

**HOME AND MEMORY IN EXPERIMENTAL ANIMATION: A PRACTICE-LED STUDY WITHIN
EXPANDED CINEMA THEORY**

By

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EXPANDED CINEMA THEORY

I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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TITLE:

Home and memory in experimental animation: A practice-led study within expanded cinema theory

SUMMARY:

This practice-led study investigates the extent to which expanded cinema practices, which focus on materiality, multisensory engagement, and spatial experience, can be used in experimental animation to enhance the exploration of home and memory in the digital era. The key theoretical approaches employed in this study are located within the fields of expanded cinema theory and human geography. The concept of home is informed by the theories of Alison Blunt and Robyn Dowling, as well as Doreen Massey. With regards to memory, specific attention is given to home and trauma and home and nostalgia. In this regard, the study is informed by Gaston Bachelard and Svetlana Boym. The expanded cinema framework draws from early expanded cinema authors such as Gene Youngblood. These early understandings of cinematic space and the experience thereof are extended to include Giuliana Bruno's view that media form technological ecologies and that the cinematic is a relational event in which experience takes place. The intersection of these frameworks lies in their shared focus on spatiality and relationality, and this study explores how these aspects can be used in experimental animation to explore the concepts of home and memory in an increasingly mediated world.

The practical aspect of this study is informed by the theoretical research as well as the critical analysis of existing artworks. Particular attention is given to the works of Sabrina Ratté, as well as Lei Lei and Thomas Sauvin, to examine how expanded cinema practices are used to explore the concepts of home and memory in the digital era. The practice follows an iterative and exploratory approach with experimentation spanning both analogue and digital cinematic forms.

LIST OF KEY TERMS:

Home and memory; experimental animation; expand cinema; human geography, home and trauma; home and nostalgia; analogue nostalgia; multisensory experience; immersivity; interactivity

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LIST OF ABBREVIATIONS

AR: Augmented reality

VR: Virtual Reality

Chapter 1: INTRODUCTION

This practice-led study investigates the extent to which expanded cinema practices, when used in experimental animation, can contribute to exploring the concepts of home and memory. The research is rooted in a broad interest in the way individuals construct and negotiate meaning within their lived environments and how these shape the ways they engage with and experience the environments they inhabit. Both cinema and home are associated with particular kinds of spaces and experiences, and the study investigates how these spaces, as sites of personal and collective meaning, can reveal the layered and dynamic processes involved in the experience of home and memory.

By framing my experimental animation processes within the field of expanded cinema, I can explore not only the space in the frame but also the space surrounding the frame. The expanded cinema framework vastly opens the potential of experimenting with the animated image, particularly through its emphasis on materiality and the relationship between the artwork, the audience, and the technology. Furthermore, the expanded cinema framework situates the use of contemporary digital technologies in experimental animation within the wider historical perspective of expanded cinema and roots the study in a specific form of experimental filmmaking. This approach allows for a deeper investigation into the dynamic interplay between home and memory and the potential for experimental animation to evoke these concepts, which is further explored in the practical component of this research.

The study critically examines selected experimental animations and integrates insights from my own body of work, *Fragments of Familiarity* (2022–2024). Although the study refers to several animations, particular attention is given to Lei Lei and Thomas Sauvin's *Recycled* (2013) and selected works from Sabrina Ratté's exhibition *Aurea* (2022). These works illustrate how materiality, multisensory experience, and spatial practices inherent in expanded cinema can be used in experimental animation to investigate the interplay between home and memory in the digital era.

1.1 BACKGROUND TO THE STUDY

‘Home’ is a complex and multi-layered space. It is often associated with comfort, security, familiarity, and belonging. As a space and a place, it is inextricably linked to memory and is often associated with ideas such as the childhood home or the homeland. However, as Angelika Bammer (1992: xi) explains, as much as home is the utopian place of comfort and security we yearn for, it is also a place of secrets and fears. Home is an ambiguous and complex concept associated with seemingly opposing elements, such as belonging and longing, remembering and forgetting, and comfort and alienation. It can be both familiar and unfamiliar, homely and unhomely, at the same time.

Furthermore, as digital technologies have become integrated into our daily routines, home-like spaces are being created in the virtual as well as the physical world. Social media platforms and video conferencing technologies allow one to create an emotional attachment and a sense of belonging in the virtual world. As a result, the traditional notions of home and belonging can be extended to allow individuals to maintain a connection to a community even while physically distant.

Expanded cinema provides a unique approach to exploring the complex nature of home and memory. Expanded cinema emphasises dynamic and relational cinematic experiences by breaking away from traditional single-screen practices to transform the cinematic experience into immersive and participatory events where the relationship between the viewer, the technology, and the exhibition space is foregrounded. These characteristics make it an ideal approach for examining how home and memory are shaped by both material and digital spaces. The aspects of expanded cinema that this study focuses on are materiality, interactivity, and multisensory experience. The choice of these aspects was determined partly by the theoretical investigation, partly by my own practice, and partly by the technologies I had access to. Although other aspects were considered, they were eliminated due to cost and the availability of devices needed for screening.

The creative practice underpinning this research draws from my lived experiences, with the materials, objects, and narratives employed emerging from my own life. However, this study does not seek to define my personal sense of home or belonging, and the artefacts and

memories drawn from my life reflect a broader, collective experience. They illustrate how everyday objects, personal histories, and sensory encounters shape the way home is remembered and constructed.

1.2 AIMS AND OBJECTIVES

The primary aim of this study is to investigate the extent to which expanded cinema practices can be used in experimental animation to extend the exploration of home and memory in the context of the digital era. To achieve this aim, the study has the following objectives:

- The theoretical research seeks to critically examine the concepts of home and memory within a framework of human geography to explore the complex and interconnected relations that construct home-like spaces. Home and memory are inextricably linked (Ratnam 2018:5), and to understand this relationship, the study draws from geographical studies that investigate the relationship between place and memory. Particular attention is given to home and trauma and home and nostalgia as they relate to place.
- A further objective is to delineate the aspects of expanded cinema and experimental animation relevant to this study. There has been a convergence between expanded cinema and experimental animation in the twenty-first century, and the term 'expanded animation' is often used to refer to it. Expanded animation, much like expanded cinema, is a broad and multifaceted field. In particular, this study seeks to understand how expanded cinema's emphasis on materiality, multisensory engagement, and interactivity can be used in experimental animation to explore the dynamic and constructed nature of home and memory.
- The practical aspect of this study is informed by the theoretical study as well as the critical analyses of existing artworks. Sabrina Ratté, as well as Lei Lei and Thomas Sauvin's animations, are investigated to establish the strategies used to explore these concepts. Furthermore, the study seeks to examine how these strategies align

with expanded cinema's emphasis on materiality, interactivity, and multisensory engagement.

- The practical objective of the study is to firstly examine how the materiality of cinema, spanning both analogue and digital media, can trigger and evoke individual and collective memories and how it can be used to explore place memories. This exploration also considers the materiality inherent in various cinematic forms, including analogue experimentation, augmented reality, virtual reality, and projection mapping. Secondly, the study also explores how the interactive and immersive dimensions of expanded cinema can be employed to explore concepts of home and memory in the digital era, highlighting the sensory potential of both physical and digital materiality.
- The final objective is to conclude the study by synthesising the findings on how expanded cinema practices in experimental animation contribute to the understanding of home and memory in the digital era and to recommend potential directions for future research and artistic practices that further explore these concepts.

1.3 PROBLEM STATEMENT

Animation's ability to depict subjective experiences makes it a particularly salient medium for exploring memory (Walden, 2019; Wells, 1998). Traditionally, experimental animation is characterised as single-screen practices where the visual strategies often emphasise the abstract and non-narrative. While powerful for exploring subjective experiences, traditional techniques often struggle to represent the layered, interactive, and multifaceted experience of home and memory, particularly in the context of the rapidly evolving spatial landscape of digital environments.

1.4 RESEARCH QUESTION

The primary research question in this study is as follows:

To what extent can expanded cinema practices be used in experimental animation to contribute to exploring the concepts of home and memory?

The secondary questions are as follows:

How can expanded cinema's exploration of materiality be used in experimental animation to evoke place memories and elicit sensory and emotional responses?

With regards to expanded cinema's emphasis on multisensory experience, to what extent can digital manipulation and sound design be used in experimental animation to explore the ambiguous nature of home and memory?

In what ways can audience participation and interactivity in expanded cinema be utilised to explore home as a constructed and ambiguous space?

1.5 SCOPE AND LIMITATIONS

With the digital now firmly embedded in everyday life, the separation between the real and the virtual has become increasingly fluid. This interplay between the real and the virtual allows for new spaces of interaction to emerge, and new forms of belonging are created in virtual spaces. These emerging spaces challenge conventional understandings and representations of home and memory, opening new ways to examine and explore these concepts. This study addresses this gap by investigating the extent to which specific practices within expanded cinema, with their emphasis on materiality and on creating immersive and interactive experiences through manipulating cinematic space, can contribute to exploring the complex interplay between home and memory in experimental animation.

However, this study has certain limitations that define its scope. Expanded cinema is a vast field, and this research only focuses on a few forms. Other forms of expanded cinema, such

as live performance and interactive documentary, are not explored, leaving room for future research into how these forms might contribute to similar investigations. Additionally, although this study considers home and memory as conceptual and spatial constructs, it does not engage with broader socio-political aspects, such as migration and displacement.

Practical limitations included access to technology, the cost of devices and software, and the availability of spaces that are dark enough to present cinematic works. However, recent developments in mobile technology provided ways around the cost of software. I found that using these technologies and embracing their limitations opened new avenues for creative exploration.

1.6 THEORETICAL FRAMEWORK AND LITERATURE OVERVIEW

The key theoretical approaches employed in this study are located within the fields of expanded cinema theory and human geography. This study examines how the dynamic interplay between space and place contributes to the construction of home and memory. This perspective is relevant in the context of expanded cinema as well, which prioritises the exploration of cinematic space and its relationship to the audience. Expanded cinema's emphasis on reconfiguring cinematic space aligns with human geography's understanding of space as dynamic and constructed. Both approaches challenge static notions of space, emphasising its dynamic and constructed nature. The intersection of these frameworks lies in their shared focus on spatiality and relationality.

1.6.1 Home and Memory

To investigate the complex and multifaceted nature of home, the study draws from critical geographers Alison Blunt and Robyn Dowling's *Home* (2006), as well as Doreen Massey's *For Space* (2005). These scholars reject static and traditional notions of space and instead emphasise its dynamic, relational, and constructed nature.

Blunt and Dowling (2006) conceptualise home as both material and imaginative, encompassing physical places and emotional spaces imbued with meaning and memory (Blunt and Dowling 2006:22). They highlight the interrelation between home, identity, and

power, questioning normative constructions like patriarchal gender relations (Blunt and Dowling 2006:24) and frame home as multiscalar, shaped by social relations and emotions that range from the household scale to local and transnational levels (Blunt and Dowling 2006:29).

Massey (2005) is critical of the traditional understanding of space as a static, abstract container that houses the physical world. Instead, she argues that space is dynamic, changing, and consists of multiple identities. Massey (2005:9) argues that space is not fixed but rather a dynamic outcome of the relationships between elements where multiple entities can exist and interact and that it is constantly being shaped and reshaped by these interactions. With regards to the concept of home, Massey (2005:95, 131) argues that place, and therefore home, are open, fluid concepts that resist any singular definitions.

Both Massey (2005) and Blunt and Dowling (2006) highlight the dynamic, socially constructed nature of place, rejecting static views of space. The focus in Blunt and Dowling's (2006) work is on the personal and cultural experience of space and place, and they often focus on the micro-level and personal stories of migrants. In contrast, Massey (2005) emphasises the global scale and interconnectedness of places, where the local and global often coexist. This interconnected understanding of space and place is important to this study since it reveals the dynamic interplay between individual and collective experience in the construction of places such as home.

