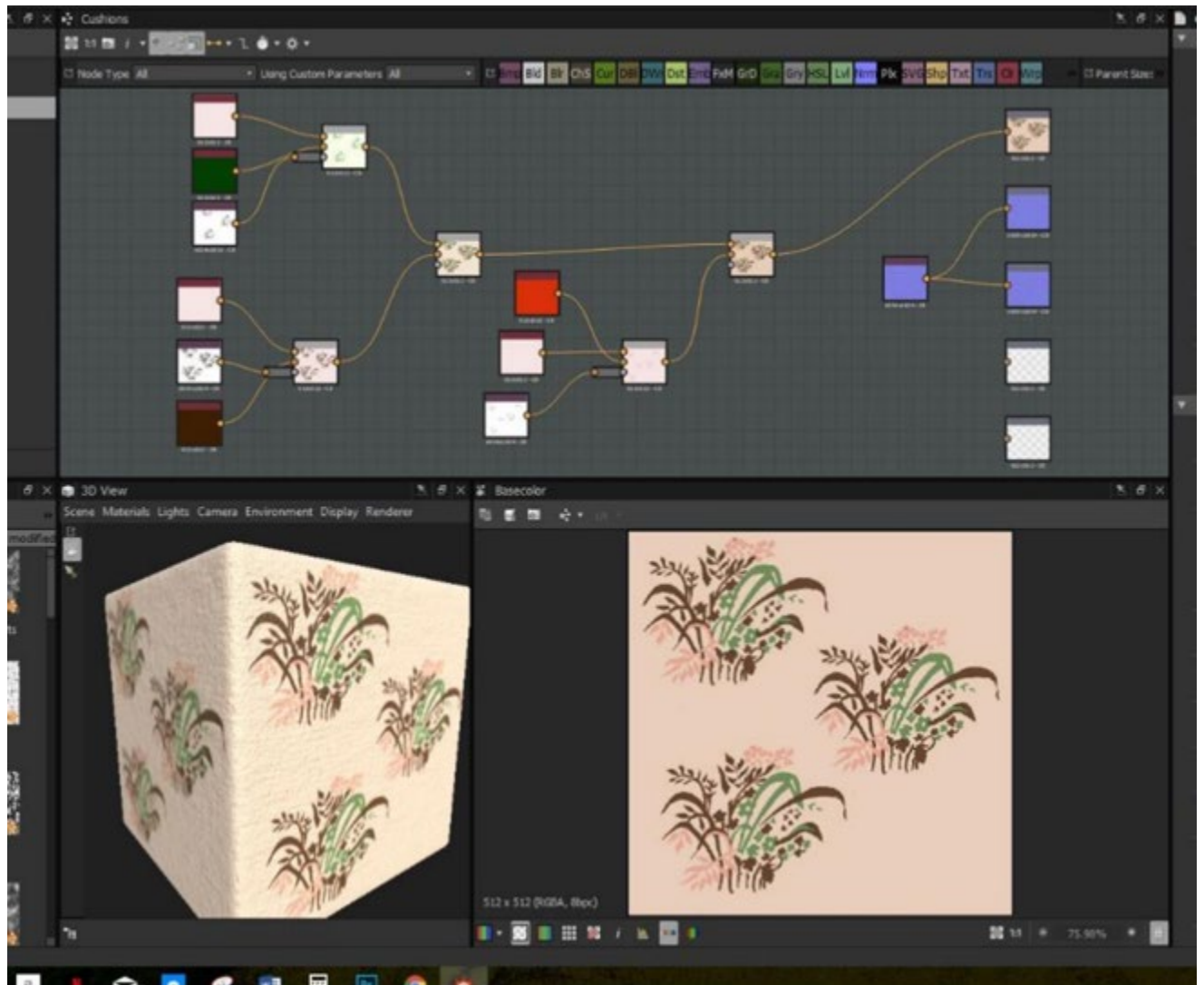
Figure 33. Bailey, D. (2018). Squab fabric made in *Substance Designer*. [Screenshot].
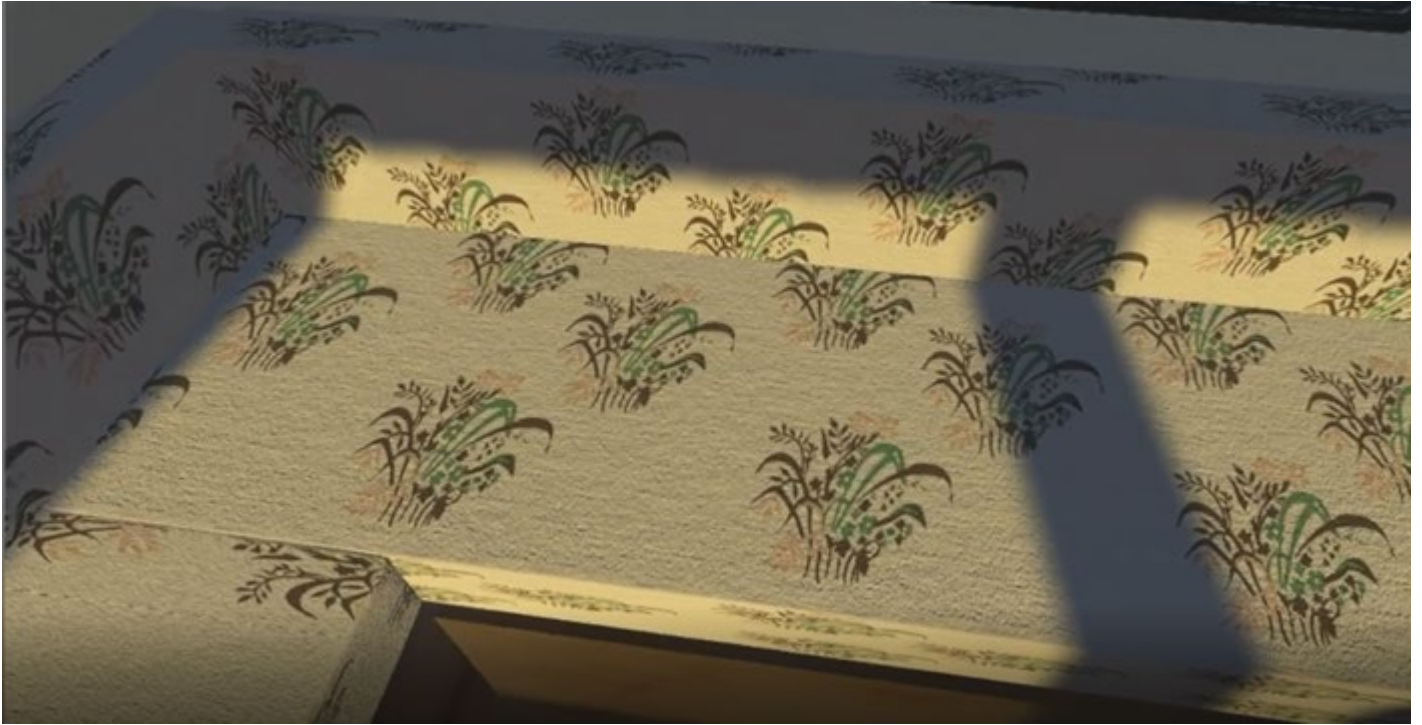
Figure 34. Bailey, D. (2018). Squab pattern in the virtual caravan in *Unity*. [Screenshot].

Through mapping and layering, textures render the intangible as tangible and visible to the eye, it becomes a virtual image. Bergson suggests a virtual image is one where the media is of such density there is no refraction and reflection, a representation of what is seen, a reflection of its actual self (1988, p. 37). While Bergson is not referring to the virtual world as a technology-based medium, this statement has relevance beyond his discussion of the daydream, or the imaginative image in the mind's eye. In the virtual world, we also see the surface of an object and find there is nothing behind it. It is an insubstantial representation, a reflection of the real world, a vision, not a tangible thing. Bergson also says perception is like a mirage, because one is viewing the reflected surface of an object and not the intricacies of how the object is made or its internal composition. There is a difference of degree between being, as in the actuality of what makes an object, and being perceived; the actual objects consist of more than what they are perceived as (Bergson, 1988, p. 37). An object in VR can appear to be solid and thus substantial, yet it is constructed of textures and reflections of created light sources. The solidity of atomic particles making up the physical world is replaced by virtual particles of light.

To extrapolate Bergson's proposition, Hansen (2006) notes that James Gibson's (1950) work on perception was used by VR researchers as a basis for recreating the physical, perceptual experience into artificial environments using textures and mapping. The mapping of light as it is reflected from objects, by mapping textures onto virtual objects, would thus transfer real-world perception to virtual worlds, and this is almost the entire basis of virtual-world object creation (Hansen, 2006, p. 114). Hansen implies real-world perception is the transfer of our ability to perceive in the real world, into the virtual world. The perceptive capability may be the same regardless of whether the textures of the world are realistic or even cartoon-like. Hansen goes further: "Because experience as such is 'analogue processed,' there can be no difference in demarcating virtual reality from the rest of experience; again,

all reality is mixed reality" (2006, p. 6). Hansen suggests that the body perceives realities from different sources, of which Virtual Reality is one and, to the body, the 'reality' of something depends upon the perception of it rather than the source. Textures are the warp and weft in the fabric of virtual space. Hansen's insight later became important as I developed a *Synchronous Reality* installation of *Caravan*.

C2.06.06 IN GALLERY SPACE: QUALITATIVE ENCOUNTERS WITH AUDIENCES

Each installation of *Caravan* (2018-2019) was an event over a number of days, where individual participant interviews were held, on a one-to-one basis. Participants were asked to enter *Caravan* in St Paul St Gallery Three, AUT, for a specified time and then answer questions. A focus group was also held where participants in the group would first individually experience the installation and subsequently, a group question-and-answer session would be conducted. Participant interviews and focus groups were the two ways in which the qualitative data was gathered to answer the research questions. I chose to pursue a qualitative interview approach to understand the subjective thought processes of the participants, and to understand how they felt and what they were thinking about whilst in the installation. The number of participants (fifteen in total) was small, and that did not lend itself to quantitative analysis.

In the introduction, I discussed the development of the concept of *Synchronous Reality* installations for this study. Initially, the idea was to work exclusively in VR. However, during the focus group for the first work *Empty Room* (see Chapter Three for further discussion), situated in a musty, red-carpeted back room to the side of Gallery Three, one of the participants mentioned the feeling they had experienced being in the physical and virtual spaces at the same time. *Empty Room* did not explore the idea of joining the two realities at the outset, but I felt it was a direction that I wanted to take for the final piece, *Caravan*. The examination of the interplay

between the virtual and physical in the first installation of *Caravan* indicated this was a development which participants appreciated; they felt included as opposed to simply being an external observer of the installation. It increased the immersive quality for them. Based on this feedback I chose to develop this aspect in further installations of *Caravan*. In the series of images below of the first iteration of the caravan, only the minimal prop of a seat, a square of old linoleum, and an outline of the caravan were given in the physical space.

Figure 35. Bailey, D. (2018). First iteration of *Caravan* installation, July 2018. [Photograph].

Figure 36. Bailey, D. (2018). July 2018, first iteration of *Caravan*. Participant touching the
window whilst experiencing the virtual space. [Photograph].

Figure 37. Bailey, D. (2018). July 2018, first iteration of *Caravan*. Participant looking out of the caravan door in the virtual space. [Photograph].

In the second iteration of *Caravan*, the physical elements were increased. The biggest change was the addition of the full seating arrangement of the original and virtual caravan, along with textures matching those in the virtual space and the original caravan (an expanded discussion of this is continued in Chapter Four).

Figure 38. Bailey, D. (2018). October 2018, second iteration of *Caravan*. Participant in *Caravan* installation. [Photograph].

C2.07 CONCLUSION

This chapter has outlined my methodological framework for this practice-led study research with autoethnography at its heart. This chapter delineates my intention to use place and memory as the autobiographical orientation for my practice. A number of methods were used to drive and facilitate the work, including: creative writing, photographic exploration, journaling, scripting, modelling and texturing. Some of these methods, such as scripting, modelling and texturing are inherent to the immersive VR technology that enabled me to design the virtual environments in my installations. Qualitative encounters with participants in the form of observations and interviews allowed me to explore the affective properties of the work. A practice-led approach and a growing knowledge of the sensory and perceptive responses of others through qualitative feedback were vital for the to the development of the later versions of *Caravan*. Immersive art is itself an experiment in an emergent field; Swedish choreographer and artist Efva Lilja says, "Artists who engage in research, investigate and experiment in a way that develops art and widens the ability to perceive each other and the world around us" (2015, p. 9). The next chapter will discuss in detail the test installations in my early experimental phase; *Cube* and the installation *Empty Room*.

CHAPTER 03
REVISITING MEMORIES

C3.01   REVISITING MEMORIES IN VIRTUAL REALITY ARTWORKS

Memories can be revisited, recreated, or reconstituted in many ways. The medium of prose is often used in a narrative or descriptive rendition of a memory. Paintings and other artistic media can give a pictorial or spatialised remembering. A memory in Virtual Reality can be endlessly revisited; it is not an original, a photograph, a video or any kind of recording of an event. To revisit, by the nature of the word, implies reconstruction rather than exactitude, or precision. Recreating or reconstituting gives choices, as to what to include or leave out of the memory. Revisiting memories in my work began to emerge in the first phase of my practice.

This chapter examines in detail the first two experimental art installations in Virtual Reality environments I created in this research. My first test exercise, titled *Cube*, was created solely for a VR environment, while *Empty Room,* the second VR installation was presented in a gallery site within the atmosphere of a physical, carpeted room. *Cube* was the start of my journey into virtual space, after the early research with photographic landscapes; I discovered how virtual space worked, how interaction worked, and how to construct environments simply, in preparation for more complexity. *Empty Room* introduced the concepts of place and memory. I began to combine physical and virtual spaces in *Empty Room*, paving the way toward my notion of *Synchronous Reality*, which emerged in the later iterations of

Caravan, covered in detail in Chapter Four. Hints of the virtual environment could be in the gallery's physical space in the *Empty Room* installation.

In early 2016 I began to work on *Cube* using *Unity* software. The first test for an audience was in the Motion Capture suite at Auckland University of Technology. *Cube* was an experiment designed to examine four-dimensional construction (including time) in virtual space and to explore interactivity in the medium. I used simple geometrical constructs whereby a shape could assume not only textures but also position and motion in the space. *Cube* would interact with the participant in space. Initial ideas for my practice in virtual space centred around autoethnographic experiences of isolation, the same condition I explored in the photographic images (see p. 88).

The Head Mounted Display (HMD) equipment itself isolates the user from the physical world, at least visually. The participant can no longer see anything outside of the virtual environment once they have donned the HMD. To have addressed only this aspect through research would have entailed a different approach. However, I sought a vehicle to explore the idea of isolation indirectly, using the equipment but placing the participant in an environment where they would be alone or in solitude. Bachelard argues in *The Poetics of Space* that memories are often triggered through the intimate recollections from a narrative of another space (1994, p. 14). Inspired by this concept, I decided to represent one of my own memories of a home within virtual space, which became the installation *Empty Room*.

This second artwork, *Empty Room*, was begun in June 2016 and completed and installed in Gallery Three at AUT during December that year. *Empty Room* was an exploration of my own past, but I deliberately conjured the atmosphere of the stark emptiness and almost sombre nature of the painting by the American artist Edward Hopper, *Sun in an Empty Room* (1963). The lack of objects in the room speaks of solitude and the use of light indicates time over a certain duration. This emptiness,

the bare walls, and the use of light in Hopper's room to alter the textures, evoked a room in a house where I had once lived. The house and its memories comprised of moments of happiness tinged with feelings of isolation and loneliness. I wished to include these elements, and most importantly the emptiness of the room, and to try to evoke an intensity in colour and a strong sense of light and shadow. *Empty Room* was constructed using *Unity* in conjunction with an *HTC Vive*. To animate the passage of light, literally gave my room temporality and movement. The installation of *Empty Room* was experienced by a focus group event to give me feedback.[13] I regarded this as a stepping stone to gain the experience for the major project to further explore my research questions. *Empty Room* was characterised by the ability of the participant to roam the extent of the virtual house without restriction.

Both *Cube* and *Empty Room* are empty of human characters and the environment itself becomes the main actor. Bachelard writes:

> …if we want to go beyond history, or even, while remaining in history, detach from our own history the always too contingent history of the persons who have encumbered it, we realise that the calendars of our lives can only be established in its imagery. In order to analyse our being in the hierarchy of an ontology…it would be necessary…to dissocialise our important memories, and attain to the plane of the daydreams we used to have in the places identified with our solitude. (1994, pp. 8-9)

Bachelard suggests that our personal histories are contingent on the people associated with them. He speculates that to discover ourselves, and the nature of our own being in relation to our history, a certain detachment might be necessary from those who were connected to it. Similarly, a participant in my place-memories

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[13] This feedback came by way of informal critique through a group session with *Empty Room*. Since this was prior to my ethics application no names, initials or direct quotes could be part of this exegesis and instead recalled paraphrases have been used. This highlighted the necessity to seek and obtain ethics permission for the iterations of *Caravan* covered in Chapter Four.

would more easily discover the nature of the place without the actual presence of the people remembered from my history. In this way, the memory becomes like a dream, a place we can remember in solitude. *Cube*, *Empty Room* and *Caravan* are devoid of people, to allow the visitor to conjure place-memories of their own. Although the memories may be personally revealing, they are at the same time anonymised by the absence of an associative identity in the form of an avatar. In order to convey solitude in my work, I only suggest human occupants obliquely in the room, in the furnishings, and the ambient sounds. In *Empty Room,* there were echoes of past occupants in the form of footsteps, and in my father's walking canes by the fireplace; objects which are very much embodied. In *Caravan* there are reminders that a person lived or lives there by the presence of a kettle, a mug and a toaster. In *Empty Room*, the red carpet in the gallery back room had a musty smell which began to sensorially evoke a particular setting. *Empty Room* and *Cube* are focused on imagery and they begin to explore sensory stimuli beyond the visual sense.

C3.02   CUBE

Nobody likes different. That was evident to me for as long as I can remember. First days at school, first days at work, feeling alone. All too familiar. I spent much of my youth alone. I had grown-up siblings leaving, to be much like the only child. I was different mainly because I was born in Africa. At an English school aged 11, I was teased for being different. I am half European and half Israeli. But I was called a Paki, Abdul, a Coon and worse. I had friends at school but it's still a form of ostracism, of isolation. To segregate a person into some other category than yourself. Children can be cruel. That cruelty often has no boundaries and no filter. Throughout my school life, I was seen as different. When you are treated this way, you strive to be the same, to fit in. I learned to give as good as I got, to insult with the best. There was still, in parts, that feeling of exclusion, you are not one of us. That feeling as a child is hurtful and

isolating. But then, I was always a rebel at heart. I was the one who sported long hair when you weren't allowed it, the one who wore black bell-bottom trousers as part of the uniform and started a trend, the one with a moustache in the sixth form, until the headmaster told me to shave it off. I almost didn't but I wanted to be able to take my exams and knew I would be suspended otherwise. Perhaps my life has been one long difference. I simply learned to live with it and to celebrate it. To be tolerant instead, and understand and accept the differences in others.

Cube was intended to examine the idea of interaction and participant affective response within immersive virtual space. To focus on an object that moved away from you, avoided you, was in part influenced by my experience of differences: Could that be communicated even by an object? Could it impart something of the isolation one feels when this occurs? These were the rudimentary ideas that formulated the work. My studio for *Cube* was the Motion Capture suite (MOCAP) at AUT. Lacking my own personal immersive equipment, this was the only space available at the time. The MOCAP suite is made up of many motion sensors in a large space. The motion sensors feed into proprietary software which in turn feeds that information into a virtual environment created by software such as *Unity*. The HMD provided for the space was not of a high resolution but was supplied with information wirelessly, although the participant had to carry a power pack to run it. The MOCAP environment was restrictive since it would be impossible to move it to another location. It was also a space in high demand and as such not conducive to the continuous iterative development of my work.

C3.03   TOOLS FOR A VIRTUAL REALITY PRACTICE

The *HTC Vive* was launched to the public during 2016, in the same year that I commenced my research. The *HTC Vive* at that time was the best fit for resolution and also the only VR product which had the ability to track the user within a defined

virtual space. The nearest other suitable brand, *Oculus Rift*, did not have the ability to do this. In 2018 other manufacturers, such as Microsoft, brought out hardware and software solutions that have tracking built in. However, moving to another hardware base would be potentially costly and time-consuming considering my investment in using the *Vive* and understanding how to build my *Synchronous Reality* installations. I was able to export *Cube* to the *HTC Vive* when the first one became available for use within AUT. Using the *Vive* made my work less dependent on location. Having a dedicated hardware setup meant I could easily make and test iterative developments repeatedly. The progress of making the work increased dramatically. As I began to focus more on what would eventuate as *Synchronous Reality* installations, starting with *Empty Room*, the *Vive* could be installed in a gallery space which facilitated this.

The choice of software to create a 3D virtual environment was limited to *Unity* or *Unreal Engine*.[14] I chose *Unity* partly because it was more widely used within the university and was generally better known. Both could have accomplished the same task. *Unity* also interfaced fairly seamlessly with the *Vive*, using free scripts in a toolkit provided by *Unity*. My experience of the software is that it was not very restrictive or necessarily limiting. I found I was able to accomplish the effects, look and feel I set out to achieve. *Unity* also allows scenes to be saved and so different iterations of the virtual environment can be kept.

I made *Cube* responsive to the presence of a participant in the virtual space. I constructed various experimental versions, which produced certain reactions when the *Cube* was approached. The basic algorithmic trigger was 'avoidance'. I wrote a

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[14] From the *Unreal Engine* website (2019): "*Unreal Engine 4* is a complete suite of development tools made for anyone working with real-time technology. From enterprise applications and cinematic experiences to high-quality games across PC, console, mobile, VR and AR, *Unreal Engine 4* gives you everything you need to start, ship, grow and stand out from the crowd."

script that determined the proximity of the HMD wearer to the virtual *Cube*. When approached at a certain distance the script would relocate the *Cube* to another randomly determined position within the virtual space; any animation of objects or interactions in *Unity*, as noted previously, has to be programmed. The behaviour of the *Cube* was intended to shun the participant's company, to see if that might engender a reaction from the participant. At the same time as avoiding the participant, the *Cube* could change its shape, texture and rotation.

The *Cube* reacted very rapidly to the presence of the participant. A predetermined distance was set as a script parameter and when the participant approached the *Cube* inside this distance the script made it respond. The script would randomly determine a new position, and might also trigger a change of shape, texture and rotation. Since the participant was generally motivated to approach the *Cube*, these changes were frequent. The participant had no time to adjust to the environment before the look of it changed. The *Cube* itself moved very quickly and so attained a new position almost instantaneously. The overall feel of *Cube* was similar to a temporal experience of teleporting from one space to another at any given instant. In immersive terms, *Cube* was interactive, it was challenge based. However, the participants were not being faced with constant and mental challenges as described by Ermi and Mayra (2005), rather they were simply tempted to come closer but never able to succeed. Whilst the concept seemed sound, participants who tried it indicated that the *Cube*'s movement was jarring, if not somewhat unnerving. The audience felt they were not able to settle into the environment and appreciate the experience because it was always changing. The rapid changes did not appear to break the immersion for participants, but the immersive environment was perhaps more unsettling, as if the real world was constantly changing around them. It also suggests the environment was thus not immersive enough; the audience did not appear deeply immersed in it or part of it. This emerged as a point to take forward; participants liked to have some time to absorb the environment, thus moving away

from challenge-based immersion, and towards sensory and imaginative immersion (Ermi & Mayra, 2005). I used this in the testing of *Caravan* by stipulating to participants a minimum time they had to spend in the installation. I was also interested in whether any affective feeling of isolation might result from the *Cube* constantly moving away, but participants tended to see this as more playful, perhaps like a game of tag.

Cube was autobiographically invested, through exploring personal isolation. As the personal reflection above shows, isolation was a significant factor in my childhood, much of which was spent on my own. This could explain my interest in examining the topic further. Perhaps *Cube*'s main deficiency was in conveying a feeling of aloneness to the participants through the use of texture, light or colour, as well as by movement. *Cube* did not deliver an isolating experience; it did too much as opposed to not enough. The changes became a distraction. Anthropologist Marc Augé (1995) defines a place that is not relational, historical or concerned with identity as a non-place, a place that has no anthropological connection. *Cube* was a digitally created 'non-place' with no point of reference for the participant, thus it would be unlikely to elicit a memory response from the participant. To move into a memory-based context would need these connections to be part of the creation. *Cube* lacked other elements, such as atmospheric lighting and sound, to enhance the digital experience and utilise the potential of the virtual environment. As an experiment with many constraints, *Cube* was an important way-point along the route to the development of *Synchronous Reality*.

The following images show how the cube appeared to the participant. This was a capture from the stereoscopic image that was made in the motion capture suite. However, the participant would see the image in 3D from the headset. Textures were applied to the cube, walls and floors; these changed when the cube was

triggered by the presence of a person within a certain distance. It relocated to another position and sometimes also changed size and shape

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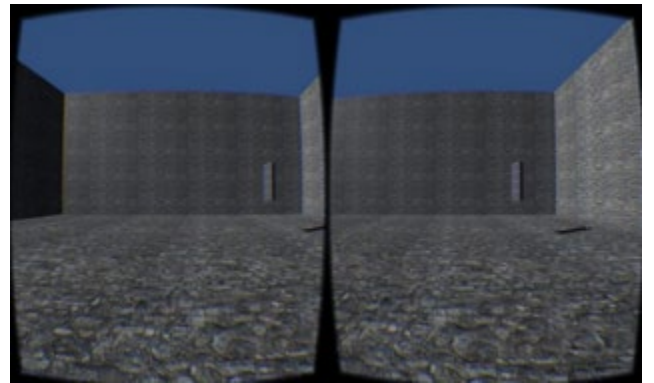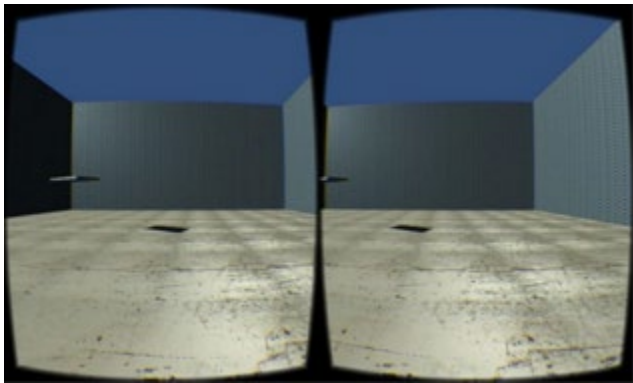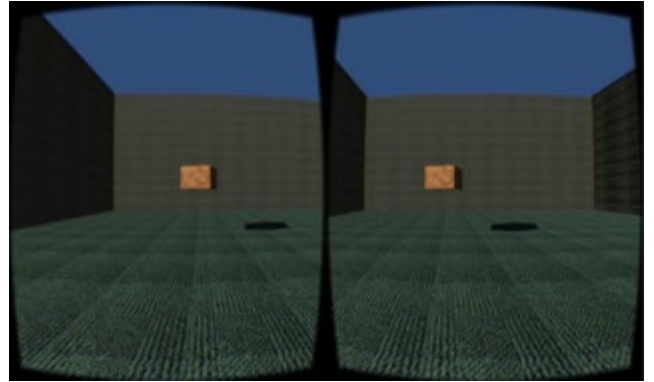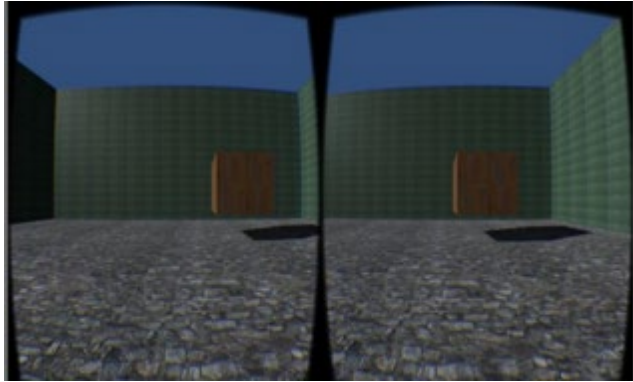
Figure 39. Bailey, D. (2016). *Cube* showing changes in shape and texture. [Screenshot].

C3.04   EMPTY ROOM

My practice is a metaphor, or rather it's more than just a memory. Past echoes of remembered items which represent attachments. The Empty Room is my old house in Forest Row, deconstructed and recalled in specifics but also in its isolation. I spent many happy and not so happy hours in that room. Sometimes in solitude at night as I contemplated the dissatisfaction with aspects of my life. My father lived in the house with us for a few years. For me this was a blessing, a recapturing of my youth – when my father was not around, separated from my mother, leaving me perhaps in parental isolation. I felt as if the fabric of my own family was beginning to fracture also, which is perhaps reflected in the fractured unfinished virtual model of the house. My father had two hips replaced and never walked correctly again, due to his stubborn nature and refusal to attend physiotherapy. He had two sticks to aid him when walking was difficult. The sticks remain though my father passed away in 2008. The sticks are a reminder of his ungainly stoop and his floppy hat, and his infinitely kind nature and pleasure in seeing me return home from work each day. My youngest son was inordinately fond of Lego; it was often strewn all over the floor of the living room. He had multitudes of little men and bricks and other things. I used to play hours of Lego with his sister and him, making up characters and stories in an endless Lego soap opera. All the characters had names, life histories and sang silly songs; they were embodied in the narratives of our collective imagination. My son and daughter have now grown up, but the Lego will always remind me of their youth. Memory is imperfect. The room is imperfect and echoes the imperfections of my life at the time. I remember the last time I saw it – empty, devoid of us, those who had lived in it and loved it for all of those years. But in my mind, there are echoes.

I intended *Empty Room* to evoke a memory of a specific room but at the same time draw on other strands of connected memories. The memories were poignant for me, but it was not the poignancy I wished to convey but instead the elements that stood out the most, such as the Lego and my father's walking sticks. The room in the work is deliberately insubstantial, to render it with a more dreamlike quality. Inside the

virtual space, the room appears to be solid, but in the same way that a theatrical stage consists of flats, on the outside, the room gives way to nothing, an isolated nothing. The room is also motionless – there is no activity apparent within it, other than sounds. I drew on Bachelard for the inspiration to design a space to allow one to dream in. He writes, "If I were asked to name the chief benefit of the house, I should say: the house shelters day-dreaming, the house protects the dreamer, the house allows one to dream in peace" (1994, p. 6). The immersive space that was *Empty Room* would be the house which shelters and protects the dreamer, encouraging the participant to spend time in it alone without interruption. The dreamer, while sheltered and protected in the virtual space, enters a constructed reality beyond their physical presence, rather as one can 'tune out' while actually daydreaming, virtual space can mirror this process of being in two places at once (Bailenson & Blascovich, 2011, p. 21).

Bachelard alludes to motionlessness when discussing recollections of past homes: "And after we are in the new house, when memories of other places we have lived come back to us, we travel to the land of Motionless Childhood, motionless in the way all Immemorial things are" (1994, p. 5). Virtual space could be paradoxically argued to be motionless even though it could be equally argued that virtual space is highly mobile. Proponents of virtual environments, especially games, might construct vast worlds which can be explored, and participants would find these full of motion as a result. *Empty Room*, however, was intended to give the essence of motionless frozen time with a loop of memories playing over and over again, as time slips from one juxtaposition to another. *Empty Room* appeared as if it was almost suspended in time, but in another sense, the passage of time was marked by the day-to-night phase of the sun repeated in a never-ending cycle. This temporal timeslip, the disconnect between virtual time created in an immersive space and real-time governed by the clock, was of increasing interest. Participants did not seem concerned that the sun moved in a different rhythm, they did not remark upon it,

implying a tacit acceptance of its virtual synchronous passage. The virtual experience of a room, as Bachelard's suggests, is where a house transcends geometrical space through the people who inhabit it (1994, p. 47). The memory, the dream remains moveable and relocatable using the accoutrements of hardware and software to accomplish this task.[15]

Empty Room contained some virtual artefacts connected to my personal, familial experiences: Lego that my children and I played with, my father's walking sticks. The interior was represented as it was then (1996-2006) but was deliberately imperfectly rendered. Hollis notes:

> All things are encoded with belief; but buildings and objects change much more slowly than the order of things that made them. The arrangement of rooms, on the other hand, clings closely to momentary concerns. As a consequence, interiors are ephemeral subjects made of permanent objects. (2014, p. 14)

The objects within the room are ephemeral in the sense that what they represent may no longer be part of the room, but the objects themselves are more permanent in the sense of their solidity. The objects and their arrangement can change, the room itself changes more slowly over time. *Empty Room* contained virtual objects of familial significance to me, reflecting some internal import. The objects themselves were otherwise seemingly commonplace to others. However, the room contained more than objects. I did not focus specifically on the physicality of the installation, although I chose a small empty room to house a bigger virtual one. The one echoed the other in effect. The room had windows creating the light and shade like that of my photographs, and Hopper's paintings. The carpet having a slight smell of 'must'

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[15] *Empty Room* was created using the *HTC Vive*, as I had acquired my own equipment by this time. I was, however, still confined to using it within AUT since I did not possess a computer of high enough specification to run an *HTC Vive.*

gave it a feeling of age. These factors began the sense of interplay, the introduction of physical senses to the virtual environment.

I returned to photography as a method to develop the spatial construction of the *Empty Room* by exploring the shadows created by strong sunlight within rooms with my camera, a photographic theme I continued throughout the project. The effects that this created are illustrated in Figures 38 and 39. Choosing certain times of day when the sun was low enough or in the right place to create the right angle would show relief between the stark bright patches of light and the shadows. I intentionally took photographs of ordinary, unarranged spaces, just to examine how the properties of the light changed them. I tried to bring this effect to bear using the day/night cycle simulation in *Empty Room*. The sun's path gives a sense of the temporal dimension in *Empty Room*, and the movement of the sun across the room's floor also triggered a memory for one participant who had enjoyed looking at this effect and had even stopped and watched the light creeping up the wall in the virtual space (2016).

Figure 40. Bailey, D. (2016). Shadow of cats. [Photograph].

Figure 41. Bailey, D. (2017/2018). Morning light. [Photograph].

Empty Room was exhibited as a piece for critique, attended by staff working in the VR and visual art arena, and postgraduate students, on the 8th of December 2016 in St Paul St Gallery Three at AUT City Campus. A small empty room in the back of the gallery with an old red carpet was used to house the VR technology that enabled the participant to experience the virtual room created. The *HTC Vive* allows the creation of a 'play space', which is the main space in which a participant can move freely, but there are restrictions as to the size of that space. In the case of *Empty Room*, the dimensions of the room exceeded the size of the 'play space'. I received useful feedback about the sonic atmosphere as well as the visual and proprioceptive experience of the room.

Empty Room also contained sounds replayed through speakers, which were triggered randomly and by proximity to certain objects; of footsteps and other ambient noises, as well as various television shows that reference the time of my occupation. The silence of virtual space renders it as an entirely visual medium and the installation is imposed upon by sounds that are external. To become a more encompassing immersive experience requires more than a visual stimulus. Sound is present in daily life and it makes sense for this to also be part of a virtual installation. The sound helped to achieve a stronger sense of presence in the virtual environment since it addresses more than just the visual and kinetic set of perceptions.

One of the participants noted the sound appeared to be very ghostly. They felt that even though they could not identify the source of the sounds, the sound itself was like a common language. A language implying that the sounds were from the past (2016). Another participant indicated that as they crossed the threshold of the door, and returned back to the lounge, they enjoyed hearing noises as if a child was running up the stairs (2016). These comments demonstrated that the sounds added a dimension to the space, and also perhaps a narrative. The participants were able

to imagine a narrative through what they had heard. However, not all the sounds worked. In one corner of the room where the TV had originally stood, a series of soundbites from the 1980s and 90s TV shows played when the participant approached that area. One commented that the TV sounds didn't work for them. They felt as if they were standing on a non-existent TV and the sounds were emanating from nowhere (2016). Overall, the sounds of footsteps seemed to have been the most effective, in adding a sensory dimension to the room. Motion also triggered sounds by proximity. The engagement of participants with the environment through their articulation of the affect of the sounds, the passage of light, indicates *Empty Room* began to achieve the "illusion of nonmediation" (Lombard & Ditton, 1997, p. 32) which is essential to feeling 'present'. It was apparent from comments that participants had begun to respond to the environment as if the medium of Virtual Reality was not there. This led me to investigate further as to how I could enhance this through *Caravan*.

Empty Room also allowed participants the ability to move around the virtual room using the *Vive* controller and the 'teleportation' function. This is a feature that is often used within immersive environments that are greater than the physical space allowed by the technology.[16] It was a deliberate choice to allow navigation within the room and other parts of the house.[17] However, teleportation has limitations. When the participant teleports to another part of the scene, the change can either be instantaneous or by briefly fading in and out. Instantaneous changes tend to be jarring and *Cube* had already shown that participants did not like that sensation.

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[16] The *HTC Vive* allows the creation of a 'play space' which is the main space in which a participant can move freely but there are restrictions as to the size of that space. In the case of *Empty Room*, the dimensions of the room exceeded the size of the 'play space'.
[17] Teleportation was selected as it creates less likelihood of nausea than other methods of artificial motion in virtual space. "Because locomotion leads to vection and, in turn, discomfort, some developers have experimented with using various means of teleporting the player between different locations to move them through a space." (Oculus VR, 2017, p. 23, 28)

Fading in and out is strange for the user at first and unnatural, but participants adapt quickly. It is not possible to teleport everywhere within an installation and conversely this is not always desirable either. The use of the controller also moved the installation more towards a challenge-based type of interaction and I did not want to continue in the direction of challenge-based environments. One of the major issues with teleportation is that it is impossible to register the virtual space against a physical one. The close association of physical and virtual spaces would not be possible using teleportation and thus a true *Synchronous Reality* could not be achieved.

Feedback from the exhibition provoked further thought for future installations to increase the number of physical and virtual joined objects. The sensory syncing of the physical space and the virtual space was expanded with *Caravan*. One participant asserted the most interesting part of *Empty Room* was the limitation of the boundaries of the physical space and the virtual space exceeding those boundaries (2016). They were reminded not to go further because of the physical space but they felt they still might able to do so. One participant suggested that the 'real world' was almost like a grid in which we live and through which we access our memories (2016). Another stated that there was a disconnect between the body telling them they might be going to fall (2016). One comment prompted the idea of joining the two realities, becoming an important feature for my installations (2016). The physical room contained references to the virtual room that enhanced the experience for some participants. One said the 'real' Lego man on the window ledge created an enjoyable moment, having seen it in VR and then removing their headset to also see a Lego man in front of the window (2016). Another recalled seeing the physical Lego man before entering the VR environment and then seeing it in the virtual space (2016). This type of feedback indicated the interplay of the physical and virtual to be something I should examine in more depth, continuing to increase the level of the illusion of non-mediation so the participant would feel they were even

more part of the environment created by the installation. In the 'actual' gallery room in physical space, sunlight from the real sun fell onto a faded red carpet, preconditioning the audience to the virtual room inside the HMD. These synergies allowed the experience of one temporality to seep into another.

One participant loved the yellow texture in the VR room because it was a reminder of Edward Hopper, and gave the feeling of being inside a painting but with the sun moving around it; which became a totally new experience. They recalled their grandmother's house. There would be silence, nobody around, just the enjoyment of the tranquillity of the moment (2016). These remarks indicated that the participant had been reminded of their own memories of a room and had begun to remember these whilst within the virtual experience. This showed me that intimacy is a crucial facet to explore within my practice. One participant discussed the fact that parts of the room seemed unfinished, or there were slight gaps in the joins. They related this to the physical world where they would normally expect that the space would be polished and finished. But then they reasoned this was a revisitation of memory which itself reflected the amount of accuracy that a memory might have. They then pondered whether the virtual space could have been even less finished, like a sketch, to enhance the sense of an ephemeral memory (2016).

Rooms change over time, and are subject to cultural and social tendencies and personal narratives. Hollis notes: "Ancient buildings can contain modern interiors, and modern interiors can contain antique furniture. The rooms we live in are collages, constructed conversations between the past and the present" (2014, p. 14). *Empty Room* was from a specific time, occupancy and era. It was not intended to be portrayed as a 'generic' or neutral room. *Empty Room* was proportioned to make it seem larger than life. Bachelard likens the daydreams of a house to a large cradle, and perhaps a child may perceive it thus (1994, p. 7). The portrayal of a type of fenestration, specific architectural details and proportions in VR can affect the

participant's response to and perception of it. I hoped the change in proportions might also increase a sense of isolation, but this was not borne out in the feedback. Later I would learn to embrace the gap between my memories and intentions and the experience of my audience as I developed the next phase of my research.
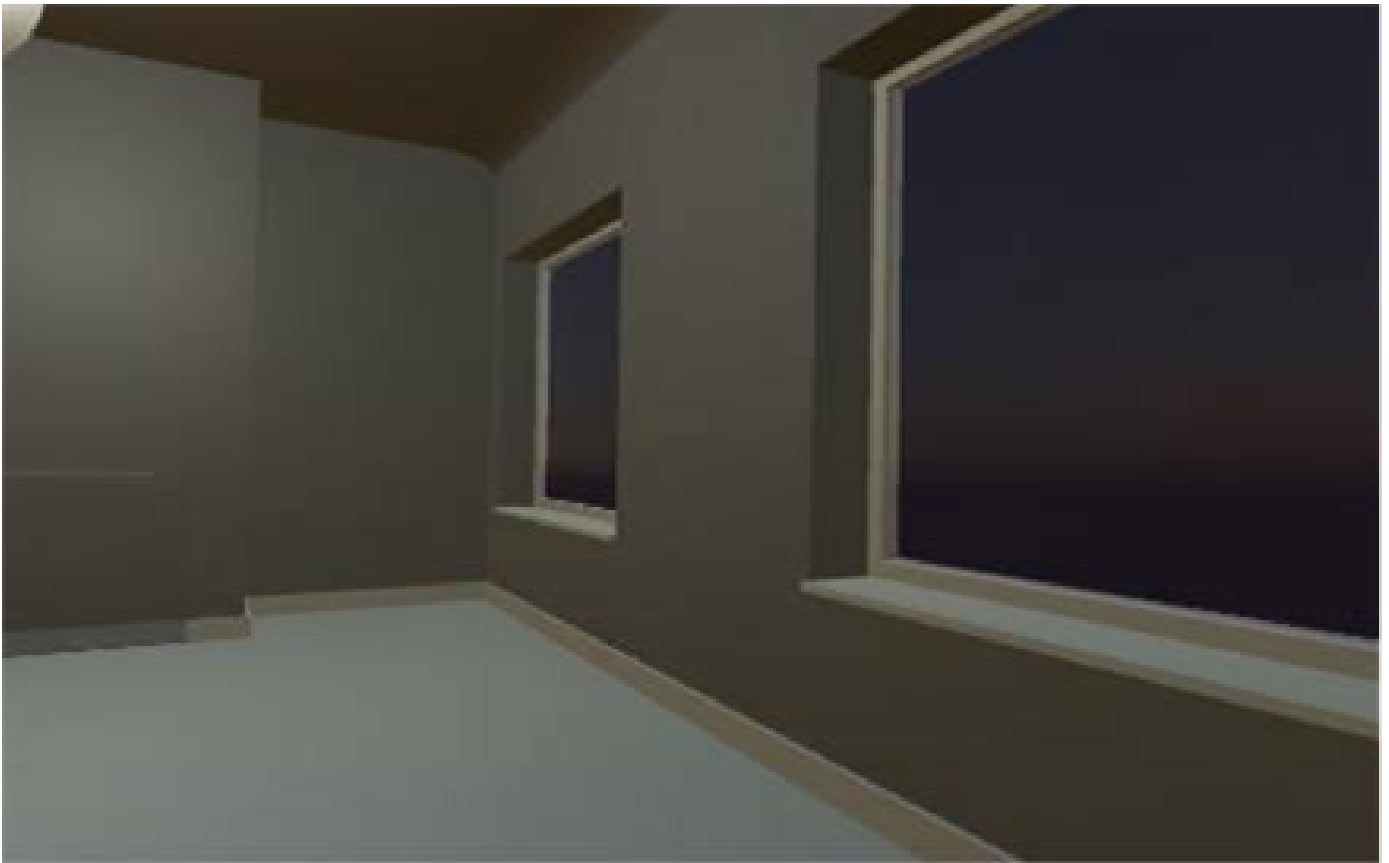
Figure 42. Bailey, D. (2016). Untextured room. [Screenshot].

Early initial virtual construction of the *Empty Room*. What can be seen is the basic setup of walls, windows, floors and so on, without the addition of textures. This could be likened to the plain 3D virtual canvas on which one can 'paint' as an artist in VR, but in this case, the painting can encompass a variety of media, such as sound.

Figure 43. Bailey, D. (2016). Finished room with sunlight. [Screenshot].

Here I have added textures which were part of the wall texture tests and floor texture tests. These were then viewed with the *Vive* to gain an appreciation of the full implication and impact on the participant. The advantage of working like this is it's a matter of a few seconds to change from one texture to another prepared texture. The preparation takes time but the ability to test the work on the model takes only moments

.
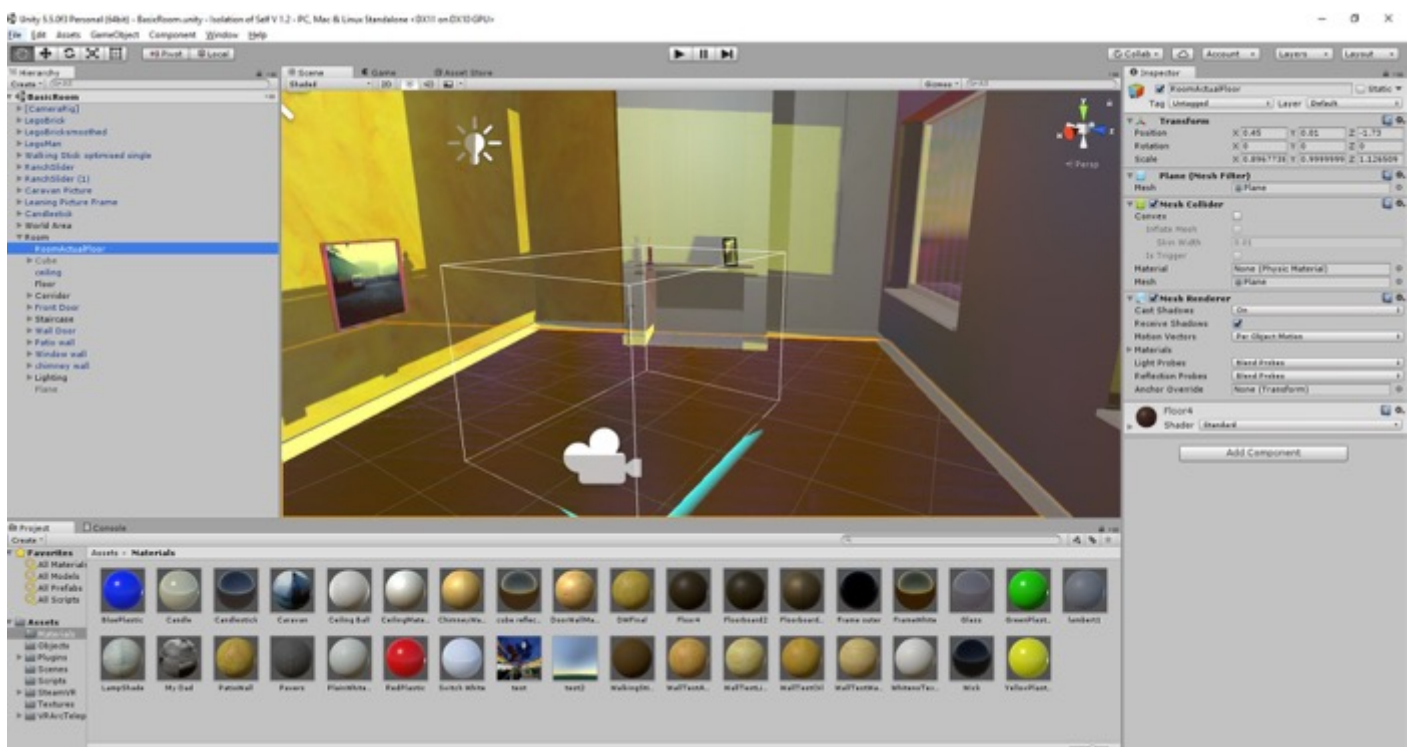
Figure 44. Bailey, D. (2016). *Unity* environment. [Screenshot].

The environment itself is shaped around *Unity*. This depicts the room as a *Unity* scene, and underneath are the materials that one can choose to lay onto the model to provide the textures. Objects in the scene are selectable and on the right of the scene, each object contains attributes that one can add to and change, such as materials, scripts and so on.

Figure 45. Bailey, D. (2016). Entrance to *Empty Room* installation. [Photograph].

This was the entrance to the physical room. The room contained the *Vive* room sensors and the headset and controllers. The computer running it was housed in another room and not visible to the participant. A light was placed on a ladder to provide shadow illumination in the room. The idea was to evoke a 'Hopperesque' atmosphere.

Figure 46. Bailey, D. (2016). Computer screens running the simulation. [Photograph].

This was the controlling computer housed in a different room, using *Unity* to create the virtual room. On the left-hand screen is the *Unity* system and on the right is the view of the scene through the headset. The headset has a stereoscopic image, but this is the 'game' view from *Unity* which shows it as a single image. This is useful because it allowed me to see what the person viewing the installation was doing and looking at whilst they were in the virtual environment. This could also be recorded for later use or reference.

Figure 47. Bailey, D. (2016). Physical interior of the installation. [Photograph].

The interior of the physical room which shows the creation of stark shadows, echoing Hopper's style and creating an atmosphere where perhaps the participant might have felt as if it were a space one could dream in.

Figure 48. Bailey, D. (2016). Physical interior of the installation. [Photograph].

The interior of the physical installation. I especially liked the shadows created by the door. Up above the door is one of the *Vive* room sensors, which allow the software to track the participant's movements.

Figure 49. Bailey, D. (2016). The Lego man. The Lego man was put there to reference the virtual Lego man. [Photograph].

Figure 50. Bailey, D. (2016). Participant in the room. [Still from video recording].

This shows a participant using the *Vive* and exploring the virtual room within the physical room. Speakers on the floor provided sounds that would be triggered by proximity to certain virtual objects.

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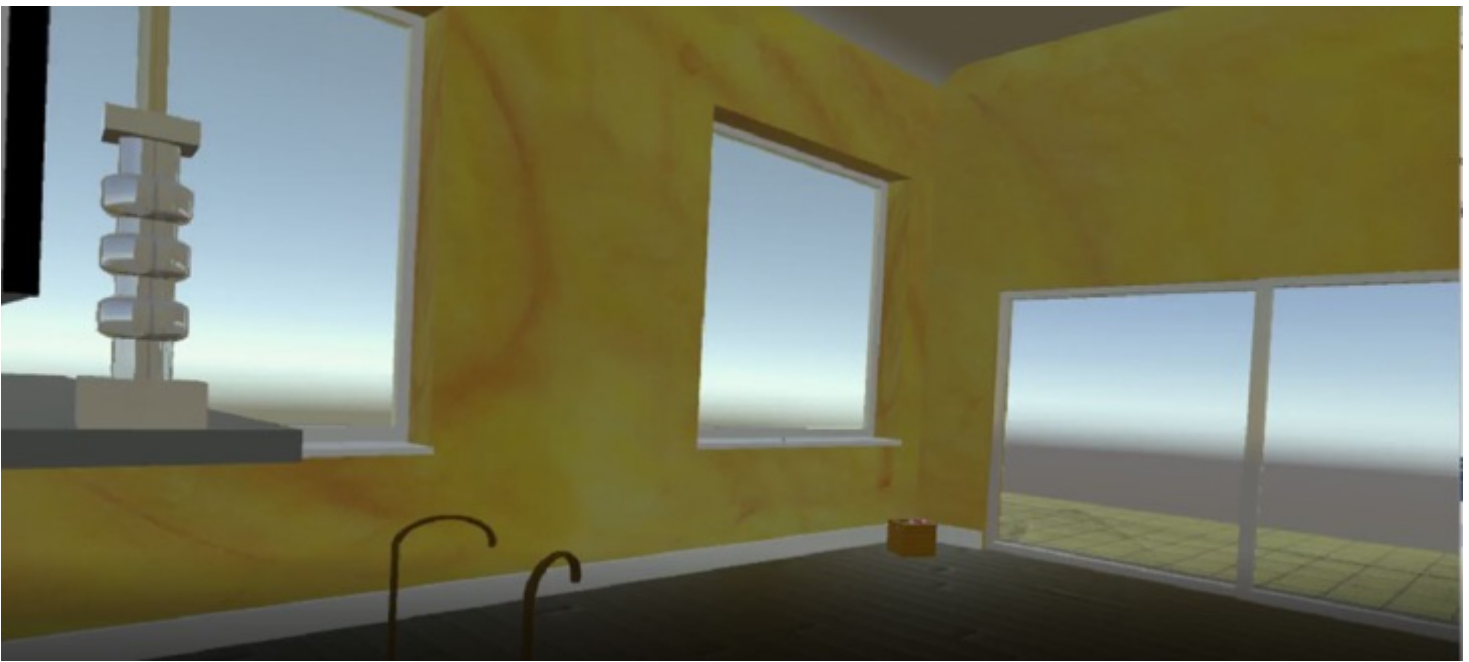
Figure 51. Bailey, D. (2016). Virtual interior. [Screenshot].

This shows the interior of the virtual room as seen from the headset of the participant. In the foreground are my father's walking sticks and over in the corner a box of Lego. A Lego man stands on the window ledge above it.
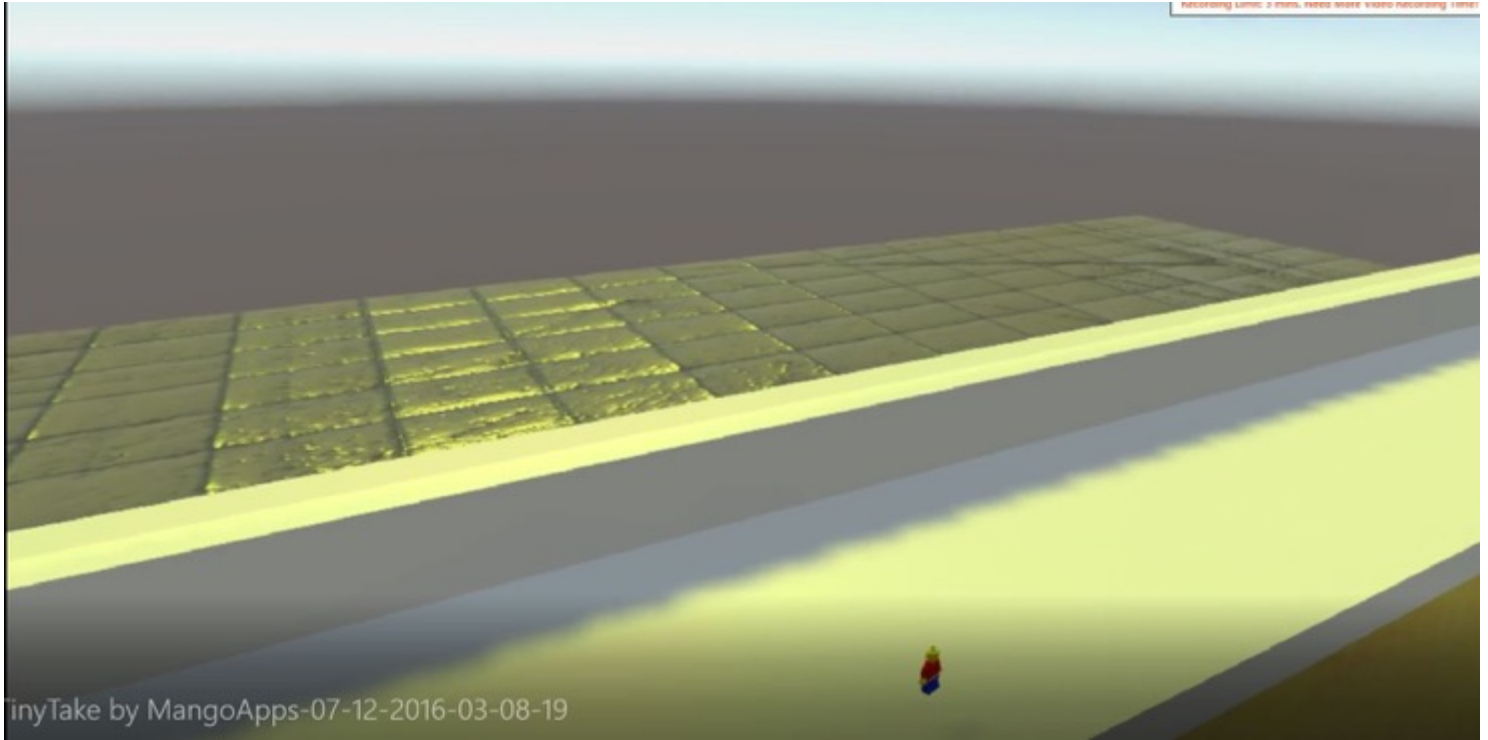
Figure 52. Bailey, D. (2016). Virtual Lego man. [Screenshot].

This shows the virtual Lego man on the window ledge, which references the physical Lego man in the physical room.

Figure 53. Bailey, D. (2016) Virtual room interior with sunlight. [Screenshot].

This shows the interior of the room as the participant sees it. Of interest is the play of light, which moves across the floor and up the walls as the time of day changes. This happened on a short cycle, and created stark shadows and areas of light and shade, echoing the effects created in the physical room.
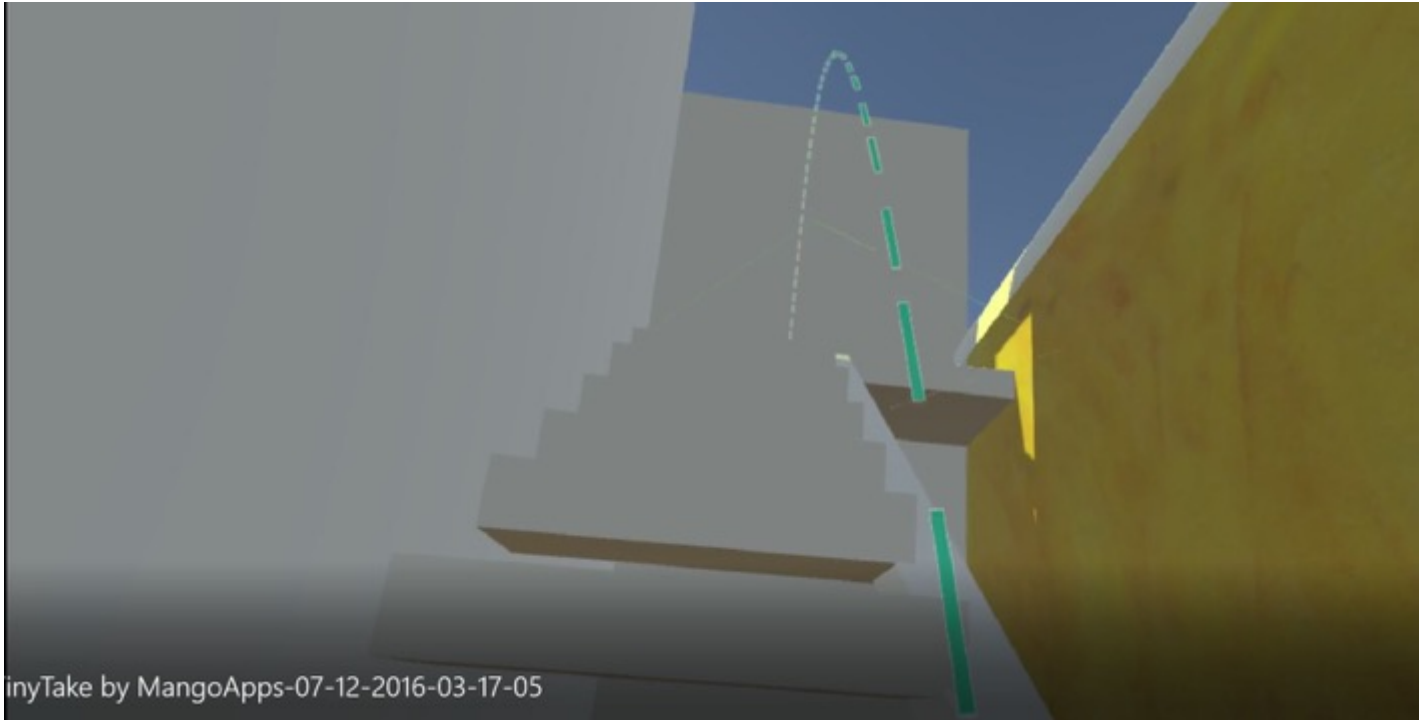
Figure 54. Bailey, D. (2016). Teleporting up the stairway. [Screenshot].

This shows the stairway and also the teleport being activated, which enabled the participant to go up the stairs. Above the stairs was nothing; this was the fractured memory. The room itself was the important part of the memory. The participant aimed the teleport to the point where they wished to move to, using the hand controller.

C3.05   CONCLUSION

The virtual walls and objects of *Cube* and *Empty Room* are ultimately a 'superficial skin' in Bergsonian terms. Their lack of solidity offers both a suggestion of reality and its dissolution at the same time. For Bergson, "memory and perception become states of the same nature, and between them no other difference than a difference of intensity can be found" (1988, p. 240). Our perception of 'reality' becomes unstable and the remembered cannot be differentiated from the constructed space, other than one may become more vivid than the other. The ephemeral nature of the *Empty Room* was intended to convey the insubstantial nature of a memory.

The testing of *Cube* and the installation *Empty Room* were a precursor to my major project, the installation *Caravan* as discussed in the next chapter. The practice began with an exploration of some of the capabilities of virtual space and then progressed to creating a *Synchronous Reality* where virtual and physical realities coincide. *Cube* enabled an appreciation of virtual space and how to create interactivity, while exploring an autobiographical experience of isolation. Through Bachelard's concept of spatial intimacy and the installation *Empty Room,* I began to question whether the intimacy of a memory revisited in virtual space could elicit recollections in others. *Empty Room* made evident the importance of feedback from participants to take forward into the *Caravan* installation. I would carry on the animation of the movement of the sun, the exploration of sonic atmospheres and the findings from my observations of how participants connect with the virtual space. Only by allowing others to experience the installations could I understand how they might evoke a kind of intimacy for the participant. I also found that rapid changes to the environment were not desirable and that the participant needed time to absorb the atmosphere of the virtual space. The necessity to increase sensory experience by adopting further physical elements in my installation pieces became a clear direction to take in the next steps of the practice.

CHAPTER 04
CARAVAN – A CRITICAL REVIEW OF PRACTICE

C4.01   INTRODUCTION

Bergson notes that when we perceive, our perception engages memories. Along with Bachelard's musings on the intimacy of domestic spaces, I began to investigate how my autobiographical memories could evoke place-memories for others. For *Caravan*, the major project in this study, I chose to return to an even more confined space than *Empty Room*: my caravan, in which I lived for several years. I spent two of those years in Yorkshire alone with two cats on a remote campsite. This was far removed from anything I was used to. From a large five-bedroom house, I was compacted into a space that was thirteen feet in length and just over six feet wide. I was isolated and had to learn to live with this new state of occupation both in body and mind. I decided to translate this autobiographical experience into immersive virtual space. Ellis (2004) explains how important or concrete moments in one's life (2004, p. 30) can isolate the essential requirements for a compelling narrative. The work became a multisensory synthesis of my own time in the caravan. The work is autobiographical through the physical and virtual recreation of a particular time and place from my life, yet I also aimed for *Caravan* to have a feeling of commonality, to the extent others could identify with the solitary experience of caravan life.

Caravan forges a close registration between physical and virtual conditions by building on what I had learned from *Empty Room* and *Cube*. *Caravan* commenced in early 2017 and was developed through to 2019 in *Unity* on an *HTC Vive*. This

project had several iterations, and each installation gradually adopted an increasing biophysicality including touch, hearing and smell, intertwining the virtual and physical conditions. I responded to feedback that participants wanted time to absorb the environment without sudden changes, and that the application of textures should be more specific to the simulated environment. *Empty Room* allowed latitude of movement and used the affordance of a *Vive* controller. I decided to remove the challenge-based aspects from the installation through directional interaction with the *Vive* controller, so a less technologically mediated sense of 'presence' could gradually take hold. *Caravan* focused on the feeling of 'being there', which Lombard and Ditton (1997) describe as a response to a virtual environment as if a person is really in that environment; or the "illusion of nonmediation" (p. 32).

C4.02   MEMORIES OF MY CARAVAN

Of all the follies I committed in my life, perhaps the decision to live in a thirteen-foot caravan was the greatest. Yet they say some good may come from even the worst of decisions. One is meant, it is said, to commit all acts of indiscretion in one's youth. That is perhaps why it is often referred to as 'misspent'. However, I seem to have managed to defer this period until later in life. It is then I commenced upon several years wherein I did many things I now regret but cannot change. But I am nothing if not an optimist and sometimes when we have embarked upon what in hindsight are precipitous courses of action it is not always easy to alter course.

The decision to even own a caravan at all was born out of the idea I could no longer afford to live in a house. It was also a hare-brained scheme to move up to Yorkshire and restart my business there with a low expense threshold of caravan life. The move to Yorkshire was motivated by my emotions rather than my common sense, isn't it always? In hindsight, it was probably doomed from the start. Wise, are we who were

once foolish, but it seems sometimes one has to go through the foolish part first, and the regretful part too.

The caravan I ended up with was also not what I had envisaged, and from the moment I bought it to the time I vacated it I pretty much regretted the purchase every day. But, as they say, having made one's bed, one must also lie in it, and lie in it I did. I lay in it on the hottest of summer days and the coldest and clammiest of Yorkshire winters. My two cats and I inhabited that little box for two years in Yorkshire, and six years in all. I bought the caravan on eBay, since it seemed to be the easiest way to go. My father gave me the money to buy it and naturally, I did not want to spend too much. I seem to recall it cost about four hundred pounds in all.

The caravan became my home and home to my two cats. But much of what I learned, of isolation, of solitude, and of being alone, came from those years in Yorkshire. Those years taught me much, of the appreciation of solitude and to be comfortable in my own skin. Nothing is wasted and much gained from these periods of reflection. The crispness of the air breathed in on a frosty morning, the heat of the summer through the caravan windows, the morning mist rolling in across the fields, the sun coming up and casting its golden light across the campground, all of these moments are etched in my memories. These are the silver linings in those clouds and these are the moments I hark back to when remembering my caravan.

The caravan became the receptacle of those memories, and the recreation of it was cathartic, and healing in its essence. What springs to mind when recalling the caravan is not the worst of times, but usually the best of times. There were some moments of 'pure gold' sitting in that contemplative space, and it is those moments I wanted to convey as I progressed the making of the virtual world. It is interesting that I also found time spent in my own memory raised other connected recollections for me, much as Bachelard has said they would. Caravan became a space where a participant could experience their own moments of daydreaming. The qualities of the light passing through the day, the sounds of the birds, the feel of the space beyond, were those I

felt most drawn to. I wanted others to feel those aspects of comfortable solitude, as I had when living it.

Memories were, of course, key to the reconstruction for my installation. The choices taken from a solitary existence would shape the sensory *Synchronous Reality* world I made. Would I be able to recreate the feeling of the sun clipping the horizon as it rose above the fields to greet me and as I looked out of the window? There would be that blast of heat which accompanied that feeling and was doubly welcome on a cold frosty day. I could not, I felt, incorporate all of the seasons as every one of them contained a different aspect. I chose summer, perhaps because that is my favourite time of year, and summer in Yorkshire is often glorious, warm and balmy. The sun shines brightly in the day and yet you find yourself bathed in the changing colours at sunrise and sunset, so much that it inspires you greatly to reach for your camera and record the event over and over again. There were cold days, sharp frosty days, white-crested trees and grass days, and all of them were different. I opted instead to focus on one, one day in a Yorkshire summer. There was something joyous and at the same time unbearably lonely about experiencing all these moments in solitary silence. Yet then, one could lay back on the bed, and find a cat almost at once on your chest its throbbing purr vibrating through the core of your very being. You could simply lie there and watch the clouds go by, listen to the sighing wind in the trees and feel truly content. I strove to somehow convey that contentment so that others could feel it too, and some of sensory experience caravan living had given to me.

C4.03 SITUATING THE *CARAVAN*

A caravan is a living space, a mobile dwelling. Bachelard (1994) describes the house, as a dwelling, a living space, where our imagination builds walls of

'impalpable shadows' furnishing the illusion of comfort, for 'sheltered being'. For Bachelard, the house is experienced "in its reality and its virtuality, by means of thoughts and dreams" (1994, p. 5). Bachelard focuses upon dwelling places as a fulcrum to daydreaming, just as *Caravan* embarks upon narrative based on a memory of this erstwhile dwelling. *Caravan* allows a temporary place of 'sheltered being' and a heightened connection to the landscape that a mobile dwelling offers. Bachelard suggests the place itself engages intimacy in the form of our recollections, where we carry to a new house the memories of our previous dwelling places. I will always carry memories of the caravan's spatial dimensions. Living in such a small space impinges upon your consciousness in unexpected ways, I often felt as if I was perhaps shut in but at the time same part of the wider landscape of the campsite. I wanted more space inside, but the space was always there outside, and I could look at it and also be part of it. By revisiting such memories, I entertained an expectation that participants might engage with recollections of their own whilst in the installation. My hope was they would appreciate the solitude, the moments of reflection the space allowed them, perhaps time to breathe and create a connection to their own past. *Caravan* would supply them with a comfortable space where the 'sheltered being' can dream. If it can be imagined that one could go a whole day or more without seeing another soul, if one wished to, then dreams are all you have. Of course, one can engage in more worldly distractions such the mobile phone, books, movies, but sitting alone and absorbing the world around you, was also an occupation I indulged in. It is in those moments when I remembered other times, other spaces, and connected with my own past.