The concept of home is inextricably linked to memory, and to investigate the ways that places, such as home, are active participants in the act of remembering and forgetting, the study draws from Edward Casey's (2000) ideas that memories are emplaced. Gaston Bachelard's (1994 [1958]) notion of home as part of one's innermost being further underscores this relationship. However, this study also considers critical responses to these romanticised views, particularly feminist geographers such as Gillian Rose (1993), who highlight the power relations underpinning the construction of home. Rose's critique of the gendered dimensions of home introduces a more complex understanding of its potential as both a site of belonging and alienation.

Informed by Svetlana Boym (2001), the relationship between home and nostalgia is approached from nostalgia studies rather than memory studies. Nostalgia is not just a personal feeling but also a cultural phenomenon shaped by modernity, global displacement, and the acceleration of time. Boym (2001:41) distinguishes between restorative and reflective nostalgia to emphasise the ambiguity and imperfections of memory. Restorative nostalgia aims to “rebuild the lost home and patch up memory gaps,” and Boym (2001:41) describes this form of nostalgia as a desire to “resurrect a lost golden age” (Reynolds 2011: xxviii). She explains that restorative nostalgia is one of the common strategies in political nostalgia and is often used in nationalistic ideologies¹ (Boym 2001:41).

Reflective nostalgia focuses on the longing and loss part of nostalgia. This version of nostalgia highlights the imperfect process of remembering. It “lingers on ruins” (Boym 2001:41) and dreams of other places and other times. Boym (2001:38) argues that reflective nostalgia is defined by loss and by spatial and temporal displacement. Here, there is a deep understanding that the past is forever lost and irrecoverable.

The study acknowledges that there is always an overlap between restorative and reflective nostalgia, and Boym’s (2001) approach to nostalgia provides a framework for understanding the dual nature of longing and loss in the experience of home. However, reflective nostalgia, in particular, aligns with this study’s exploration of the imperfect, dynamic processes of remembering and forgetting, especially as it relates to place. It highlights the complexity and ambivalence inherent in the relationship between home and memory.

While not a primary focus of this study, Freud’s (1919) concept of the *Heimlich*² and *Unheimlich* is relevant and merits brief mention. *Heimlich* refers to homely experiences such as comfort and security, whereas *Unheimlich* refers to feelings of estrangement, where the familiar becomes unfamiliar or strange. Anthony Vidler (1992: x) argues that the *Heimlich* is framed within the architectural and in the environment of the domestic. To Vidler (1992:17), the uncanny arises from the opposition between home as a place of nostalgic

¹ South African films that are often discussed in this context are Jason Xenopoulos’ *Promised Land* (2002) and Darrell Roodt’s *Treurgrond* (2015).

² In his essay “The Uncanny” (1919), Freud explores the unhomely through the German word *Heimlich* and its opposite, the *Unheimlich*.

comfort and the fear that something foreign, unfamiliar, or threatening can disrupt the comfort of home and turn it into a place of unease or estrangement. The uncanny is therefore closely linked to the concept of home.

Dwayne Avery (2014:12) also explains that *Heimlich* refers to the ability to create a space of comfort and is associated with the interior of the home where ideologies of privacy and security are foregrounded. He calls this experience the “tamed home,” where privacy and security are prioritised to keep the “wild exterior” at bay (Avery 2014:12). Esther Wolfe (2013: [sp]) notes that Freud’s treatment of the uncanny reveals that there is a slippery exchange between the *Heimlich* and *Unheimlich* and that it is rooted in the anxiety about the construction and instability of the boundary itself, that which separates the inside from the outside.

However, Homi Bhabha (1992: 141), in writing about the uncanny nature of postcolonialism, argues that the uncanny does not necessarily relate to invading forces from the outside, nor does it refer to the destruction of the private sphere from within. To Bhabha (1992: 141), the unhomely exist at the point where home and world, public and private, and self and other meet. Here, the unhomely occurs through the hybrid fusion of the inside and outside (Avery 2014:16). Hybridity does not mean the convergence of two separate entities to form a new one, but rather what Bhabha calls a third space, which is a liminal space or an “in-between reality” (Bhabha 1992:148) that allows for other positions to emerge.

To Blunt and Dowling (2006:26), the homely and unhomely never exist in opposition to each other but are always found in each other. Avery (2014:5) applies this idea to the new conditions of globalisation and argues that in an age of instant connectivity and network societies, the unhomely is a common phenomenon and that it is a result of living in a borderless world. For Avery, the homely and the unhomely in the digital era arise not from “aberrant modes of habitation” (Avery 2014:4) but rather from the dissolution of familiar boundaries associated with home, such as the traditional division between private/public and leisure/work.

These ideas are relevant to this study as they highlight the complexities of home and memory. Furthermore, as the interplay between the real and the virtual has grown more complex, these concepts provide insight into how contemporary artists, such as Sabrina Ratté, engage with the notion of place and memory in increasingly digital contexts.

1.6.2 Expanded cinema

Notoriously hard to define, expanded cinema includes the strikingly spectacular to the absolute materialist films. It is characterised by its conceptual ambiguity, where the boundaries of what constitutes ‘expanded’ are often unclear. Various interpretations and practices have emerged over time, making it difficult to establish any singular, universally accepted definition. To provide historical and background information regarding expanded cinema theory and to create a suitable framework, the study is informed by early expanded cinema theorist Gene Youngblood (1970) as well as the contemporary film theorist Jonathan Walley (2020). To locate expanded cinema in the 21st century, the study draws from *Fluid Screens, Expanded Cinema* (2007), edited by Janine Marchessault and Susan Lord, as well as Giuliana Bruno’s *Atmospheres of Projection: Environmentality in Art and Screen Media* (2022).

Youngblood (1942-2021) was associated with the expanded cinema movement that emerged in the United States during the 1960s, primarily concerned with technological experimentation, visual spectacle, and the rejection of medium specificity. He separated cinema from its medium and defined it as the art of organising “a stream of audiovisual events in time” (Youngblood 1989:27). Youngblood (1970:41) famously equated expanded cinema with expanded consciousness and argued that new technologies could revolutionise communication, pushing the boundaries of human expression. Influenced by the ideas of Marshall McLuhan³, Youngblood suggested that the interconnectedness of media and the transformative power of technology could create new forms of social and political expression. His ideas are often criticised for being overly utopian (Walley 2020:108) but are important for this study as these notions highlight the hybrid and interdisciplinary nature of

³ McLuhan (1964:3) saw media technologies as extensions of our physical and mental faculties, which he argued could shape our perception and experience of the world.

cinema. It also provides background information on the role of technological innovation in expanded cinema.

Jonathan Walley's book *Cinema Expanded* (2020) locates expanded cinema within the broader discourse of avant-garde film history, and, unlike Youngblood (1970), he argues in favour of a cinematic specificity while recognising that cinema is inherently hybrid and interdisciplinary (Walley 2020:15). He writes that cinema can be understood as a negotiation between its "technological and aesthetic heterogeneity on the one hand, and its specificity and historical continuity on the other" (Walley 2020:16). His work deals with the ontology of cinema, and although he advocates for the idea that cinema's identity isn't solely defined by conventional cinematic materials, such as the filmstrip or the projector, his focus remains largely on the physical and material aspects of cinema rather than fully embracing the digital realm as a central element of cinematic identity. When he suggests that even works that reject traditional cinematic forms and materials can still be considered cinematic, he specifically refers to works that use the elements of cinema, such as light and flicker, but not projectors, screens, or the medium of film itself (Walley 2020:17).

Walley's analysis remains deeply tied to the historical and conceptual framework of expanded cinema as a form of intermedia⁴, a space where art forms converge but where material and medium specificity remain central. His emphasis on cinematic specificity moves away from the heterogeneity of Youngblood's (1970) expanded cinema, and instead, he defines "expanded cinema as a concept, reclaiming it for a more narrowly and thus clearly defined group of works" (Walley 2020:17). Walley's argument for a cinematic specificity allows for the recognition that while expanded cinema can be a broad concept, it still has its limitations, and his approach offers a way to define those limitations within the context of this study.

Fluid Screens, Expanded Cinema (2007), edited by Janine Marchessault and Susan Lord, provides a critical framework for understanding the evolution of expanded cinema in the digital era. It highlights the fluidity of cinema as it moves beyond traditional formats to

⁴ Early forms of expanded cinema were equated with intermedia, a term credited to Dick Higgins (1938-1998), which refers to the combination of different art forms or media and operated across film, music, poetry, sculpture, and performance art.

incorporate new technologies and modes of interaction. The contributors to this book trace the conceptual and material transformations of cinema, emphasising its continued relevance in the contemporary era. Rooted in Youngblood's (1970) version of expanded cinema, the editors take an ecological approach to media where digital media is not just a technology but also an experience in space and time (Marchessault & Lord, 2007:14).

This ecological approach to media complements Giuliana Bruno's concept of 'environmentality,' which she unpacks in her book *Atmospheres of Projection: Environmentality in Art and Screen Media* (2022). Bruno (2022:19) challenges the idea that cinematic projection is just a technological or optical process and argues for projection as an environmental and atmospheric phenomenon, emphasising its materiality as well as its dynamic and relational nature. To Bruno, there is an intrinsic relationship between projection, space, and the environment, and she argues that it could also be understood in terms of psychological projection onto spaces (Bruno 2022:9). In this regard, she highlights how spatial experience is continuously shaped by the interplay between the physical, the sensory, and the psychological. In a similar way to critical geographers' move away from human-centred approaches in the understanding of place, cinematic projection can therefore be understood as a relational event where neither the film, the technology, the viewer, or the exhibition space exists independently from each other.

1.7 RESEARCH METHODOLOGY

This study is qualitative. It follows a practice-led methodology with an iterative and exploratory approach. In addition to creative practice, textual analysis plays a key role in examining theoretical frameworks and locating the research within existing scholarship. Through the analysis of existing artworks and the aforementioned literature on expanded cinema and human geography, as well as home and memory, the research engages with existing discourses while allowing the creative process to drive new enquiries and insights. This dual focus on practice and textual analysis ensures that both the practice and theoretical components of the study contribute to the exploration of the extent to which expanded cinema practices can be used in experimental animation to explore the concepts of home and memory in a hypermediated world.

My research has been shaped not only by the theoretical and practical frameworks inherent in practice-led methodologies but also by personal experience, and the research was significantly shaped by my encounters with technology. Here, 'encounter' refers to more than an unexpected meeting and can be understood as an event that reshaped my relationship with technologies and, by extension, the spaces and environments it mediates. An upgrade in computer hardware and software significantly expanded the creative tools at my disposal and opened new possibilities for artistic practice. This shift also impacted my theoretical and conceptual frameworks as I became interested in the way that real and virtual spaces intersect and inform one another. My research has led me to re-examine the sensory and emotional responses as well as the embodied experiences that can be triggered in digital environments and how these aspects can expand my exploration into the concepts of home and memory.

Within the framework of expanded cinema theory, my practice is rooted in non-narrative, intermedial, and multisensory processes. In my body of work, *Fragments of Familiarity* (2022-2024), I am less interested in the pictorial, interpretive, or narrative aspects of home and memory and rather aim to investigate the possibilities of expanded cinema's immersive and interactive aspects and how this can be used in experimental animation to explore the complex and ambiguous nature of the home and memory nexus.

My process involves different forms of experimentation to explore the interrelation between home and memory. As a practice-led study, my process is intuitive, and I do not make use of storyboards or screenplays. Instead, my practical exploration involved digital and analogue processes and techniques where I interact with various spaces that range from the physical and material to the virtual.

1.8 ETHICAL CONSIDERATIONS

I confirm that I have read and understood *Unisa's Policy on Research Ethics* (2016) and agree to adhere to its principles, values, and standards. This study is both literature-based and practice-led, which means that ethical considerations extend beyond conventional research analysis to include the creative process. The practical component also follows

ethical guidelines and is based on personal experiences and materials from my own life. Where external sources have been incorporated, proper attribution has been given in accordance with ethical guidelines, ensuring that all materials used respect intellectual property rights. The theoretical research is based on published articles, artists' statements, websites, and accredited online sources. The research does not involve any identifiable human research data. The negligible risk application was reviewed, and ethical clearance was granted by the University of South Africa's College of Human Science Ethics Committee on 4 March 2022.