Bachelard notes, "for a knowledge of intimacy, localization in the spaces of our intimacy is more urgent than the determination of dates" (1994, p. 9). He argues there is no point in giving a 'plan' and description of a room that is accurate in all the details which only the person relating to it could possibly remember or know. He suggests mere description cannot convey the actuality of how the room was and

how it might have been experienced (1994, p. 13). However, in an immersive virtual space simulation, it may be possible to generate some of those details to give the sense of a first-hand experience. My approach creates some of the specific smells, textures, sounds and inhabited memories of my caravan to offer the participant.

I paid particular attention to specific details; for example, the windows of the real caravan were made of double-skinned Perspex, which bulged out from the sides. I wanted to approximate this appearance in virtual space to get the perceptual effect I recalled when looking through the actual windows. Certain subtle nuances like these were important, because those were things I most remembered and I wanted to stay true to the recollection. I tried to recreate the interior textures to resemble those of the original caravan: the lino floor, the wooden cupboards, the textured wallpaper, the rubber window seals. Each texture had elements of colour, sheen and surface that I tried to reproduce in the virtual space. When constructing a recollection in *Unity* software, I also needed to make decisions with regard to the simulation. What level of simulation was I aiming for? How would I recreate the memory in virtual and physical terms? Baudrillard's (1981) examination of successive phases of an image's simulation proved helpful. These ideas would apply not just to the visual aspects but to all those sensory aspects I was considering incorporating including sounds.

There were certainly a number of aural aspects to the memories I held. Yorkshire being known for its windy nature could certainly be loud and violent enough to shake the caravan making sleep almost impossible. However, when it was moved into the lee of a large barn in the latter stages of my occupation the wind was less impinging. I opted for a milder atmosphere more conducive to calm weather in my virtual model. The owl which sat in the tree used to screech very loudly and the vixens during the mating season would make an unearthly noise at night. This was coupled with the discovery that slugs moving across the exterior of the van made a noise, not

unlike someone continually tearing off Elastoplast. Even a small spider once scratched on the outside of my window loud enough to be heard. The caravan itself seemed almost as if it was an amplification device to all of the exterior world. What sounds I retained for the installation were more soothing and calming as opposed to alarming in order to create an atmosphere conducive to quietude.

For the exterior landscape, I modelled the caravan site in Yorkshire where I had spent two of the six years in the caravan. My aim with *Caravan's* landscape setting was to 'reflect' rather than accurately portray the Yorkshire campsite, and the different sensory aspects to it. In this regard, the work operates as a 'reflection of reality', rather than a 'pure simulation' with no physical referent (Baudrillard, 1981) (see p. 22). Certain things in the campsite were more prominent for me. There was a very large tree standing not far from my front window. The tree creates an immediate association with the place in my mind. Conversely, I did not want to include the farm buildings and big barns because they did not figure greatly in my memory. Rather than crowd the composition, I preferred to create a feeling of open space and distance rather than the adjacent farm buildings. These were replaced with a concrete ruin and rusty steel roofing as an epitaph to the original. As the body is constantly perceiving space and distance even while wearing a headset, I began to explore how physical sensations could be articulated in the form of an affective response, to return to Massumi. For many participants, a sense of solitude emerged within the expanse of the empty landscape.

C4.04   ITERATIONS OF *CARAVAN*

There were several iterations of *Caravan* over the course of two years. The first version*, Iteration One,* culminated in a test exhibition installation in St Paul Street Gallery Three, AUT, during July 2018. This first work consisted of virtual and

physical elements. The physical installation was sited in a corner of the gallery, which allowed the use of two walls to match two sides of the caravan. A piece of lino was rolled out across the floor to give the feel of walking on it or of touch. Along the side wall, an outline of the caravan and one window was marked out with masking tape. One bench was created under the window, with an uncovered foam squab. The technical components, speakers, lighthouses, were very visibly part of the installation. During participation, cinnamon muffins were toasted to impart a particular smell. The ambient soundtrack was composed of birds to be found in or near woodlands, such as pheasants, and smaller songbirds. These sounds were coupled with exterior noises using a separate stereo sound system. Incidental sounds within the caravan used a speaker connected to the laptop. The simulated caravan interior was textured to include lino, wood and squab patterning. It contained a plain white mug, white toaster and kettle, a soccer ball and teddy bear. Through the windows was an open pastoral landscape, and an animated cat wandered through. A fog effect was added to give the feel of my campsite in Yorkshire and also to suggest a nonfigurative landscape.

The July 2018 exhibition paved the way as an early model of what would become a *Synchronous Reality* installation. Five participants were interviewed in this exhibition and I will discuss the value of their feedback later on in this chapter. Even though the participants were from different countries to the British Isles, including New Zealand, I found there was resonance within *Caravan* with their own lives; the intimacy to which Bachelard alludes.

Figure 55. Bailey, D. (2018). *Caravan, Iteration One*, with participant. [Photograph].

Figure 56. Bailey, D. (2018), *Caravan, Iteration One*, exterior view of virtual world with participant. [Still from video].

Figure 57. Bailey, D. (2018), *Caravan, Iteration One* with participant. [Still from Video].
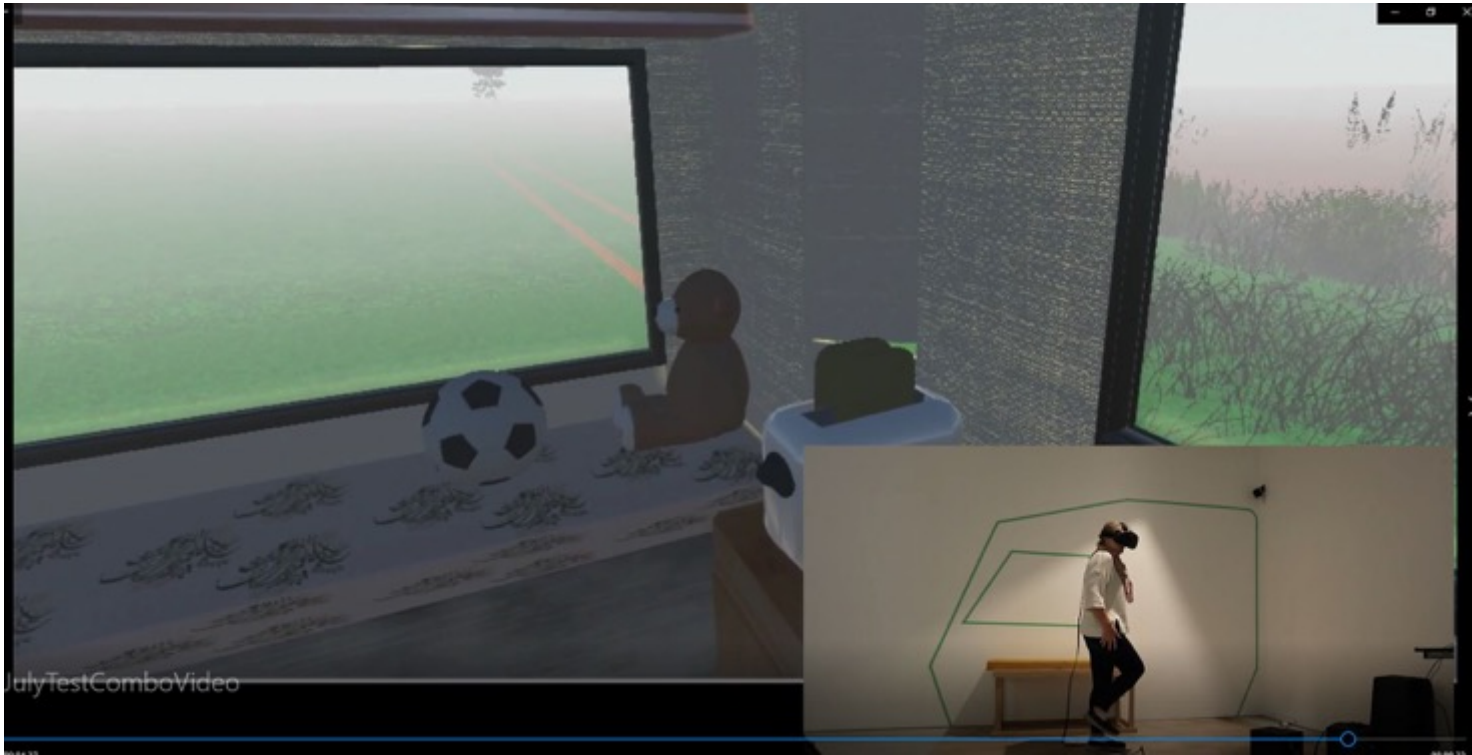
Figure 58. Bailey, D. (2018). *Caravan, Iteration One*, view of virtual landscape from interior
with participant. [Still from Video].
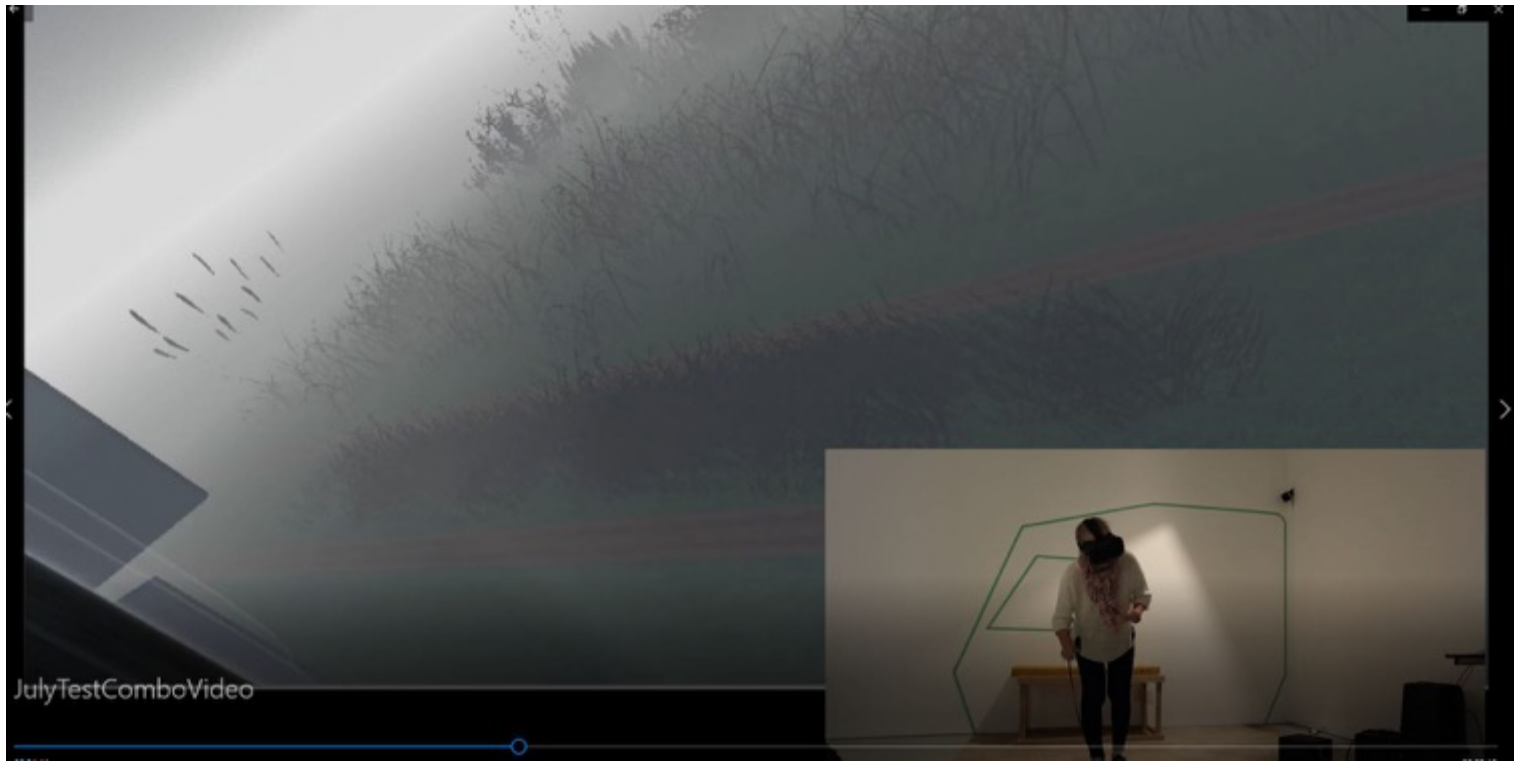
Figure 59. Bailey, D. (2018). *Caravan, Iteration One*, virtual exterior showing tyre tracks with participant. [Still from Video].

The second installation, *Iteration Two* of *Caravan*, was the main exhibition to which participants were invited for feedback in St Paul Street Gallery Three, AUT, in October 2018. Conceptually my aim was to increase embodied physical sensations as I began to develop the thesis of a *Synchronous Reality*. One of the aims was a closer association between the physical and virtual, so I began matching textures and colour tones between the *Unity* software world and the physical gallery environment. As Hansen emphasises, the body is the focal point for the receipt of physical sensations, at the same time as we visually perceive the virtual environment. In *Caravan*, composited flying birds that participants could see using the headset provided a virtual link to the ambient sounds that they could hear.

Caravan's physical installation in *Iteration Two* included four constructed benches with squabs, which mirrored those of the *Unity*-constructed caravan. The participant could sit on any of the benches when experiencing the virtual environment. The squab covers for the 'real' seat utilized the same patterned textured material produced in AUTs textile design lab as the 'virtual bench'. This pattern was taken from a photograph of my original caravan squab (2007) and recreated in *Substance Designer*. The benches were enclosed, stained, varnished and colour matched to the virtual caravan. The caravan outline was marked out in black masking tape and the lino on the floor was cut and fitted to the bench configuration. The technical components were concealed under the benches and a proprietary stand was constructed for the freestanding lighthouse to blend it against the background.

The computer that ran the Virtual Reality environment was concealed in an adjoining room and the lighting was made subtler with a single-source lamp. The ambient soundtrack was reworked and delivered using a surround sound system concealed under the benches. Tactile sensations could be encountered with the material on the cushions, lino and benches, and the walls on two sides of the caravan. The body's spatial sense of proprioceptive feedback allowed the participant to become

more engaged with the installation; or as Hansen (2006) notes, to achieve a doubling of perception, a bodily reality.

The virtual environment of the landscape was still laden with fog, while the teddy bear was removed in *Iteration Two* as it was somehow too personal. The birds in flight increased the action and movement in the installation. A composited owl was a reminder of one that regularly sat in the tree at the campsite of my memory. The owl even flew right through the caravan in one happy accident, and although this added a dramatic element that some participants enjoyed, others found it overwhelming.

Figure 60. Bailey, D. (2018). *Caravan, Iteration Two* with participant. [Photograph].

Figure 61. Bailey, D. (2018). *Caravan, Iteration Two*, virtual interior showing part of
remodelled landscape, with participant. [Still from Video].

Video with physical and virtual
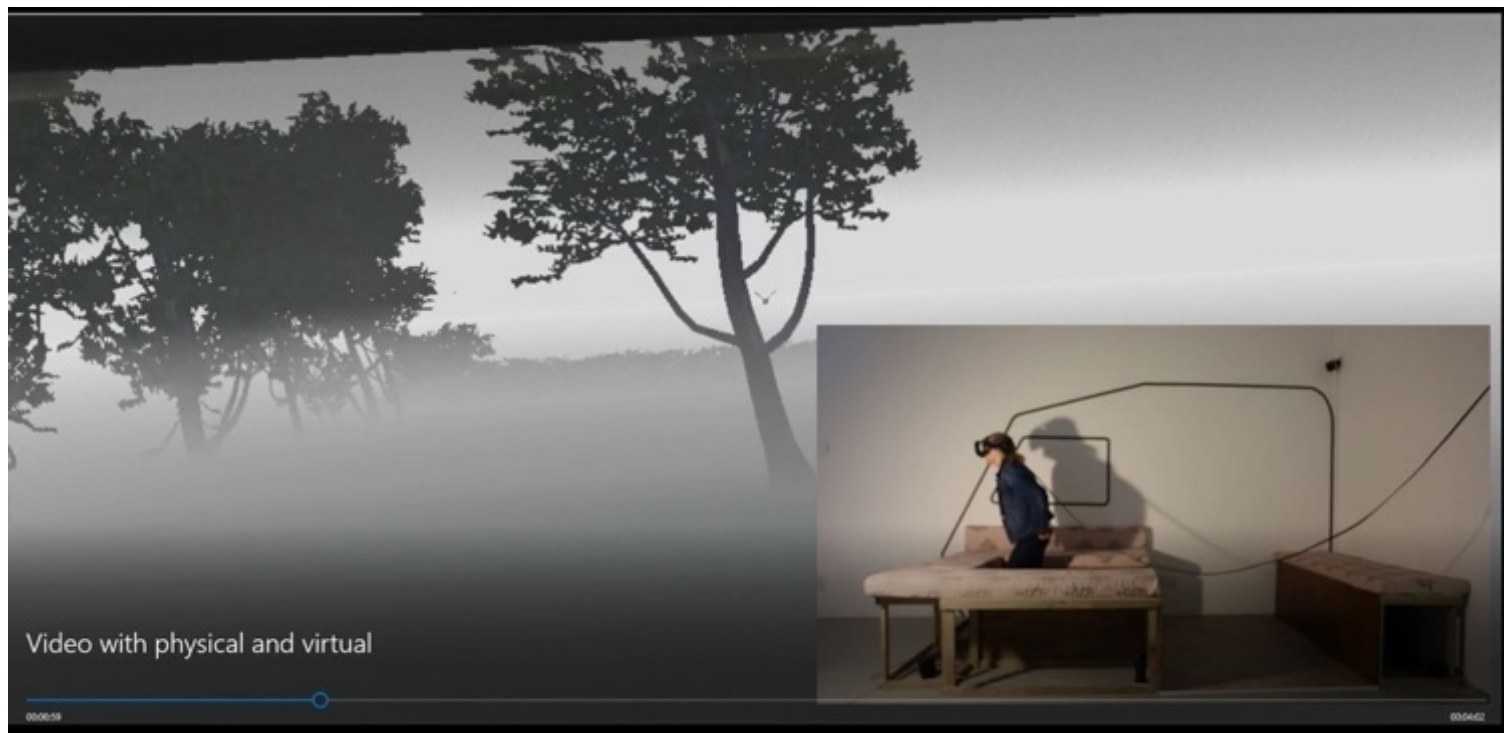
Figure 62. Bailey, D. (2018). *Caravan, Iteration Two* showing virtual exterior with owl flying in, with participant. [Still from Video].

Figure 63. Bailey, D. (2018). *Caravan, Iteration Two* showing virtual exterior with owl in situ and bird in background. [Still from Video].

Figure 64. Bailey, D. (2018). *Caravan, Iteration Two* showing virtual interior, with retextured bench items. [Still from Video].

The third and final iteration, *Iteration Three* of *Caravan* is in development toward the culminating exhibition of the research. Conceptually, the aim is to stitch the virtual scene into the sensory environment. The exhibition space is now the theatrical setting of the Black Box at AUT, where controlled, theatrical lighting is possible. An outline of one side and the back of the caravan will be secured in the manner of theatrical flats. The lighthouses will be suspended from the lighting rigs above, and the ambient sound will be supplied through a fitted sound system. The participant will be able to be focused wholly upon the caravan, allowing the virtual elements to filter into the physical space and invite a landscape into the theatrical space. Work has started toward introducing a heat lamp to coordinate with the sunrise and thus give the participant the feeling of the heat of the sun, as a thermoceptive sense.

A kitchen bench is added, with a suitably aged 'real' toaster, kettle and mug secured to it. These match virtual models and invite the audience to touch them. Side cushions will be added to the front benches so that a participant can comfortably lean on those parts where there is no physical side. The theatrical caravan 'set' focuses the participant on the aesthetic conditions of the space prior to entering the virtual scene and strengthens the physical sensations once the virtual environment is engaged. My practical research suggests that it may be possible to go 'too far' with the physical sensations and synchronous 'matching', so I am currently testing the effectiveness of these registrations and pulling back where necessary. Although I received suggestions such as enabling the opening of cupboard doors or drawers in physical and virtual spaces, and the picking up of objects, I made decisions to avoid such literal details. To increase the sense of affective embodiment I have found that we may also need some quietude to absorb rather than constantly explore.

The virtual space has undergone much development toward this final iteration. The first stage was to introduce reflection probes inside the caravan, which improved the lighting, and to replace the day/night cycle with new scripts. The sun and moon can

be seen rising and falling, and the changes in the colour of light associated with sunrise through to sunset are simulated. Baking[18] the lightmaps onto static elements has improved their resolution and appearance. Grazing sheep and a fox have been composited, and the owl remains. The landscape, although always intended to be abstracted rather than hyper-representational, was reformed using *Unity* terrain, which allowed it to become less flat. I felt this added more depth to the landscape in the installation. The fog was reworked to change density through the morning and evening and to disappear at the zenith of the day.

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[18] As defined in the *Unity Manual* (2019). "Use Baked mode for Lights used for local ambience, rather than fully featured Lights. Unity pre-calculates the illumination from these Lights before run time, and does not include them in any run-time lighting calculations. This means that there is no run-time overhead for baked Lights."

Figure 65. Bailey, D. (2018). Campsite tree. Tree on the campsite visible from *Caravan* front window. [Still from Video].

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Figure 66. Bailey, D. (2018) Caravan and tree proximity. Tree and caravan placement, also illustrating border treeline and hedge. [Photograph].

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Figure 67. Bailey, D. (2018). Ruin that replaced the corrugated iron viewed from caravan
side window in VR. [Screenshot].

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C4.05 ATMOSPHERE AND SOUND FOR *CARAVAN*

Toward creating an affective mood for *Caravan*, I was less concerned with trying to recreate a hyper-realistic environment than a sense of atmosphere. I wanted to recreate textures that suggested the real surfaces of the interior, but which also conveyed the abstract and ethereal nature of a memory. I speculated that a subtly abstracted landscape could also help participants to find space for their own memories within the *Caravan*. American Cartoonist Scott McCloud (1994), writing on the nature of comic art, suggests that less realism allows the reader to not just observe a cartoon, but "become it" (McCloud, 1994, p. 36). McCloud's observation could equally apply to a virtual environment, where less descriptive realism invites the participant to fill in the gaps with their own experience. As Bergson says, we retain signs and remnants of our former lived perceptions within our memories, which in my view allows for the abstraction of the detail of those memories.

To abstract the details of the caravan's environment and digital texturing, I manipulated strong changing sunlight and fog, which produced silhouettes of trees and other built features. These would change in appearance during the temporal shift of the day/night cycle. The movement of the sun and the moon added this temporal shift, though time appeared to go faster than the physical world due to the speed of the changing light. Barker (2012) refers to time as a multiplicity of events which, as digital encounters, happen in conjunction with technology. In the case of *Caravan, s*imilarly to *Empty Room*, these events are linked synchronously to the passage of the sun. While temporally invested in the virtual environment, the participant can assume a different sense of time, measured by atmospheric events rather than seconds on a clock.

Fog is an important element in the *Caravan* as a moving entity that both integrates and disintegrates the solid forms of animated objects. The Yorkshire of my memory is prone to fog. Yorkshire-based author and vet James Herriot describes how

Yorkshire fog can become very thick and almost stifling at times, and with the sudden appearance of the sun can thin to nothing and leave the vibrant Yorkshire landscape in view (Herriot, 2013, p. 8). The fog in my caravan also lifts at certain moments. Author Umberto Eco also speaks poetically of fog in *The Mysterious Flame of Queen Loana* (2005), where he exhorts: "Oh pallid impalpable fog, hide what is far away" (Eco, 2005, p. 61). One of the virtues of fog is it obscures and to a degree isolates us from our surroundings to create a kind of solitude. My aim with *Caravan* was to partially obscure the surroundings. I wanted to create the same effect of the sun breaking through and not lose the expansiveness of the landscape surrounding the caravan. The introduction of passing animated characters, such as a cat, injected a moment of life and movement into the landscape scene. Sheep were also experimented with and the sounds of a farm vehicle going past. Part of my aim was to bring the installation alive for a brief period for the participant sitting in quiet contemplation.

In addition, an ambient soundtrack was intended to make the participant feel as if they were surrounded by sound. Specific noises such as a kettle, toaster, and footsteps were also recorded and edited; these were triggered by a random algorithm, and played through a speaker located in the installation. The ambient track was played through a separate sound system to an atmospheric soundbed, through speakers situated in the room. For *Empty Room*, I sourced and created the sounds myself, while I collaborated with a family member on the sound composition for *Caravan*. On reflection, I felt I had not been able to do justice to the soundscape in the first installation, which relied on layered sound effects rather than a whole atmosphere. As I wished to increase the physical sensory experience of the next installation piece the audio needed further attention.

For *Caravan* I enlisted the support of my youngest son, Llewi, who has a BA (Hons) in Digital Media and greater experience of working with sound composition than I.

Based on my direction for the kind of mood, atmosphere and timing I imagined, he created the soundtrack and sent it back to me from the UK to New Zealand. We were able to correspond and discuss changes and improvements. In the gallery space, we also made adjustments according to the sonic atmosphere of Gallery Three. This collaborative exchange produced a more immersive composition.

The ambient track for *Caravan* would contain environmental and bird sounds that would seem to emerge from the Yorkshire fog. With my collaborator Llewi, I reviewed a number of soundtracks as references. Games were a good starting point, since they tend to heavily feature soundscapes. One reference example was *Everybody's Gone to the Rapture* (Webber, 2015), which involved the exploration of a deserted landscape. The ambient track was heavily loaded with wind and bird sounds, coupled with incidental music to add to the atmosphere. Similarly, *Dear Esther* (Hernden, 2016) features an isolated windswept landscape with strong wind noise and incidental piano-based musical overtones. Yet again, *Anxiety Attacks* (Khalyleh, 2015) features the exploration of a landscape with an overriding musical feature-film style ambient soundtrack and bird sounds. The enduring similarity of these sounds was also found in *Limbo* (Freeman, 2010), in a fog-laden terrain which has a soundtrack with subdued wind noise and some atmospheric deep bass sounds. While *Unravel* (Muncy, 2016) had a full musical soundtrack and ambient bird noise, *Firewatch* (Ditum, 2016) had no musical content but strong ambient wind and bird noise. In the same vein, *Kholat* (Dale, 2015) was an adventure/horror game which had a strong, emotive musically based soundtrack and incidental exterior forest noise. All of these forest or outdoor-based games had wind noise and bird sounds in common, plus some strong incidental music or undertones.

In addition, we investigated film soundscapes, and one of the most useful examples of a forest soundscape was *The Assassin* (Hou, 2015), featuring a forest scene without music and simply ambient bird and wind noise, which was very effective.

This soundtrack was a useful reference because incidental music was not appropriate to *Caravan*, as this would make the soundtrack too game-like and might overwhelm the atmosphere with the intensity of a classical film score. The final ambient track was composed from a live recording out in the field in Scotland and augmented by bird sounds.[19] We tried to achieve a balanced composition, with the background wind noise less prominent than the bird-calls.

We also looked at soundscapes from virtual installations. For instance, Sarah Rothberg's *Memory/Place* (2014) had overriding sounds of videos being played as the participant navigates a virtual house. In contrast, Diana Gromala's *Mobuis Floe* (2014) uses a musical soundtrack to accompany the virtual environment, making it different from Rothberg's choice of sounds. Gromala's *Virtual Meditative Walk* (2014) has a soothing musical accompaniment to the virtual walk in the woods. While Nicole Stenger's works *Dynasty* (2007-2009) and *Chambers* (2018) also use musically based soundscapes in the same way as Gromala, they have the addition of a spoken narrative. I felt that an environmental soundbed, rather than a musical base, for my soundscape in *Caravan* would be more evocative of the environment I had created.

Whitelaw (2012) argues that aesthetic aural experience enables moments of intensity, or fleeting or visceral moments, that might be triggered for the listener. The soundtrack we arrived at had these moments of light and shade, the sudden nearness of a tractor going by or the cries of the sheep, tempered with a background of more muted noises of birds, and sudden flurries of pheasants taking flight. Bachelard writes of the benefits of the naturalisation of sound in order to make it less hostile in the context of soothing the sounds of urban living (1994, p. 29).

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[19] Author's Note: The Scottish Highlands, where the recordings were made, have a very similar audio terrain to Yorkshire, and birds which are found in Yorkshire can also be found in the Highlands. Sounds were recorded in the field and some free individual bird-sound recordings were used from Soundcloud.

Rather than offering sound with emotive connotations, I wanted to soothe and calm the participant, so they would feel part of a natural order, a respite from the noise of urban spaces.

In addition to the audible, tactile and visual elements of the installation I also wanted to add the further input of an olfactory sense. In *Iterations One* and *Two* I toasted cinnamon bread during the installation. The toaster was situated near to the physical caravan and the intense aroma of cinnamon toast was evocative for some participants. I am further exploring smell in *Iteration Three*, to include a musty quality to the caravan interior and the scent of brewed coffee. One of the affective qualities of the installation is the intimacy of sensory recollection within the contemplative environment of the caravan. Strengthening this aspect may lead participants to a deeper connection to their own memories of place while they occupy the installation.

'The Proust Effect' is a phenomenon ascribed to Marcel Proust (1992), who found sensations could invoke memories which eventually resolved into a distinct recollection. His work *In Search of Lost Time* (1992) explored the consequential memories from the sensation in some detail. Dutch author and researcher Cretien van Campen discusses how senses can stimulate recollections in *The Proust Effect* (2014). He describes how Marcel Proust's taste of a madeleine cake dipped in tea left him overcome by memories:

> At that moment, Marcel becomes aware that a simple taste stimulus is able to evoke an aesthetic experience which goes far beyond the pleasant taste of the cake. The special qualities lie not in the cake, but in what it has awakened in him. The aesthetic moment is not limited to the moment itself, but extends far back into his past, calling up memories from long ago. (van Campen, 2014, p. 12)

The sensation of the taste of the madeleine was the trigger for the memories he experienced that are loosely connected with the sweet cake. Van Campen notes that the sensation of eating the madeleine, which itself may be an aesthetic

experience, was the pathway to deeper recollections from Proust's childhood. Memory does not simply arrive in one quick burst but is a set of increasing revelations that result in the clarity of remembering the full related experience, according to van Campen.

> First there was the taste; this was followed by a vague feeling, and only then did sensory experiences from the past begin to appear in the form of remembered tastes, sounds and images. Some time passed before the sensory impressions came together to form a clear memory and the penny dropped. (van Campen, 2014, p. 13)

Van Campen observes that such sensory triggers seep through the consciousness and into the forgotten recesses of the mind. The sensory recollections may then return slowly to the mind, forming the actual experiences to which they refer. In *Caravan*, several participants recalled memories of camping or caravanning which may have been engaged by these sensations. Those triggers were coupled with the soundscape of birds and ambient pastoral sounds, as well as the actual smell of cinnamon toast. One participant remarked that they remembered eating toast while camping. Van Campen elaborates on how senses other than smell, such as sound and vision can similarly bring the past to mind. He concludes that sense memories are memories which are triggered involuntarily by a single sensory stimulus and which in collaboration with other sensory processes in the brain create "an emotionally charged and physically palpable collage which gives a meaningful but coloured representation of an episode from the personal past" (van Campen, 2014, p. 128). Based on my observations and interviews, as we shall see in the next section, giving the participants time in the installation to absorb sensory impressions, including sound and aroma, allows these sensations to slowly reform as memories.

Proprioception is another important element of a combined VR and physical reality installation. Proske and Gandevia (2012) define proprioception as the muscular

sensations providing information about the position and movement of the body, and is also related to kinaesthesia. This awareness assists in orienting the body to the virtual environment and adds to the feeling of immersion. Mine (1997) notes if an object in VR is located at the user's hand position, they have a good sense of the object's position. Locating physical elements in the installation should increase the proprioceptive sense of position. Lecuyer (2017) further writes that breaks in the feeling of 'being there' are likely if there is a noticeable disparity between the physical and virtual elements of a simulation. Massumi (2002) also observes how vision works with other senses, and aids in proprioception in order to place the body in space. The sense of physical awareness and of body position is important, and notably in VR where the body is not visible, but yet is present. The visual elements of the virtual environment combined with the sensation and awareness of body position in relation to physical elements amplify the feeling of 'being there'.

In *Caravan*, these physical sensations locate the body in the virtual space of the campsite and facilitate the feeling of actually being inside the caravan. The aim of my qualitative research with a range of participants was to corroborate this with direct feedback, including to what extent they felt part of the environment they temporarily inhabited. A sense of virtual embodiment appears to be enhanced by spatial and physical engagement, contributing to a sense of being present. Postphenomenologist Don Idhe (2002) contends that artefacts can become an extension of a person's embodiment, in the way that a blind person extends their bodily experience through a cane, or a craftsperson feels a nail through a hammer. He defines these extended sensations as elements that would be noticed to be missing in the absence of the article. By extension, the headset that allows us to enter into the virtual world becomes part of our sensing apparatus. In the *Synchronous Reality* of the caravan, I propose, the physical sensations augment our senses beyond the limits of the headset, while the headset extends our physical senses into the virtual.

C4.06   ACTIVATING THE WORK THROUGH PARTICIPATION

C4.06.01   PARTICIPATORY EVENTS

It was important in this research to engage with participants to see how the work resonated beyond my own experience. To work toward an answer to my research questions, feedback events were conducted where participants could experience my work while I observed, and to give me verbal feedback. A gallery-based installation was vital to test *Synchronous Reality* amongst physical and virtual elements in *Caravan*'s first two iterations. For the sake of consistency, the form of the exhibition events and my questions were kept the same for each participant. The qualitative results drawn from participant experience under similar conditions from these sessions are analysed in what follows.

Two sets of exhibition events were held to gather critical feedback from participants, each using the same method. The first participant event was held in July 2018 with five participant sessions. The second participant event, held in October 2018, had ten participant sessions and one focus group, and was a response to the first set of remarks. Posters were placed in strategic areas inviting participation to a one-on-one experience. The audience participants were generally students or staff within AUT, including staff working in the field of VR. There were demographic differences in familiarity with virtual environments amongst the participants. Four were first-time users of VR, while at least three were frequent VR users. Six were from New Zealand and the rest were other nationalities; Middle Eastern and European. Seven were in the age range 20 to 30, five in the range 30 to 40, and two in the range 40 to 50.

At the start, each participant was welcomed into the gallery. Short interviews were conducted on a one-to-one basis, although participants could be joined by a support person. There was an initial discussion with the participant to explain the process

and for the participant to sign consent forms and ask any questions. The installation was not initially visible to the participant on entering the gallery, however, the ambient soundtrack was already playing and audible. The participant was then introduced to the installation, asked to stand in the centre of the installation and put on the VR headset. I invited them to remain in the installation for a minimum of ten minutes as this was the timing for one complete day/night cycle in the virtual environment and allowed a reasonable time for the participant to explore, settle down and absorb the installation. The participant would not be controlled by real-world time in the form of a maximum time they could spend in the headset (although they were given a suggested minimum time), but the duration of the sequence of animated events within the virtual environment, including the passage of the sun, meant that participants generally remained for a similar time period. Once the participant was happy to finish the practical part of the event, they removed the HMD and were interviewed in a separate part of the gallery space. Each participant was asked the same questions (see Appendix A). Interviews were recorded on a digital audio device and later transcribed.

Figure 68. Bailey, D. (2018). Participant in the installation after putting on the VR headset and starting up the VR environment. [Photograph].

C4.06.02   FOCUS GROUP

One small focus group was held and four individuals who were either PhD candidates or staff members took part. The focus group signed a group consent form and then took turns in trying out the installation. In this case, focus group members were able to observe others whilst they were in the installation and also make comments during that period. There was no set time for each person from the focus group to remain in the installation. Following the session in the installation, a round-table discussion was held and recorded. The following review of the qualitative research from these groups generally supports my supposition that *Synchronous Reality* increases the depth of immersion and a sense of being part of the installation.

C4.06.03   THE EXPERIENCE OF THE *CARAVAN* INSTALLATION

One distinct and observable phenomenon was that there were two phases of participation; the first active and the second passive. When the virtual environment was first initiated, each participant began to explore the caravan to a greater or lesser degree. In the active phase, participants were observed simply walking around and looking at things or putting their hands out to feel the spatial boundaries. Participants spent an average of 11 minutes in the installation, although one spent 20 minutes in order to view the complete day/night cycle from the caravan interior and then exterior. Most participants appeared to lose a sense of real-world time. This suggests that their sense of time was overlaid by the time of the virtual environment, as Barker (2012) observes often happens.

More experienced VR users, potentially gamers, spent longer investigating for hidden triggers or 'Easter eggs' in an attempt to discover and 'see everything'. This observation bears out Ermi and Mayra's (2005) description of the challenge-based

phase, where participants were perhaps seeking tasks to perform or challenges to meet. Gamers would be more likely to look for challenges as these are a key expectation of gaming environments. After the active phase, which included sometimes leaving the caravan, participants generally entered a passive phase. They chose places to sit and became an observer passively 'absorbing' the environment, similar to sitting at a window watching the world go by. This is where Ermi and Mayra's (2015) sensory and imaginative phases of immersion became more observationally prominent. Participants allowed their senses to take precedence and their imagination to roam free, enjoying the environment as opposed to the challenge it might present. During this phase, participants recalled memories of similar places or experiences. The absorption phase was, for me, the most important. My intention had been to offer a less active and more meditative experience by recreating a contemplative memory engendering a positive feeling of solitude and comfort. The aim was never to challenge people with tasks, but simply to invite the participant to be there and allow their senses to hold sway.

C4.06.04   DESCRIBING THE EXPERIENCE

I asked the participants to give descriptive words to encompass their experience in the installation in physical or emotional terms. My intention was to draw on their responses for a quasi-thematic analysis of the qualitative results from my limited sample of people. Thirteen of the participants (87%) used one or more of the following words or variations to describe their experience: calm, relaxed, safe, cosy, peaceful. Calm and peaceful were the most common words, and were used by half the participants. Other words included exciting, melancholic, pensive, solitude, alone, lonely, isolated, moody, curious, eerie, creepy, and intimate, specifically in relation to *Iteration One*. In *Iteration Two* I shifted my own artistic intentions away from the desire to provoke a sense of isolation to the more comfortable affective modalities of solitude and intimacy, to engender the calmness of being alone in a

safe yet solitary space. As Massumi (2002) points out, these kinds of sensations from a given environment would ultimately lead to an emergent affective articulation for the participant, although not immediately. The interview process at the end gave them time to have registered and thought about their response to the installation as an affective experience.

C4.06.05   LEVELS OF IMMERSION

One of my research questions asks: Could the immersive quality of the created environments be enhanced by combining virtual objects with physical counterparts? The immersive quality is a key factor that makes the participant feel they are present in the created virtual environment. It is useful to define levels of immersion more precisely, aided by observations of behaviour, in immersive VR. VR researchers Witmer and Singer (1998) note certain factors in measuring presence also indicate the level of immersion. Their study assumes interactions with the virtual environment should seem natural, which makes the environment more immersive, although this may not be the only criteria with which immersion could be measured. In *Caravan*, the inclusion of physical references to the virtual environment seems to enhance the immersive quality. The engagement of multiple senses is important, and in *Caravan*, I engage touch, smell, sound, vision and proprioception. As Ermi and Mayra (2005) also suggest, sensory-based immersion can draw the participant more deeply into the virtual environment and its stimuli.

Immersion is assisted by the degree to which the visual and auditory aspects involve the participant. In *Iteration Three* I aim to introduce the sense of thermoception or temperature to deepen the immersion. In *Caravan*, involvement is passive as the participant attunes to different senses, becoming part of the *Caravan* as an observer and also as an 'experiencer'. Witmer and Singer state if each of these factors is plotted against a scale, then the higher they score, the higher the level of immersion and presence is indicated (Witmer & Singer, 1998, pp. 231-233). My research did

not include detailed empirical quantitative measurements, but participants were specifically asked how immersed they felt. In summary, the interviews seemed to indicate the level of immersion and presence in the environment was high for many participants, and this related to notions of *Synchronous Reality*.

C4.06.06   INVOLVEMENT AND INTERACTION WITH THE INSTALLATION

The level of immersion is an important element of a virtual environment. The project aimed to establish whether the immersive quality was heightened by the creation of a *Synchronous Reality* type of environment, in relation to my questions concerning affect, place and memory. Several participants indicated that they did feel deeply immersed, for instance:

> It felt so real. I really felt like I'm in the space (P.M., Iteration One, 2018).
>
> Completely immersed. Completely forget the fact that I was not there (A.T., Iteration One, 2018).

Indirect questions also demonstrated significant levels of immersion for the participants. Participants were asked how they found navigating the space, and physical or emotional sensations they felt. In *Iteration One*, a participant was observed spending a long time peering out through the gap in the door. In this version, participants were unable to exit the caravan but commented they could feel the heat of the sun on their face, in spite of no verifiable change in temperature, as a result of the virtual sun (A.T., Iteration One, 2018). This suggests a level of immersion engendered a synesthetic response in the participant where the sight of the sun elicited a feeling of heat. One participant also said they felt as if they were there, and the sounds and smells made them feel immersed, indicating the inclusion of a soundscape was important (P.M., Iteration One, 2018). Another participant said the environment seemed natural to them because they could actually sit on the

seats and lean on the windows to look out, which supported increasing the physical content of the installation (A.G., Iteration Two, 2018).

One indicator of an intensive immersion was the way people encountered the caravan door. The virtual door was left ajar so that the opening was too narrow for a person to simply walk through it comfortably and yet several participants were observed trying to squeeze through the virtual gap.

Figure 69. Bailey, D. (2018) Participant attempting to squeeze through the virtual door of the caravan. [Photographs].

Another participant was observed during their immersion in the installation attempting to take out their phone to look at it. They said:

> I felt so natural with myself and the environment. So, first of all, I forget about the fact that I'm not seeing my body…I felt completely natural and my phone rang and, "Let me check my phone," and I grabbed my phone out. I just remembered, "Okay. I can't see it," because it's in real mode. (A.T., Iteration Two, 2018)

Overall, participant comments and their behaviour in *Caravan* demonstrated they felt part of the installation to a greater or lesser degree. The level and quality of immersion, while not a core question for the research, is nevertheless important in creating an environment conducive to a contemplative mood which might then invoke memories of place through an interaction of physical and virtual elements.

C4.06.07 INTERPLAY BETWEEN THE VIRTUAL AND PHYSICAL PARTS IN SYNCHRONOUS REALITY

The original idea for *Caravan* was to increase the interplay between the virtual and physical installation. People felt encouraged to sit down and become part of the space due to the fabric-covered caravan benches. One said it felt very real due to this aspect, but it worried them not knowing if the other seats were real or not (P.M., Iteration One, 2018). In *Iteration Two* all the caravan seating elements were extended to align with the virtual seats and feedback from participants was very positive. The commentary indicated that the additional physically coordinated elements of the installation increased the participants' sense of being comfortable and part of a particular place. The immersive quality of *Iterations One* and *Two* seemed to have been enhanced. One participant noted it felt correct that the physical seats registered with the virtual seats, and this created the feeling they were really sitting in the caravan (K.M., Iteration Two, 2018). Another emphasised the feeling of safety, meaning they could connect the physical and virtual parts without having to think. The participant said:

> So, I just sat there for one minute my brain was customised to the environment and,
> "Okay, here I can easily trust the environment." (A.T., Iteration Two, 2018)

The same participant also noted the caravan squabs had 'give' when they were seated (A.T., Iteration Two, 2018). Seeing the virtual squab added to the tactile and proprioceptive experience. Another participant found the *Synchronous Reality* increased the excitement, indicating in feedback they were very much part it. The participant felt excited to be able to sit on different seats, watching the changing light (C.H, Iteration Two, 2018). Some participants noted that seeing physical components prior to the virtual environment helped to set the scene. One noted that the fabric print on the physical seats personalised their experience (C.H., Iteration Two, 2018). Another talked about how the presence of the physical elements increased their level of trust in the space:

> So, as long as I knew that I was navigating around the seats, I was okay. And they were kind of my safe haven where I knew that they were solid. So, I could navigate around them in the virtual space…Yep, I completely trusted them. (A.G., Iteration Two, 2018)

The level of trust, as noted by more than one participant, is crucial to an enhanced quality of immersion based on physical markers in virtual space. Comparing this to a normal physical environment, a person does not question whether or not they can sit down on a physical chair, they trust it to be solid. Achieving that same level of confidence in the virtual environment is significant and important, not only for the immersive quality, but ultimately for a greater personal sense of identification or connection with place. The intention was to place a sufficient amount of physicality to achieve what I would later term a *Synchronous Reality,* enhancing a sense of duration and poetic experience of embodied immersion for the participant.

At first, participants demonstrated an initial desire to explore the scene, to look for challenges. For those better versed in VR this exploration was more intense,

involving searching for clues or affordances. On realising the caravan was simply a caravan in a field, a more relaxed frame of mind took hold. The participant was ready to sit and take in what was around them. My aim was to make the environment or sounds more meditative and natural. The participants, in recalling past memories, engendered an intimacy with the installation and often became lost in contemplation, accepting the environment. This affective response to the caravan and the campsite was one of the main objectives.

C4.06.08   CALMNESS AND QUIETUDE

A frequent response from participants was a feeling of calmness. The caravan was deliberately left uncluttered, rather than filled with personal items. My intention was to provide just enough of my own sensorial recollections to allow the participant to invest their own narratives. Bachelard (1994) suggests that while listening to the description of a room, a person will cease to hear it and begin to recall their own memories of other rooms. The presence of more physical domestic objects might also have enticed more exploration and less absorption. One participant commented:

> …there's something about it being a really simple space. At the very end of it, I went, oh, it's just nice to be in a place that's not cluttered with everyday stuff, so it was a really tidy space. (C.H., Iteration Two, 2018)

I initially reduced movement in the caravan interior, removing the necessity for any kind of teleportation including the jump function in the hand controller that I had used in *Empty Room*. I wanted the interior to be passive and encourage reflection. More opportunity for exploration might discourage sitting, detracting from a feeling of being calm and reflective. Restricting the participant to the interior of the caravan also conformed to restrictions of the *Vive* in terms of 'play space'. *In Iteration One*, the participant could look out of the caravan but never leave it. In *Iteration Two*, the participant could leave the caravan for a limited exploration of the outside. This

freedom gave the participant a chance to see the exterior world of the caravan and gather the feeling of being in a virtual space. I found the restriction was unnecessary however, as the space was still absorbing whether within the caravan or external to it, and the environment became more cohesive as a consequence.

The design of the installation facilitated a contemplative mode in participants. Once participants gained their bearings, they tended to settle on the seats and begin to notice minor details, shifts of light or environmental changes. The quality of quietude would allow them to become absorbed in the scene of my memories and connect to their own past. Bachelard (1971) notes, "In a reverie of solitude which increases the solitude of the dreamer, two depths pair off, reverberate in echoes"; the dreamer moves from the echoes of the world, to that of the dreamer, with the implication they are in a more receptive state for those connections to be made. The immersive quality of the *Synchronous Reality* helped participants become part of the environment and perhaps achieve this receptive condition.

C4.06.09   THE INTIMACY OF RECOLLECTIONS

Participants noted that once they had explored enough, they would sit with their own thoughts. One person commented that the discovery was overtaken by simply sitting "in the middle of nature, kind of by myself." The point of overcoming curiosity and settling down was when "those memories started to come back. And that's when I felt more attached to it" (A.G., Iteration Two, 2018). Through their memories, the participant would relate more to the environment in a process of discovery. For some, relaxation offered a feeling of simply "drifting off" and then "being able to go from trying to engage with everything to just contemplating it" (B.K., Iteration Two, 2018) One participant said they could "actually just sit there and be," becoming part of the environment (S.M., Iteration Two, 2018).

To foster a sense of intimacy in a *Synchronous Reality* installation that holds the capacity for evoking memory was one of my research goals. One participant described the space as feeling like their home and was reminded of the time of the morning when it is quite dark, the sun began to rise, and they would get up and have breakfast (P.M., Iteration One, 2018). Another mentioned a similar place they had experienced in Iran, which was cold, with the same weather and mist (A.T., Iteration One, 2018). Two others mentioned places they had visited with the same atmosphere, landscape or lighting (A.T., H.N., Iteration One, 2018). One remarked on the mist and the birds of a camping trip near the sea (H.N., Iteration One, 2018). Another recollection centred around a cat, a pet they had lost in Malaysia (P.M., Iteration One, 2018).

Camping was also one of the stronger factors in the memories that surfaced for participants:

> My parents had a similar caravan...It was sort of a retro caravan that they bought second hand in New Zealand and travelled around for many years [in] it and I came along with them...I had a flashback to when we stayed in a particular campsite in, I think it was Coromandel...This also reminded me of another campsite...It was a very deserted one by Invercargill…was very sort of lonely and wild kind of, and there were sheep somewhere, and it was misty, and it was very cold. (S.S. Iteration Two, 2018)
>
> I've lived in a place where we had our grandma living in a caravan in the back. Yeah, stuff from when I was a kid. Yeah, because it kind of felt the same, like it had a very similar feel to it, similar age vehicles. Yes, so the seats were the same. I expected to feel that soft, foamy cushion and just the way it was shaped, and the way you kind of interacted with that space. (A.G., Iteration Two, 2018)

One participant focused on the idea of intimacy:

> Well, my experience was I felt if somebody was sharing kind of a secret with me. If I was being part of something really personal…So, in that sense, I think it's kind of

intimate. Intimate in the sense of I feel closer to the creator, to the artist, 'cos again, to me it's kind of like if that person let me inside his or her head, whatever he or she imagined, it's there, and I'm inside of that imagination, which doesn't happen with other type of arts 'cos you're standing outside.… And in here it's not…so it's private, it's just me and the artist. So that why I feel that it's private and intimate. (M.M., Iteration One, 2018)

The intimacy evoked recollections and a shift in time for the participants. In their minds, they recalled past events. The *Caravan* is a little like an archive of a past time of mine, yet I found through the interview process that my narrative began to become less important than what the artwork could do for others. At first, I imagined the virtual space as a mirror, a reflection of my own self and experience, while equally, the participants saw a reflection of their own memories whilst in the caravan's interior.

C4.07 PHOTOGRAPHS FROM *CARAVAN, ITERATION ONE* JULY 2018

Figure 70. Bailey, D. (2018). *Caravan, Iteration One*. [Photograph].

Illustrating the use of lino and an outline to suggest the physical presence of the caravan. The seating corresponded exactly to the virtual seat on that side of the virtual van and allowed the participant to sit down, as if they were in the caravan, whilst in the installation. In this test the technical equipment was visible. The next installation took steps to conceal these items and render them less obtrusive to participants. The next installation included further seating areas, in response to feedback from participants.

Figure 71. Bailey, D. (2018). *Caravan, Iteration One* showing participant in the installation
sitting on the physical and virtual seat. The console view shows what the participant is seeing
in virtual space. [Photograph].

Figure 72. Bailey, D. (2018). *Caravan, Iteration One*. Assisting the participant. [Photograph].

Holding the headset wire for the participant, to keep it out of the way. Some participants did not require this. However, steps were taken in the next installation to suspend the wire from a height which would keep it off the floor and facilitate better ease of movement.

Figure 73. Bailey, D. (2018). *Caravan, Iteration One*. Testing the seating. [Photograph].

Participants assumed different positions on the seating, which perhaps indicates the level of presence felt at the time, and were also moved to feel areas like the window with their hands. The next installation, *Iteration Two* increased the tactile element by adding, for example, a Perspex sheet to the window area.

PHOTOGRAPHS FROM *CARAVAN, ITERATION TWO* OCTOBER 2018

Figure 74. Bailey, D. (2018). *Caravan, Iteration Two*. Completed installation from side and front. Technical elements have been minimised or concealed. New lighthouse stand constructed. Headset wire put up higher on the wall in an attempt to make it less intrusive. [Photograph].

Figure 75. Bailey, D. (2018). *Caravan, Iteration Two*. Participant seated in the interior.
[Photograph].

Figure 76. Bailey, D. (2018). *Caravan, Iteration Two*. Participant relaxing in the installation. [Photograph].

Figure 77. Bailey, D. (2018). *Caravan, Iteration Two*. Participant lying on the ground looking at the virtual grass, leaning through the virtual door in the installation. [Photograph].

Figure 78. Bailey, D. (2018). *Caravan, Iteration Two*. Participant feeling the texture of the squabs and pushing down to feel the 'give'. [Photograph].
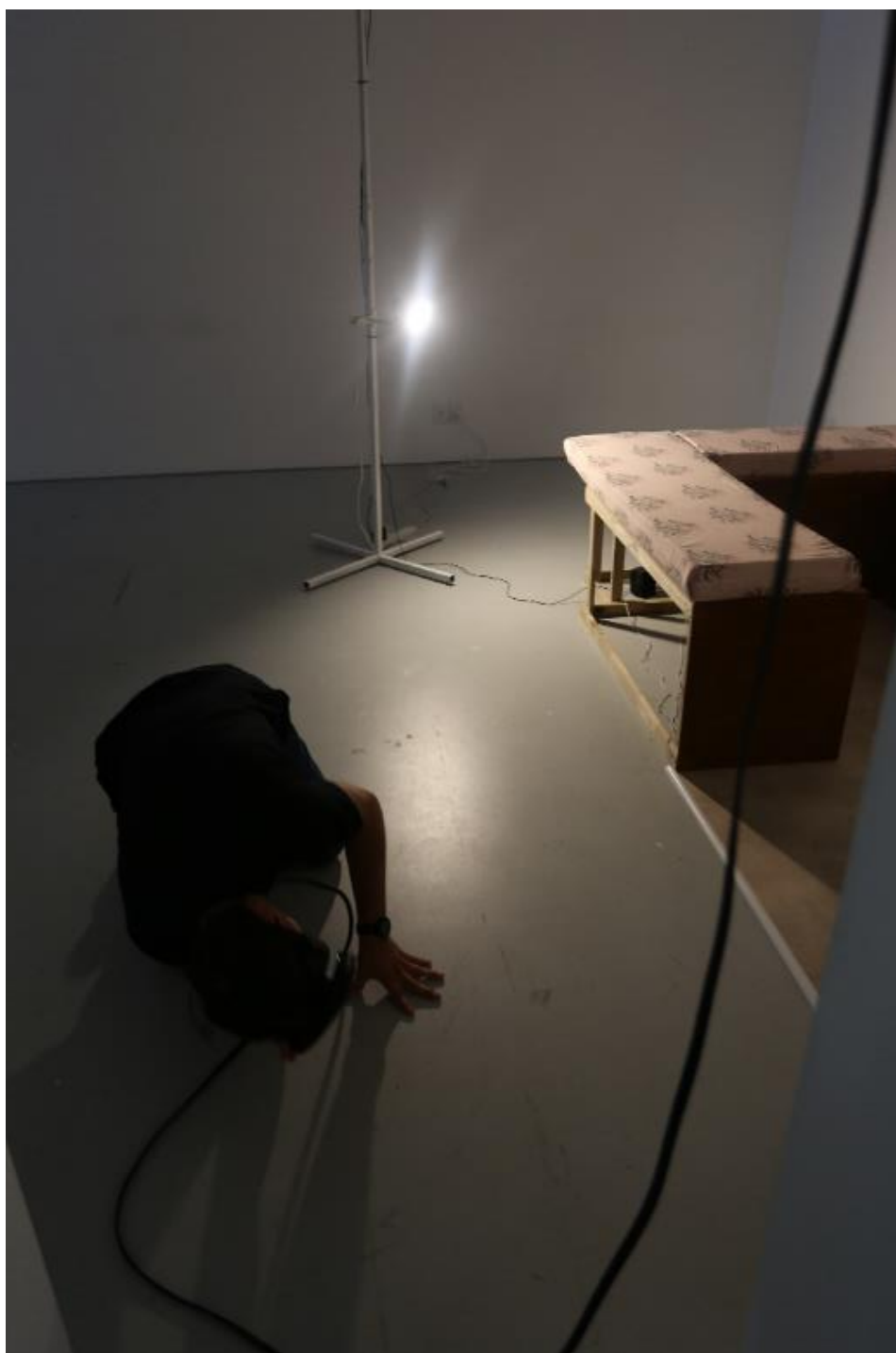
Figure 79. Bailey, D. (2018). *Caravan, Iteration Two*. Participant looking underneath the virtual caravan. [Photograph].

Figure 80. Bailey, D. (2018). *Caravan, Iteration Two*. Participant absorbed in the
environment of the physical and virtual caravan. [Photograph].

Figure 81. Bailey, D. (2018). *Caravan, Iteration Two*. Participant exploring the physical nature of the seating. [Photograph].

C4.09   CONCLUSION

> Things, perception, and thought are in a reciprocal movement into and out of each
> other and themselves. They are moments or dimensions of the same process of
> mutual reinforcement and co-conversion. Sensation is the point of co-conversion
> through which the variations of perception and thought play out. (Massumi, 2002, p.
> 94)

Massumi's statement reflects my understanding of the back-and-forth movement between sensation and material that occurs in the experience of the caravan. In my final set of questions, participants were asked to articulate their aesthetic and conceptual response to this installation. One participant referred to the aesthetics of the design, indicating the installation was the opposite of gaming, due to the slowness of the experience and its contemplative nature (C.H., Iteration Two, 2018). Another participant felt the installation went into more dimensions than other media; namely time, smell, sound and touch (A.G., Iteration Two, 2018). The multi-dimensional aspect was felt to offer each person a different experience depending on where they were positioned.

A sense of becoming part of the caravan's world was noted by many, one suggesting "you don't just witness it, you don't just look at it, you…it happens because of you, in a way" (E.C., Iteration Two, 2018). Another described how the space helped bring out their own recollections:

> This one gave me the opportunity to navigate the internal space as well through
> Virtual Reality, so it was triggering a lot of memories and feeling that I would not
> have been able to achieve easily without the space you have created. (H.N.,
> Iteration One, 2018)

The participant also said, "I was surrounded by the experience; the experience was all around me" (H.N., Iteration One, 2018). Based on feedback such as this, I argue that the immersive quality of VR indeed has a significant effect on the level of

immediacy and intimacy in the creation of the *Caravan* installation. This sense of being part of the work undoes the detachment of an observer looking in on another world. Rather, the observer is inside and looking out, experiencing a reality on a more intimate level through their senses. The participant feedback from *Caravan* suggests that a *Synchronous Reality* installation opens up new possibilities for practice through contemplative participation. *Caravan* offers a range of sensations through localised sounds, scents, moments of physical tactility and the animation of a fog-drenched rural setting, yet the work still retains a dream-like quality. In *Synchronous Reality,* these perceptual sensations merge into an articulated response, which may well be the recollection of memories.

CHAPTER 05
CONCLUSION

> However brief we suppose any perception to be, it always occupies a certain duration, and involves, consequently, an effort of memory which prolongs, one into another, a plurality of moments. As we shall endeavour to show, even the "subjectivity" of sensible qualities consists above all else in a kind of contraction of the real, effected by our memory. (Bergson, 1988, p. 34)

Over the course of this research, a critical question emerged: Through the perceptual exploration of a *Synchronous Reality* installation, how might memories emerge for others? As Bergson suggests, perception implies an inevitable entanglement with memory, whereby our perception is cloaked by recollections that contract many moments into a 'single internal moment'. While the initial research question focused on evoking a feeling of intimacy and solitude in the immersive work, a direction emerged through the active inhabitation of *Caravan* where participants began to connect with their own events of the past. An intimate relationship was made by many participants as they recounted specific memories of their own while reflecting on the intensified moment in the *Caravan* installation. These memories were neither vague nor insubstantial, for instance, one participant recalled:

> I've got a friend [who] used to have a little cute, little yellow caravan, like one of those really old-fashioned ones. And she's just now gone away and she's living in a van. It's quite open but it reminded me of that. It reminded me of going away in her caravan. And the other thing was the scene where it was parked. Yeah, it was kind of memories of being in the country and having birds around and being quite peaceful, yeah. (E.C., Iteration Two, 2018)

C5.01   SENSORY ATTUNEMENTS IN *SYNCHRONOUS REALITY*

My development of the term *Synchronous Reality* as a means to expand the art experience in VR environments through multiple modes of sensory perception is a significant finding in this research. I found that *Caravan* could provide 'real-world' sensations in physical space that correspond to virtual and visual sensations. Increasing the sensory feedback in *Caravan* appeared to deepen the immersive experience for participants. The tactile sensation through seating was an essential element, through the comforting feel of the caravan's cushioned squabs. The placement of the seating, and the two side walls, generated proprioceptive feedback which enabled the participant to orient their body physically in the virtual space. In alignment with this finding, VR researcher Anatole Lecuyer (2017) argues that there is often a conflict between the real world and the virtual world in virtual installations when the real-world senses are not supplied. He writes, "When this psychological conflict is solved in favour of the virtual situation, the resulting sensory experience and subsequent feeling of immersion can be so strong it evokes a physiological or behavioural reaction in users" (Lecuyer, 2017, p. 20).

The aural sensory stimulus was also essential in creating a sense of lively affective arena for the participant that encouraged a desire to remain in the space over a duration of time. Larsson, Väljamäe, Västfjäll, Tajadura-Jiménez and Kleiner (2009) examined the effect of aural input on presence in mixed-reality environments, where they concluded "while a visual scene – real or virtual – may be completely static, sound is by nature constantly ongoing and 'alive'; it tells us that something is happening" (2009, p. 225). The soundtrack was evocative of my own memories of a particular place, yet it was familiar enough for people to recall their own place-memories. Nordhal and Nilsson (2014) reviewed the research on aural sensory input in *The Sound of Being There*, where they noted since human experience is

multimodal, it is important to present sensory feedback in a way that mimics that of the real world. They believe that the virtual world becomes more plausible to the participant when surrounded by aural stimulation. The soundtrack was vital, rather than something 'nice to have'. In *Caravan*, participants referred to sounds as part of a rounded experience of the immersion, as if it was a natural part of being in the space, and the sounds themselves were naturalised to suggest a rural environment.

The effect of aroma on VR presence has not been extensively researched although a recent study by Munyan et al. (2016) on the increase of presence in VR environments due to olfactory stimulation concluded that olfactory sensory input is a factor in increasing presence. The inclusion of some olfactory elements in *Caravan* does bear this out, with the cinnamon toast reminding some participants of similar scents in their own memories of camping trips. *Synchronous Reality* as a research process suggests the convergence of embodied biophysical sensations in a VR environment is a generative avenue for artists and designers of spatial installations to explore.

In Chapter Three, I outlined the significance of *Empty Room*, which laid the foundation for my major work *Caravan*. The room was a recreation of a space of significance I remembered and lived in, and this installation began the journey into my past. The move towards a greater interplay between the virtual and physical space came from feedback on *Empty Room*. Enlarging the role of the soundscape and other senses was also part of the lessons learned from this installation. *Empty Room* was effectively a stepping stone towards the creation of a *Synchronous Reality*. *Caravan* offered a way for physical reality to be experienced at the same time as Virtual Reality as in the case of this research. Others beginning to work in this field include American artist Rhonda Holberton, whose piece entitled *Again for the First Time* (2018) was exhibited in the Yerba Buena Centre for the Arts in San Francisco. The installation consisted of physical reiki mats with cushions, where

participants could lie on the mats. Participants put on an *Oculus Rift* HMD which placed them in similar virtual space to that in which they were lying. They were then given a reiki session by some disembodied hands (Devine, 2018). Artists Jess Johnson and Simon Ward exhibited an installation at the National Gallery of Australia (Canberra) titled *Terminus* (2018). The piece consisted of detailed, imaginary architectural illusions, along with painted lines that implied walkways along the physical floor, and constructed Max Escher-like staircase objects. The gallery was attended by enthusiastic groups of school children, and people queued for the VR stations equipped with an HMD that transformed this into an immersive surrealist world of pink mannequins, walkways in the sky and spiralling worms, among other things.[20] These two installations illustrate that a paradigm shift in virtual installations to include more physicality and *Synchronous Reality* could add to the impetus of that direction. It is also interesting to note that controllers for VR are becoming more haptic, one such offering being the *HaptX Glove* (Lang, 2019) which facilitates a high level of touch sensation in VR.[21]

The inclusion of sensory perceptions is one of the key elements in developing a *Synchronous Reality* installation. The importance of sound and tactile feedback, in particular, must not be understated. In the physical world, aural stimulus is ever-present, and care should be exercised in the kind of sounds utilised in the soundscape. A musical soundtrack may not, for example, be appropriate to create the *Synchronous Reality* sensory experience. Ambient, relevant sounds could be a more suitable sensory terrain. Further decisions on the balance of physical to virtual

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[20] Johnson notes in an interview about the artwork, "I think the gallery space can be utilised as an effective 'conduit' to the virtual reality experiences situated within it. Embedding the virtual reality within an elaborate installation environment is a really important aspect of the experience for me. I like the idea of utilising the art gallery as a sanctum. The audience is ushered into the installation, then unwittingly dropped into a completely different realm" (Fazal, 2018).

[21] Ben Lang in *RoadtoVR* (2019): "The review notes the prototype as effective but cumbersome and bulky. An examination into the area of sensory attachments for VR reveals many devices aimed at increasing sensory information."

components need to be taken. It is as much of importance as to what to leave out, as to what to retain of the physical parts of the installation. The artist should have in mind what affect they are trying to achieve, and what emotive response or otherwise is being attempted. The gaps in the physical parts are a choice which is dependent on the content of the installation itself. As an example, seating in the caravan was key since participants wanted to be able to sit down in every part of it. However, the absence of walls was not an issue, nor cupboards or storage lockers. The trust element in the piece was not compromised by the lack of those items. Probably the most important aspect of *Synchronous Reality* is the synchronisation and registration of physical and virtual components in an effort to try and build a seamless coherence between the installation layers.

C5.02   BENEFITS OF QUALITATIVE RESEARCH

The participant events and interviews were essential to the research process for *Caravan*. Since the installation was an individual experience, it was important to capture the individual feedback elicited from the encounter. The qualitative method resulted in a much deeper level of engagement than just the observations of gallery visitors. The method included my observations of participants over a duration of time within *Caravan* which allowed the participant to sit and absorb the atmosphere and elements of the installation. The interview process opened up discussion not only of the work itself but also of the wider implications of this type of installation and the medium of Virtual Reality. I was able to find out not only how the participant felt whilst in the installation but also their personal insights and recollections. What I took away from this process was the affirmation of VR as a medium which provides a complex sensorial experience of an artwork. With the multi-sensory experience that *Synchronous Reality* offered, many participants also found a depth of immersion that

made them feel as if they were really in the virtual space. Yet they were still bodily engaged in a biophysical reality that reinforced the virtual. The insights from the participants, and their enthusiasm for the experience, were very gratifying parts of the research. Without their input, I could not have gained the insights I was seeking to the research questions. I became convinced, as an artist, that the inclusion of biophysical structures and sensations would be essential for future installations. The body became central to my research as the principal vehicle and receptor of the sensory information. I found that the body, combined with the internalised experience of memory, is not incidental to the piece, it is a vital part of the feeling of presence.

Participants indicated one of the defining features of the installation was their placement within the experience, observing first hand and even creating their own narrative. To be immersed in the artwork gave them an opportunity to build and expand on this, by adding their own layers of previous memories. The experience was unique for each person. In *Synchronous Reality,* participants were provided comfort and they took advantage of the opportunity to receive sounds, images and tactile sensations, rather than to become an active player, giving credence to the idea that a 'passive' encounter can be effective in the medium of VR. The more multi-faceted the sensorial encounter, the more immersive it can become. A key finding from participants is that the immersive quality of the *Synchronous Reality* installation was enhanced by combining virtual objects with physical counterparts; this was revealed not only through the level of trust they felt in the installation itself, but also through the potential for past reservoirs of memories to be reactivated. The research has woven together place and memory and located them in a virtual setting.

My understanding of place, memory, affect and sensation through the reading of Bergson, Bachelard and Massumi was critical to the conceptual mapping of

Caravan as a *Synchronous Reality* installation. Bachelard's poetic voice has provided an important approach to the spatial recollections of my life in the *Caravan*. He describes how consciousness is 'uplifted' by an image which is brought to life in a recollective way, moving from the descriptive to the inspirational, as if the recollection of the memory inspires something in the telling. Bachelard writes, "The space we love is unwilling to remain permanently enclosed. It deploys and appears to move elsewhere without difficulty; into other times, and on different planes of dream and memory" (1994, p. 53). This speaks of the mobility and atemporal nature of memory. Through this, I have found that memory is translatable, timeless and moveable, and extends into Virtual Reality experiences. The audience could be simultaneously immersed in a sensorial world I had constructed and in their own memories.

Once a participant was immersed within my work and ready to absorb the atmosphere of the piece, I also found a more embodied experience could emerge; which I came to understand as also conditioned by the environment as affects. Massumi has pointed out the time lapse between the receipt of a sensation and cognitive thought. I am interested in this intuitive moment of bodily encounter. However, Massumi also notes that of the multitude of sensations received in each moment, not all will articulate themselves further. He suggests that "Each recursive duration must be posited as leading to a discrete awareness. Except that only a very few of the teeming swarm actually make it to awareness" (2002, p. 196). I have found that there is much that happens in the perception of such an installation as *Caravan* that never makes it to the surface as thought.