1.9 OUTLINE OF CHAPTERS

Chapter Two unpacks the key concepts that inform this study. The chapter commences by locating the concept of home and memory in a geographical framework and concludes with an outline of the aspects of expanded cinema that are relevant to this study.

Chapter three analyses and discusses the use of analogue media in the digital era to explore the extent to which these practices can be utilised in the investigation of home and memory. Place and memory are explored through the concept of analogue nostalgia. Lei Lei and Thomas Sauvin's experimental animation *Recycled* (2013) as well as my own animations in *Remembering Houses* (2022) are analysed to investigate the ways that analogue media can be used to trigger and evoke place memories.

Chapter Four draws from expanded cinema's emphasis on multisensory experience. The chapter explores the use of digital manipulation and sound design as strategies to explore the ways that memory shapes our perception and experience of places such as home. To investigate these aspects, the chapter analyses Sabrina Ratté's experimental animation, *Built-in Views* (2016), alongside my own animations, *Broken Comfort* (2022) and *Save Our Ship* (2023).

Chapter Five investigates the potential of audience participation, interactivity, and immersivity in exploring home as a constructed and ambiguous space. Drawing from expanded cinema's experimentation with the relationship between the viewer, the

technology, the exhibition space, and the film, the chapter focuses on multiscreen installations, augmented reality, and virtual reality. Selected experimental animations of Sabrina Ratté's exhibition *Aurae* (2022) as well as my own animations are analysed.

Chapter Six concludes the study by providing an overview of the research and indicating the study's outcomes as they relate to the research questions.

Chapter 2: KEY THEORETICAL INSIGHTS

INTRODUCTION

This chapter unpacks the key concepts that inform this study. To investigate the dynamic and constructed nature of home and memory and how these are shaped by relational networks, the chapter begins by situating the concept of home in the framework of human geography. It examines the traditional view of home as a haven where home is understood as a fixed and stable space associated with stability, security, and familial intimacy. Thereafter, the chapter explores feminist and critical geographers' perspectives who challenged the idealised notion of home to show that home is a constructed and dynamic space. Digital geographies are also addressed to examine how the interplay between real and virtual spaces continues to inform the complex nature of home and memory. With regards to memory, particular attention is given to home and trauma as well as home and nostalgia. The chapter concludes by delineating the crossover between experimental animation and expanded cinema in the 21st century and outlines the aspects of expanded cinema that are used in this study to investigate the extent to which these practices can be used in experimental animation to expand the exploration of home and memory.

2.1 HOME AND GEOGRAPHY

This study takes a geographical approach to understanding the complex ways that people perceive, understand, and experience their sense of belonging and connection to place. The geographical approach in this study is informed by human geography. While physical geography focuses on the study of geographical information through disciplines such as cartography, human geography emphasises the idea that the world functions in both space and time. Social interactions are not separate from the surrounding environment but rather deeply rooted in and shaped by it. In human geography, special attention is given to the concepts of space and place, which are also relevant to the expanded cinema framework

where the focus is on exploring cinematic space and its relationship to the audience. It is therefore necessary to briefly outline the way that space and place are used in this study.

Historically, space was understood as a geometrical container that houses the physical world and as natural and given (Kitchin 2009:269). Robert Tally (2013:30-34) explains that throughout the eighteenth and nineteenth centuries, space was seen as a backdrop to other phenomena, which implies that although events and processes happen in space, it was not influenced by space itself. Space was viewed as less significant than time and history because time was seen as having a greater impact on shaping events than space did.

The twentieth century saw a renewed interest in space and spatiality, or socio-spatial relationships, and philosophers challenged historical conceptions of time, space, and place. In what became known as the 'spatial turn'⁵ the focus shifted from an understanding of space as absolute and abstract to the relational aspects of space. Philosophers such as Henri Lefebvre (1991:38) argued for an understanding that space is produced and constructed by people through the social practices of a society. In other words, space is not a passive backdrop against which social life unfolds but rather products of interaction that are influenced by social, cultural, and power dynamics. This means that space is never neutral and does not simply emerge or exist as natural and given, but that it is the expression of certain social forces as well as individual experiences.

In this study, place is considered, as Doreen Massey (Massey 1994: 115) defines it, "a local articulation within the wider whole." Space and place are therefore understood as intimately intertwined and cannot explicitly be distinguished from each other. Places are, as Nicole Shröder (2006:45) explains, a certain aspect of space, a smaller unit of space, which serves as the foundation for the experience of space. In other words, when space and experience merge, places are produced.

⁵ Denis Cosgrove (1999:7) explains that the 'spatial turn' aligns with post-structuralism's rejection of single, overarching narratives, emphasising the importance of position and context in shaping knowledge. The spatial turn originated in the 1960s, gained popularity in the 1980s, and became fully established in the 1990s (Prieto, 2017:67). It was supported by the artistic and cultural movement of postmodernism (Tally 2013:2).

The arrangement of space influences how the space will be used, what type of place it will be, and how it will be experienced. Space can be marked out in many ways. Walls and fences are built, and furniture is placed in certain areas. It is marked out by natural elements such as rivers, oceans, and mountains, as well as through ideologies, language, and technologies. The activities performed in the place and the meanings attached to the place could, however, change over time and lead to changes in the space, which will produce a different kind of place.

For instance, traditionally, a kitchen was a space to prepare meals. It was a closed-off room with gender-specific associations, a place for women's work. Today, as social practices have changed and more people work from home, kitchens have open plan designs and are used for a variety of activities that range from entertainment to office work. The meanings and significance attached to places are a result of the embodied experience of space. Place is therefore embodied and relational space, constructed through social and cultural practices and constantly changing through the interactions that happen in it. From a geographical perspective, the interconnection between space and place is important for understanding how meaning is created in the environments we inhabit. The evolving nature of place is particularly evident in the concept of home, which has historically undergone significant changes in response to social, cultural, and technological changes.

2.1.1 Home as haven

In Western industrialised societies, there exists a strong connection between home and family. Tamara Hareven (1991:254), however, notes that in pre-industrial societies there was a considerable difference between the family's residence and the concept of home as it developed later. It was not always understood as a private retreat, and the removal of the workplace and education from home was a result of urbanisation and industrialisation (Hareven 1991:259).

During the nineteenth and twentieth centuries, work and education became increasingly separated from the home, and the family home was promoted as a space of all that is good and safe, a private haven. Although the nuclear family also featured in the pre-industrial era, Justine Loyd and Ellie Vasta (2017:2) explain that it was only after the Second World

War that home became the centre of the nuclear family. It was an era when children lived at home and went to school, only to leave home once they got married. Women were caretakers of the family and stayed at home while men participated in the economic world by going to work (Blunt and Dowling 2006: 18). Home was understood as a haven, a sanctuary, a refuge from work, and an authentic site of meaning.

Humanistic geography⁶ is rooted in these ideas of home as the ultimate space of belonging, privacy, and familial intimacy. Humanistic geographers place home at the centre of their study (Blunt and Dowling 2006: 11). Geographers such as Yi-Fu Tuan (1979:388), a prominent figure in humanistic geography, focus specifically on human agency to explore the relationship between humans and their environments. Here, home is understood as much more than a house or a positive feeling of attachment and belonging, but rather, as Blunt and Dowling (2006:11) note, “an anchoring point through which human beings are centred.” Edward Relph (1976:39) also describes home as an “irreplaceable centre of significance,” while Tuan (in Blunt and Dowling 2006: 11) refers to home as a place “to which one withdraws and from which one ventures forth.” For humanistic geographers, home was, therefore, a grounding point for identity and a static and sacred place, separate from society. This separation between home and society is rooted in the humanistic division between space and place, where space was understood as abstract and unknowable, and place as experienced and felt.

Although humanistic geographers explored place as something deeply felt and experienced, they largely overlooked how power influences the creation and contestation of places and their meanings (Creswell 2009:172). Katherine Brickell (2012: 225) is critical of the humanistic approach to place and writes that it casts home as “a uniform space of safety and familiarity.” Brickell (2012:226), as well as Blunt and Dowling (2006:15), note that several feminist geographers took exception to this understanding of home and have shown that home is “never exclusively private, familial, or feminine” (Blunt and Dowling 2006:16),

⁶ Humanistic geography is a subfield of human geography that emerged in the 1970s. Influenced by the perspectives and principles of humanism, humanistic geographers emphasise the subjective experience of place and, as Blunt and Dowling (2006:11) note, they focus on how home is a meaningful place and how people create a sense of home in terms of belonging and comfort.

but that it is also a place of limitations and restrictions where feelings of safety and protection are often realised through severe regulation.

Feminism had a strong influence on human geography and contributed to the understanding that home is a complex, multifaceted, and contested space, shaped by societal norms, inequalities, and power dynamics. Moving away from the notion that home is an ideal space of belonging and comfort, they emphasise that home is defined by opposing aspects, such as comfort/alienation and longing/belonging, and that these aspects do not exist in opposition to each other but are inherently found in each other. Authors such as Doreen Massey (2005) brought attention to the power relations that construct places such as home. As a result of dominant ideologies such as patriarchy, women are more likely to experience home as isolating and alienating. Gillian Rose (1993), also critical of the idea of home as an authentic site of meaning, argues that it neglects the gendered dynamics of home. She emphasises that home can also be a “site of domestic labour, or of domestic violence” (Rose 1993:12) and points out that humanistic geography relies on the experience of men and ignores the experience of women.

2.1.2 Home as dynamic.

Moving away from humanistic geography, critical geographers argue that the identities and meanings attached to places are constructed and negotiated over time through human interaction and repetition. Massey (2005:141) uses the term “spatio-temporal events” to emphasise the interconnectedness of space and time in shaping the identity and character of places. Places are not only influenced by the physical environment but also by historical processes and the ongoing social interaction that happens in it.

Places are therefore not specific things, but rather constellations of processes (Massey 2005:141), constantly changing and open for negotiation. Massey’s understanding of place is that it is open and dynamic, where all places consist of relations that extend well beyond the local. Places are interconnected through networks of people, ideas, and goods. To critical geographers, place has no stable meaning and is always constructed and produced through everyday practices and regular human interaction.

Furthermore, Blunt and Dowling (2006) highlight that home can also be understood as an idea that is imbued with feelings that range from belonging and comfort to fear and alienation. They use the term “spatial imaginary” (Blunt and Dowling 2006:2) to refer to the way that the feelings and ideas that construct places, like home, are not fixed, but that it is context related. In other words, it is influenced by personal history as well as social and cultural factors, and these ideas and feelings contribute to the way that home is constructed and experienced.

Building on Heidegger’s⁷ ideas, Blunt and Dowling (2006:23) argue that home is a process of creating dwelling and belonging, while Olivia Hamilton (2017:181) views ‘home’ as the constant interplay of people, places, and memories that happens over time. Shelley Mallet (2004:63) also emphasises the particular activities and relationships associated with the construction of home. Home can therefore be understood as a practiced concept, as performative, and as a constant process that ‘takes place.’ From this perspective, home becomes an intricate network of relationships and can be better described as a constant process of making homes, rather than ever being at home.

2.1.3 Digital geographies of home

Throughout the history of home, even small technological changes made a difference in the way that home was understood and experienced. Judith Flanders (2014) traces the history of cooking and shows that before the nineteenth century, many foods⁸ and clothing were produced at home. Changes in technology from the nineteenth century onwards allowed for these products to be bought, and in the process, home changed from a place of production to a place of consumption (Flanders 2014:171). Such shifts in how technology influences the home are not new, as technological advancements have consistently reshaped the meaning and experience of home.

⁷ Heidegger (1971), through his concept of *dwelling*, argued that we are not separate from the world but rather an integral part of it. He writes that dwelling is the “basic character of being” (Heidegger 1971:142) and therefore a fundamental way of being in the world.

⁸Foods such as bread, butter, jam, meat, and beer, were mostly produced at home. Flanders (2014:174) uses the example of the home butchery that became redundant with the development of refrigeration and railway transport.