Massumi indicates that a greater part of bodily sensations remains virtual, and as such, unresolved. He explains: "Perception is an intensive movement back into and out of an abstract 'space' of experiential previousness" (2002, p. 196). From the many strands of sensations which affect a participant, only some will be expressed

as a clearly emotive or physiological response. My research has found that to isolate a cause of sensation in an installation is less valuable than the certain feeling or the attunement to a sense of 'experiential previousness'. In this light, affective VR installation engages the participant in sensory and place-memories of their own rather than trying to achieve specific emotional responses. However, a memory is not static or limited, it can recur with an open-ended duration.

Bergson links perception to duration as a concatenation of moments from the past. Like Massumi, who locates sensation in the virtual space of the mind, Bergson connects sensation as a part of memory where moments follow on from each other. Time is related to memory in the sense it is not static; memory moves through a 'plurality of moments'. Bergson writes:

> Memory, inseparable in practice from perception, imports the past into the present, contracts into a single intuition of many moments of duration, and thus by a twofold operation compels us, *de facto*, to perceive matter in ourselves…. (1988, p. 73)

He implies we perceive matter, or the physical, in ourselves as part of the memory. To recreate a memory precisely is impossible, yet the conditions for evoking memory can be encouraged through sensory means and through experiences of duration. Within the *Synchronous Reality* installation, the passing of time was not only suggested by the passage of the sun, but by the sounds which give the feeling of temporal motion. Likewise, the smell of cinnamon toast is not continuously present, it is a physical sensation which arrives and then fades away over time.

An autoethnographic approach was one element of my methodology, within the overarching paradigm of practice-led research. Participants found themselves engaged in personal reflection when in the installation, and some had thoughts about the nature of VR and various aspects of simulation. This engagement is one of the tenets of autoethnography, where the aim is not merely to provide an individual's narrative but to provoke further thought about how these stories might become

meaningful to others. Autoethnography also allowed me the latitude, as the artist/researcher, to offer the personal aspects of my memories which I felt were significant. In Chapter Two, I discussed the autoethnographic techniques and methods as a background to the environments and installations, including the recording and reflective activities of journaling and photographic exploration. I have included passages of autoethnographic creative writing alongside the more formal descriptions of my artworks in Chapters Three and Four.

The methodology of autoethnography has allowed me to process my own personal experiences of isolation, which were often uncompromisingly bleak, into something more positive and generative. I have realised that memories can reflect negative or positive experiences and engender affects in others in a similar way. The creative process of building the *Caravan* installation, in particular, was a healing one. The inclusion of elements such as the birds, the cat, the wafting grasses and trees, and the open space were all not only symptomatic of my memory and the lived experience but in fact, reflected some aspects of its actuality. I once had enjoyed the open space and the freedom of living in a caravan and was able to reflect this experience in the installation.

Some of the moments of solitude I experienced were reflective and mindful. Watching the sun rise across the fields was fulfilling in its own way. In the wider sphere, do the lessons we learn from autoethnographic work have to be of great significance, or even life-changing? Or is it that the small moments of pleasure that are conveyed can somehow bring us back to a perspective in ourselves of what is important? Through the creation of *Caravan,* I began to understand myself more, to reconcile myself to the regrets I had buried in the past, but which still slept there. My tendency to dwell on the negative recollections of the past was overcome by creating this piece. By rebuilding the memory, I was able to also re-experience a

better version of it, and for me this was perhaps cathartic and to some degree therapeutic. It helped me to lay the past to rest.

Although artists have more recently started to explore a synchronicity between physical and virtual conditions, this is an emerging phenomenon that is only beginning to be theorised. There are certainly technical challenges to registering physical and virtual objects together that are just beginning to be explored through practice. It is certainly complicated to achieve a *Synchronous Reality* installation, due to the technical limitations as discussed in Chapter Four. Also in Chapter Four, I described the extent of my exploration of the effects and affects of the inclusion of physical elements on the immersive quality of the installations for a range of participants. This qualitative research has added to knowledge of immersion through art practice that may also be applicable to other design sectors where a level of sensory attunement is needed in a physical space for the VR immersion to have a functional impact.

C5.03   REFLECTIONS ON THE SOFTWARE ANIMATION PROCESS

Bringing together the elements both virtual and physical is part of the animation of the installation. In *Caravan*, the seating and two sides were the most important elements in feedback given by the participants, outlining the importance of the proprioceptive sense of the body in space. In addition, the collaborative development of the soundscape was an invaluable contribution to *Caravan*. Without sound, which was a noticeable absence during development, the scene would seem comparatively lifeless. Similarly, the addition of textures clothed the underlying structure of polygons and shapes and I connected the same textile pattern through

the physically constructed cotton cushions with the virtual caravan benches as a form of 'syncing'.

To create interaction within the environment required advanced scripting. Animation, and even the playing of sounds or other triggered or random events, needed my coding knowledge to be developed throughout the research. The animation is not a straightforward affair. Often, achieving the right effect or movement needed repetitive plays while adjusting different parameters each time. The script is an apt term since the components of the virtual space become like actors in the virtual scene. The script provides agency. My own experience was one of creating but then replaying and viewing in VR until I was satisfied with the result. Each time a new object, texture or element is added, I would need to replay it and view it from various angles. However, the final stage where all these elements come together in the gallery or theatrical setting is the point of fine-tuning, where the installation takes its final shape.

C5.04   THE FINAL INSTALL

An analogy to designing *Caravan* was the process of physical set-design and creation, a field I have some experience in prior to my digital research. The installation is a convergence of both the final theatrical choice of site and the set-like components of the constructed interior of the caravan. The Black Box Theatre Space at AUT was chosen for the final iteration of *Caravan*. I selected this space in order to amplify the theatricality of the *Caravan* as a site of encounter and also have more control over the physical environment. I am able to light the installation precisely using a lighting rig and have the remaining part of the space in darkness. The virtual elements of the installation raised the cloak on this darkness and combined with the physical structure of the *Caravan*. The dark space became a

cavern where the *Synchronous Reality* installation could be discerned at first in physical form and then, once immersed in the headset, as a simultaneous virtual and physical encounter.

My own ambition with *Caravan* would be to exhibit it at SIGGRAPH, ISEA (International Symposium of Electronic Arts) and for audiences in public galleries. For a wider audience, technological constraints may need to be resolved to facilitate the use of wireless HMDs,[22] which would open up more of the external space around the *Caravan*. With a bigger range around the *Caravan* exterior, physical components such as tree-objects could be included, so that the participant could touch them at the same time as virtual objects. Creating *Synchronous Reality* modes of installations would require a permanent space for the duration of the artwork, due to the physical components. When addressing more than the visual sense several other technologies come into play; for example, audio and other sensory affordances, which are either simulated or real. In addition, immersion is generally restricted to one person participating, based on the technology available at the time of writing. However, multiple participation platforms do exist which require heavier investments in technology and software to facilitate them.

Virtual experiences provide more latitude to an artist to offer an encompassing world less easily rendered in a different type of art media or situation. In VR participants can be immediately placed in completely alien environments, or simply in estranged familiar spaces as with the *Caravan*. Immersion in VR is also constrained by the capability of the software to avoid glitches, lags and breaks in the scenes it

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[22] Although speeds of recent wireless adapters for Head Mounted Displays have been reported to be reasonable for image quality and latency (i.e., no lag between transmission of data from the PC and receipt by the headset), the adapters do not appear to be widely used at present, so empirical information is lacking. What constraints in computing power they might impose would need to be investigated, as would the size of area the adapter might enable a participant to cover. Understanding and fully testing these issues would be crucial to using them in any kind of installation.

produces. However, the same could be said of any medium that experiences the limits of the tools it uses, such as video art as it emerged in the 1960s. Although *Synchronous Reality* installations are in an emergent phase now, they could well become a frequent feature of twenty-first century art galleries.

The depth of immersion for an audience empirically appears to be improved in a *Synchronous Reality* environment, and although this was not the core question in this research, this tendency could have implications for other disciplines beyond the field of artistic research. Immersive VR, combined with synchronous sensorial cues, is at a nascent stage in other fields including theatre, architecture, interior design, and health or other service design, to which this study could be useful. Fashion might utilise material and texture, with the garment itself made in VR and there are many more possible applications across the creative industries.

Future directions for this research could include further extensions of the physical elements of a *Synchronous Reality* as an art installation. One direction I would like to test in the future is smooth physical elements that are without colour or texture. This would provide a physical environment onto which the virtual is effectively painted, giving the physical constructed objects the substance. Such an installation raises questions of where the focus of the *Synchronous Reality* is; how little could remain of the physical construction and still give the sense of immersion? Conversely, to increase the sensory content is another area of further exploration. This research explored the visual, auditory, haptic and olfactory senses, and in the final installation a sense of thermoception. However, smell and other sensations such as heat could be increased and programmatically triggered or driven. This raises questions around how much physicality is enough. These will be tested in more depth and each future installation will continue the experimental journey I began with *Caravan*.

There are many questions about VR as an avenue for artistic exploration that are yet to be answered. However, as an artist/researcher, I see this as a medium that opens

up a field of experiences which allows the artist to draw in their audience deeply and immerse them in the artwork itself. The attention to physicality and the sensorial in the *Caravan* installation, which I have positioned as a form of *Synchronous Reality*, is a core finding of the study. *Caravan* reveals participants are willing to accept a partially constructed physical environment together with a virtual environment, through software and through the virtuality of their internal memories. Much of the focus in VR research is on exploration and action, yet the *Caravan* offers a slower, more contemplative counterpoint. Engagement does not have to necessarily imply high-energy interaction or environment-based challenges.

The setting of the scene with physical components was an important part of the installation and this included a soundscape already running when the participant enters the room. It invested the participant with certain expectations before the virtual environment came into play. There was perhaps an element of provocation in this too, in terms of emotional response. The theatrical setting gave a predisposition and preconception as to mood and ambience, creating a certain feeling before the virtual layer was viewed. The element of temporality was also important, the day/night cycle very much a synchronous activity and appreciated by those experiencing it, watching the light and shadows play across the virtual scene. Inclusion or exclusion are choices which also contribute to and builds a narrative, where objects, sounds, smells, all add their own part to the story.

The audience can enter the artist's virtually remembered world yet bring their own experiences and memories. Through this research, I have come to the realisation that solitude is not all bad and there are moments of life we can simply sit back and absorb without necessitating any further engagement. *Caravan* is ultimately a work with simple objectives: sit, watch, listen and become open to other senses. The work offers a place to lose oneself in daydreams, reflection and personal recollection. In closing, I would like to summarise the original contribution of this research.

C5.05   CONTRIBUTION TO WIDER FIELDS

The original contribution of this thesis lies within the creative work of the practice itself and the analysis of the audience experience and critical feedback. The use of virtual space to synchronise with a coherent physical space is a different way of using the medium to the typical VR experience where a virtual environment exists on its own. The effective layering of senses which can be perceived through the body whilst in a virtual space observably, and by participant feedback, improves and increases the immersive quality of the *Synchronous Reality* type of installation. Artists and Virtual Reality creators can consider the idea of using physical layered sensory input to virtual environments rather than attempting to simulate it with haptic types of devices. *Caravan* also underlines the importance of sensory experience in such installations and how this helps to intensify the experience of the audience.

Furthermore, *Caravan* demonstrates that a contemplative passive environment can be created in VR which participants are willing to remain in for long periods. The immersed engagement with the environment and the desire to remain engaged was evident during research. This extends the fields of VR and Art Installation into less challenge based and aesthetic, sensory based types of VR installations, indicating an environment such as this has validity as an experience. After the final iteration of *Caravan*, an exhibition of the work titled *Caravan Reverie* was held for the school of Clinical Sciences at the AUT North Shore Campus. The installation was experienced by 31 staff individually and bears out the argument that the desire of the audience to remain in the calming environment was strong, some staying up to thirty minutes or more for many day/night cycles. The audience were also observably immersed, and their comments afterwards confirmed this. The exhibition also opened up the potential of contribution in the field of Health and Wellbeing where an installation of this type could be used as a way of destressing or engaging mindfulness in those partaking of it.

The use of VR for artists and practitioners or designers in the field of health, for instance, opens a way to provide meaningful engagement through sensory experience with an open-ended encounter, rather than an explicit narrative. The *Synchronous Reality* installation demonstrated the specific qualities of VR which allows a person to be placed and embodied within a virtual space. By crafting the sensory environment, the affective response can be felt, or memories explored by the participant. *Synchronous Reality* becomes a vehicle allowing connection to memories which did occur for participants as indicated in the feedback received during the research and recent exhibition. The extension of a visible body into the virtual space was also not necessary for the audience to engage fully with the installation. Even those who found this strange adjusted within a short space of time in the virtual environment. This showed that the proprioceptive sense of embodiment was strong, even without visible cues of their own body.

Future directions for installations such as *Caravan* could increase the scope for movement in the environment itself by enlarging the size of the virtual space possible using new devices coming to market. Also freeing the audience by using functional wireless and self-contained headsets. Of interest could be performance-based pieces where, for example, items of food could appear simultaneously physically and virtually and supply actual taste to the virtual object.

In the final installation, the project returned to the theatrical principles of the illusory world discussed by Artaud (2004, p. 49). This setting, in particular, seemed to provide the developing atmosphere for what was almost a performance as much as it was a *Synchronous Reality* installation. It enabled the participant to focus on the experience from first arrival and thus ultimately connect with their past (Bachelard 1994, p. 41). To consider the creation of a *Synchronous Reality* installation necessitates a conception of the embodied whole, to include the many parts of a sensory environment. My understanding of creating virtual environments was

irrevocably changed by my research where at first, I had only considered the virtual environment to be a relevant part of the experience, while by the end my horizon for creative encounter encompassed a whole gamut of sensations in both virtual and physical worlds.

Figure 82. Bailey, D. (2019). *Caravan, Iteration Three*. Interior of caravan with sun rising.
[Still from video].

Figure 83. Bailey, D. (2019). Caravan, *Iteration Three.* Bench with Toaster and Jug showing textures. [Still from video].
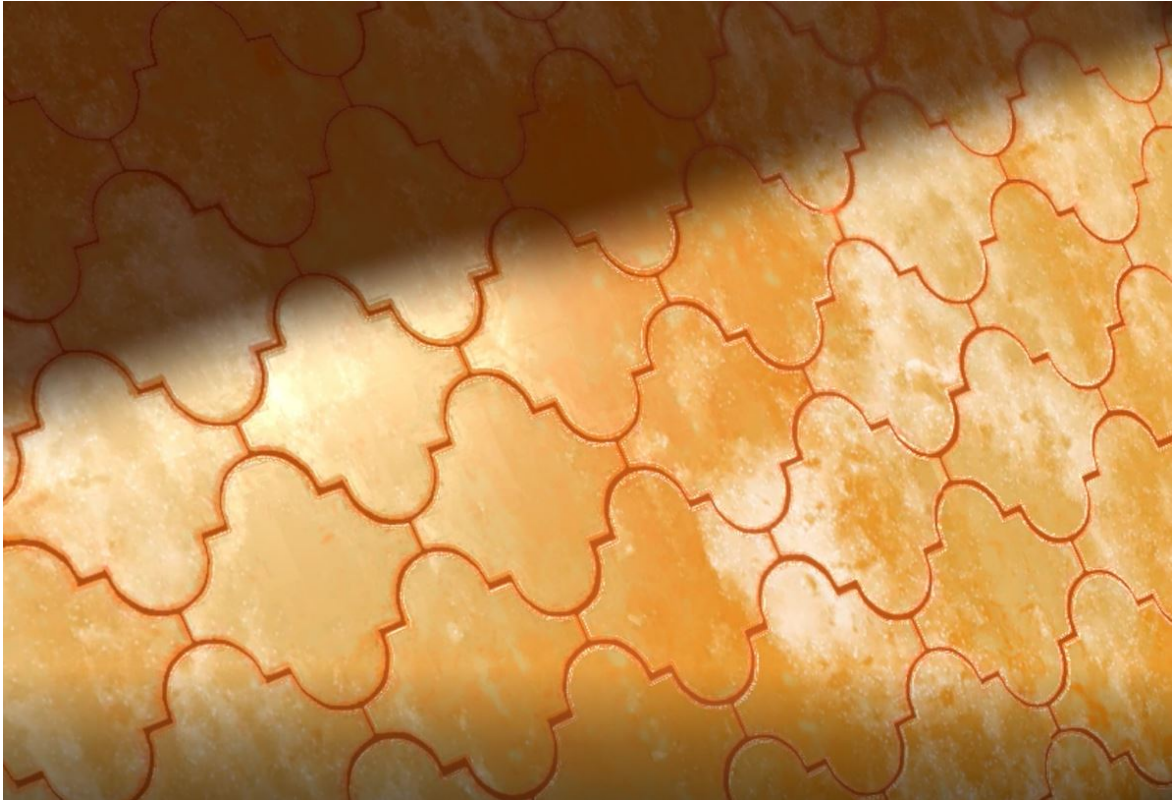
Figure 84. Bailey, D. (2019). Caravan, *Iteration Three.* Closeup of Lino texture. [Still from video].
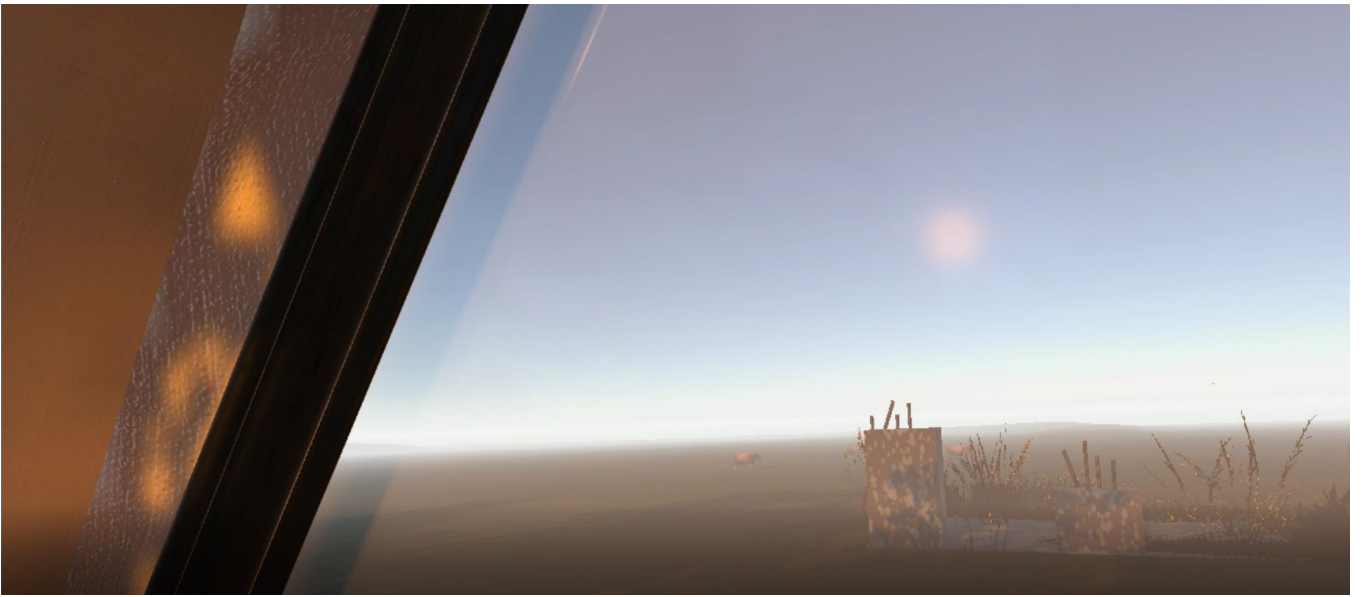
Figure 85. Bailey, D. (2019). Caravan, *Iteration Three.* Setting sun from interior. Seen through double skinned glass texture. Sheep in background. [Still from video].
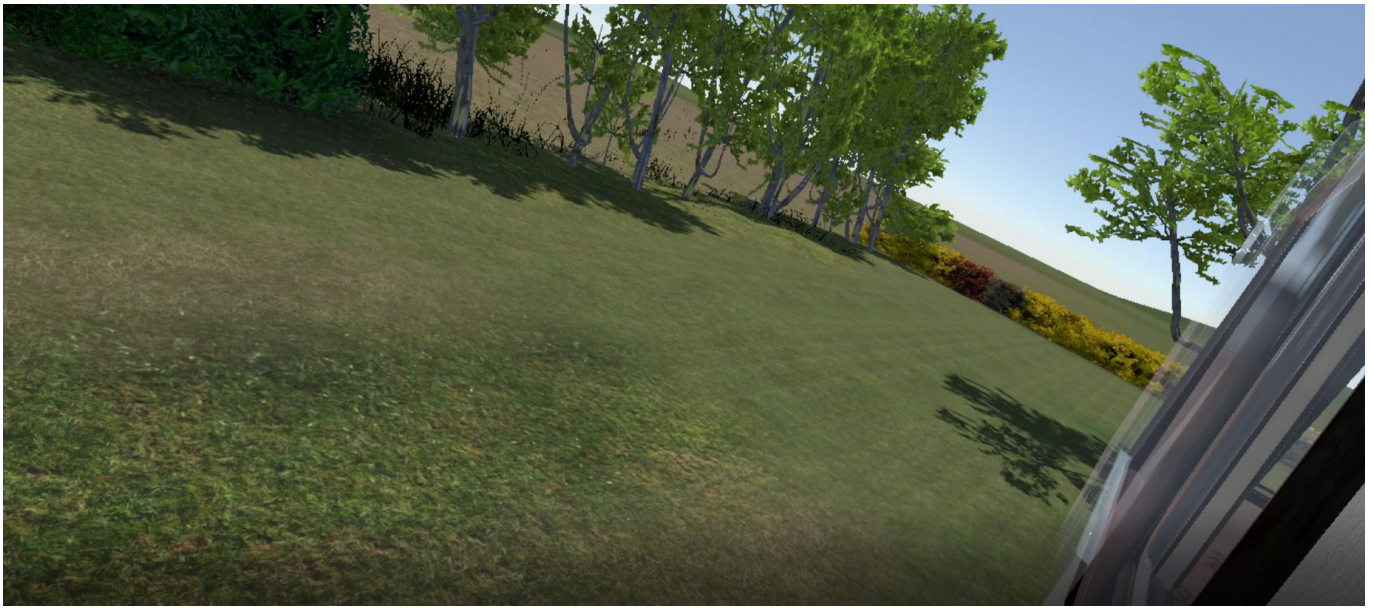
Figure 86. Bailey, D. (2019). Caravan, *Iteration Three.* Exterior campsite view at midday.
[Still from video].
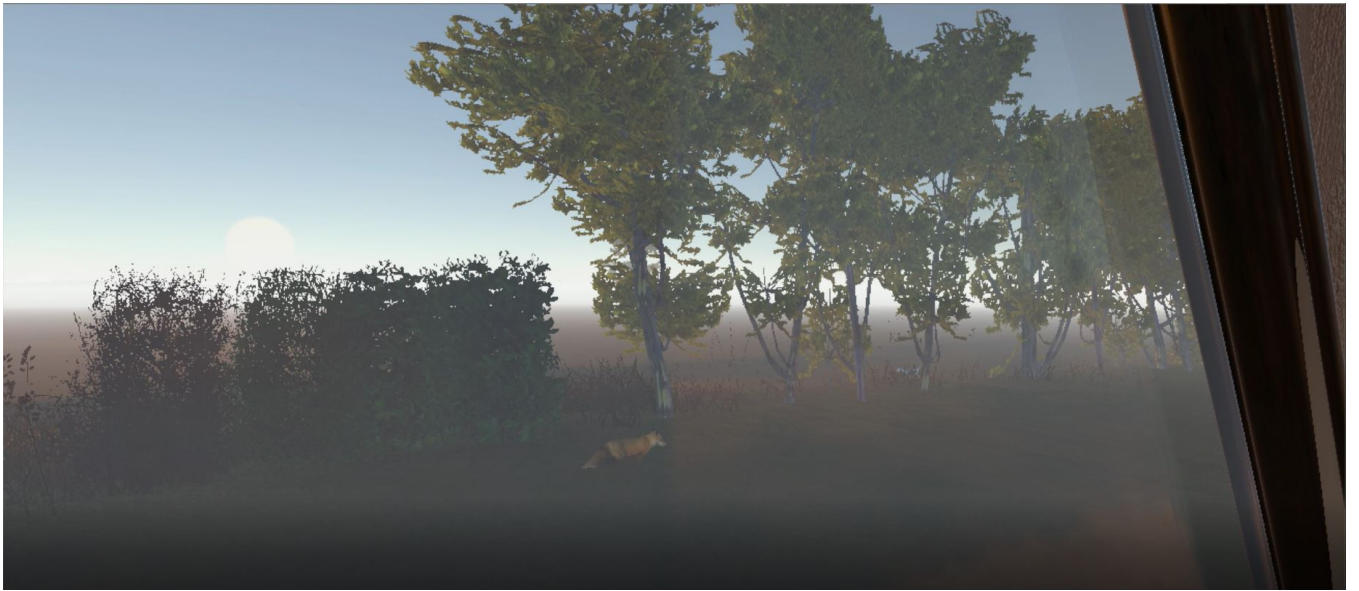
Figure 87. Bailey, D. (2019). Caravan, *Iteration Three*. Fox at sunrise viewed through double skinned window glass [Still from video].

Figure 88. Bailey, D. (2019). *Caravan, Iteration Three*. Installation in the Black Box AUT
[Photograph].

Figure 89. Bailey, D. (2019). *Caravan, Iteration Three*. Participant in Installation in the Black Box AUT [Photograph].

Figure 90. Bailey, D. (2019). *Caravan, Iteration Three*. Participant in Installation in the Black Box AUT. Rear console, and 2000 KW Spot for thermoception sun effect [Photograph].

Figure 91. Bailey, D. (2019). *Caravan Reverie*. Exhibition at AUT North Shore Campus, School of Clinical Sciences [Photograph].

C5.06   REFERENCES

Adams, T., Holman Jones, S., & Ellis, C. (2015). *Autoethnography*. New York: Oxford University Press.

Alt, C. (2002). The materialities of Maya: Making sense of object-orientation. *Configurations*, *10*(3), 387-422. doi: 10.1353/con.2004.0002

Artaud, A. (2004). *The theater and its double*. New York: Grove Press.

Augé, M. (1995). *Non-places*. London, UK: Verso.

Bachelard, G., & Russell, D. (1971). *The poetics of reverie*. Boston: Beacon Press.

Bachelard, G. (1994). *The poetics of space* (M. Jolas, Trans.). Boston, MA: Beacon Press Books.

Barker, T. (2012). *Time and the digital: Connecting technology, aesthetics, and a process philosophy of time (Interfaces: Studies in visual culture)*. Hanover, NH: Dartmouth College Press.

Baudrillard, J. (1981). *Simulacra and simulation*. Paris, France: Editions Galilée. Retrieved from https://0ducks.files.wordpress.com/2014/12/simulacra-and-simulation-by-jean-baudrillard.pdf

Bergson, H. (1988). *Matter and memory* (1st ed.). New York: Zone Books.

Berman, A. D. (n. d.). Retrieved from http://www.annedeaneberman.com/

Blascovich, J., & Bailenson, J. (2011). *Infinite reality*. [Kindle]. New York: Harper Collins. Retrieved from https://www.amazon.com/Infinite-Reality-Avatars-Eternal-Revolution-ebook/dp/B004CFA9WI

Chan, M. (2014). *Virtual Reality: Representations in contemporary media* (1st ed.). New York: Bloomsbury Academic USA.

Chun, W. (2008). The enduring ephemeral, or the future is a memory. *Critical Inquiry*, *35*(1), 148-171. doi: 10.1086/595632

Chun, W. (2011). *Programmed visions: Sofware and memory*. Cambridge, MA: MIT Press.

Chung, E. (2018). Eugene Chung. Retrieved from http://eugenechung.co/

Cruz-Neira, C., Sandin, D., & DeFanti, T. (1993). Surround-screen projection-based virtual reality. *Proceedings of the 20th Annual Conference on Computer Graphics and Interactive Techniques – SIGGRAPH '93*. doi: 10.1145/166117.166134

Conjugal. (2019). In *English Oxford living dictionaries*. Retrieved from
https://en.oxforddictionaries.com/definition/conjugal

Conjugate. (2019). In *English Oxford living dictionaries*. Retrieved from
https://en.oxforddictionaries.com/definition/conjugate).

Craig, A. (2013). *Understanding augmented reality: Concepts and Applications*.
Amsterdam: Morgan Kaufmann.

Dale, L. (2015). Kholat review: The pass. Retrieved from
https://www.polygon.com/2015/6/23/8825883/kholat-review

Devine, S. (2018). Bay Area artists have taken over yerba buena – Broke Ass
Stuart's San Francisco website. Retrieved from
https://brokeassstuart.com/sf/2018/09/18/bay-area-artists-have-taken-over-
yerba-buena/

Ditum, N. (2016, February 8). Firewatch review – a small game with a big story. *The
Guardian*. Retrieved from
https://www.theguardian.com/technology/2016/feb/08/firewatch-review-first-
person-simulation-adventure-game

Eco, U. (2005). *The mysterious flame of Queen Loana* (1st ed.) (G. Brock, Trans.).
Orlando, FLA: Harcourt Books.

Ellis, C. (2004). *The ethnographic I* (1st ed.). Walnut Creek, CA: AltaMira Press.

Ermi, L., & Mayra, F. (2005). Fundamental components of the gameplay experience:
Analysing immersion. *Proceedings of the DiGRA Conference 2005.* (pp. 1-
14). Vancouver, Canada. Retrieved from http://www.digra.org/digital-
library/publications/fundamental-components-of-the-gameplay-experience-
analysing-immersion/

Estupinan, S., Rebelo, F., Noriega, P., Ferreira, C., & Duarte, E. (2013). Can Virtual
Reality Increase Emotional Responses (Arousal and Valence)? A Pilot Study.
Lecture Notes In Computer Science 8518:541-549 · January 2013.

Fazal, M. (2018, May 31). Can VR change the way we engage with contemporary
art? *Vice*. Retrieved from https://www.vice.com/en_au/article/qvn3j7/can-vr-
change-the-way-we-engage-with-contemporary-art

Freeman, W. (2010). Limbo | Game review. Retrieved from
https://www.theguardian.com/technology/2010/aug/01/limbo-xbla-microsoft-
playdead-studios

Gallagher, S. (2012). *Phenomenology*. Basingstoke, UK: Palgrave Macmillan.

Gibson, J. (1950). *The perception of the visual world* (1st ed.). Cambridge, MA: The
Riverside Press.

Gottschalk, M. (2016). Virtual Reality is the most powerful artistic medium of our time. Retrieved from https://www.artsy.net/article/artsy-editorial-virtual-reality-is-the-most-powerful-artistic-medium-of-our-time

Hansen, M. (2006). *Bodies in code: Interfaces with digital media* (1st ed.). New York: Routledge.

Herndon, N. (2016, September 30). 'Dear Esther: Landmark Edition' is haunting and beautiful. *Forbes.* Retrieved from https://www.forbes.com/sites/archenemy/2016/09/30/dear-esther-will-haunt-your-dreams/#54d48afb4c43

Herriot, J. (2013). *Vets might fly*. London, UK: Pan.

Higonnet, M. (1981). Bachelard and the romantic imagination. *Comparative Literature*, *33*(1), 18. doi: 10.2307/1770415

Hollis, E. (2014). *Memory palace*. Berkeley, CA: Counterpoint.

Hou, H. (Director). (2015). *The assassin.* [Film]. Taipei, Taiwan: Central Motion Picture Corporation.

Ihde, D. (2002). *Bodies in technology*. Minneapolis, MN: University of Minnesota Press.

Jacob, M., & Grabner, M. (2010). *The studio reader: On the space of artists* [Kindle Location 1]. Chicago, IL: The University of Chicago Press. Retrieved from https://www.amazon.com/Studio-Reader-Space-Artists-ebook-dp-B003URR8L4/dp/B003URR8L4/ref=mt_kindle?_encoding=UTF8&me=&qid=

Käufer, S., & Chemero, A. (2015). *Phenomenology*. Cambridge, UK: Polity.

Khalyleh, H. (2015). A videogame meant to raise awareness of anxiety attacks. Retrieved from https://killscreen.com/articles/videogame-meant-raise-awareness-anxiety-attacks/

Kipper, G., & Rampolla, J. (2012). *Augmented Reality: An emerging technologies guide to AR* (1st ed.). Waltham, MA: Syngress.

Lang, B. (2019). Hands-on: HaptX Glove delivers impressively detailed micro-pneumatic haptics, force feedback. Retrieved from https://www.roadtovr.com/haptx-vr-glove-micro-pneumatic-haptics-force-feedback-axonvr/

Laing, O. (2016). *The lonely city*. New York: Picador.

Lanier, J. (1992). Virtual Reality: The promise of the future. *Interactive Learning International*, *8*(4), 275-279.

Larsson, P., Väljamäe, A., Västfjäll, D., Tajadura-Jiménez, A., & Kleiner, M. (2009). Auditory-induced presence in mixed reality environments and related technology. *The Engineering Of Mixed Reality Systems*, 143-163. doi: 10.1007/978-1-84882-733-2_8

Lecuyer, A. (2017). Playing with Senses in VR: Alternate Perceptions Combining Vision and Touch. *IEEE Computer Graphics And Applications*, *37*(1), 20-26. doi: 10.1109/mcg.2017.14

Leonard, B. (Director). (1992). *The lawnmower man* [Film]. United States: Allied Vision.

Lilja, E. (2015). *Art, research, empowerment* (1st ed.). Stockholm, Sweden: Ministry of Education and Research.

Lombard, M., & Ditton, T. (1997). At the heart of it all: The concept of presence. *Journal Of Computer-Mediated Communication*, *3*(2), 0-0. doi: 10.1111/j.1083-6101.1997.tb00072.x

Loeffler, C., & Anderson, T. (1994). *The virtual reality casebook*. New York: Van Nostrand.

Mäkelä, M., & Nimkulrat, N. (2018). Documentation as a practice-led research tool for reflection on experiential knowledge. *Form Akademisk – Forskningstidsskrift For Design Og Designdidaktikk*, *11*(2). doi: 10.7577/formakademisk.1818

Mann, S., Furness, T., Yuan, Y., Iorio, J., & Wang, Z. (2018). All reality: Virtual, augmented, mixed (X), mediated (X,Y), and multimediated reality. *Arxiv:1804.08386*.

Maya. (2019). Retrieved from https://www.autodesk.com/products/maya/overview#

Massumi, B. (2002). *Parables for the virtual*. Durham, NC: Duke University Press.

Massumi, B. (2015). *Politics of affect*. Cambridge, UK; Malden, MA: Polity Press.

Merleau-Ponty, M., & Smith, C. (1962). *Phenomenology of perception*. London: Routledge & Kegan Paul,.

McCall, C., Hildebrandt, L., Hartmann, R., Baczkowski, B., & Singer, T. (2016). Introducing the Wunderkammer as a tool for emotion research: Unconstrained gaze and movement patterns in three emotionally evocative virtual worlds. *Computers In Human Behavior*, *59*, 93-107. doi: 10.1016/j.chb.2016.01.028

McCloud, S. (1994). *Understanding comics*. New York: HarperPerennial.