As a space and a place, the meaning of home is traditionally based on long-term personal and family connections to place. As new technologies are integrated into the home, these conventional notions are being displaced. With the digital now firmly embedded in everyday life, home-like spaces are being created in the physical as well as the virtual world. Social media platforms and video conferencing technologies allow one to create an emotional attachment and a sense of belonging in the virtual world. Similarly, online shopping and e-commerce have become part of daily routines. It is transforming the way individuals interact with each other and the world around them.

This phenomenon, in which technology becomes fully integrated into social life, has often been understood in deterministic terms. Marshall McLuhan (1964:93), for instance, argued that technological advancement influences social organisation, and he viewed media and new technologies as shaping human communication, perception, and behaviour. For McLuhan, human agency is secondary to technology in shaping social structures and behaviours. However, when the relationship between people, their environments, and technology is considered from a geographical perspective, it becomes clear that our everyday experiences, such as the experience of home, are shaped by the interconnected relationships and interactions between technology, social interactions, cultural practices, and physical places (Leszczynski 2019:19).

The digital has reshaped many geographies and altered socio-spatial relations. Robyn Longhurst (2013:664), for instance, has argued that the visual nature of digital communication technologies alters the bodily relations between family members⁹. James Ash, Rob Kitchin, and Agnieszka Leszczynski (2019:5) explain that digital technologies challenge traditional understandings of place-based identity. They argue that the terms 'cyberspace' and 'virtual reality' are problematic because they create an unnecessary divide between physical and digital worlds. This distinction oversimplifies the complexity of how digital objects, such as data, media, or digital content, contribute to the creation of

⁹ Longhurst's (2013) research deals specifically with Skype, and she explores the difference between real-time communication technologies as opposed to written, text, and phone communication, specifically as it relates to the relationship between mothers and children.

environments and spaces. These environments alter spatial understanding and embodied knowledge. The integration of digital technologies into everyday life not only challenges traditional conceptions of home but also reshapes how we experience and relate to the world. As the interplay between the real and the virtual continues to grow more complex, the geographies of home are increasingly defined by the complex relations between the material, the social, and the digital.

2.2 HOME AND MEMORY

‘Home’ is not only a space filled with objects (Blunt 2006:114) but also imprinted by the body, where it becomes “vessels of memory and touchstones of experience” (Shone 2000: 55). As a memory space, it is not only a private space but also forms part of collective memory. In research into material culture and personal and collective memories of home and homeland, authors such as Deborah Chambers (2003:96) have shown that past homes are evoked in the present and that they are often associated with spatial identity and a sense of belonging.

Dovey (1985: [sp]) describes the home environment as a “mnemonic anchor” where memories are not only preserved and evoked but also help to create the current experience of home. Here, home is understood in terms of connectedness with the past in the form of memories of the place called home as well as the sense of familiarity and continuity it provides. This sense of familiarity and continuity is closely related to the homely, and as Blunt and Dowling (2006:114) argue, ‘home’ is often used to promote a sense of continuity¹⁰. The relation between memory and home, therefore, not only refers to the experience of place over time but also to being familiar with particular spatial patterns.

Memories are often located, or emplaced, and physical places can play a significant role in shaping and triggering memories. Edward Casey (2000:201) emphasises this point when he explains that the experience of remembering can be conceived as an activity of “re-implacing.” To Casey, remembering is an embodied experience and inherently tied to place.

¹⁰ An example would be where the ruling class uses the concept of homeland to promote nationalism and patriotism with the aim of preserving and protecting land, wealth, and power (Mallet 2004:65).

It involves not only a mental recollection but also a sensory and spatial engagement with the environment, where textures, smells, and sights of a place can trigger memories. Memories accumulate within the walls of home and imbue it with significance and meaning. The act of remembering home is inseparable from place itself. Just as Casey suggests with the concept of "re-implacing," returning to memories of home can feel like stepping back into a familiar space and time.

It is, however, important to note that not all memories associated with home are idyllic or comforting. Places play a significant role in recalling traumatic experiences. Traumatic events, such as violence, loss, or abuse, can leave lasting imprints on the places where they occurred, turning home into an ambiguous site of both belonging and alienation. In addition to trauma, nostalgia is another prominent form of memory associated with home, often evoking longing for the past and a sense of loss for what once was. Trauma and nostalgia are central to this study, as they shape how individuals experience home and memory in both positive and painful ways.

2.2.1 Home and trauma

Gaston Bachelard's (1994 [1958]) writings have been particularly influential in the field of human geography. To him, home and memory are interdependent, and he writes that "the house we were born in is physically inscribed in us" (Bachelard 1994 [1958]:14). Memories of home and the past are not merely remembered but rather interwoven with the present and a part of our ongoing experiences (Bachelard 1994:141). Although Bachelard writes about specific spaces in the home, such as the attic, the cellar, and the wardrobe, he is less interested in these spaces as real spaces but rather refers to people's psychological responses to these spaces (Talley 2013:115).

The way individuals perceive, and experience home is influenced not only by their present environment but also by their past, including the spaces they have inhabited and the relationships they have had with those spaces. These past spatial experiences continue to shape how they relate to and feel about their current surroundings. Irene Cieraad (2010), in a study on homemaking practices among university students, brings attention to the impact

that memories of past homes have on future homes (Cieraad 2010:93). There is therefore a personal and psychological link between past memories of home and future projections of home. In a similar way to Casey (2000) and Bachelard (1994 [1958]), Cieraad (2010:93) explains that place evokes a body memory that is not only recalled when revisiting these places but also influences our interaction with other places.

Bachelard (1994 [1958]) places significant attention on daydreaming, memory, and space as they relate to the individual psychological subject (Talley 2013:116), and he suggests a “topoanalysis” to complement psychoanalysis (Bachelard 1994 [1958]:8). In response to Bachelard’s romanticised view of the childhood home, Rachel Bowlby (1995:77) argues that “in psychoanalysis, the home is no place of harmony.” She explains that the home is filled with ghosts from the past, which act as intruding forces on the “comforting appearance of womblike unity” ¹¹ (Bowlby 1995:77) and highlights the slipperiness between the homely and the unhomely.

While Janet Donohoe (2014:42) explains that Bachelard is correct in emphasising the way that home constitutes one’s understanding of the world, she argues that he neglects to take the social and cultural aspects of spaces, such as home, into consideration. Referring to Bachelard’s romanticising of the childhood home, Donohoe (2014:43) contends that if home is characterised by abuse and violence, the memory of the trauma experienced is ingrained, and all future places are approached from a similar perspective.

Research in the field of migration and diaspora studies has shown that when the network of relationships that construct home is interrupted through incidences of loss, violence, marginalisation, or dispossession, home becomes an ambiguous site of both belonging and alienation. These notions are further complicated by the interplay between the real and the virtual, where individuals now have access to stories of other places and times through digital platforms in ways that were not possible before. Elisabeth Sommerlad (2022:118) explains that media representations increasingly shape our understanding of reality,

¹¹ Here Bowlby refers to Freud’s (1963:52) argument that the “dwelling place was a substitute for the mother’s womb” and that our separation from this original home not only suggests one’s absolute exile from home but also that the concept of home is built around this sense of loss.

blending with daily experiences, which create an overall sense of the world. Films often evoke a strong sense of place, creating the impression that viewers can understand what it feels like to be there.

These virtual stories can trigger powerful emotional responses that can recall past traumas. For instance, a South African might experience feelings of guilt and shame when watching accounts of violence in Gaza, as the stories bring back the memory of the historical violence of apartheid. For others, these narratives may evoke memories of violence, displacement, or loss. In this way, digital accounts can resurrect old wounds, creating a connection to past experiences that influences one's understanding of home. Virtual images and narratives of war and destruction, received through digital media, alter the emotional and spatial experience of home. This interaction between the real and the virtual demonstrates the impact of digital environments on emotional responses and how it can shape both personal memories and shared feelings about home.

2.1.2 Home and Nostalgia

Nostalgia evokes home in its very meaning as it brings together the two concepts of longing and homecoming¹², thus, through nostalgia, notions of longing and loss are associated with the concept of home. As an emotion and as a form of remembrance, nostalgia, just like home, is a complex and multi-layered concept. It is often regarded as backward-looking, regressive, sentimental, and unwilling to change. It is a spatial as well as temporal phenomenon and an individual experience as much as it is a social and cultural phenomenon. It is particularly visible in popular culture through nostalgic artifice¹³ in films, social media, and consumer products, but can also be seen in areas such as politics¹⁴, environmentalism, and economics¹⁵.

¹² The word 'nostalgia' stems from the Greek 'nostos,' meaning 'homecoming,' and 'algos,' meaning 'pain' (Boym 2001: XIII)

¹³ This includes the re-runs of films and series, retro filters on Instagram, vintage clothing, furniture, and technology, as well as a love for older aesthetics such as black and white films and glitch aesthetics.

¹⁴ One of the most publicised forms of political nostalgia in recent times would be Donald Trump's 'Make America Great Again' campaign. In South African politics, this form of nostalgia can be seen in Afrikaner nostalgia, where the *boereplaas* are used to revive narratives around the *boerestaat* (Kloppers 2016:12).

¹⁵ Brexit is a prime example of economic nostalgia, where Brexit supporters promised to revive Britain's economic dominance. This is also a form of restorative nostalgia as theorised by Boym (2001).

Svetlana Byom (2001:3) traces the origins of nostalgia to the seventeenth century, where the term was used to describe the physical illness associated with a longing or desire to return home. Johannes Hofer (in Boym 2001: 3) wrote that nostalgia was a “sad mood originating from the desire for the return to one’s native land.” During this time, nostalgia was a spatial phenomenon related to physically being away from one’s home and suggested that there were obstacles, often in the form of war, preventing one from returning home.

Through nostalgia, the concept of home, despite its connotations with comfort and security, is also associated with sickness and loss. As mentioned earlier, home has always included in it the Freudian *Unheimlich*. Dirk Kloppe (2016:10) explains that for Freud, nostalgia is always a wishful colouring of the past and emerges from the irrecoverable loss of childhood, home, and mother. Nostalgia can therefore be explained as an enchantment with distance and a desire for the homely, but which always includes in it the unhomely. As a bittersweet emotion, nostalgia contains elements of happiness and sadness, and in a similar way to the homely and the unhomely, the line that separates the bitter and the sweet in nostalgia cannot be clearly demarcated.

Nostalgia is often seen as a coping mechanism where its appearance is considered reassuring and benign. Stephen Legg (2004:103) contends that nostalgia, just like trauma, is a problematic engagement with the past. While trauma represents a negative engagement with the past, nostalgia, by focusing on a time and place before or beyond the traumatic event, can act as a refuge. For Legg (2004), nostalgia can therefore be a complex response to trauma, offering both solace and a distorted view of reality. Alastair Bonnett (2016:103), however, argues that this approach implies that nostalgia is a way of avoiding trauma and explains that it can be a powerful source of meaning. He explains that a big part of the disruptive power of nostalgia is that it complicates the distinction between what is real and what is invented, and in this regard, it can serve as a catalyst for reconnecting with valuable aspects of the past, such as meaningful relationships, cherished traditions, or a sense of community (Bonnet 2016:6).

In conclusion, nostalgia is a complex and multifaceted emotion deeply intertwined with the concept of home and influenced by both positive and traumatic experiences. While it can serve as a coping mechanism for trauma, nostalgia also possesses the potential to inspire and motivate. By acknowledging its complexities and recognising its potential for both solace and social change, a deeper understanding of this powerful and pervasive human emotion can be achieved.

2.3 EXPERIMENTAL ANIMATION AND EXPANDED CINEMA

This section outlines the aspects of expanded cinema used in this study. In the context of expanded cinema, the relational and constructed understanding of space and place in human geography is relevant to exploring cinematic space and its relationship to the audience. As a spatial practice, expanded cinema focuses on redefining the traditional cinematic experience, and one of the main tenets of early expanded cinema was a shift in the understanding of the relationship between the viewer, the film, and the technology.