McNiff, S. (1998). *Art-based research*. Philadelphia, PA: Jessica Kingsley.

Milgram, P., Takemura, H., Utsumi, A., & Kishino, F. (1994). Augmented Reality: A class of displays on the reality-virtuality continuum. *Telemanipulator And Telepresence Technologies*, *2351*, 282-292.

Mine, M., Brooks, F., & Sequin, C. (1997). Moving Objects In Space: Exploiting Proprioception In Virtual-Environment Interaction. In L. Pocock, R. Hopkins, D. Ebert & J. Crow (Eds.), *SIGGRAPH '97* (pp. 19-26). New York: ACM Press/Addision-Wesley Publishing Co.

Muncy, J. (2016). Unravel, a game about a yarn person, tries way too hard. Retrieved from https://www.wired.com/2016/02/unravel-unremarkable/

Munyan, B., Neer, S., Beidel, D., & Jentsch, F. (2016). Olfactory stimuli increase presence in virtual environments. *PLOS ONE*, *11*(6), e0157568. doi: 10.1371/journal.pone.0157568

Murray, J. (2015). How close are we to the holodeck? In G. Freyermuth & L. Gotto (Eds.), *Clash of Realities Keynote, Cologne Game Lab 2015 (pp. 29-44)*.Cologne: TH Koln University of Technology, Arts and Sciences.

Murray, J. (1997). *Hamlet on the holodeck: The future of narrative in cyberspace*. New York: Free Press.

Naimark, M. (2018). Retrieved from http://naimark.net/VRpubsntalks.htm

Naimark, M. (2016). VR cinematography studies for Google. Retrieved from https://medium.com/@michaelnaimark/vr-cinematography-studies-for-google-8a2681317b3

Normal Map. (2019). Unity – Manual: Normal map (Bump mapping). Retrieved from https://docs.unity3d.com/Manual/StandardShaderMaterialParameterNormalMap.html

Nilsson, N., Nordahl, R., & Serafin, S. (2016). Immersion revisited: A review of existing definitions of immersion and their relation to different theories of presence. *Human Technology*, *12*(2), 108-134. doi: 10.17011/ht/urn.201611174652

Nordahl, R., & Nilsson, N. (2014). The sound of being there: Presence and interactive audio in immersive virtual reality. In K. Collins, B. Kapralos & H. Tesler (Eds.), *The Oxford handbook of interactive audio* (pp. 213-233). New York: Oxford University Press.

Oculus VR. (2017). Oculus Best Practices: Version 310-30000-02. Retrieved from http://static.oculus.com/documentation/pdfs/intro-vr/latest/bp.pdf

Pain Studies Lab. (2014). Dr. Diane Gromola, Dr. Faranak Farzan & Dr. Sylvain Moreno won the Judge's Grand Prize @ Stanford's Innovation Lab. Retrieved from http://painstudieslab.com/dr-diane-gromala/

Pinkerton, N. (2018). Sundance Interview: Rachel Rossin. Retrieved from https://www.filmcomment.com/blog/sundance-interview-rachel-rossin/

Proske, U., & Gandevia, S. (2012). The Proprioceptive Senses: Their Roles in Signaling Body Shape, Body Position and Movement, and Muscle Force. *Physiological Reviews*, *92*(4), 1651-1697.

Proust, M.(1992). *In search of lost time* (T. Kilmartin, Trans). London, UK: Chatto & Windus.

Riva, G., Mantovani, F., Capideville, C., Preziosa, A., Morganti, F., & Villani, D. et al. (2007). Affective Interactions Using Virtual Reality: The Link between Presence and Emotions. *Cyberpsychology & Behavior*, *10*(1), 45-56. doi: 10.1089/cpb.2006.9993

Rokhsaritalemi, S., Sadeghi-Niaraki, A., & Choi, S. (2020). A Review on Mixed Reality: Current Trends, Challenges and Prospects. *Applied Sciences*, *10*(2), 636. doi: 10.3390/app10020636

Rothberg, S. (2014). Memory/place my house. Retrieved from http://sarahrothberg.com/MEMORY-PLACE-MY-HOUSE

Rothberg, S. (2017). Touching a cactus. Retrieved from http://sarahrothberg.com/TOUCHING-A-CACTUS

Schwarz, G. (2018). A portrait of the artist's studio. *Apollo*. Retrieved from https://www.apollo-magazine.com/a-portrait-of-the-artists-studio-in-virtual-reality/

Shapira, L., & Freedman, D. (2016). Reality skins: Creating immersive and tactile virtual environments. In *2016 IEEE International Symposium on Mixed and Augmented Reality.* (pp. 115-124). Merida, Yucatan, Mexico: IEEE Computer Society.

Skains, R. (2018). Creative practice as research: Discourse on methodology. *Media Practice And Education*, *19*(1), 82-97. doi: 10.1080/14682753.2017.1362175

Skarbez, R., Brooks, Jr., F., & Whitton, M. (2017). A survey of presence and related concepts. *ACM Computing Surveys*, *50*(6), 1-39. doi: 10.1145/3134301

Slater, M. (2003). A note on presence erminology. Retrieved from http://s3.amazonaws.com/publicationslist.org/data/melslater/ref-201/a%20note%20on%20presence%20terminology.pdf

Slater, M. (2009). Place illusion and plausibility can lead to realistic behaviour in immersive virtual environments. *Philosophical Transactions Of The Royal Society B: Biological Sciences*, *364*(1535), 3549-3557. doi: 10.1098/rstb.2009.0138

Stenger, N. (2018). Retrieved from http://www.nicolestenger.com/news2019.html

Substance Designer. (2019). Retrieved from https://www.substance3d.com/products/substance-designer

Sullivan, G. (2006). *Art practice as research*. Thousand Oaks, CA: Sage.

Synchronous. (2019). In English Oxford living dictionaries. https://www.lexico.com/definition/synchronous

The Assassin. (2015). Retrieved from https://www.imdb.com/title/tt3508840/

Unity. (2019). Baked lighting. Retrieved from https://docs.unity3d.com/Manual/LightMode-Baked.html

Unreal Engine. (2019). Features. Retrieved from https://www.unrealengine.com/en-US/features

Van Campen, C., & Ross, J. (2014). *The Proust effect*. Oxford, UK: Oxford University Press.

Wachowski, L., & Wachowski, L. (Directors). (1999). *The matrix* [Film]. Sydney, Australia: Warner Bros.

Webber, J. (2015, August 13). Everybody's Gone to the Rapture review: A beautiful test of patience. *The Guardian*. Retrieved from https://www.theguardian.com/technology/2015/aug/13/everybodys-gone-to-rapture-review-beautiful-patience

Westerhoff., J. (2011). *Reality: A very short introduction*. Oxford, UK: Oxford University Press.

Whitelaw, M. (2012). Transmateriality: Presence aesthetics and the media arts. In U. Ekman (Ed.), *Throughout: Art and culture emerging with ubiquitous computing* (pp. 223-236). Boston, MA: The MIT Press.

Witmer, B., & Singer, M. (1998). Measuring presence in virtual environments: A Presence questionnaire. *Presence: Teleoperators And Virtual Environments*, *7*(3), 225-240. doi: 10.1162/105474698565686

08 APPENDIX A

QUESTIONS FOR THE PARTICIPANT INTERVIEWS

- Describe your experiences of navigating the virtual space, while wearing the *HTC Vive*, and negotiating the physical gallery space?

- How you feel in terms of a) your physical sensations, b) your cerebral experiences, while navigating the virtual space?

- Did you recall any memories of your own whilst you were in the virtual space of the artwork? Did any part of the installation produce particular associations of time or place?

- How much would you say you felt part of the site in the artwork and how much would you say you felt detached from it?

- What, if anything, might have improved your experience of the artwork?

- Do you think, having experienced it, that immersive VR can offer an art experience?

- What kind of language would you use to describe your experience with the virtual space?

- Is there anything else you would like to say about the installation or your experience

09 APPENDIX B GLOSSARY OF TECHNICAL TERMS

09.01 AUGMENTED REALITY

Technologist and Researcher Alan Craig (2013) gives a succinct technical definition of Augmented reality which must contain the following elements:

> Key aspects (ingredients) of augmented reality:
>
> The physical world is augmented by digital information superimposed on a view of the physical world.
>
> The information is displayed in registration with the physical world.
>
> The information displayed is dependent on the location of the real world and the physical perspective of the person in the physical world.
>
> The augmented reality experience is interactive, that is, a person can sense the information and make changes to that information if desired.
>
> The level of interactivity can range from simply changing the physical perspective
>
> (e.g., seeing it from a different point of view) to manipulating and even creating new information. (Craig, 2013, p.16)

Augmented reality can use many different devices in order to facilitate the augmentation which may include, a mobile phone, a heads-up display or other similar type of affordance which allows digital information to be superimposed on the physical landscape.

09.02   HEAD MOUNTED DISPLAY – HMD

A Head Mounted Display is one which is placed in front of the eyes. It will usually consist of an optical device which covers both eyes. For immersive displays, each eye will see a slightly different image contributing to a stereoscopic effect which produces a three dimensional whole. For augmented displays, these will usually be clear plastic upon which images are superimposed in the front of the eyes, thus adding to the physical objects which can be seen through the display.

09.03   IMMERSION

Immersion is the feeling of being completely in or surrounded by something. As described by Murray (1997) it is "the sensation of being surrounded by a completely other reality, as different as water is from air, that takes over all of our attention, our whole perceptual apparatus" (1997, p. 99). Immersive technology or immersive VR typically shuts out the visual aspects of the physical world so that the participant can only see the virtual world by use of an HMD. Thus, they are immersed, at least visually, in the virtual environment. To complete the immersion further requires the addition of other sensory input as discussed in this exegesis.

09.04   MIXED REALITY

According to Rokhsaritalemi, Sadeghi-Niaraki and Choi (2020) Mixed Reality needs to contain three key elements. They write:

> a real-world object interacts with a virtual object to execute practical scenarios for the user. There are three important features of any MR system: (1) combining the real-world object and the virtual object; (2) interacting in real-time; and (3) mapping

between the virtual object and the real object to create interactions between them. (2020, p. 2)

There is, thus an Augmented Reality element to the Mixed Reality scenario, in that real and virtual objects are combined; however, the interactions are such that the virtual object can interact directly with a real or physical object. A physical object can thus obscure a virtual object, if the virtual object is behind it. In Augmented Reality this would not be the case and is a fundamental difference between the two.

09.05   PRESENCE

As noted by Skarbez (2017), presence is the feeling of 'being there'. An individual who is to a greater or lesser degree immersed in a virtual environment may feel they are 'actually there' in the virtual space. This particular feeling is known as presence.

09.06   VIRTUAL REALITY - VR

Virtual Reality (VR), as applied to computing, and a technical environment can be succinctly defined thus: "a three-dimensional simulated environment created by computer software and rendered in real-time according to the behaviour of the user" (Loeffler & Anderson, 1994, p. xiv). Thus, the term VR can be applied to screen-based environments, as well as three dimensional immersive environments using an HMD. The technical creation using software of a simulated environment which looks three dimensional is the key point.

10 APPENDIX C SELECTED INTERVIEW TRANSCRIPTS

The following are selected transcripts from the interviews conducted which were particularly influential in making decisions about developments to the installation.

09.07 INTERVIEW TRANSCRIPT WITH PARTICIPANT A.T. FROM JULY 2018 1ST ITERATION OF CARAVAN

D.B.: So, I'm gonna ask you some specific questions. First, I just want some demographics. So, you were, you've lived all your life in Iran? Is that right?

A.T.: Pardon?

D.B.: You lived in Iran all your life?

A.T.: Yes.

D.B.: Okay. And this is the only other country you've visited?

A.T.: Yes. Although, I've been like, [inaudible 00:00:36] to Malaysia, but doesn't count.

D.B.: Okay. So [inaudible 00:00:41] is the only other place you've lived?

A.T.: Yep.

D.B.: Okay. And how old are you?

A.T.: 33.

D.B.:   Okay. So, now I'm gonna ask you some questions.

So, can you describe the experience of moving around the virtual space while you're wearing this? And also moving around the physical space. Can you describe it for me?

A.T.:   Describe it?

D.B.:   Yes.

A.T.:   What do you mean by describe it?

D.B.:   I mean tell me about it.

A.T.:   Oh, okay. So, after, even though the headset wasn't fit correctly, but after a while, I just forget completely about the physical environment. I just, I immersed completely in the virtual world.

D.B.:   Really?

A.T.:   Yeah.

D.B.:   Okay.

A.T.:   And the, even after I started to interact with the physical object that were in align with the virtual one.

D.B.:   Mm-hmm (affirmative).

A.T.:   I was thinking of those as a part of the virtual world. So, I was completely immersed. Especially some small things resemble, I try to go and look out the window, and I hit the wall which was aligned with the window and I was like "Okay! This is real!" Now, I'm so, this, yeah. That's why I would really like to sit on other places and really have the urge to touch the stuff.

D.B.:   Right.

A.T.: Which I was [00:02:30] which in my perspective is that kind of a new uncanny [inaudible 00:02:43]. It's not the old [inaudible 00:02:40], it's the urge because everything looks real and seems real, I get the urge to do real stuff.

D.B.: Right.

A.T.: But I can't, that's the new uncanny [inaudible 00:02:55] for me. Which we should probably name it something else.

D.B.: Yes.

A.T.: But, you know what I mean.

D.B.: Okay.

A.T.: So, yeah.

D.B.: Okay. Um, so can you just tell me about the, some of the physical sensations being in that space?

A.T.: So, the sun came out. At first, I really felt that I'm feeling the heat of the sun. So that's why I was looking for the sun itself. Because when you go and feel the sun on your face, the brightness of the sun affects the sensation of the feeling as well. But it wasn't there so I just get a little distracted. The effect of the sun was exactly what I feel should be. And I felt it, even though it wasn't there.

D.B.: You felt that your skin was touched by the sun?

A.T.: Yeah.

D.B.: Even though there was no sun?

A.T.: No sun. And when I went to find the sun, the sun itself wasn't bright enough so that's was [inaudible 00:04:14] with this. But if the sun is bright enough to hit my eyes, my eyes will feel the same sensation.

D.B.: Okay. Interesting. That's really interesting. Any other physical things?

A.T.: Smells is physical?

D.B.: Okay so, what did you think about the smell?

A.T.: At first, I didn't notice it because there was nothing special in the environment that makes me think that this, but when it became kind of strong I started noticing it and I said, "Oy!" There was a virtual object that I can, my brain can be, make it to that smell it would be great. But there was nothing there.

D.B.: So, you'd like to connect the smell to a virtual object?

A.T.: Yeah.

D.B.: What was the smell that you smelt?

A.T.: Ginger? Gingery.

D.B.: Like a toast or something?

A.T.: Yeah. Kind of but...

D.B.: Spicy?

A.T.: Yeah, spicy.

D.B.: Okay.

A.T.: There was some toast there, but I wasn't able to connect the smell with that toast. I don't know why but maybe it's my, just, people in my culture don't use toast.

D.B.: [inaudible 00:05:41]

A.T.: So, I not connecting the smell with the toast. Maybe that's why.

D.B.: Oh, right. I get it. Cause you would cook the toast. Yeah, okay.

A.T.: We don't have toast.

D.B.: So, while you were in the environment what was going on in your head? What was going on in your mind? What were you thinking?

A.T.:	I was thinking, I don't know, maybe I'm on vacation? This is chill.

D.B.:	Okay.

A.T.:	I feel really relaxed. But I also had the urge to go out. You know what I mean? It was really, the first time I put my head out the window I'm like, "Yes! This is awesome." But then I wanted to go out.

D.B.:	You wanted to go out?

A.T.:	Really needed to go out.

D.B.:	Okay.

A.T.:	So, after a while, like maybe if you make it like 15 minutes it will get frustrating for people because we are kind of prisoner. 10 minutes was bearable for me but I was starting to feel prisoner. Although it's not a prison, you feel it.

D.B.:	Okay.

A.T.:	Which is kind of good.

D.B.:	And interesting, yeah. Okay. So, the next question is, while you were in the space did you think of any memories of your own?

A.T.:	Yeah. So, my parents have this house in the North of Iran which has almost the same weather, so. Frosty in the morning and cold, kinda cold, and the sun come out and it's bright and sunny. So. And the mist is always there so it reminded me of the same memories that I have in that environment. So it was for me the environment tricked any memory related to a similar environment. So, yeah.

D.B.:	Cool. And were those good memories?

A.T.:	Yes.

D.B.:	And so that was like a time and a place that you associated a particular time?

A.T.:   Generally speaking. Not as specific, time and memory but the general memory of the same environment and place. So, almost all of the memories from that is because we go there every year almost. For a couple of years.

D.B.:   Were there any other memories? Is that the main one?

A.T.:   Well, that was the main one. Any other specific memories? No, I was so into myself.

D.B.:   Okay. So, how much, I think you may have answered this but, how much did you feel part of the artwork and how much did you feel detached from it?

A.T.:   More than 70% I felt like part of...

D.B.:   70% part of it?

A.T.:   Yeah, yeah. Even more. But the physical representation was so aligned that I really needed everything else to be there as well. I really like to start touching everything.

D.B.:   So, because you found one thing that was physical, you wanted everything to become physical from that one thing?

A.T.:   Mm-hmm (affirmative). I really like it because it was so on point and correct and align and was like okay "This is real! Why everything else is not real?"

D.B.:   Okay. So that whole physical connection really works.

A.T.:   Yes. In a 150% situation.

D.B.:   Awesome.

A.T.:   This was the best VR experience I ever had because one of my main problems with any VR experience I ever had was, like, where is this physical sensation? Where's the physical collaboration? Why are we doing everything completely virtual?

D.B.:   Right. So, you like the face there was a mixture?

A.T.:   Experiment, yeah.

D.B.:   But you, what you're saying is that you just like a little bit more.

A.T.:   A little bit more, yes.

D.B.:   And even if it's just more seats?

A.T.:   Yup! Even more seats. Even more seats. Yeah, sure. But the main ones, ya know, you have a lot of seats there, at least I like to feel the seats and the walls. The imitation walls.

D.B.:   Yeah.

A.T.:   For me, they are very, very, even more important than seats is the walls and windows. So, I really like to go [inaudible 00:10:59].

D.B.:   You were knocking on that window a few times, I noticed that.

A.T.:   That was really cool! And if you be able to somehow to put a window.

D.B.:   So it feels...

A.T.:   The sound and the...it would be hard, I know, but it would be amazing!

D.B.:   Right. Okay, that very, that's really useful. So, is there anything that could've improved your experience of the artwork? You may have already said but...

A.T.:   Obviously adding more physical, yes. Make the sun really hurt the eye by making the actual object very bright.

D.B.:   Mm-hmm (affirmative). Did you have any urge to open things? Like cupboards and [inaudible 00:11:58]

A.T.:   Yeah, that's why I said if there was physical, I really wanted to pour the tea.

D.B.:   Pour the tea?

A.T.:   Yeah.

D.B.:   But what if you couldn't but you could open the virtual cupboards? Would that be interesting? Or not so much?

A.T.:   Because there wasn't anything for me to try, there were no handles.

D.B.:   But if you did have?

A.T.:   Maybe?

D.B.:   Would that have encouraged it? Or?

A.T.:   No. I believe because...that's hard to answer because if you had at least one virtual thing I would have tell you but there was no, there was nothing.

D.B.:   Oh, I see.

A.T.:   So, at least add a couple of them. Then we need to repeat the experience. Then I can tell. Maybe it can improve it. Maybe it becomes [inaudible 00:12:54].

D.B.:   Right. I get it. Thank you. Okay. So, having experienced this do you think that immersive VR can offer an art experience?

A.T.:   Definitely.

D.B.:   Awesome.

A.T.:   I believe I had a good feeling that it can but now I'm completely sure.

D.B.:   So, this has convinced you that it can do that?

A.T.:   Yes.

D.B.:   Awesome.

A.T.:   Even if I wasn't convinced before, I would have been convinced by this study. It has potential.

D.B.:   Thank you. So, how would you, what sort of a language would you use to describe this experience. How would you describe it? Bit of a weird question, so.

A.T.:   Yeah, yeah. At the same time relaxing. But at the same time, I don't know, I shouldn't say...

D.B.:   Just say what you...

A.T.:   I'm kinda ready but something is not right. Something is missing. You know? Just like [inaudible 00:14:11] situation but in a multi-sensory way instead of the visual way.

D.B.:   Okay. So, finally, then is there anything else you would like to say about it?

A.T.:   No, I think I said everything.

D.B.:   You said everything?

A.T.:   Yeah.

D.B.:   [inaudible 00:14:27]

A.T.:   Yes, smells. Oh! Sound. I like to have the, I don't know why, but I like either have the sound be in [inaudible 00:14:40] like here. Or at least be in a headphone. And actually...

D.B.:   So, do you not like the sound?

A.T.:   I liked it but it, first of all, it wasn't loud enough, at least.

D.B.:   So, you would have liked it to be louder?

A.T.:   Right. Although, I have a hearing problem so, scratch that.

D.B.:   That could be the reason yes.

A.T.:   Yeah, could be a reason. But still, I don't know why, it shouldn't be the case, but I prefer the headphone for virtual reality experiences.

D.B.:   Okay. Well, that yeah. Anything else?

A.T.:   No.

D.B.:   Okay, thank you very much for your...

A.T.:   Welcome.

09.08   INTERVIEW TRANSCRIPT WITH PARTICIPANT P.M. FROM JULY 2018 1ST ITERATION OF CARAVAN

D.B.:   This is Participant interview with P.M. and it's the 13th of July 2018. Can I just ask you some demographics? You were born in Iran?

P.M.:   Yep.

D.B.:   And you're how old?

P.M.:   I'm 29, I think. No 30, that would make it 30.

D.B.:   And you're a P.A student in art and design.

P.M.:   Yeah, industrial design.

D.B.:   Okay, and you've lived in which countries?

P.M.:   I've lived in Iran till I was 23, then I lived in Malaysia for four years almost, and here almost one year and a half.

D.B.:   Have you travelled anywhere else?

P.M.:   Yeah, I went to, besides that I went to Turkey and Dubai. I think that's about it.

D.B.:   Okay, cool. So, I'm gonna ask you some questions. The first question is, can you describe your experience of navigating the virtual space while wearing the HTC and also negotiating the physical gallery space. Can you describe the experience?

P.M.:   So, the gallery space you mean without the headset or with the headset on?

D.B.:   No, with the headset on.

P.M.:   Okay, so it was quite easy to move around. I liked the space because it felt so real, especially with the chair, being able to sit inside the cabin. It kind of felt me

worrying knowing that the other seats are not real because I saw it beforehand but yeah. 'Cause I was like is this the part I can sit or not. It was just my brain trying to...but I really enjoyed it, the fact that you could sneak out from the tiny bits of the door being opened to get out of it. And do you want me to describe the scenes as well, or not individually?

D.B.:   Well I just whatever you want. No, I'd like to hear everything you have to say.

P.M.:   I liked the scenery of the outside. I felt I wanted to go out, so that was my thing. I wanted to go out and explore the scenery, the green space of it.

D.B.:   Did you feel anyway constricted then by the fact that you couldn't go out?

P.M.:   Yeah, I felt like yeah I wanna go out and explore stuff, but I couldn't.

D.B.:   Cool.

P.M.:   I liked the sound as well a lot, like the sound of the birds, the nature. So maybe that was one thing that wanted me to get out and explore. And then there were sounds of things happening that I wasn't seeing, so that kind of felt like somethings gonna happen that I'm not seeing. Like footsteps and also the sound of the kettle being poured and I wasn't seeing anything, so that was a bit of stressful like comparing to games and all that like I felt like yeah, somethings happening that I'm not seeing.

D.B.:   Okay. So, I'll ask you this next question. So how, when you were navigating the space, how did you feel in terms of physically how did you feel?

P.M.:   Physically, you mean-

D.B.:   Physical sensations.

P.M.:   It felt so real. I really felt like I'm in the space. The only part that I would know I'm not in the real space would be when I look at my feet, there weren't any feet. But it felt so, I felt I was in the space.

D.B.:   You felt you were there.

P.M.:   Yeah, I felt I was in space. Even with everything being pretty, it felt so real, so yeah, it was good.

D.B.:   Awesome, amazing. So, what about your cerebral experience, the thoughts that were going through your head.

P.M.:   It was a peaceful experience. Like I said because of the scene, the fog and like the space was so calm and soothing.

D.B.:   Right.

P.M.:   But I felt like the because I never been into a-

D.B.:   A caravan?

P.M.:   Caravan, yeah.

D.B.:   You've never been in a caravan.

P.M.:   No, I've looked at the photos and I've been inside the tents and camps like tents but I never been in a real caravan. So it was interesting to experience that. I don't know if that answers your questions.

D.B.:   No, it's fine, everything's relevant. When you are in the artwork, did you, did it bring any memories to mind of your own?

P.M.:   Yes, seeing the cat walking out. It kind of, I don't know if that's a good experience or not because I had a cat in Malaysia that I lost, so I wanted, it felt like that, it felt because the cat was distant to me, it kind of brought my memories of my own cat. And that's why I kept asking for the cat later.

D.B.:   You wanted to see it.

P.M.:   Yeah, it felt like it's my cat at the distant.

D.B.:   Okay, did any other things-

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P.M.:   Yeah, the experience of the sun rising, the fog going away. It kind of made the whole experience brighter sort of. And then it went back to the dark and gloomy. I think it was especially I think it was at some point it became like gray, black and white-ish. So that was a nice experience to see the sunrise and suddenly. Like it brightens up my mood and then it went gloomy, so I had to see [inaudible 00:07:23]

D.B.:   So, did it, did any part of the insulation, did it produce any particular associations of say time or place for you? Have you already told me?

P.M.:   Yeah, I think I told you with the, especially with the outside part, the cat, seeing it at distant. It kind of brought back memories.

D.B.:   Brought back, of the Malaysian cat.

P.M.:   The cat I had in Malaysia, I lost it, so it brought a lot of-

D.B.:   It was kind of-

P.M.:   Sad memory.

D.B.:   So was that kind of, made you kind of sad. Okay.

P.M.:   Yeah, sad memories.

D.B.:   How much would you say, you may have already answered this but, how much would you say you felt part of the site in the artwork, and how much do you feel you were detached from it?

P.M.:   I felt I was inside of it, so yeah, it felt so real being inside of it.

D.B.:   Okay.

P.M.:   The thing that I wanted, I was, I wanted to engage more with it because I felt I was bound in the caravan, like to stay in the caravan.

D.B.:   So, when you say engage more, is that because you wanted to go outside?

P.M.: Yeah, because I like the scenery and I wanted to go out and explore stuff inside it, but yeah.

D.B.: Right. So, could you tell me-

P.M.: Kind of felt trapped inside.

D.B.: Okay, so that kind of was a maybe an emotion in itself, feeling trapped?

P.M.: Yeah, maybe because it was a small space itself. I wanted to get out of it, like yeah.

D.B.: Okay, is there anything that could have improved your experience?

P.M.: Some maybe inside the experience if I wanted to stay in the caravan I would like to at least engage with the elements of inside the caravan as well. Like with the toaster, the bread popping out, or anything inside of it I could maybe interact with it more, maybe.

D.B.: Okay. Would you have liked to open cupboards?

P.M.: Yeah, that's what I mean, like use the kettle or open the, explore to see what's inside that caravan.

D.B.: So, would you say that now you've experienced that, would you say that immersive virtual reality can offer an art experience. Would you describe it as an art experience?

P.M.: Yeah, it was more of an art. Like I said with the scenery, the fog going away, clearing, the road, was it like a tire stand. And also some elements on the other side that I could see it as well as the sound. It was quite nice aligned together, the sound of the bird-like feeling the sun rising. It was quite a peaceful experience and then the other elements would make you feel other things. Like the footsteps, I thought somebody's coming and nobody's coming.

D.B.: Is there any particular language you could use to describe the experience?

P.M.:   What do you mean?

D.B.:   Well you probably have already answered that question. Yeah, I think nothing springs to mind.

P.M.:   I don't know what you mean by that.

D.B.:   Language, I mean like how, sort of terms you might describe it?

P.M.:   Oh like terms to describe. Yeah, I think it was peaceful, but in a way, I wanted more excitement maybe for me. I felt like I'm trapped. It was peaceful, but I wanted to explore it more, I wanted to engage with it more sort of.

D.B.:   Right, okay. Did you, I'm just asking because I'm part of, there's a particular test I was doing, did you smell anything?

P.M.:   Yeah, the smell of toast.

D.B.:   Right, good. And what did you think of that?

P.M.:   It was nice, I wanted to have a toast there because it was...no I mean you hear the sound of the tea pouring and all that. It felt like home, so yeah it felt like you were in the morning at home having a cup of tea and the bread. So it felt like home. And that's why maybe I wanted to engage more with the elements around me.

D.B.:   Cool, that's actually really good. Would you say that it made you sort of feel intimate with the space?

P.M.:   Yeah yeah, it was like that. It felt like it's my space. It didn't feel like I'm in somebody else's space until I've heard the footsteps. That felt like somebody's coming to bust me.

D.B.:   Anything else you wanna say about the experience?

P.M.:   That was interesting because I didn't know if the smell was intentional or not. I felt like maybe your preparing something.

D.B.:   Yeah I was.

P.M.:   It's nice, it's good that you brought it up because I like that the fact that there was a smell. It worked with my scene, but yeah, I didn't know it was intentional.

D.B.:   Well that's why I didn't want to say 'cause I wanna find out the work of this element.

P.M.:   I guess maybe I'm not good at just saying everything myself.

D.B.:   No it's fine.

P.M.:   Never been interviewed like this.

D.B.:   You wanna piece of this toast.

P.M.:   Yeah, of course.

D.B.:   Sorry, I haven't got any butter.

P.M.:   No no, that's good.

D.B.:   Cause I can't be using any more.

P.M.:   It will be too burnt.

D.B.:   No, yeah, can have both pieces if you want.

P.M.:   Thank you. Yeah, I like the cupboard that had the toasts as like, I think it popped up at the beginning. I liked that, that felt, that made the whole space like a homey place. The other seats were nice as well, but it was kind of pushing me to sit on them because they felt so real.

D.B.:   So you would have liked it if you could have sat on some of the other seats.

P.M.:   Yeah, I wanted to sit on the other side next to the bowl and teddy bear and also the other way.

D.B.:   That's interesting. It's interesting that you said it made it feel like home so it gave you that feeling. So by when you saw all the things that were there, like the toast, and it made you feel as if, it reminded you of your own home.

P.M.:   Yeah, and it's not like that it looked like my space, it didn't look at all like my home or my experiences, but it made it like a home, intimate space. I think the time of the day maybe it made it like a home because here when I get out of the house in the mornings, it's quite dark. The sun rises quite dark, like late here. But that's usually when the time I used to wake up in Iran, even in Malaysia as well. The sun rising, the breakfast time, so it was like that kind of the time of the day.

D.B.:   Awesome.

P.M.:   Seeing the shadow of the sunrise on the side of the cabin was nice too.

D.B.:   Anything else? Do you want some more juice?

P.M.:   No no, I'm good thank you. I think that's all, yeah.

09.09   INTERVIEW TRANSCRIPT WITH PARTICIPANT M.M. FROM JULY 2018 1ST ITERATION OF CARAVAN

D.B.:   Okay, so this is an interview with M.M. and it's the 13th of July, 2018. So, I'm going to ask you some specific questions.

M.M.:   Okay.

D.B.:   But could I just get some demographics?

M.M.:   Yeah, sure, sure.

D.B.:   You're from Mexico?

M.M.:   Yeah.

D.B.:   And how old are you?

M.M.:   34.

D.B.:   Okay, and how long have you lived in New Zealand?

M.M.:   Eight months now.

D.B.:   Okay, and have you lived anywhere else?

M.M.:   Well a short period, like, a couple of months in the U.S., years ago.

D.B.:   But mainly Mexico.

M.M.:   Yeah, Mexico.

D.B.:   Awesome, okay. So I'm gonna ask you some questions about what you just experienced.

M.M.:   Yeah, sure.

D.B.:   All right. So, the first question is, can you describe your experience of navigating that virtual space, obviously while you're wearing that headset, and also negotiating the physical space, can you describe that experience?

M.M.:   You mean in terms of navigating the virtual space, while at the same time knowing that I am here?

D.B.:   Yeah. And how did it feel?

M.M.:   Well it was quite nice. I guess the fact that you're within kind of a vehicle, it kind of provides you with a specific area, or it's really clear the area that you can actually move around, so in that sense, I think it was nice, I felt safe, 'cause of course, you can't see your body, right? So sometimes I think that it can be strange, but since I was perfectly able to identify the area in which I was supposed to move it was a nice experience in that sense. And also, it was interesting--the fact that within the simulation I had this inner space, which was the vehicle, and then an out space. Like a third layer of space. The outside within the inside or something like that. So that was interesting.

D.B.:   Could you just explain that a bit more, you mean you're inside something?

M.M.:   So yeah, I'm inside the virtual world, and then within the virtual world there's an inside and an outside.

D.B.:   Oh okay, yeah, got it. Thank you. How were the physical sensations, what were they like?

M.M.:   I think it was a peaceful environment with all the natural sounds around myself. Also, basically being by myself in the sense that no other human is in there, it's just me, and this cat that walks around. But otherwise, it's basically myself and nature, which was peaceful. How the virtual exterior switched from sunny to a little bit of fog--that was quite nice as well.

D.B.:   Okay. And what were you thinking when you were in there? What sort of thoughts were going through your...?

M.M.:   Well, I was thinking that it would actually be really nice to be in the real place. I thought it has the whole idea of kind of being inside of a memory. And then you wonder, "Hey, this looks like a nice place I wish I could actually be in that place." And, yeah, I was just trying also to pay attention to other specifics, not only the outside, but even the hearts that are on the teddy bear's feet and all these kind of things that make me think on the details that you remember after waking up of a dream. And since it's an environment that somebody else has created, it kind of makes me think "Okay, this person paid attention to these specific details, and maybe I should pay attention as well to those details."

D.B.:   Awesome. So, did it bring to mind any of your own memories while you were in there?

M.M.:   Well, not really. I was really aware that I was in someone else's memory, or that was my feeling at least. So I was more concerned about exploring than connecting or recalling something in my own memory.

D.B.:   So how did you get the idea that it was a memory, is that just something you...?

M.M.:   I don't know, I think it's kind of like the way it's settled, so I have the vehicle and then the outside. But then there's a limit to which I can see outside. So I guess that's kind of a constrained space. You can't remember or communicate everything that you recall, so it was kind of a fragment of a piece of mind.

D.B.:   Awesome. There were no associations for you from your own personal experience?

M.M.:   Well yeah, there are some details. For example, not a like super-elaborate memory, but for example, the coffee jar? I was just thinking, "Well that's exactly the

one that I have at the office." So I was looking at that. Well yeah, maybe if I think carefully. The teddy bear and the hearts--I used to have a teddy bear not exactly like that, but also with a heart on the chest. So that as well is there. And yeah, I think those are the elements that I could connect to my experience.

D.B.:   Awesome. Thank you. So how much would you say you felt part of the artwork, or part of it, and how much did you feel detached from it?