Where the traditional cinematic experience requires one to be seated in a darkened theatre and focus one's attention on a single screen for an extended period, expanded cinema aimed at liberating the viewer from this "dulling effect" (Hosea 2018:264) of mainstream cinema, where free association and participation were restricted. Expanded cinema transforms the traditional cinematic space and experience by engaging viewers in dynamic, immersive, and interactive environments. From a geographical perspective, expanded cinema engages with site-specificity, immersive environments, performative elements, and spectator engagement to create cinematic environments that are active, relational, and dynamic.

It is within this broader framework of space and place that this study examines the potential of using expanded cinema practices in experimental animation to explore the complex interplay between home and memory, especially in the context of the digital. In both academic discourse and my praxis, there is a significant overlap between experimental animation, expanded cinema, and expanded animation. This section commences by delineating the aspects of these terms that are relevant to this study before concluding with an outline of the expanded cinema framework used in the analyses of selected experimental animations and my practice.

2.3.1 Experimental animation

Experimental animation has its roots in abstract painting and film. Filmmakers such as Walter Ruttmann (1887-1941) and Hans Richter (1888–1976) experimented with abstraction and the synchronisation of sound and image. These filmmakers challenged cinematic representation and narrative and insisted that light and time were cinema's true materials (Elder 2008:7). Ruttmann believed that abstract animation could reinterpret the physical world through simplified representations of movement and transformations (Torre 2015:63) and that it could open a reflective space that allows for a much broader consideration of the world. Experimental animation in this era was characterised as single-screen practices where there was an emphasis on abstraction and where cinema technology and film material were preferred over narrative. These filmmakers from the 1920s are considered to have laid the groundwork for the innovations seen in 1970s experimental animation (Smith & Hamlyn 2018:5).

Experimental animators from the second half of the twentieth century, such as the Quay Brothers and Jan Švankmajer, moved away from abstraction, which characterised early experimental animation, to include narrative and referential images. Towards the end of the century, as technology became more widely available, experimental animation became a hybrid form of filmic representation that extends beyond the vocabulary of traditional animation techniques, such as stop-frame animation, working directly onto celluloid film, and hand-drawn animation, to include digital experimentation. Today, experimental animation has expanded to include practices that range from single-screen animations to projection mapping, generative art, and virtual reality.

Paul Taberham (2019:24) contends that since experimental animation consists of such a vast array of techniques, media, and processes, it is better defined as a film practice that is based on a process of discovery and is mostly produced and distributed independently.

Furthermore, he defines experimental animation as animations that 'evoke' rather than 'tell' and often attempt to "express the inexpressible." By this he means that experimental

animation often lacks a linear narrative and that the goal is not to unravel hidden meanings, but rather, as Lilly Husbands (2019:170) states, “it invites the viewer to actively participate in their comprehension of the animation.” At its core, experimental animation is a broad and constantly evolving category of filmmaking that breaks away from traditional techniques and conventions and emphasises artistic expression and innovation over commercial appeal or narrative clarity.

2.3.2 Expanded cinema

Within expanded cinema theory, the expansion of cinema is understood to have occurred in two forms (Walley 2020: 41). On the one hand, cinema was expanded through technological experimentation and associated with the theories of Gene Youngblood (1942-2021). This form of expanded cinema was hybrid and intermedial, and it aimed at creating immersive and interactive cinematic experiences. In the United Kingdom and Europe, cinema was expanded by experimenting with the materials and apparatus¹⁶ of cinema. This form of expanded cinema often experimented with the idea of cinema and through fusions with art forms such as performance art, music, poetry, and animation (Walley 2020:48). It was centred around the London’s Filmmakers Co-op¹⁷ and associated with filmmakers such as Annabel Nicolson and Malcolm Le Grice.

Although artists from North America and the United Kingdom had different approaches to expanding cinema, both forms resisted representation and illusion in favour of exploring the physical components, basic processes, and exhibition space of cinema (Kim 2016:132). In both forms of expanded cinema, there was an increasing recognition of the spatial arrangement of cinema as well as the active role of both the technology and the audience. Artists often experimented with multiscreen installations, site specificity, or interactivity to explore how meaning is created and how the active roles of both the technology and the audience shape the cinematic experience.

¹⁶ The apparatus of cinema not only deals with cinema’s equipment, such as celluloid film and the projector, but also with the social mechanisms that shape the institution of cinema.

¹⁷ The London Filmmaker’s Co-op was established in 1966 and aimed to provide production, exhibition, and distribution assistance to experimental filmmakers.

Experimentation with spatial and temporal phenomena in expanded cinema flourished during the 1960s and 1970s. Artists not only focused on the space represented in the film but also the space of the spectator and the space occupied by the apparatus of cinema. While expanded cinema is often understood as a reaction against socio-political conditions, Andrew Uroskie (2014:10) explains that there was also a growing awareness of the site specificity of cinema. Uroskie (2014:11) explains that the art gallery, the cinema theatre, and the theatrical stage are all governed by their own conventions of production and reception, and these sites have established protocols for exhibition and spectatorship. When artists in the 1960s started experimenting with cinema as an art form, they challenged the accepted cinematic production, exhibition, and spectatorship norms established by Hollywood.

Malcolm Le Grice (2001:156) argued that commercial cinema, through creating illusory time and space, denies the presence of the audience. Le Grice was strongly opposed to the narrative form of conventional cinema and the passive subjectivity of the audience. He advocated for a cinematic space where the focus is shifted from cinematic structure to cinematic experience (White 2010:95). One of the main tenets of early expanded cinema was a shift in the understanding of the relationship between exhibition space, the viewer, the film, and the technology. It is often discussed in relation to immersive technologies and as a unique form of performance art where neither the artwork, spectator, nor technology is considered independent of each other or the environment within which it is experienced.

With the widespread adoption of digital technology, cinema in the twenty-first century exploded onto multiple platforms and media in ways that resist any single definition (Knowles 2020:1). There has been a renewed interest in these early forms of expanded cinema. Marchessault and Lord (2007) revisit Youngblood's (1970) model of expanded cinema and examine how cinema continues to evolve in relation to digital technology. Frederico Biggio (2020:174) traces the connection between Youngblood's expanded cinema and the current condition of digital media users. He argues that Youngblood's (1970) concept of an 'intermedia network' is especially relevant in today's hypermediated world and claims that augmented reality, virtual reality, and artificial intelligence are the new expanded cinema (Biggio 2020:174).

2.3.4 Expanded animation

As mentioned earlier, the early twenty-first century saw an academic crossover between experimental animation and expanded cinema, and the term expanded animation¹⁸ is often used to refer to this crossover. Expanded animation, in the same way as expanded cinema, is an elastic term that embodies a large number of concepts. It ranges from single-screen animations to animations that forgo the screen entirely and includes works that make use of multi-screen projections, live multimedia performances, immersive installations, virtual reality, and augmented reality. As a form of experimental animation, it draws from expanded cinema to investigate the possibilities of the animated moving image outside of its traditional notion as a sub-genre¹⁹ of cinema and beyond its associations with entertainment.

One of the key developments that led to this crossover can be found in what Francesco Casetti (2019) calls ‘the relocation of cinema.’ Here, cinema not only moved from the traditional enclosed theatre to public spaces such as the gallery or museum but also migrated onto the digital platform. With the proliferation of digital technologies in the 1990s, the use of animation technologies in cinema became widespread.²⁰ The impact of the digital revolution on animation was significant, and it allowed for animation to infiltrate many facets and areas of contemporary life.

¹⁸ Established in 2010, Birgitta Hosea’s (2010: [sp]) blog (<https://expandedanimation.net>) explores the “intermedial melting-pot” of histories, disciplines, and styles in experimental animation, while Vicky Smith and Nicky Hamlyn (2018:2) use the term ‘expanded animation’ to refer to the crossover between animation and installation or performance art. In 2013, Jürgen Hagler and Alexander Wilhelm, in collaboration with Ars Electronica, established the annual Expanded Animation Symposium (<https://expandedanimation.com/>) to explore the implications of this crossover by looking at hybrid forms of animation and interdisciplinary collaborations.

¹⁹ Although pre-cinematic optical toys of the 19th century, such as the zoetrope, the praxinoscope, and the phenakistiscope, paved the way for cinematography cinema, in the early twentieth century, defined itself as a recording medium, associated with live action and an indexical relation to the real. Animation has been delegated to manual, handmade, single-frame practices (Smith and Hamlyn 2018:5) and is often associated with entertainment.

²⁰ Technologies such as motion capture were used in the production of Hironobu Sakaguchi’s animated feature film *Final Fantasy: The Spirits Within* (2001) (Lamarre 2006:168). Neil Blomkamp’s film *District 9* (2009) combines live-action footage with CGI technology to create the final battle scenes in the film.

One of the defining features of expanded animation is its hybrid and interdisciplinary nature. Authors such as Taberham (2019), Smith and Hamlyn (2018), and Hosea (2018) all emphasise this aspect of expanded animation, highlighting how it often interacts with other art forms such as installation art, as well as other disciplines such as science and technology. Expanded animation draws from both experimental animation and expanded cinema by incorporating experimental animation's experimentation with the materiality of cinema and its non-linear narrative techniques as well as expanded cinema's engagement with multi-sensory experience and technological experimentation.

2.4 EXPANDED CINEMA FRAMEWORK

2.4.1 The materiality of cinema

Experimentation with the materiality of cinema was a central aspect of early expanded cinema practice in the United Kingdom and Europe. Influenced by the ideas of early avant-garde artists (EXPORT 2003: [sp]), these artists separated themselves from Youngblood's ideas of expanded consciousness and technological experimentation (Walley 2020:71-72) and instead deconstructed the apparatus of cinema. These filmmakers²¹, as Al Rees (2011:81) writes, challenged the definition of film as representation and rather sought cinema's ontology in the medium's simplest elements.

A radical example of this approach can be seen in the concept of 'paracinema,' where cinema is stripped down to its most basic components. Walley (2003:17) uses the term 'paracinema' to refer to cinematic works that explore the idea of cinema. Such works abandon the medium of film completely while still being described by their makers as cinematic. Paracinematic artworks use the elements of film, such as light and flicker, but not the medium of film itself, or projectors or screens. An example would be Anthony McCall's *Long Film for Ambient Light* (1975) (figure 1), in which all cinematic equipment (film, screen, projector, and recording equipment) is removed. The resulting 'film' is an empty room with

²¹ An example is Annabel Nicolson's *Reel Time* (1973). It is a direct-on-film animation in which she foregrounds the physical presence and materiality of film as a medium (White 2010:95). The work consists of a projected live-action film of Nicolson working on a sewing machine. As the live-action film is being projected, the celluloid film is passed through an actual sewing machine operated by the artist. The needle of the sewing machine punches holes into the celluloid film before it is sent through the projector again.

a light bulb and windows covered with translucent paper. The 'film' ran for 24 hours. Paracinema highlights the materiality of cinema by eliminating all conventional cinematic equipment and materials. This exploration of materiality suggests a broader definition of specificity, one that includes the viewer's experience within the cinematic environment.



Fig. 1. Anthony McCall, *Long Film for Ambient Light* (1975).

While the broader materiality of cinema encompasses aspects such as light, space, and audience participation, the materiality of film examines how its tactile and sensory qualities can be used to explore the audience's physical relationship with these elements and interrogate the aspects that define the cinematic experience. Experimentation with working directly onto celluloid film flourished during early expanded cinema, and artists challenged the idea of film as a passive medium that simply records and reproduces reality. A notable example is *Mothlight* (1963) (figure 2) by Stan Brakhage, where he used actual moth wings and other natural materials pressed between layers of celluloid film before running it through a projector.



Fig. 2. Stan Brakhage, *Mothlight* (1963).

During this era, working directly onto celluloid film was considered a radical act of transgression that liberated film technology to expose the mechanisms of cinema. Artists deconstructed the cinematic apparatus to challenge mainstream cinematic representation and to act against mass production and commercial entertainment. Today, as the medium of film has become outdated, film media has become politically charged in ways it did not in the 1960s and 1970s. In the digital era, the critical interrogation of obsolete media often has negative associations with retro-fetishism and the commercial exploitation of nostalgia. However, when analogue media, such as celluloid film, are used in the context of the digital, they carry associated meanings of the past and can be considered in terms of their thematic associations. Sarah Callahan (2018:287) explains that analogue media can be analysed in terms of the “interplay between medium as technique and medium as concept and content” and therefore can also be considered as a conceptual framework that assists in analysing how meaning is generated when older media is used in a digital context.

In the digital era, the imperfections and decay of analogue media are often used to represent a sense of pastness and nostalgia. Authors such as Kim Knowles (2019), Sarah Durcan (2020), and Laura Marks (2002) all draw attention to the associations that obsolete media, such as celluloid film, have with nostalgia. Marks (2002:152) notes that in the era of virtual media, there has been an increased desire for indexicality. She uses the term “analogue nostalgia” to describe the “retrospective fondness for the ‘problems’ of decay and generational loss” (Marks 2002:152) inherent in analogue media. In the next chapter,

this connection between analogue media and nostalgia is investigated by emphasising its practical application within the context of a practice-led methodology.

2.4.2 Cinematic Space

In expanded cinema, the understanding of cinematic space is extended beyond the space of the movie theatre and the narrative space²² within the film. Through multiscreen projections and interactive environments, expanded cinema aims to create immersive environments that surround the viewer. Youngblood (1970) advocated for the exploration of “new dimensions of awareness” through “new technological extensions” (Youngblood 1970:135) and envisioned a deeply moving and mind-altering cinematic experience that would involve all the senses. He proposed a “synesthetic cinema,” a multisensory experience that moves away from realism and that has the potential to unify the senses (Marchessault and Lord 2007:15). To Youngblood, the spectator in the synesthetic cinema environment is not a mere consumer but rather an active participant who assists in creating meaning as they respond to the film (Casetti 2015:103).

Although cinema has been expanding from its very beginning, Youngblood’s expanded cinema signals a particular moment in the history of the expansion of cinema. Casetti (2015:105) explains that through his theories of ‘intermedia,’ ‘synesthetic cinema,’ and ‘artist as ecologist,’ Youngblood captured a turning point in the relationship between film, media, and spectator. Cinema in the twenty-first century has expanded beyond Youngblood’s imagination, but as Marchessault and Lord (2007:7) note, his theories are still relevant since they provide a structure to discuss cinema’s expansion towards immersive, interactive, and interconnected environments and highlight the relational and interconnected environments that media create.

Bruno (2022:31) explains that from this perspective, media are not merely pervasive technologies that envelop culture but are also considered in environmental terms. Here, ‘environmental’ refers to the immersive environments or “zones of activity” (Bruno

²² Narrative space is created through *mise-en-scène* and camera techniques. It is often referred to as scenography, which includes the building of film sets and shooting at specific locations to create a sense of place in the narrative of the film.

2022:31) that media creates and is especially relevant in contemporary society. Stephen Crocker (2007:52) notes that the ubiquity of new technologies, such as smartphones, wireless networks, and the Internet, has created new kinds of environments in which the “basic phenomenological structures of experience” have changed.

As media have come to saturate the world, the immaterial and ephemeral nature of media has come into question. Set within a broader turn towards materialist transformation within media studies, Weihong Bao, Jacob Gaboury, and Daniel Morgan (2023:303) explain that contemporary digital media studies focus on the material effects that technical systems have on the world. In this regard, it is necessary to look at cinema as a medium beyond its purely technical means and rather, as Somaini (2019:161) explains, as the “environment, the *milieu*,²³ or the *Umwelt*,²⁴ in which sensory experience takes place.”

Historically, technology and culture were understood as opposing forces. Here, culture is understood as the space of human activity and therefore considered ‘alive’ and endowed with meaning and values. In contrast, technology was understood as indifferent to the needs of living beings and conceived as opposite in relation to culture (de Andrade 2008:8). Florian Sprenger (2023:407) explains that this approach can no longer describe the current situation where we are surrounded by ambient, smart, and ubiquitous technologies. By adopting an ecological or environmental approach to cinema, the cinematic experience becomes an event that emerges from the interplay of various elements, forming an assemblage of relationships.

This ecological approach to media, where it is understood in terms of its environmental effects, is by no means new. Marshall McLuhan (1966:200) stated that “new media are new environments,” and Friedrich Kittler (1999: xxxix) famously proclaimed that “media

²³ In French, the term *milieu* not only refers to a physical environment or setting but also to “surroundings,” “medium,” and “middle.” Jakob von Uexküll (1864-1944) proposed the notion of the ‘*umwelt*’ in 1939. As a biological term, Inga Pollman (2013:778) explains that Uexküll argued that each species lives in its own subjective world, which he termed the ‘*umwelt*.’ He compared the *umwelt* to a soap bubble and used the example of a tick to whom the smell of butyric acid and warm flesh becomes the tick’s soap bubble, or ‘*umwelt*,’ within which it experiences the world (Uexküll 2001:119).

determine our situation.” In terms of expanded cinema, Youngblood writes that “[t]he simultaneous use of various media ... create[s] a total environmental experience for the audience” (Youngblood 1970:348). Both McLuhan and Youngblood’s framework of media ecology regarded media as environments. These environments are inherently immersive and dynamic, and it is this aspect of expanded cinema that is relevant to this study.

As mentioned earlier, one of the core principles of early expanded cinema was a shift in the understanding of the relationship between the viewer, the artwork, the technology, and the exhibition space. Artists such as Stan Vanderbeek (1927-1984) created works that were “spectator-centred” (White 2011: 169), where the viewer is engaged in multiscreen installations. This means that they are required to make decisions about where to focus their attention. Instead of being a passive spectator, they become active participants in the experience, perception, and interpretation of the work (White 2011: 169). VanDerBeek’s *Movie-Drome* (1965) (figure 3) was an immersive environment where multisensory experience was prioritised over narrative. Gloria Sutton (2015: 15) explains that spectators inside the *Movie-Drome* (1965) were bombarded with an endless stream of images and sounds. Projectors, attached to turntables and wheeled carts, produced moving lights that were superimposed onto newsreel footage while on-the-spot illustrations were projected through overhead projectors as they were being drawn.



Fig. 3. Stan Vanderbeek, *Movie-Drome* (1964-1965).

In the 1960s and 1970s, these kinds of exhibitions were groundbreaking, marking the exodus of cinema from the theatre and repositioning it within gallery installations and public performances. This shift laid the foundation for today's immersive and interactive media experiences, where the relationship between the audience and moving images continues to evolve. Expanded cinema's multiscreen projections, immersive environments, and interactivity invite viewers to experience space as fluid and dynamic rather than fixed or passive. This aligns with contemporary understandings of space as socially produced and constructed, shaped by interactions, movements, and technological mediations. In multisensory cinematic environments, space is not merely a backdrop for narrative action but a central element of the experience, continuously shaped by the viewer's perspective, movement, and engagement.

The expanded cinema framework in this study aims to provide a way to investigate the construction of home and memory by exploring how media environments can redefine our experience of space and place. It bridges the gap between the materiality of space and the immateriality of media, highlighting the interplay between physical places and mediated environments. This approach is especially relevant in today's hypermediated world, where the boundaries between virtual and physical spaces are increasingly fluid and where the construction of place often involves an amalgamation of digital and physical realities.

Chapter 3: ANALOGUE NOSTALGIA AND PLACE MEMORIES

INTRODUCTION

Informed by authors such as Vicky Smith (2018), Kim Knowles (2019), and Laura Marks (2002), my initial investigation considered the ways that celluloid film can be used to create spaces of memory as it relates to place. Drawing from early expanded cinema practices, I focused on the embodied cinematic experiences that can be created through the tactile quality of images. This is reflected in my research, where I engaged with 35mm film negatives to explore themes of memory and materiality, drawing inspiration from creative projects that embraced the physical decay of film as a metaphor for memory.

In this chapter, the materiality of cinema is explored through Marks' (2002) concept of analogue nostalgia and deals with the ways that the materiality of film can be used in experimental animation to trigger or evoke the type of memories associated with home. Focusing on materialist approaches of early expanded cinema, the chapter aims to establish the extent to which these practices can create sensory experiences for the viewer.

This is achieved through the analysis of Lei Lei and Thomas Sauvin's experimental animation *Recycled* (2013). The discussion commences by analysing the relationship between place and memory as it relates to their animation. Thereafter, the analysis is centred around the use of 35mm film negatives and their relationship with individual and collective place memories as well as the use of analogue media in the digital era to evoke and trigger the experience of memory. Following this analysis, I discuss my own animations, *Remembering Houses* (2022), where I employ similar techniques and processes to explore these themes.

3.1 PLACE AND MEMORY IN *RECYCLED* (2013)

As discussed in chapter two, [under section 2.2](#), the relationship between place and memory in human geography is often analysed through the interlocking themes of memory, forgetting, trauma, and nostalgia. Derek Gregory (2009:453) writes that memory is "inherently a geographical concept" and explains that places store and evoke individual and

collective memories.²⁵ This approach to memory challenges the notion that memory is purely mental or psychological and means that places can be active participants in the process of remembering and forgetting.

Stephen Legg (2024:2) explains that in cultural geography, this idea is often discussed in relation to heritage and memorialisation as well as the performance of rituals of remembrance. Influenced by Maurice Halbwachs' (1877-1945) ideas that memory is as much a social activity as a spatial phenomenon (Hoelscher and Alderman 2004: 349), a substantial amount of research has been done into the relationship between place and social and collective memories. Authors such as Pierre Nora²⁶ (1989), for instance, explore how places like monuments and memorials serve as repositories for collective memory. Karin Till (2003) examined the social and spatial processes involved in memory related to themes such as national identity and the memorialisation or contestation thereof, while Blunt and Dowling (2006: 167) examine the relationship between the domestic home and the nation or homeland.

Activities such as commemorative rituals, place naming, and the collection and display of artefacts contribute to a common shared identity because they trigger a social memory. Gregory (2009:454), drawing on ideas shared by both Halbwachs and the French historian Pierre Nora, explain that memory endures best when it is anchored in both spatial imagery and physical objects. Known for his work on French identity and memory, Nora (1992) highlights how memory is attached to concrete, physical places, such as monuments, cathedrals, and prisons, as well as non-material sites, such as celebrations and rituals. The relationship between place and memory highlights the ways in which the act of remembering is deeply rooted in spatial contexts and how places are essential in the preservation and transmission of both individual and collective memories.

²⁵ A childhood home, for instance, may hold personal significance, while a monument has a shared historical meaning and therefore contributes to how we recall past events.

²⁶ Pierre Nora is a French historian known for his notion of 'sites of memory,' or *lieu de mémoire*, and coined the term in his article, *Between memory and history: Les Lieux de Mémoire*. (1989). It is a sociological concept related to collective memory and deals with the interaction between places, objects, events, and people in the act of remembrance. Nora's concept of *lieu de me'moir* refers to "a collective shared knowledge ... of the past, on which a group's sense of unity and individuality is based" (Assmann 1995:132).

In their experimental animation, *Recycled* (2013), Lei Lei and Thomas Sauvin make use of discarded 35mm film negatives to reconstruct individual and collective memories of place. Sauvin, a French photographer, collected 35mm film negatives from a recycling plant in Beijing. The negatives were digitised to create an archive called *Beijing Silvermine*²⁷ and consist of 850,000 film negatives that document the personal and private lives of the inhabitants of the city. The photographs were taken by amateur photographers over a period of roughly twenty years, from the 1980s to the early 2000s. It was the era that saw the rise of modern China and its introduction to consumer culture (Weedon 2021 [sp]).

Inspired by Sauvin's archive, the artist Lei selected 3000 of these photographs to make the animation. *Recycled* (2013) (figures 4 and 5) consists of holiday and family photos of strangers that flash by at a high speed with no continuity of movement across frames. Several photographs were taken from similar positions and placed together to reconstruct anonymous memories of place and personal history in China. Urban space is represented through images of daily life, and several photographs depict recognisable streets, landmarks, and monuments in Beijing.



Fig. 4. Lei Lei and Thomas Sauvin, *Recycled* (2013).