M.M.:   I mean I felt part of it, that's why I was more concerned about exploring. And I was just curious, like when I was standing close to the entrance of the vehicle, I could turn it easily and look around on one side, but on the other, you have the doors, and I was curious about looking on the other side, on the other direction, although you have the window inside, but it's different. And I would like to keep just moving around and walking around the grass, maybe following the cat.

D.B.:   Right. So you would have liked to go outside if you could.

M.M.:   Yes, of course, yeah. And I even forgot about the cable. Of course, you keep feeling it, and at some points, yes, you might run into it. But I was just motivated to keep walking and looking around.

D.B.:   Okay. I notice you spent a lot of time at that door, which is interesting. Why did you spend so much time there?

M.M.:   Well, I was just trying to see, I was enjoying how the fog comes in, and also when the sun appears. So how the external environment transforms. But then I was thinking, "Well, I'm paying a lot of attention to what's happening outside," and then I turned back 'cause then I was thinking, "Well, maybe the inside is changing as well." But as far as I noticed it didn't. Well, there's a bread that comes out of the toaster. But otherwise yes, that's why I was looking around, because there were elements around. And, of course, natural elements that are always appealing, at least to me.

D.B.:   Cool. So is there anything that could have improved your experience of it?

M.M.: Maybe just being able to go outside. Outside the vehicle. Maybe asides of the visual, I think the sound was good, but maybe whenever the fog comes into the scene, I don't know if there's a way, but I kind of have the impression that that might feel cold.

D.B.: So you wanted to feel the sensation?

M.M.: Yeah kind of like how the temperature switches. Or whenever the sun comes out, you actually feel it on your skin. So that might actually be interesting.

D.B.: Okay, yes. Did you smell anything?

M.M.: I actually didn't pay attention to that.

D.B.: Okay. So now that you've experienced this, would you say that immersive VR can offer an art experience?

M.M.: An art?

D.B.: Yeah.

M.M.: Yes, of course, totally.

D.B.: Good. Is there any sort of language you could use to describe the experience of the virtual space? How would you talk about it?

M.M.: If I was supposed to describe the virtual space?

D.B.: Yeah. Or your experience of it.

M.M.: Well, my experience was I felt if somebody was sharing kind of a secret with me. If I was being part of something really personal. 'Cause again, I have this experience like you actually are transported to this other place, right? And it's a place that somebody else created based on, I don't know, imagination or a dream or a memory or whatever, but it's still something or an environment, a visual representation of somebody else's idea. An environment that somebody else

created, and that we are both able to see the exact same thing. 'Cause that's always a problem, maybe, with other types of art--that you are always thinking, "Well, the artist, what was he or she trying to say?" Of course, there is interpretation in here. But the actual set, the actual moments within the virtual environment are decided by the artist, and you're looking at the things that the artist wants for you to see. So in that sense, I think it's kind of intimate.

D.B.:   Right, can you just elaborate a bit more on that? What you just said, "intimate." Can you elaborate on that?

M.M.:   Intimate in the sense of I feel closer to the creator, to the artist, 'cause again, to me, it's kind of like if that person let me inside his or her head, whatever he or she imagined, it's there, and I'm inside of that imagination, which doesn't happen with other types of arts 'cause you're standing outside. Even theatre and the movies, yeah, there's immersion, but still, you're out of the picture, and in here you're inside. But you're inside and it's still private. 'Cause for example, I can think of some theatre plays in which you're supposed to participate, but then the entire crowd is looking at you. And in here it's not. I mean of course, you are here, but there is nobody else so I still feel like okay, this is my own experience of the piece, so it's private, it's just me and the artist. So that why I feel that it's private and intimate.

D.B.:   Awesome. Okay, that's really fantastic feedback. Really, really good. Is there anything else you'd like to say about the installation, or your experience, or anything else you'd like to say?

M.M.:   The entire experience was really nice. I was also at some points trying to touch some of the things.

D.B.:   So would you have liked, a bit, to be able to interact? Like open the cupboards?

M.M.: Maybe open them or at least, for example, sitting and looking out the other window.

D.B.: So you would have liked a seat over there as well. So a bit more seating would have helped.

M.M.: Yeah, to contemplate the piece from different angles, and yeah, just sit, chill and be there.

D.B.: Okay, anything else?

M.M.: No I think that's it. I mean it's quite nice, interesting. I mean, this is my own perspective, but I think that these technologies are quite interesting both for the audience and the creator, 'cause as an audience, I feel that I'm kind of brought into the artist's mind. But also as being the creator, you're kind of immersing yourself into your own mind to come up to design. You can go in, see how it works, then go out, modify, improve. I have the impression that the audience is also getting in and getting out and that's quite amazing to me.

And I wonder how this might be useful, for example, in my case or for everybody, just to keep track of, let's say, for example, a journal. Instead of having a video journal or a notebook, you can have an immersive journal where you can go in, it's only yours so you can leave there secrets, you can leave there notes. Or for example, now that I'm supposed to be writing my PGR9, I wish and I'm curious about how this would be useful for analyzing ideas. Like just for example, being inside a white room with the big word that I'm thinking about, and actually being able to interact physically with the ideas, with the concepts. And use that to develop your ideas, to write further. I'm curious about how that would actually help me or help a lot of people to deal and to dialogue with yourself, 'cause that's what I feel this is intimate, 'cause it's coming in, coming in, coming in.

D.B.: Fantastic.

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M.M.: Yeah it was quite nice, quite a nice experience.

D.B.: Thank you.

M.M.: That's it.

D.B.: Thank you very much.

M.M.: Thank you.

09.010 INTERVIEW TRANSCRIPT WITH PARTICIPANT A.T. FROM OCTOBER 2018 2ND ITERATION OF CARAVAN

D.B.: Okay, so this is 25th of October, this is A.T. This is his second go as a participant in the revised version. So, bearing in mind this is your second time through. It's perfectly okay while you're answering the questions to relate how it compared to the other one. For example. Okay, so, can you describe your experiences navigating the virtual space and the physical space.

A.T.: Well, after one minute I felt safe, which is a new feeling in VR which you never feel safe in VR.

D.B.: Can you explain why?

A.T.: Because of the correlation between the physical world and the virtual world. My brain started to connect them together and after a while, I wasn't even looking to find anything. I trusted my spatial and my visual and I just sit down from one table to another table. In the real world when you change place or just walk around, automatically and very fast on a real-time system we trust our visual cues and just go from there. So, I just sat there for one minute my brain was customised to the environment and, "Okay, here I can easily trust the environment, I can go from here to here. I don't need to try and touch and find and see like a blind person," you know what I mean?

D.B.: Yeah.

A.T.: So, we are not like a blind person anymore in this specific environment because of the-

D.B.: Physical part. And comparing the physical arrangement to the previous one that-

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A.T.: Yeah. So, the first thing, I was like, "Oh, okay. I have never felt like this before was the effect of pressure. So the weight of something when you sit on something, goes down. Very different when you sit on something soft that is affected by your weight and it just goes down and this is something that doesn't. So last time it wasn't like that.

D.B.: It wasn't as, it didn't go down?

A.T.: Yes. So you sit down and, "Okay, that's exactly what my brain was expecting to experience." In the subconscious mind because based on the life and living experience, we know we see something even without touching it we can guess that, "Hey, this is a soft surface and if I sit on it it will go down."

A.T.: So you can add pressure or the effect of the weight, to the whole tactile experience. So, smell, sound, these are obvious. Everybody knows about those. But something like the effect of the weight on a soft, the texture, everything is the thing that normally people don't think about as a tactile experience, but they're part of, they're very important.

D.B.: Yeah. Okay. Can you tell me-

A.T.: Plus, the situation of the lighting of the real environment get me ready for the virtual environment. So, the fact that they're kind of the same feeling. Warm and sunny, it was really-

D.B.: So we gave you that. An expectation-

A.T.: Expectation, yes. Which was good because they are the same. That's good. It was good.

D.B.: All right. So, you probably described the physical sensations, also what was going through your head when you were in this space? What were you thinking about?

A.T.: I was thinking about that time really there, now and I was really ... I liked actually. So, the first thing I was like the case. Now I really want to be able to go to the real place. Which actually can be really helpful in different scenarios. So, say you want to push people to go to nature more so you maybe you need to just, but for me, it was calming and after a while I just like, "I wish I be able to someday physically really go there."

D.B.: And being in the, a real space?

A.T.: And be in the real environment. And I know that I can't so the sensation between the is not uncanny really but it's an uncanny experience. So I just want to be there, I am there in a sense but the other part I know that it's not real anyway. So, my part of my brain wants to go to the real realm place someday and then I remember that I probably can't in my life so I'm back to enjoying an individual one.

Speaker 1: We could go to a caravan in the middle of nowhere.

D.B.: Yeah. It wouldn't be the same.

A.T.: Yeah. That's true.

D.B.: Oh, okay. By the way, if you want any ...

A.T.: That's okay.

D.B.: So, I know last time you remembered or recall some memories while you were in the space. Did you recall any memories this time that you were in the space?

A.T.: What do you mean by memory?

D.B.: Things of your own, memories of your own.

A.T.: Oh, yeah.

D.B.: Did it bring anything to mind?

A.T.:   This time I was really, for me it was really about the experience itself. It's probably because it's the second time.

D.B.:   Yes.

A.T.:   So the experience is the same. So, I'm sure if it was my first time it would bring a lot of memory but because it was my second time, I was more into the environment itself was trying to put myself in the position of the person that experienced this before. So for example, you experienced this probably before, you created it out of memory?

D.B.:   Yeah.

A.T.:   Okay. Okay. Then I was trying to put myself in your place and feel that, okay.

A.T.:   "If it was my memory, how would it be like remember it?"

D.B.:   So you are trying to, you are focusing on experiencing the memory that you were inside?

A.T.:   This time basically for the second time basically, "Make me yourself". So I change place with you.

D.B.:   That's actually good too because most people that, well, all the participants that come don't know, well they know, because if they read the thing properly it says it's a memory, but they don't know how to trick it. They don't know how to register it, so from that sense, they come in not knowing what to expect. So then you get a different perspective, while as you, you knew there was going to be a caravan and you knew it was an enhanced version, certainly physically. So, you perhaps, you're one of the few ... well, the only participant who has come in with that different viewpoint.

A.T.: Yeah. So, you need to think about it. So, do want to tell people, "Hey this is a memory," or "if you don't want it you need to." Because if you tell them, they will experience it completely differently.

D.B.: Yeah. I see what you're saying. That's a very interesting point. And I think for the purposes of the research, I don't want to tell them. If it was a gallery exhibit then you probably would have your thesis that then people could read that and then they would perhaps view it slightly differently. I think there's two different purposes and for the purposes of this I don't want people, for example, I don't tell them they can go outside because I want to see if they will try. Some people have tried, some didn't.

A.T.: Well, I already tried it before so that's why I didn't, I knew.

D.B.: So, yeah. Okay. So it seems to me particularly because I noticed, because you got your phone out and tried to look at it.

A.T.: That was because I felt ... So after a while, I felt so natural with myself and the environment. So, first of all, I forget about the fact that I'm not seeing my body. So it was no big deal for my brain. That it's not seeing itself. It was okay. I was able to touch myself and feel myself. So, that was enough. But there are relaxing sensation and the fact that I felt completely natural and my phone rang and, "Let me check my phone," and I grabbed my phone out. I just remembered, "Okay. I can see it," because it's in real mode [inaudible 00:10:48].

D.B.: That might really answer the question of how much you felt part of it. It seems like you felt.

A.T.: Completely immersed. Completely forget the fact that I was not there. And this is not real. So there was a bridge. So I know that I knew that I'm not in the real world, but there is a bridge between the virtual and real and you were able to close that gap and bridge. And so our goal from a scientific standpoint, my brain knows that it's not in that environment and there's a difference between real and virtual, my

subconscious is completely immersed and taking the phone out and trying to see, is an unconscious behaviour. So my unconscious was completely out and accepting of the whole experience.

D.B.:   That's cool. That's very good-

A.T.:   A very important part. So, the gap you need to close is for the subconscious mind, not the conscious mind. The conscious was always knew that it's not real and it doesn't matter. Anyway.

D.B.:   I've made that. I've sat in it quite a lot, but I only recently, well the other day I was sitting in it just to try it out at the end of yesterday actually. And then there have been points where I was able to just let go and feel as if I was really there.

A.T.:   The let go experience is happening and it's easily happening as well after, I don't know, three minutes, it happens.

D.B.:   So actually I'm quite interested in that because you've obviously experienced quite a bit of the art. How does this compare immersively to those other ones in terms of that absolute ability to let go?

A.T.:   So, we are trying to somehow trick your brain to let go by cheap tricks, like calm especially in games. So you get involved in the activity and the story and whatever you forget about the bridge. But in your experience, you actually close the bridge. You're not doing anything. It's not attack or some Zombie attacking you and whatnot. It's just calm and you're just sitting in it. So you're basically closing the bridge instead of tricking my brain to forget about it.

D.B.:   That's really interesting and important point I think because what you're suggesting is that people are distracted from the real world and it's the distraction that makes them forget it. And what you're saying here, is that there is no distraction.

A.T.:   There is no distractions.

D.B.:   You just feel it closes the gap because of the physicA.T.ty of it and that-

A.T.:   And everything else. So everything is playing here. To close the gap. It's what's distracting me about the gap.

D.B.:   That's interesting. Do you actually know of any research that talks about that?

A.T.:   No, that's interesting, I should ...Because-

D.B.:   Let me know because I think that's-

A.T.:   That's the key.

D.B.:   That's an actually really interesting point. That it's the distraction that removes, that assists the immersion. And when you don't have the distraction by inserting physical things, that correspond, in other words, make a mixed reA.T.ty, you gain that acceptance again. Is there anything that would have improved your experience of it?

A.T.:   It's hard to say. Really hard to say because I'm already thinking about this VR experience. And I have a lot of ideas and I didn't try some of these ideas. So, in my mind, I think it will help but they, I see it in action. So, when you try it, you may encounter the, "Hey, doesn't work." So, I'm not the best person to ask that question. You need to ask people are not ...

D.B.:   I have obviously asked them. But sort of slightly aside from that though, there was enough physicA.T.ty in it.

A.T.:   Yeah, that's enough. You can always add more, and add more texture. Okay. The texture of the window is different from the wall.

D.B.:   Yeah, I was thinking of, originally I wanted to put a piece of perspective on there but I just couldn't figure out how to attach it properly without screwing it in. And there was a number of-

A.T.:   Obviously because that one is more obvious in this specific because everywhere is windows. So at least having one window texture may help, but really to try to see if it really makes a difference. Otherwise, just added bonus.

D.B.:   That's good. So to summarise, you are satisfied with the amount of physicA.T.ty and that gave you enough-

A.T.:   Yeah. That's enough. I remember that I told you this a couple of days ago that you are [inaudible 00:17:12] "Hey, put a boat here and that here and that here" But when you actually tried to explain it, that's enough. Because if you go ahead and just recreate everything, then it's too much. Then the question will be, "Okay, why? What's the difference? Why the virtual reality?

D.B.:   I agree with you.

A.T.:   So the minimal physicality that gives you the immersion is enough. You need to go with the minimum requirement for-

D.B.:   To gain that.

A.T.:   Yeah. And that's enough. That even maybe more than [inaudible 00:18:00] a little bit. Which is good.

D.B.:   Okay. Then one question. You obviously would have liked to move, if you could go outside, which you could. Would you have liked to go further around, walk around further? I mean, the only reason I'm asking is because I'm thinking that was a distance that I tested and I can't change it now, but I, because I've got the sink lead on it, it may be that I can pull it back that sense of back.

A.T.: Okay. So this specific experience? Maybe not. Okay. But another experience that is revolve around the environment that a maze that may be there? Yes. So, but for this specific event, is a caravan in the middle of nowhere from a memory. Actually, no. Even, maybe the, I know that I told you last time the stepping out thing, but maybe the stepping out is even too much. So, it's good that it's there, but you definitely shouldn't tell anybody that they can.

D.B.: I don't tell.

A.T.: Yeah, that's good.

D.B.: I don't tell them and I wait to see if they will step out. And the funny thing is that the ones that have stepped out, except one guy that was very used to the art, they try to squeeze through that door and so it's actually quite fun that I didn't make the door wider and you can see how. And I tried it myself because I know I can walk through the door. But when you see the door, you automatically want or to try to squeeze out. Okay. I've asked you this before and you did say yes, but I'll ask it again. Do you think that immersive VR can offer an art experience?

A.T.: Yes. Yes.

D.B.: So can you elaborate on that in your own words as to why you say that?

A.T.: For example, the simplest approach in art is we are trying to make people to see the world differently and try to change their perspective, make them to see the world from another people, another person perspective in life.

A.T.: That's the best ... So you basically put me in your brain and your memory and repeated it for me because I somehow knew some of them because I've experienced it before. Okay. So now in an art gallery, if you tell everybody that, "This is the memory, this is the memory, this is the memory," you make an expectation for their brain and then they go in. They, definitely, even if it's their first time, they will see through your brain.

D.B.:   Right. That makes sense.

A.T.:   So that is actually, so that happened to me just because it was my second time. So even without telling me that this is a memory happened to me, the change of perspective, seeing from different. So yeah.

D.B.:   All right. What sort of words would you use to describe the experience of or your experience? You've used one, calm.

A.T.:   Yeah. Calm.

D.B.:   Any other words?

A.T.:   Safe. Technical one would be a spatial immersion.

D.B.:   Spatial immersion?

A.T.:   Yeah. So my brain knew about the 3D world after a while was, "They can ...," they can just walk around and sit down and sit here without-

D.B.:   You didn't have to test-

A.T.:   Test. I didn't need to. Everything is ...

D.B.:   Makes Sense.

A.T.:   Now, the funny thing if you, is if you move stuff around for cognitive scientists, not you.

D.B.:   Yeah, because then people would fall over. If they'd be expecting it to be there and if you took it away and they would fall over and hurt themselves because if they try to sit down on something that wasn't there anymore.

A.T.:   So yeah, that's actually you can test to see if people are actually-

D.B.:   Immersed?

A.T.:   Spatially immersed while you are moving stuff around. If they fall, that means they go with their subconscious.

D.B.:   That is very tough on the participants.

A.T.:   Yeah, that's not good, they need to have a very safe environment. But not you.

D.B.:   No, I'm not planning that. So yeah, that would be more of a psychology thing-

A.T.:   Yeah, for psychology speciA.T.sts.

D.B.:   Yeah, I think that, perhaps it's not very scientific, but it's obvious by watching people in the space and how their body language [crosstalk 00:23:49] You can tell how into the space they are and how immersed they are because the more they just sit there or they go and sit on the seat. You can see them looking. If they were not-

A.T.:   Moving or they're just sitting ...

D.B.:   Immersed, there's obviously something engaging. And then they sit quite relaxed and in different ways and I think that's more as telling as what the person says, what they're doing is as telling as what they're saying.

A.T.:   Yeah. In fact, you can use video from-

D.B.:   I could. If I could have taken lots of videos, but I didn't. But I have pictures showing people and you can see that they are engaged with the way they're ... So I think that that tells a story itself.

A.T.:   Oh, remind me. One of my friends just wrote a simple online article about how we all can play a role for researchers in psychology. So, using VR as a playground world.

D.B.:   That's what they, I mean Stanford University have been doing for a long time.

A.T.:   Yeah. So, that's fun.

D.B.:   All right. So anything else?

A.T.:   Nope. I think I-

D.B.:   Covered it?

A.T.:   Calming and immersion. Yeah.

D.B.:   Okay. So, do you have anything else you want to say about the piece?

A.T.:   I really hope to someday see it in an actual art gallery, that would be fun. Because then you have more open times and you really, then people will talk about it. There is something different when we experience art piece together and then come out and talk. People talk about it-

D.B.:   I sort of have a vision that, if I were to put it in a gallery, I would try to make a bigger, make that caravan in the middle of the space with maybe just a wall and vent and then actually have a tree. Even if it's ... actually have that tree there and then people could have a wireless headset and then you'd say you've got a much larger space to track it. So that they could walk around, go inside the caravan-

A.T.:   Even watching other people experiencing the environment as they say probably see what the user sees, is in it's an experience if done right.

D.B.:   And you would put certain things in that, like the caravan, you'd probably make it with one side only and then the benches like that and then actually have a window, a real window, but then people could walk all around it and then you'd have a natural tree you construct to treat it as the same. And so you'd have certain things in the environment. Maybe you could have a bench and someone would sit on the bench and so you register all that and then maybe you'd have to have a little bit more interactivity with, you've got the birds and the cats and the owl and there might just have to be other things that I can look at.

D.B.:   It becomes, not to turn it into some sort of arcade, but just a space where you could go and there's the caravan and you're in the countryside and you can experience that. Excuse me, and you can experience that whole thing.

A.T.:   I'd really like to see that.

D.B.:   That's kind of, thanks. If I were to create an art piece from that, that's the art piece I would want to create most definitely. I would, I mean, I'm hoping maybe I could interest the gallery at some point and have enough money to develop that into something bigger.

A.T.:   Like to see that someday.

09.011   INTERVIEW TRANSCRIPT WITH PARTICIPANT A.G. FROM OCTOBER 2018 2ND ITERATION OF CARAVAN

D.B.:   Yes. Okay, and for some reason, it doesn't ... it's not a very good recorder. Okay, so this is 25th of October with A.G., and I'm going to ask you some questions. So, the first question is, can you describe your experience of navigating the virtual space and physical space?

A.G.:   So, before I put the headset on, I clearly saw the outline on the wall and the little model, so I kind of understood the environment I'd be in in the virtual space. And then obviously the seats really helped, the fact that they were colourful and that they matched what was in the virtual world kind of set my markers really clearly. So, as long as I knew that I was navigating around the seats, I was okay. And they were kind of my safe haven where, I knew that they were solid. So, I could navigate around them in the virtual space. And also, I knew that I was tethered. So, I was limited, but they kind set the boundaries for where I could go.

D.B.:   Right. And I didn't notice you testing to check whether they were really in the right place you just seemed to just sit on them.

A.G.:   Yep, I completely trusted them. I would have fallen if it was incorrectly placed.

D.B.:   Yeah. Okay. So, can you describe some of the physical sensations that you experienced?

A.G.:   Physical sensations?

D.B.:   Yeah. Senses, any kind of senses.

A.G.: Okay. The most prominent one and unexpected one was the smell which I noticed. That was ... I completely didn't notice the toaster before I put the headset on and so-

D.B.: That's because I had hidden it around the corner.

A.G.: Okay, that makes sense. So, when I suddenly smelled cinnamon, it was incredibly surprising. And for some reason, I again don't know if it was logical or not, but that barrier between outside and inside the caravan, it seemed to cut off the smell almost.

D.B.: Really?

A.G.: So, it felt to me like the smell was outside the caravan, rather than inside. Again, I think that's psychological and because I first noticed the smell when I was outside. Physical sensation, even being in the virtual environment of the caravan, I felt a little bit more protected when I was inside than outside, even though in physical space I was still in the same open gallery. There were a lot of kind of emotional sensations that I felt.

D.B.: Okay. Well, I will be asking about those. And really what I was going to ask you next was the things that were going through your mind and the sort of cerebral. What was going on in your head, and also emotionally?

A.G.: Yeah, so I think I mentioned out loud a few times that it was quite moody. So, because there was quite a lot of ambient noise, but nothing to really ... no narrative to zone in on. I felt like after enough exploration, I was left with almost my own thoughts, and it was as though I was actually in the middle of nature kind of by myself, where especially if it had been longer than 10 minutes, I would have definitely zoned out at some point. So, I noticed myself sitting down, maybe on the floor or on the seat just kind of drifting off a little bit.

D.B.: Yeah, I sort of noticed that. You seemed sort of quite ... you were wandering around and looking at everything and quite restless and then suddenly you just sat down.

A.G.: Yeah, when I noticed that I thought I had explored enough, because I feel like when you do enter virtual reality or into a game, alternate world, I feel like because we're so used to seeing that in a gamified sense, it feels like you have to be curious, you have to explore everything. There is a secret, there's a point, there's a narrative. And so, I almost had to prove to myself that that's not the case. I'm allowed to just be calm in this environment without ... yeah, I needed to get the restlessness out of the way. So, you saw me poking my head into cupboards and making sure that all of the objects didn't have secrets inside them. Yeah, I felt it was quite satisfying to break the rules of physics when I could, except forgetting that there was actually a wall when there was a wall in virtual reality was kind of hilarious. But it's an interesting juxtaposition because you said that I didn't test the seats. I completely trusted them. Whereas, with the cupboards and the walls of the caravan, I assumed that they weren't real. It's very strange.

D.B.: Okay. And whilst you were in there, did you recall any memories of your own?

A.G.: I think camping trips maybe. And it was kind of a combination of the endless tea and being so close to just nature and the cycles of the day, and that ability to just sit and ponder.

D.B.: So, were there any particular times and places?

A.G.: Yep. I was thinking of Queenstown about two years ago maybe. Yeah, two years ago. We did a camper van trip through the South Island. And we spent a few nights in kind of really remote places. It was off-season, so Lakeside, even though there was no lake in the virtual reality. And yeah, just really beautiful quiet nights.

D.B.:   So, that feed sort of took you back to that?

A.G.:   Mm-hmm (affirmative).

D.B.:   Awesome. Okay. So, then how much of it ... how much do you feel you were part of it? And how much were you detached from it?

A.G.:   Well, interesting. To begin with, I was quite detached because I was discovering. And when you're discovering, everything is new. And when it's new, you feel kind of separate from it. And only after that first moment of getting over the curiosity and the exploration, and once I sat down and settled, that's when kind of those memories started coming back. And that's when I felt more attached to it. It's like now that I knew the scope and I had felt out the limits of that environment, I could relate to it.

D.B.:   Okay. Is there anything you think would have improved your experience?

A.G.:   Not being tethered.

D.B.:   Okay. So, if it was wireless?

A.G.:   Yeah.

D.B.:   Yeah, anything else?

A.G.:   I would love to be able to explore more, but I don't think that's necessary for the experience, that's just me and my curiosity.

D.B.:   More of the outside, you mean?

A.G.:   Yeah. But, again, that's not really the point. Yeah. I think that's really it.

D.B.:   Okay. So, having experienced this, do you think that immersive VR can be an art experience?

A.G.:   Yeah, totally.

D.B.:   Okay. So, can you articulate why you think that?

A.G.: It almost connects on a philosophical level where it's conveying an outlook and a perspective. And that's essentially what art is if you think of the impressionists, for instance, they were basically conveying a perspective. And that's the most literal sense, but so is every other piece of art. And this is just another medium to convey that. It's just going many dimensions further than what other mediums have allowed. So, we're talking about time and we're talking about other senses, obviously. So, smell, sound, touch in this experience. And you're really kind of getting into the artist's brain, rather than just an object they've produced.

D.B.: Yeah, okay. Can you sort of think of what words you would use to describe the experience? Like, you said calm, so what sort of words if I asked you to-

A.G.: I would say melancholy, pensive, reflective, lonely, isolated, distant, contained.

D.B.: That's excellent. Keep going.

A.G.: I don't know. Separated. Quiet. Yeah.

D.B.: Okay. Okay, anything else you would like to say about it?

A.G.: I loved, again, the unexpected cinnamon. But I don't think I mentioned before what I said to you before we started recording about forgetting about the physical wall in this space, and that was a little bit shocking that I was so involved in the virtual space that I realised that I had stopped calculating where physical space ended other than the benches. For some reason, I locked onto those, but not the wall. What else?

D.B.: Did you notice any animals or creatures?

A.G.: Yeah. I noticed a cat to begin with. I noticed an owl and some pigeons. I noticed the tea filling and straining, and the sound of someone stirring. The toast appearing, disappearing, and the smell of said toast. But there were almost kind of

cycles of the day, cycles of life. So, things repeating, passing, going. And for instance, when I saw the cat, I really wanted to lock in on it and create that into a story and see if I could follow it and figure it out, but realising that I was so constrained with the tether and the limits of the space, I kind of felt more okay letting it go and not creating a story out of it. So, the same thing with every other thing that I noticed. So, the owl or the tea or the toast because those were quirky things. They could have been secrets that I could unlock and it would tell me something new, but instead, I kind of felt it to be more correct to just kind of let them be, let them go, if that makes sense.

D.B.:   Okay, well they didn't do anything. I mean, you may not notice the owl. Did you see it fly?

A.G.:   Yes, it flew through the caravan.

D.B.:   Yeah, so what did you think about that?

A.G.:   I know that it was intentional, but at the same time, I feel like my brain almost just dismisses it as a glitch because again, we're so used to the game world and simulated environments where things glitch into each other quite a lot. So, I was almost used to that.

D.B.:   Okay, so you didn't think it was unusual or surprising?

A.G.:   I thought it was unusual, but I didn't find it surprising.

D.B.:   No, okay. That's interesting.

A.G.:   Yeah, I noticed it as it was flying away from me through the caravan.

D.B.:   Yeah, it was actually a deliberate thing.

A.G.:   Of course, I'm sure.

D.B.:   Any other points?

A.G.:   I think the grass grew outside, is that right?

D.B.:   Grew? No, it didn't actually.

A.G.:   No, okay. Maybe I just didn't notice it, to begin with. It was curious that the tyre tracks, I think that's what they were outside.

D.B.:   Yeah, they're supposed to be.

A.G.:   Stopped just in front of the caravan, but we didn't know what they were from. That was kind of confusing and slightly frustrating that they went off into the distance and I couldn't follow them. I can't satiate my curiosity enough. I think it was really important to be able to see the sun because then you could gauge what time of day it was and understand that time was faster than it should be because the sun was moving. It was interesting to see the fog at dawn and dusk versus the clarity of the day because I felt like with the fog, since you could see less outside, you kind of want to be contained within the camper van more than during the day when it was bright and everything was visible and you wanted to be more explorative.

D.B.:   Yeah, that's good because I kind of like the fact that it does that.

A.G.:   Yeah, and that's kind of natural to what we usually do. Except, instead of fog usually it's light and darkness.

D.B.:   Yeah, that's true, that part. Okay, anything else?

A.G.:   I wish there was something inside the cupboards, but I realise that that's completely unnecessary to the experience.

D.B.:   Is that-

A.G.:   I felt a little bit helpless not being able to touch things, except for the seats.

D.B.:   Right, is that the gamer in you wanting to do that?

A.G.:   Probably. I wanted to stir the tea, but instead, someone was doing it for me with the sounds. Damn it. Yeah.

D.B.:   So, you felt you couldn't ... it wasn't sufficient for you to be able to just feel the textures. You actually wanted to manipulate something or move something around.

A.G.:   Yeah. I wanted to do that, but again, it relates to that initial curiosity. I don't think it's necessary for the experience. I think it's just part of getting acquainted with a new environment. It's like a baby, you know, how they need to put things in their mouth and touch things and shake them around and smash them against the floor. It's that kind of experiential understanding of where you are.

D.B.:   Okay, anything else?

A.G.:   I really want cinnamon toast now. What else? I thought it was interesting that the door to the camper van was very simple. It was almost like reality was breaking apart a little bit because it was modelled as a very-

D.B.:   Not a proper door.

A.G.:   Yeah, not a proper door, it's kind of like just a plane that had a very slim thickness to it, whereas everything else was very wholly rendered.

D.B.:   Did it bother you?

A.G.:   A little bit. And it also bothered me that I kind of had to walk through the plane to get outside. It wasn't kind of ajar enough for me to ignore that I was walking through solid.

D.B.:   But interestingly enough, other people have refused to walk through the door, but they squeeze themselves through the gap.

A.G.:   Interesting. That's fascinating. You see, I wasn't afraid to go through planes, except for the seats. There was a moment where I was sitting and I was trying to

plan where else I would stick my head, and I was half tempted to stick my head through the seats, and then I had to stop myself because I then realised I was sitting on it, so I couldn't do that. Otherwise, you would have seen me-

D.B.:   Trying to put your head-

A.G.:   Literally on the floor just trying to push my head through the wood.

D.B.:   That could have been funny.

A.G.:   Yep.

D.B.:   Okay, anything else?

A.G.:   I think with my feet, I could feel a bit of a threshold as I was stepping outside, that was really helpful because it helped me navigate. I did find myself trying to grab the sides of the door as I was trying to walk out.

D.B.:   Did it worry you that the ground seemed like you should step down, but then you didn't have to step down?

A.G.:   No.

D.B.:   No, that didn't bother you.

A.G.:   No. Although, I did notice the threshold and that bothered me. Not bothered me, but worried me because I didn't want to trip.

D.B.:   No. I don't think you would have tripped over it.

A.G.:   Okay. Thank you.

D.B.:   Okay, anything else? Do you have any questions for me?

A.G.:   What-

D.B.:   What is it?

A.G.:   What is it? Where was I? Was it a memory of yours?

D.B.:   Yeah, it basically was a recreation of a memory, just like the other one. And it was a caravan that I lived in for several years, but two years in Yorkshire, and the parts of it that parts of the landscape are reminiscent of the campsite. There was a tree and there was an owl that used to come there and make a lot of noise and keep me awake. And there were the hedges like that. But I sort of flattened it so that it was very flat. I sort of liked it, plus the fact that part of the landscape was very flat where I was living. And I wanted to give that sense of being in the middle of nowhere, sort of isolated. And the fog is ... well, you get those fogs in Yorkshire. In fact, thicker than that, and they're sort of very cloying. But I didn't want to leave the fog there the whole time. I just felt that I enjoyed the way that the sun sort of groped the fog.

D.B.:   And I lived there with two cats that travelled with me, so that was where the cat came from. And then the various sounds were just things that I would have done, like make tea and walk around. And then the soccer ball, my youngest son used to come over and we'd kick a ball around. So, I could have filled it with a whole load of other things because my caravan was actually very cluttered. And I didn't. And in some ways, I'm glad I didn't because another person said that that allowed them to put themselves into the space, whereas the more things of mine would sort of impose a narrative on the person in the space. So, it gives them the space to experience a memory inside of ... be inside of my head.

A.G.:   Yeah, I agree. I think if there was more stuff, then I'd want to continue that exploration that I had started with and there would be kind of no time to sink into my own memories.

D.B.:   Yeah, and I sort of deliberately set it at around 10 minutes because it seems a reasonable length of time. And what I've noticed is that people do just sit and absorb, start to zone out or just absorb it, rather than think they've got to do something. Or 10 minutes might seem a very long time, but it actually passes quite

quickly. I mean, I've sat in there for 10 minutes and it's actually quite comforting, you know? I can get to the point where I forget that it isn't ... I can sort of cross that threshold sometimes. But another chap crossed that threshold entirely because his phone rang and he tried to look at it while he was in the caravan.

A.G.:   That's hilarious. Wow. That's so weird. Did you get a photo?

D.B.:   Of course he couldn't see it. No. I didn't. But we talked about it afterwards.

A.G.:   That's awesome.

D.B.:   Also, people might think that was staged if I had taken a photo.

A.G.:   That's great. The only thing that I felt brought me out of it a little bit was hearing you take photos.