²⁷ <https://www.beijingsilvermine.com/gallery>. For more about the archive, visit <https://archive.nytimes.com/lens.blogs.nytimes.com/2013/03/01/chinese-family-memories-recycled/>.



Fig. 5. Lei Lei and Thomas Sauvin, *Recycled* (2013).

In *Recycled* (2013), the discarded images no longer serve as channels for conveying personal and familial memories but speak of the interrelation of personal and collective memory (Van Gageldonk, Munteán, and Shobeiri 2020:6). Many frames feature people posing in front of similar landmarks; others are participating in similar customs, such as weddings, birthdays, and dinners (figures 6 and 7). Certain social conventions, such as posing for the camera, objects such as televisions and computers, and candid photographs in front of a newly built McDonald's reflect broader cultural and historical narratives of Beijing as a space and a place (MacDonald 2013: [sp]). Lei and Sauvin's use of discarded 35mm film negatives serves as a powerful vehicle to explore the interrelation between place and memory as well as personal and collective memory.



Fig. 6. Lei Lei and Thomas Sauvin, *Recycled* (2013).



Fig. 7. Lei Lei and Thomas Sauvin, *Recycled* (2013).

As mentioned in chapter two, Massey (2005:141) maintains that places are not fixed but constantly changing and open for negotiation. Places are shaped by the constant interaction of people, goods, and networks, and the animation also becomes a representation of how changing social practices transform everyday places. The transformation from traditional environments to modern, consumer-orientated spaces reflects the broader changes in spatial experiences as China rapidly developed. Sauvin (MacDonald 2013: [sp]) notes the societal shifts visible in the photographic archive and explains that few photographs depict people abroad during the 1980s. Photographs taken during the 1990s, however, showed that as China developed, Thailand became a popular holiday destination. Through snapshots of personal intimate moments, the animation represents the collective memory of current Beijing society and reflects the ways that urbanisation and globalisation have reshaped everyday spaces (figure 8).



Fig. 8. Lei Lei and Thomas Sauvin, *Recycled* (2013).

3.2 ANALOGUE NOSTALGIA IN *RECYCLED* (2013).

As mentioned in the previous chapter ([section 2.4.1](#)), Marks (2002:152) argues that the signs of imperfection and physical destruction of analogue media not only highlight issues of the afterlife of old media but also evoke the sense of the deterioration and fragility of memory. Marks (2002:94) furthermore notes that the incorporation of analogue decay in cinema is often used as a metaphor for memory and that these works “borrow the aura of the disappearing image” (Durcan 2020:12) to trigger the experience of memory. For Knowles (2020:4), the reuse and misuse of analogue media “complicate and reimagine understandings of history [and] temporality,” and she recognises an inherent nostalgia in analogue media.

For Marks (Marks in Shrey 2014:28), however, ‘analogue nostalgia’ is not about resisting new technologies or about a longing for the authenticity of analogue media, but rather about the digital remediation of analogue aesthetics within the digital. Dominik Schrey (2014:34) explains that this strategy operates as a “re-enchantment of an object through an aesthetic” that is characterised by deliberate imperfections, and to him, the aesthetics of analogue decay are inextricably linked to a sense of pastness and nostalgia. This approach to analogue nostalgia aligns with Boym’s (2001) concept of reflective nostalgia, where the imperfections and decay of analogue aesthetics are not used to restore a lost past, but rather to reflect on it and engage with the past as something irretrievable yet emotionally significant.

As an aesthetic, analogue nostalgia foregrounds the background noise and flaws of old media, such as the hiss of vinyl or the scratches on film stock. Micheal Scofield (2019:25) states that digital media is haunted by its analogue predecessors, and he highlights the point that working with older media often addresses the mediation of memory, the effects of recording technologies on our perception of time passing, and our view of the past. This is often done through the appropriation or the digital re-animation of archival materials, as well as the signs of analogue decay in media such as celluloid film. This strategy is used in *Recycled* (2013) (figures 9 and 10), where the analogue signs and physical decay of the discarded film negatives are preserved to evoke memories of a bygone era when analogue

photography was still prevalent. Erased and barely visible images become a metaphor for remembering and forgetting, and the aesthetic and tactile qualities of analogue media create a sense of longing, loss, and nostalgia.



Fig. 9. Lei Lei and Thomas Sauvin, *Recycled* (2013).



Fig. 10. Lei Lei and Thomas Sauvin, *Recycled* (2013).

3.2.1 The colour of nostalgia

Ute Holl (2014:161) notes that the use of colour to trigger nostalgic memories has temporal rather than spatial consequences because certain colours trigger a desire to return to a familiar order of things as it was in the past. Black and white films, for instance, are associated with a classical style and historical memory (Grainge 2003:215). These associations are socially constructed, and many nostalgia films, such as *Mank* (2020)²⁸, use this strategy to evoke a sense of nostalgia. Similarly, the greenish tones of the 1930s, the reddish tones of the 1940s, or the neon colours of the 1970s are often used in mainstream films²⁹ to transport the audience to a past era. In *Recycled* (2013) (figure 11 and 12), the colour contamination in the film negatives is preserved to evoke a sense of nostalgia. The colour produced through light leaks and faded film also evokes memories of a certain era in

²⁸ David Fincher, *Mank* (2020). Feature film, Netflix Studios. 2 hours 11 minutes.

²⁹ The directors, Wes Anderson and Quentin Tarantino, are well-known for their use of colour to evoke a sense of pastness and nostalgia.

the audience, and in this way, it links individual and cultural forms of remembering (Holl 2014:162).

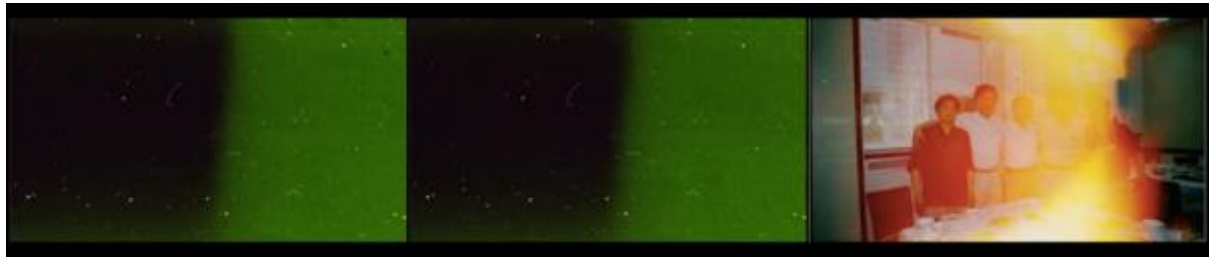


Fig. 11. Lei Lei and Thomas Sauvin, *Recycled* (2013).

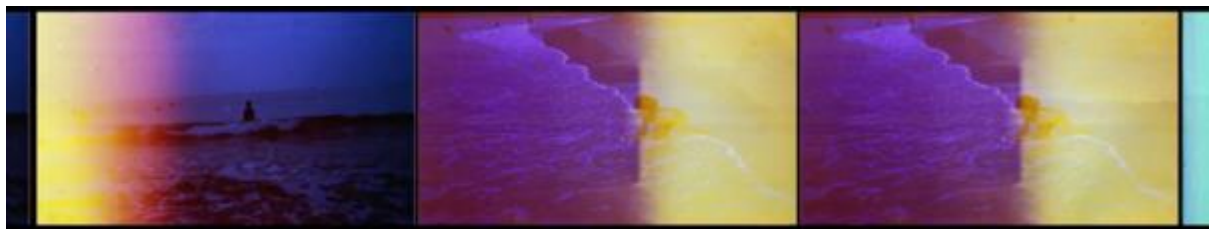


Fig. 12. Lei Lei and Thomas Sauvin, *Recycled* (2013).

In writing about home movies, Giuseppina Sapio (2014:43) argues that digital media led to the “symbolic dematerialisation” of family albums and home videos. She explains that in order to return to the tactile dimensions of these cultural objects, visual effects such as film grain and warmer colours are often added (Sapio 2014:45). According to Sapio (2014: 46), the sense of pastness created through effects such as film grain and warmer colours not only refers to the fragility and fading of memory but also contributes to a sense of belonging to a wider group and history. Therefore, the memories evoked through colour trigger involuntary memories in a similar way to smells and tastes do for Marcel Proust³⁰ (Holl 2014:161).

3.3 ANALOGUE NOSTALGIA IN *REMEMBERING HOUSES* (2022)

My series, *Remembering Houses* (2022), consists of two animations, namely *All the Years I've Waited for You* (2022) and *Nothing Ever Happens Here* (2022). In these animations I

³⁰ In the first section of his multivolume novel *A la recherche du temps perdu* (*In Search of Lost Time*), Marcel Proust (1871-1922) recounted how the taste of a madeleine cake brought back memories of his childhood. This sensation became known as the Proust phenomenon and refers to the spontaneous recall of autobiographical memories, often triggered by tastes and smells.

draw from early expanded cinema's experimentation with the materiality of film and the contemporary use of old technologies in the digital era. I investigated the potential of direct-on-film animation techniques to communicate the type of memories associated with home. Rather than simply representing memory³¹, these animations aim to create spaces of memory, where viewers can actively participate in constructing meaning based on their own memories and emotional responses instead of being led by traditional narrative strategies.

The source material for the animations in *Remembering Houses* (2022) was a collection of 35mm film negatives of old photographs taken in places I have, at some point, called home. These negatives became the foundation for my initial explorations. The film negatives were bleached and scratched (figures 13 and 14) with washing soda, washing powder, citric acid, domestic bleach, and oven cleaner and then animated in a frame-by-frame manner. The scanned 35mm film negatives were used in their original, unaltered negative form, without being digitally inverted, thereby preserving their inverted colouration and tonal qualities. I deliberately used the negatives as they are, allowing the inherent visual characteristics of the medium to contribute to the aesthetic and conceptual exploration of memory and nostalgia.

³¹ In heritage cinema, characterisation and plot are often treated as secondary to the costumes and scenery. The representation of home and memory in these films relies on the picturesque and idyllic to nostalgically rekindle an idealised past. An example would be Michael Engler's feature film *Downton Abbey* (2019) (Aakær 2018:10). Other cinematic strategies used to represent memory and nostalgia include the flashback, the close-up, the fade, and slow motion. A commercial film that uses all these strategies is Brad Bird's animated feature film *Ratatouille* (2007).

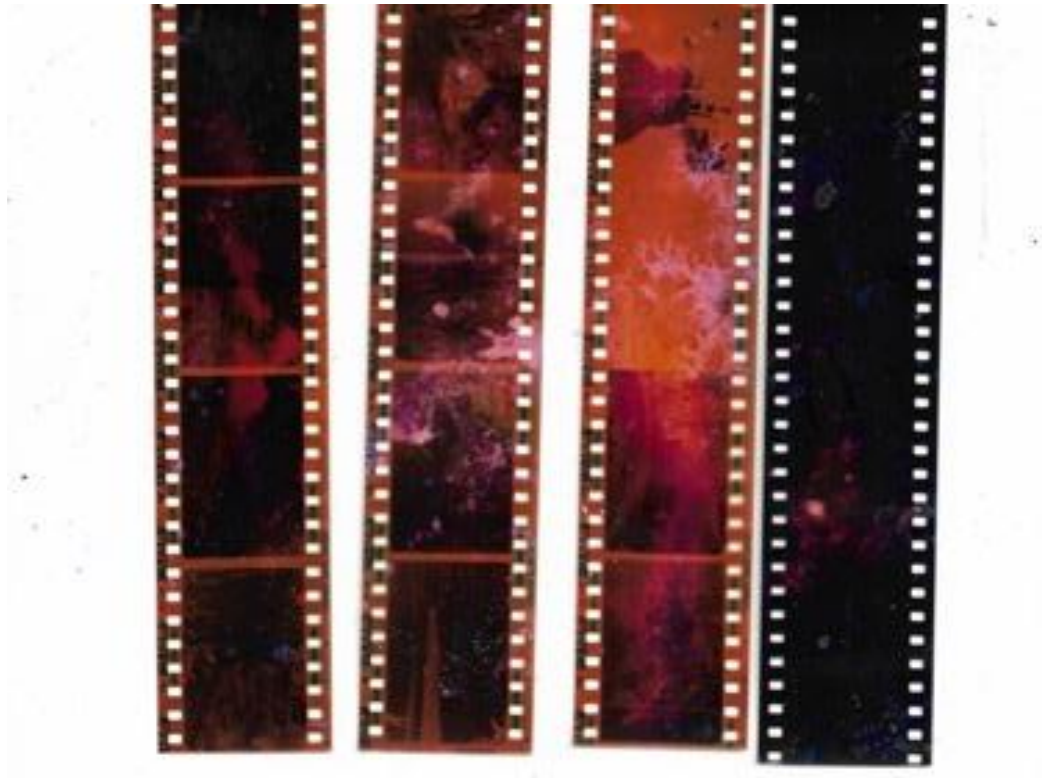


Fig. 13. Christel Liebenberg. Bleached film negatives (2022).