D.B.:   Yes, I know. And I couldn't figure out how to take the bloody ... how to turn the shutter noise off on that camera.

A.G.:   That's fine.

D.B.:   But I needed the shots, you know?

A.G.:   Yeah, no, I'm just commenting on the technology.

D.B.:   Yeah, that's a fair point. Just interested in your views then on comparing this to the ... you know, you went in the empty room that I made, and that was another memory, and this is another memory in there. What sort of comparisons could you make between the two of them?

A.G.:   So, the house, you mean?

D.B.:   Yeah.

A.G.:   Yeah, so with that one, I was very much in the ... I kind of stayed in the exploratory mindset, where because I could travel outside of the bounds of the physical space, I would be jumping around, I'd be seeing what was around every

corner. And you did have a kind of mysterious narrative where there were objects that were clearly out of place. And I tried to construct a story behind each of them and make some assumptions. And that felt a little bit more game-like. Whereas, this one, because it was constrained to the bounds of the physical space as well, I kind of ... there was a limit to how much I could see and explore. And I think it allowed much more for that reflection, that personal reflection more than the first one. Whereas, the first one did feel more like I was stepping into someone else's world.

D.B.:   That's good. That's interesting because I sort of baulked at the idea of just having someone in a small caravan in VR. I was like, I don't think that's ... you know, it's very constricting. But now that I've done it and tried it, I think that the constriction does force a person into a different mindset, and as you say, with that other one because you can teleport all over the place. And also, I just felt that giving someone a control started to cross that game threshold. And so, I didn't want to have any affordances of any sort, you know? Even, say down to haptic gloves or anything like that, so that I could try to convey the physical aspects, or some of them, through a physical installation.

A.G.:   Yeah, and I really appreciated not having headphones as well because, again, that kind of opened me up to accept it more.

D.B.:   Sure. I considered using headphones, and then I think the fact that not having headphones means that all you have is the thing on your head. And apart from the wire, as you say, and me clicking shutters. If I took all of that away, then it would just be ... I think you could immerse even more fully-

A.G.:   I think so too. Yeah.

D.B.:   ... if you didn't have those constraints. And if I had been able to, and I probably can, if I'd been able to open the space up more with a distance. And it was wireless, so you could move around a lot more freely. And you wouldn't walk into the

caravan where the seats were because you'd know the seats were there most probably.

A.G.:   Yeah.

D.B.:   So, I think it could work quite well.

A.G.:   I think so too. I did find myself grabbing the cord quite a lot to understand where it was and where I-

D.B.:   Yeah, I tried to do what they do in most galleries, which is take it up off the floor because when it's on the floor it's even more irritating to people. And I've worn it like that and I've found that was actually better. I enjoyed it better, but I still think a wireless version would be an improvement.

A.G.:   Yeah, so whatever ... the less kind of hardware the better. So, the fact that you removed the headphones, that was a big step. The controller, that was a big step. Yeah, the last thing I think was the wire.

D.B.:   So yeah, so that was the purpose of it. And also, I was trying to get that sort of mixed reality, that sort of interplay between physical and virtual. That's what I was aiming at with this.

A.G.:   Yeah, I think it was really successful.

D.B.:   Thank you.

A.G.:   Again, with some unexpected things, like cinnamon. And the warmth as well.

D.B.:   Yeah, I just added that in. And I actually wanted to, although I gather other people have already done stuff like get a fan so it blows when you go outside, you know? Things like that, so it becomes a little bit more of a performance, I suppose. That could be interesting.

A.G.:   I think so. Yeah. That difference in temperature as well between outside and inside with the fan. One thing I didn't notice is the sounds changed depending on where I was.

D.B.:   Well, it's running on a surround sound, so-

A.G.:   But if I stepped inside or outside, that didn't trigger anything?

D.B.:   No. No. Well, what I had was an ambient soundtrack, and then on the computer, I had random sounds. So, they weren't related to proximity because I'd tried the proximity thing in an empty room and it doesn't work very well, the proximity. And things still trigger in a random way, and you're standing where you're supposed to trigger a sound, and then it doesn't trigger, and it's very annoying from a designer point of view. So, I just decided not to have triggers.

A.G.:   Yeah, I think it makes sense to not use it if it's not accurate, but I do kind of like the idea of using the fan for inside outside, but if you could also use other things to distinguish that barrier. So if you could do sound, say, for instance not just triggering different sound effects, but maybe changing the quality of the sounds. Like, making it more muffled inside or something like that. Or ... I don't know. What else could you do?

D.B.:   You could do that, but somehow you'd have to be able to flick the volume up and down. I mean, you could do it. Yeah. But it would be in a different sort of way.

A.G.:   Yeah, I don't know technically how it could work. Yeah.

D.B.:   Cool. Well, I'm going to turn this off now.

A.G.:   Sure.

09.012   INTERVIEW TRANSCRIPT WITH PARTICIPANT C.H. FROM OCTOBER 2018 2ND ITERATION OF CARAVAN

D.B.:   Okay, so -

C.H.:   So that was about 20 minutes.

D.B.:   Yeah it was. Okay, so this is C.H., and it's the 24th of October and C.H. spent 20 minutes in the simulation, which is double than the installation, which is twice as long as normal, but that's good. Okay, so I'm going to ask you some questions.

C.H.:   Okay.

D.B.:   So the first question is, can you describe your experience of navigating the virtual space and also the physical gallery space, can you describe those experiences?

C.H.:   It really helped for me to have some solid items so the seating, that was really awesome to be able to see and feel that, so that gave me the security that I kind of knew where I was. And so I did so navigated myself around those.

D.B.:   How about the virtual space, navigating it?

C.H.:   The virtual - navigating it?

D.B.:   Yeah.

C.H.:   So, you mean like looking at it?

D.B.:   Or just moving around or -

C.H.:   Oh, moving around. So, I spent some time inside the caravan.

D.B.:   Yeah.

C.H.: Sitting and watching and then after a while, I realised that it was changing, so it was like, it was really exciting. I was like, oh, okay. These things are going to be changing. Because it could have just stayed the same.

D.B.: So you liked, sort of, the light the changing light.

C.H.: Yeah, yeah. The change in the day. And it was kind of like, I guess, it was a state of discovery, so it was nice to just wait and then it was like, the little surprises like Oh, is that changing? and then Oh, the bird's flying. I mean, things that I couldn't quite see which was what was around the outside of the caravan.

D.B.: Right.

C.H.: But I was trying to look around the back of things and out the windows like you would if you were in a caravan I suppose. And then, I thought I saw the ruru, the morepork, sitting, or the owl, I suppose that that's a different country. But I couldn't quite tell what it was, and then it flew right through the caravan, and so I had to duck. And then I was like, was that supposed to happen? So that was really cool, and then, yeah, so I did use my hands to see what was solid and what wasn't.

D.B.: Okay.

C.H.: And I found that really interesting because it made me think about whether or not I needed to feel that, so I'm having this experience of the environment and then I'm like, oh, how do my hands look, well how do I feel? And when I saw that, I was like, whoa, there's no body here. So that was kind of an interesting experience, I wouldn't say it was negative or positive, because it made me think whether or not you need a body in a virtual environment. But I felt like I was in a real place.

D.B.: Yeah.

C.H.: And it was good to know that you wouldn't hit your head. And then, just the realisation of sitting in different seats and seeing all different views, and then

realising that the sun was changing. And then going, oh my God, I can go outside the door. That was pretty exciting, because it hadn't - it didn't cross my mind before then. So, and then going out the door was like, really like going outside, like it gave me the same amazing sensation like when you're cooped up inside a caravan.

D.B.:   Wow.

C.H.:   You go outside, and I think there's so much potential in that, like, for people who can't go outside, to get that feeling. I mean, I was like, oh, wow, I'm outside. So I got that same expansive feeling. And that's why I ended up kind of on the ground right out there. Because it wasn't just an ordinary go outside, it was a hyper-sensitized going outside.

D.B.:   Could you explain that a bit more.

C.H.:   A sense of wonder.

D.B.:   Right.

C.H.:   Like it was new, like maybe if you're like a child, and you go, wow, and then maybe want to really explore. So I felt like I was really exploring.

D.B.:   That's cool.

C.H.:   Yeah. Yeah. So that was real fun. And yeah, exploring was really fun, and feeling able to, probably because I know you, I don't know but, I felt quite comfortable just lying on the ground.

D.B.:   Yeah.

C.H.:   And kind of, like I was tripping out, like whoa. I'm like, hanging out on the ground going "lalala" so, outside social confines, it's a safe space to be kind of like, so being by myself. But then I also thought, how cool would it be to do it with other people?

D.B.:   Yeah.

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C.H.:　So there'd be other people in the caravan [crosstalk 00:05:05]. Well, that's a different thing. But there was something about when I was outside as well, like wanting to see the sunlight on my hands.

D.B.:　Right.

C.H.:　Yeah.

D.B.:　But of course, you couldn't, because you didn't have a body.

C.H.:　There was no body.

D.B.:　Yeah.

C.H.:　But I think that adds to it because it gives and gains and everything.

D.B.:　Yeah.

C.H.:　It's becoming so that it becomes more like real life that you've got your hands, a body, and everything. So I think there's something in there, and then when I went back inside - oh, I noticed a toaster popping up and down so it's like, yeah, time passing when we're tea or toasting. But that didn't feel like that was for me, the toast.

D.B.:　No.

C.H.:　So maybe it was observing someone else's place, and so there's an absence of a person who is somebody in the caravan because they've got toast and tea, but I'm unable to -

D.B.:　Partake.

C.H.:　Partake in that bodily experience. Yeah.

D.B.:　You mentioned the fact that you went through the whole cycle again, the light, then day, night, because you wanted to see what it was like when you were out, so -

C.H.:   Yeah.

D.B.:   As well as inside.

C.H.:   Yeah, so I spent the first half of the cycle inside, and then realised I could go outside. And then it became dark again. And then it was like, when it started again, I was like, right, I can get the morning outside, so then I really got to see the sun rising and the light and the shadows of the caravan coming across my head was amazing, and you saw the tree shadow, and then I went back inside and I looked out the other side, and I could see the sun going down.

D.B.:   Yeah.

C.H.:   And that was stuff I missed in that first bit when I was just sitting in the caravan.

D.B.:   So you stayed also longer to take in more details, would that be right? You wanted to -

C.H.:   Yeah. So I think what I was doing was exploring, but I definitely felt like I was making the space, so it was a new place when I first started. And it became more familiar and then it was like finding out more about the place that you love or that you're staying at. It was like that experience.

D.B.:   Oh, cool. Also -

C.H.:   Which is funny, it's a bit off track, because I had a weird dream last night.

D.B.:   Oh, really?

C.H.:   About, we suddenly, me and my husband, I don't think it's bad, we're in New York, and it was like, great, I've never been to New York. Let's go and explore and there were all these things that stopped me being able to move out of that one street. And I felt really let down, because you know, you go to a new place.

D.B.:   Yeah.

C.H.:   It's all about finding out what's around the corner and what's dadada. So that kind of felt like that relates a wee bit to this.

D.B.:   So, in a way, you could go so far in this one but not far -

C.H.:   I didn't feel restricted like I did in the dream.

D.B.:   Oh.

C.H.:   But I guess, there came an endpoint because if I'd stayed maybe another cycle, it would have been like, oh yeah, toast is popping, boom. That's when the bird flies. So then it would become, it wouldn't have that newness. [crosstalk 00:08:17] Yeah.

D.B.:   Okay. So, the next question, then, is, I think you may have answered some of these, but -

C.H.:   Ask me anyway, yeah.

D.B.:   Your physical sensations, how did you feel, in terms of physical sensations?

C.H.:   Yeah, well there was that sense of comfort, actually, in the beginning, because it was a comfortable caravan space with the seating.

D.B.:   Yeah.

C.H.:   Which is a really, everybody knows what to do in that space, so they always go on and sit down in the caravan.

D.B.:   Yeah.

C.H.:   So that was a great place to start, and I really enjoyed that, and even putting my feet up going [inaudible 00:09:03] sitting in the caravan.

D.B.:   Yeah yeah.

C.H.:   I forgot what your question was -

D.B.:   The physical sensations.

C.H.:   Yeah. And, slightly off-topic that I wish I could go back to, there's something about it being a really simple space. At the very end of it, I went, oh, it's just nice to be in a place that's not cluttered with everyday stuff, so it was a really tidy space. It was actually quite a luxurious feeling like when you go and stay in a hotel or something.

D.B.:   Yeah.

C.H.:   It's like the cleanliness and the emptiness that kind of makes you feel fresh or something, something that had going for it. Sensations, yeah, comfortable space. It wasn't a space I couldn't - because I couldn't run around.

D.B.:   No.

C.H.:   I didn't get those body sensations of like, what I would probably normally do if I was outside would be doing a really big, strong, brisk walk.

D.B.:   Okay.

C.H.:   But differently, that stepping outside for this question, was pretty cool, it's like, oh my God, oh, there's the sky. It kind of made me laugh. So you felt the sensations, the laugh, the surprises.

D.B.:   Okay.

C.H.:   Were laughing, happy moments, like haha, and oh, the toast, haha. And yeah.

D.B.:   Okay. So also, what sort of things were going through your mind while you were navigating? You may have already said but -

C.H.:   Yeah. So, in relation to it being, or knowing that the caravan has a special place in your memory.

D.B.:   Yeah.

C.H.:   So it felt like special. Like a memory. But probably because you told me that.

D.B.:   Yeah.

C.H.:   Beforehand.

D.B.:   It was in the

C.H.:   So it's already

C.H.:   But differently, the print.

D.B.:   I mentioned it, yeah.

C.H.:   Okay, differently, the print on the seats gave that sensation anyway.

D.B.:   Right.

C.H.:   Then it was -

D.B.:   A particular thing.

C.H.:   Yeah. A particular space, and like what kind of landscape was it. The sheep and the cow, and I thought a truck went past, but I think that might have been the outside here.

D.B.:   No, no, it was in the sim.

C.H.:   Oh, it was in the thing. Yeah, so they were kind of quite mysterious, kind of participants in it.

D.B.:   Yeah.

C.H.:   And the birds, definitely the birds going past was pretty amazing. So, maybe it's just like the feeling that it's a natural environment, that it's not my environment, or not a, it belonged to the birds and the soundscape, and whoever lived in the caravan, with the cup of the tea and the toast and it's left me thinking about how you

have a cup of tea, how you have your cups of tea. Oh, I can't remember now, what is that? Really strong, or something? I don't know. And that was about bodily sensations -

D.B.:   No. It was cerebral.

C.H.:   Oh, well, my thoughts. I didn't - it's interesting because I didn't have any thoughts about like, how it connected to the real world, like I didn't sort of go, oh, this is the end - this is supposed to pop you like the end of the world, which is I might not normally think that. It really felt quite disconnected, like it was an imaginary place.

D.B.:   Yeah.

C.H.:   Or on a different planet. It didn't have the worries of, yeah, climate change or -

D.B.:   Yeah.

C.H.:   Yeah. Which is really interesting because I always think about that. Did I think sci-fi novels? I did a little bit, I have to admit I did think about "Ready Player One."

D.B.:   [crosstalk 00:13:01]

C.H.:   Because it was VR.

D.B.:   That's a good reference.

C.H.:   But it made me think how the medium doesn't determine the output, so that it's such an open medium that you can, it can be an artistic experience, which that felt like more to me, but more therapeutic. Oh no, actually, I'm going to fall back on that, because I was quite tired by the end, because of the, may it was the exploring and looking and then the, the visual sort of sensory. Like I held my mask up just to get it in the right spot.

D.B.:   Yeah.

C.H.:   Because I can see that it's quite difficult to get the focus, and I've always been a bit funny with binoculars. And I thought, okay, it's not a total relaxing sensation.

D.B.:   Okay.

C.H.:   Yeah. It's kind of, it's resonating or something. And then, when I was chopping through the - when I thought I'd see if I could touch things where my arms weren't, and could see my body wasn't there and it made me feel sick.

D.B.:   It probably would be, yeah.

C.H.:   Because I normally get carsick, so there must be something about your, the ears or something.

D.B.:   Yeah, the balance, the ear balance.

C.H.:   Yeah.

D.B.:   You usually wouldn't get it if you're moving yourself, but if the VR environment moves and your body stands still, then that's when your body -

C.H.:   Yeah.

D.B.:   Can't relate to the two things.

C.H.:   Yeah.

D.B.:   And that's when you get nausea.

C.H.:   Yeah, that was interesting how that happened, because I thought that it would be a really cool experience like, yay, I don't have a body. This is awesome, this could be really freeing and be a whole different experience, but then I just feel sick.

D.B.:   Right. It's interesting.

C.H.: So maybe some people could have that experience, but others can't. Or there could be some way that you stop the nausea, like whether it's just a basic -

D.B.: So, was that just when you did those movements, or was it -

C.H.: Yeah. I felt nauseous in another VR thing, but in this one, I felt quite stable. Everything with the seats.

D.B.: That's when you started waving your arms.

C.H.: It was, and I touched things earlier, which was fine because it was like, okay, I can't touch that. But when I started going, because remember I think earlier on, I was grabbing the jug and the car, but it was only when I was silly and I tried to do it fast.

D.B.: Yeah.

C.H.: Yeah.

D.B.: You tried to grab the jug even though you knew that wasn't physically there.

C.H.: Yeah. Why?

D.B.: No, I'm not saying why. I'm just saying it's an interesting point.

C.H.: I guess the space asked for action, so I was thinking about what the actions would be in this space, and like, the door as well. Trying to squeeze through the door, even though I knew that I could walk through the door.

D.B.: You still wanted to learn -

C.H.: Honour the space.

D.B.: Move in the space as if it was there.

C.H.: Yeah. It made it seem more real.

D.B.: Yeah. Okay.

C.H.:　And then lying on the ground and looking at the grass as well.

D.B.:　So, the next question. Did you recall any memories of your own whilst you're in our work?

C.H.:　Yes.

D.B.:　Okay. Could you tell me about those? Were they like, specific?

C.H.:　Yeah, it reminded me of a place where, in central Otago. Central, central, central Otago, with lots of [classic] grassland, and I spent a lot of time there doing doc research. So it was one of those places that seems like it's separate from the rest of the world, and it's really vast, and we spent a lot of time seeing birds fly overhead, so most of the trees as well, like pine trees.

D.B.:　Okay.

C.H.:　Yeah.

D.B.:　And was that just a general time, or was that like a specific time and place, like -

C.H.:　Yeah, it was specific. It was like the early 2000s.

D.B.:　Yeah.

C.H.:　Yeah, so it was a specific time.

D.B.:　Okay. And how did your emotional state, or whatever you felt when you were in Otago, and how did that relate to this one?

C.H.:　I guess it reminded me of it because it was a similar feeling.

D.B.:　Right. Okay.

C.H.:　Yeah.

D.B.:   Cool. Okay. So the next question is, how much would you say you felt part of the artwork or the site of the artwork, and how much did you feel detached?

C.H.:   I feel like I was totally part, yeah I think I was totally part of the artwork.

D.B.:   Yeah.

C.H.:   Yeah. At that time.

D.B.:   You exhibited that, so -

C.H.:   And I could hear you taking photos.

D.B.:   Yeah.

C.H.:   So it was like, okay, which was interesting as well because I was in it, but I knew you were there. So you were the safety person.

D.B.:   Yes.

C.H.:   Making sure I was okay, and then taking the photos, maybe every now and then I would flash out, and it would be like, okay, I'm now lying on the ground, that'll be a funny photo, so it was kind of, I guess it was just acknowledging both worlds existing at the same time.

D.B.:   [crosstalk 00:18:34] Would it, have a different photo camera shutter, didn't make that noise, would that have - was it a distraction?

C.H.:   No, it actually didn't - it might have been, actually, because I didn't feel like you were watching me, because you were just there to be safe. I didn't feel like I was being observed until I heard the photograph.

D.B.:   Oh, okay.

C.H.:   So, actually, I felt quite immersed in there. It was almost like, you could have wandered off and I would have gone, "D.B.!" if I'd needed help because you were in the next room. So I didn't feel too imposed by your presence.

D.B.: So that sort of reminded you that I was still there?

C.H.: Yeah.

D.B.: Yeah, okay.

C.H.: Yeah.

D.B.: Maybe I should turn off the shutter noise if I can work out, figure it out.

C.H.: Yeah, I'm not sure you can on those cameras.

D.B.: Yeah.

C.H.: Well you must be able to if it was a digital camera.

D.B.: Yeah. Okay, so, the next question is, what, if anything, might have improved your experience of the artwork?

C.H.: Definitely, it was quite pixelated. So, I think although it was definitely light and that, that would have helped I think.

D.B.: So, the resolution.

C.H.: Yeah.

D.B.: Which was -

C.H.: I thought it was pretty good, but I still felt it was a little bit -

D.B.: Unfortunately, it is a function of the technology.

C.H.: Yeah.

D.B.: [crosstalk 00:19:50]

C.H.: But I also felt like perhaps if you had a, if I had my own headset that was more, so that, because I know that they're one size only and I could see with binoculars.

D.B.: You can, sort of tighten -

C.H.: You can tighten them, but there's something about, there was a blurry bit in the middle that sometimes you can get happening, and yeah, so.

D.B.: You're totally right. It is subject to certain issues like that. And it depends on what programme you're using to run it, and so forth, so -

C.H.: Yeah.

D.B.: I think the way that that will advance is as better headsets come out -

C.H.: Yeah.

D.B.: With better resolution.

C.H.: Yeah. But the actual, the visual quality of it I thought was really awesome. Like it was sort of soft, because of the light, and when it became really bright with the grain, that was quite amazing, that wasn't like a usual kind of grain that was -

D.B.: You liked that. You liked the grain that vivid colour.

C.H.: Yeah. But I wouldn't want it through the whole time. I liked how it started -

D.B.: Subdued.

C.H.: Subdued, and then it kind of got bright and then it disappeared again because of that really moody, sort of dark scene - oh, and for the gone black, like nighttime, because you know how I said, "Is it going to go dark?"

D.B.: Yeah. I see, so -

C.H.: There was an expectation or the desire that it would actually go dark, and then it would be like, okay, but then dark, if you were outside and it was dark it would probably be moonlit dark, which I suppose that's what it was, right?

D.B.: Kind of, yeah. We were trying to simulate that.

C.H.:   Yeah. Yeah. And I was wondering about, because the seats were really great, solid. It's like, yeah, how many things do you make solid? Maybe there could be surprises, like where one thing's solid, so when I do reach out to the jug it's like, oh my God, the jug's actually there. That'd be quite hard to do, or just one of the somethings, or the soccer ball.

D.B.:   Yeah.

C.H.:   That could be difficult to do, but it was sort of a desire.

D.B.:   Yeah, I mean there is the, one of the things I wasn't able to do, what I wanted to do, I've been trying to put say, a sensor on something so that like, the ball you can pick it up and move it around.

C.H.:   The ball you could roll around. Oh, you need a sensor, okay.

D.B.:   You have to have something to track that object in space, in the virtual space.

C.H.:   Yeah.

D.B.:   I just couldn't the track to do it, but that doesn't mean for like my final, final show, I want to be able to do that.

C.H.:   Because it would only work if, the way I'm wanting it to work, from my own perspective, is not everything is, you know, it's a surprise.

D.B.:   Yeah.

C.H.:   Yeah, see? Because otherwise everything's just real and then you're like, it's all real. So -

D.B.:   That was really the - there's a point where you think, wonder what you should and shouldn't. For example, on one of the benches, I could have put the wall. I could have put the wall and a cupboard there.

C.H.:   Put the wall and a cupboard, yeah.

D.B.:   But, or I could put the gnomes and these things have been suggested and, eventually, you've constructed a whole, physical caravan.

C.H.:   Well that's the thing, because you could do something with the hand. You could do something where the hand appears only once, that might be tricky. And then there's light on a hand and then it disappears or something.

D.B.:   Okay, and you'd have to actually wear a sensor on your hand or some sort of physical -

C.H.:   Yeah, you'd have to. And then it just triggers.

D.B.:   I'm trying to get away - well, look at how I can not - like, some sort of haptic device, because that's what you normally do.

C.H.:   Yeah.

D.B.:   You wear like, a glove, a haptic glove, or something that tracks.

C.H.:   Yeah.

D.B.:   But, the more accoutrements you've got [crosstalk 00:23:50]

D.B.:   The more you feel like you're in this real space.

C.H.:   Yeah.

D.B.:   So -

C.H.:   So, you've done the right thing in keeping it really simple, with just the seeds.

D.B.:   Yeah, because although there's more I could add, I don't want to add too much more, at the end of the day.

C.H.:   Yeah.

D.B.:   Let me ask you a question. Because one of the things I didn't manage to get to do is - I was thinking of having like a perspex window on the wall, so that when you felt it -

C.H.:   Oh, you felt a frame -

D.B.:   You felt the perspex, the -

C.H.:   I didn't put my hand out to the window.

D.B.:   But if you had done, would that have been an arm stick, or would it have made no difference?

C.H.:   It could have.

D.B.:   Yeah. Okay.

C.H.:   I'm thinking you could do surprises that are analogue surprises. If someone's down there, like you become more active, if you want a whole different idea, someone's down by the grass, you put your little square of grass and they go touch-touch-touch and then you take it away.

D.B.:   Oh, yeah. That's a good idea.

C.H.:   Or you actually just put the ball, and it looks like they're touching the ball, and then you take it away. So that's a performance that you could do.

D.B.:   Yeah, it's interesting.

C.H.:   Because that kind of like if you think of a blindfolded sensory experience, someone's touching you with a feather and so, yeah.

D.B.:   Okay. That's awesome. I think you've answered this question, but the question is having experienced this, do you think in master VR can offer an art experience?

C.H.:   Yeah, definitely. Yeah.

D.B.:   Can you articulate that a bit for me from your viewpoint?

C.H.:   Yeah. I think it's aesthetic in design and memory. It's almost like everything that's opposite to what, well, I don't know. Gaming, I suppose, has that same type thing. But, yeah, I think everything that you've done in there kind of makes it an art experience, like the slowness of it. The textural quality of it, that reminds you of something else. You could create any kind of narrative in there, actually, couldn't you?

D.B.:   Yeah.

C.H.:   Yeah. Because I was, at the beginning, wondering what could happen. I really like the simplicity of the day and the night. But you actually could have - oh, I do think about that. I do think about post-apocalyptic things.

D.B.:   Oh, you bitch.

C.H.:   Oh my God. Yeah, I think so, unless I'm printing now where it's like, you know ... the sirens coming, something happens, and you're like, in this kind of situation. Yeah, there's potential for that.

D.B.:   I think I was trying to get away from [crosstalk 00:26:44] it's a game.

C.H.:   Yeah, because that's a real gaming thing, isn't it, where people are frightened and running and survive, oh yeah.

D.B.:   And also, it's not about creating a sense of fear -

C.H.:   Yeah.

D.B.:   In a person, or anything of that -

C.H.:   Well, you could totally have someone sitting there talking, though. Like, you could be in there talking, you're not only your recorder and you speak something, that could be lovely.

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D.B.:   Yeah, true. That could add some -

C.H.:   And telling me a story or even just talking to yourself like a mad person. Coming up with lots of things now. Yeah, so you could have a person in there. Be quite hard to do people, while you're sitting in there though.

D.B.:   It wouldn't be -

C.H.:   You had the animals.

D.B.:   Yeah.

C.H.:   But I really like the narrative of everyday life, so that the bird's just flying by, the sheep could come into the cabin and eat the toast or something. You could make it more or, keep it minimal. These are just ideas, vague ideas. I don't know if they need to be for your last one.

D.B.:   Some of them might be interesting -

C.H.:   Yeah.

D.B.:   But some of them are more difficult.

C.H.:   Yeah.

D.B.:   But it's good, thank you.

C.H.:   Oh, cool.

D.B.:   They're fantastic suggestions. So what kind of language would you use to describe your experience, what like, what sort of emotions did you experience, for example? What other language would you use?

C.H.:   Yeah. Like transported. Transported to a different place. It was actually quite exciting, put that one on. I don't feel very excited very much [inaudible 00:28:21].

D.B.:   You did seem quite, I must admit, you did seem quite excited by it. I was surprised, actually.

C.H.: Yeah, like the little thing, I guess that's maybe your humour. My humour, it's just like, yes, the toast has popped. Yes. You know, like, little things, at the right time. Maybe then choreograph it. You could put that in if you want because I'm a choreographer. You could say, I saw the little choreographic things, the whole durational time passing. The things moving, and it was how the choreography was, the noticing of what happened when, so what you stand in place, bird. The rhythm of the toast. Yeah, so it's kind of like each participant has their own rhythm and it's through the nature thing.

D.B.: So, would you say exciting was the overriding emotion there?

C.H.: Yeah, and there's probably a better word for that, like inspired. Chuckling. Chuckling. Feeling. Warm. A warm feeling, because you'd created that space.

D.B.: Right.

C.H.: So that was a nice feeling of being in and out of space as well, like you've created it so, yeah, it's sort of a new offering, and you take it and you go, oh, thank you, that was a really nice experience. Yeah.

D.B.: That's cool. That's actually really good.

C.H.: Yeah. So that's kind of a nice thing to think about too, when you're writing, isn't it? Like what the artist offers. Sort of like, an offering that opens space, not telling you really what to do.

D.B.: Yeah, I mean that -

C.H.: I like that. Some people might -

D.B.: I think that's part of it is, that I want to see what people do rather than giving them any expectation, or telling them what to do.

C.H.: Yeah. So the freedom.

D.B.: Yeah.

C.H.: There's that freedom that I actually created that specific artwork today. My experience is, yeah, is the artwork.

D.B.: Yeah.

C.H.: Which is cool.

D.B.: Your participation in it is part of it, I think. In other words -

C.H.: You can video it, can you, inside? I was just thinking that -

D.B.: I can record what people, I can record the headset, what people are looking at.

C.H.: Oh, yeah. Oh, that's quite interesting, isn't it? You can get totally different, wow. Like video footage of each person's experience with that.

D.B.: I'd like to do that. I haven't done it but, it depends what they're looking at.

C.H.: Yeah.

D.B.: You could go the whole thing of recording what they're looking at, and then also recording them and the hands [crosstalk 00:31:04]. I have done that. And if you can get them in -

C.H.: It's a little bit behind the scene.

D.B.: Synchronisation you can -

C.H.: Oh, yeah.

D.B.: See them and the VR space.

C.H.: They do a lot of that on YouTube, don't they, when they're showing you programmes.

D.B.: Yeah. A lot of times they green screen it.

C.H.: Oh, yeah.

D.B.: And then they superimpose it, but in this kind of environment, you can't green screen it really.

C.H.: And are you using those outside, sort of photographs of the participants just as like, this is what they look like, or are you thinking about that aesthetic as well?

D.B.: I do think about the aesthetic, and I try to take aesthetic photos, but it was so additive -

C.H.: Yeah.

D.B.: When I see participants do certain things like, leaning -

C.H.: Yeah, looking through the windows.

D.B.: It shows that they're engaged - it shows in the engagement with the piece.

C.H.: And you can kind of read the experience from the outside in that way, too.

D.B.: Yeah.

C.H.: You can imagine what they're seeing. Yeah. Cool.

D.B.: Okay, so the last question then. Is there anything else you'd like to say about this installation or your experience?

C.H.: I thought it was really awesome, D.B. I did. I thought it was really cool.

D.B.: That makes me really happy.

C.H.: Yeah, and I think you've done a really great job and, yeah. Yeah. Just the simplicity of it was really cool. Is it a real place?

D.B.: Yes. Kind of.

C.H.: Yeah.

D.B.: I spent two years; well, quite more than two years in a caravan about that size -

C.H.: Yeah.

D.B.: And that caravan specifically, although because it's a memory, it's memory constructed -

C.H.: Yeah.

D.B.: Rather than trying to make exactly the way I did it.

C.H.: Yeah.

D.B.: And two of those years I spent in Yorkshire -

C.H.: Yeah.

D.B.: I had two cats. You possibly didn't see the cat.

C.H.: I didn't see the cat.

D.B.: There was a cat that wanders around, but nevermind. It's a bit random, the programme, so if it doesn't appear it's wandered off somewhere.

C.H.: Be cool if the cat sat on your lap.

D.B.: Anyway, yeah. And the visuals are, part of that is the campsite that I stayed on most of the time, looks a bit like that.

C.H.: Oh.

D.B.: I deliberately, sort of, there was a lot of open space that was in the wilds but the [crosstalk 00:33:45] was high and flat. But I deliberately flattened it even more.

C.H.: Oh, yeah.

D.B.: And the owl, that particular owl, that particular tree was there and there was an owl that used to come hoot in the tree when I was trying to sleep.

C.H.: Oh yeah.

D.B.: Which was quite annoying.

C.H.:   Yeah.

D.B.:   The reason I made the owl fly through the caravan was that I wanted to break the reality and, because it is a memory and so -

C.H.:   Yeah. To remind you that the walls aren't solid.

D.B.:   There's an unreality of that. So yeah. What I've done is tried to do a collage of things -

C.H.:   Yeah.

D.B.:   But my caravan was very cluttered and I deliberately not cluttered it -

C.H.:   Yeah.

D.B.:   And I was actually quite interested that you said you liked that.

C.H.:   Yeah.

D.B.:   Because it allows you to impose something on it.

C.H.:   Yeah.

D.B.:   If I had put all my stuff in there -

C.H.:   Yeah.

D.B.:   Then you might not, and I did the tea and so forth because I was always making tea and it's a very English thing.

C.H.:   Yeah.

D.B.:   And the ball is, I used to play soccer with -

C.H.:   Yeah.

D.B.:   Me and my son used to kick the ball around -

C.H.:   Yeah.

D.B.:   In the field.

C.H.:   Yeah.

D.B.:   And I sort of thought about, I could have filled the shelf with DVD's and there's things I could have done -

C.H.:   Yeah.

D.B.:   And I haven't done them. I don't know whether that's good or bad.

C.H.:   Yeah.

D.B.:   It's a choice.

C.H.:   Yeah. I think it's a good thing, actually. Well you know, my work, it was full of lots of things -

D.B.:   Yeah.

C.H.:   Pull some stuff out of it, but yeah. Because there's something really cool about the soccer ball being there and you can imagine so many different scenarios of who's played with the ball.

D.B.:   Right.

C.H.:   Yeah.

D.B.:   That's cool.

C.H.:   But the bird, I tried to look for the bird the second time around.

D.B.:   It only -

C.H.:   To see if it was -

D.B.:   It comes through one time only, and if I let her someplace, she'll go. What I've done is, it just flies in virtual space -

C.H.:   Yeah.

D.B.: Forever.

C.H.: Once.

D.B.: I have thought about since, making it turn around and fly back, maybe past the caravan and not through it.

C.H.: I think I thought it might have been anyway, because there's other birds that fly past -

D.B.: Yeah.

C.H.: So there's still that thing where you don't know if -

D.B.: That's the particular thing about owls, so -

C.H.: Yeah.

D.B.: Okay, thank you. I'm going to turn this off. We can carry on talking.

C.H.: Okay.

D.B.: Thank you very much.

C.H.: You're welcome.