Fig. 14. Christel Liebenberg. Close-up of bleached negative (2022).

As discussed in the analysis of *Recycled* (2013), memories triggered by analogue media, such as 35mm film, are socially and culturally conditioned, and the colour, grain, and texture of the film negatives evoke a sense of nostalgia. The bleaching process created scratched and faded images that are associated with forgetting. The visual effects, through scratches,

warm colours, and visible sprocket holes, evoke a sense of nostalgia and belonging to a shared cultural history, where celluloid film becomes a medium of personal and collective memory.

In *All the Years I've Waited for You* (2022) (figure 15), I digitally layered photographs of my childhood home and a farm in Sutherland, South Africa, where I once lived, over the bleached film negatives. The use of archival media, particularly photographs, is a common strategy in experimental animation, as seen in Lei and Sauvin's *Recycled* (2013). My use of images from personal archives similarly engages with these themes, emphasising how material processes and digital manipulation can capture the layered, fragmented nature of memory as it relates to place. The analogue imperfections serve as metaphors for the ways in which memories are altered, fading over time yet remaining tactile and present. This aligns with Marks' (2002:152) notion of analogue nostalgia, where the use of analogue media in cinema is often used to trigger a sense of memory.



Fig. 15. Christel Liebenberg, *All the years I've waited for you* (2023).

Nothing Ever Happens Here (2023) (figure 16) was made from a 35mm film negative of a single photograph of the house in Sutherland. The film negative was carefully bleached to preserve most of the image. It was then digitally manipulated to create an endless loop of

the same image crossing the screen from right to left. The looping animation creates a dreamlike atmosphere and emphasises the fleeting and fragmented nature of memory. This conjures associations with the processes of remembering and forgetting, evoking a sense of nostalgia for a place that exists only in the past. By looping and distorting the image, the animation not only gestures toward themes of longing and loss but also disrupts the temporal aspects of cinematic space. In line with expanded cinema practice, looping becomes a way of breaking down familiar representation and challenging traditional linear narrative structures.



Fig. 16. Christel Liebenberg, *Nothing Ever Happens Here* (2023).

The animations discussed here are situated within the framework of expanded cinema by emphasising the materiality of film and the non-linear narrative structure. Although these animations do not focus on narrative, the juxtaposition of images and the sign of analogue decay allow for themes of belonging to emerge. Like Lei and Sauvin's *Recycled* (2013), I employ the visual language of analogue deterioration to evoke associations with nostalgic longing and the distance between the past and the present.

In concluding this chapter, it is important to note that Miriam Harris (2019:129), in examining the intersecting aspects of analogue and digital experimental animation, argues

that digital media can trigger sensory and emotional responses, as well as embodied experiences, equal to those of analogue media. For instance, in Takeshi Murata's animation *Monster Movie* (2015), archival footage is digitally distorted to create a glitch effect that has a similar effect to the ageing and decaying photographs in *Recycled* (2013). The glitch effect in *Monster Movie* (2015) (figures 17 and 18) has a disembodied and distorted aesthetic, and the work engages with what Mark Fisher (2014: [sp]) calls the uncanny nature of media technologies, where current digital technologies are haunted by their analogue counterparts.



Fig. 17. Takeshi Murata, *Monster Movie* (2015).



Fig. 18. Takeshi Murata, *Monster Movie* (2015).

Takeshi Murata's practice falls in the tradition of reworking the history of visual music and experimental animation through recycling its cinematic forms (Frieling 2016: [sp]).

Monster Movie (2015) consists of appropriated footage from the 1981 comedy by Carl Gottlieb, *Caveman*, which is digitally edited and degraded. Through a process called 'datamoshing,' Murata creates a glitch effect that not only speaks of technological failure but also of memory. In a similar way to Lei and Sauvin, the glitch effects also evoke memories of a certain era. By resuscitating fragments of a forgotten film, both Lei and Sauvin, as well as Murata, demonstrate how memory is layered, fragmented, and distorted.

Murata's digital interventions in *Monster Movie* (2015) also highlight how contemporary digital practices do not depart from the materialist practices found in early experimental cinema. In the next chapter, through an analysis of Sabrina Ratté's work, I will delve deeper into how digital animation techniques, like those employed by Murata, offer new ways of engaging with the concepts of home and memory.

Chapter 4: MEMORY AND THE TRANSFORMATION OF SPACE

INTRODUCTION

Drawing from expanded cinema's emphasis on multisensory experience, this chapter explores the use of digital manipulation and sound design as strategies to explore the ways that memory shapes our perception and experience of places such as home. While home is often understood as a localisable concept, it is also shaped by memories and experiences. Bachelard (1994 [1958]), as well as Cieraad (2010), discussed in chapter two, highlight the way that psychological responses, based on past experiences, influence the experience of places such as home. This highlights the ambiguous nature of home and memory and how, as Blunt and Dowling (2006) explain, the homely and unhomely never exist in opposition to each other but are always found in each other. To investigate these aspects, the chapter analyses Sabrina Ratté's experimental animation, *Built-in Views* (2016), alongside my own animations, *Broken Comfort* (2022) and *Save Our Ship* (2023).

4.1 SABRINA RATTÉ

Sabrina Ratté is a Canadian digital artist whose practice explores the various ways in which the digital image can materialise and evolve. Her practice includes sculpture, animation, photography, printing, virtual reality, and installation art. The architectural and digital environments are recurring themes in her work, and she explores the intersection between physical and virtual spaces. Ratté's practice engages with the ways in which technology shapes our experience of space and offers a unique perspective on how real and imagined spaces are constructed.

She has a particular interest in the ways that psychological projection onto spaces determines our experience of them (Vanier College Television 2024). In other words, how our own experiences and memories shape and are shaped by the spaces and places we interact with. This aspect of Ratté's practice resonates with the key concepts explored in chapter two, particularly those concerning the constructed and ambiguous nature of home and memory. Although Ratté's practice is not directly situated within expanded cinema practice, several key elements in her work align with it. Her hybrid animations have a non-linear, non-narrative structure where she abandons direct references to places in favour of

an abstract approach (Ratté: [sa]). Furthermore, her use of multiscreen installations, immersive environments, and audience participation corresponds to the experimental spatial practices of expanded cinema.

4.1.1 Sabrina Ratté's *Built-in Views* (2016)

In *Built-in Views* (2016) (figures 19 and 20), Sabrina Ratté explores themes of architecture and memory through digital manipulation. The work reflects on how environments are not only physical places but also constructed through perception, memory, and the digital. The animation depicts a dark interior architectural space that consists of walls and windows. Ratté digitally manipulates the architectural forms to create a hybrid space that can be both real and imagined. The architectural space becomes distorted and appears to be infiltrated by a strange water-like substance or texture that threatens the interior space. The invading textures morph the space until it seems to completely dissolve in an ocean of digital textures, before the architectural forms re-emerge again. At times, the digital, liquid-like distortions are interrupted by flicker, which grows and turns into a strobe effect. Although the animation does not deal with home specifically, the digitally manipulated space in *Built-in Views* (2016) suggests that spaces and places are in a constant state of flux as they shape and are shaped by subjective experience.

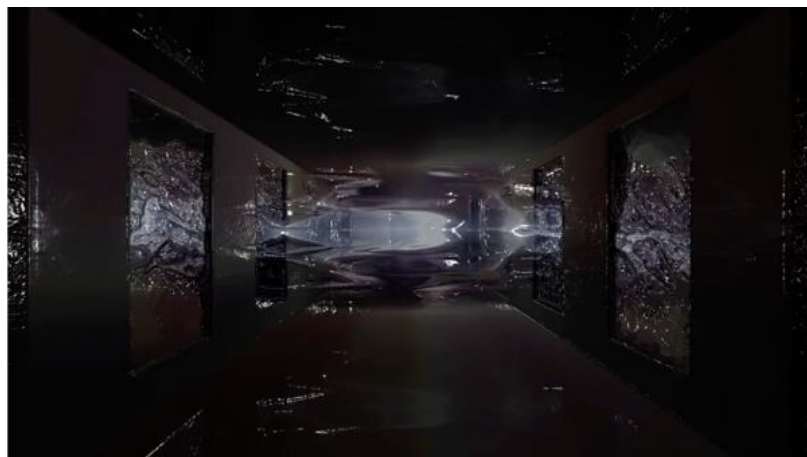


Fig. 19. Sabrina Ratté. *Built-in views* (2016).



Fig. 20. Sabrina Ratté. *Built-in views* (2016).

Ratté uses both analogue and digital media to create the distortions in the animation. She is known for her use of video synthesisers, which involve manipulating electronic signals to produce a variety of outputs that resemble glitches and errors in electronic media. These glitches and errors (figure 21) can be seen as a strategy to represent the way that memory is fragmented and in a state of continuous construction and reconstruction. Walden (2019:2) explains that memory is incomplete and inaccurate and that it involves the assemblage of human and non-human participants, which contributes to its continuous construction. The distortions created in *Built-in Views* (2016) reflect this process while simultaneously suggesting the way that physical places are imbued with psychological resonance. Albeit in a different medium, it performs a similar function to the decay of 35mm film as seen in Lei and Sauvin's *Recycled* (2013), Murata's use of data-moshing in *Monster movie* (2015), and my own animations in *Remembering Houses* (2022), where it has connotations with memory.



Fig. 21. Sabrina Ratté. *Built-in views* (2016).

In *Built-in Views* (2016), however, these glitches and distortions suggest the way that memories shape our perception and experience of spaces. Although the glitches recall the era of electronic media, they do not evoke a sense of nostalgia as in Lei and Sauvin's *Recycled* (2013). Instead, the glitches in *Built-in Views* (2016) create a hybrid space where the separation between real and virtual becomes blurred, evoking a sense of ambiguity and fluidity in the perception of place and memory. It becomes an uncanny space that aligns with Blunt and Dowling's (2006) conception of the homely and unhomely as intertwined. This also reflects Avery's (2014) argument that the boundary that separates the homely and unhomely is increasingly blurred in the digital era.

Rather than nostalgia, the glitch aesthetics used in *Built-in Views* (2016) evoke a sense of anxiety as the architectural space goes through a process of dissolution and reconstruction. This echoes Cieraad's (2010:93) and Donohue's (2014) ideas on how past traumatic experiences of home affect all future homes. The flickering strobe effect that interrupts the glitch aesthetics and the architectural forms, as well as the soundtrack, also contributes to a sensory experience that induces a sense of trauma or anxiety. Furthermore, the animation also demonstrates the intimate connection between places and the psychological experience of them as theorised by Bachelard (1994 [1958]).

In terms of expanded cinema practices, *Built-in Views* (2016) focuses on spatial experience rather than narrative. The movement in the animation is slow and creates a meditative, hypnotic atmosphere. This immersive effect is further enhanced by the soundtrack, produced by Roger Tellier Craig, a long-time collaborator of Ratté. Much like the visuals, the sound is digitally produced and emphasises the constructed nature of the scene. Spatial audio effects enhance the sense of space and draw attention to the uncanny duality of familiarity and alienation in the animation.

4.2 *BROKEN COMFORT (2022) AND SAVE OUR SHIP (2023)*

In my own animations, *Broken Comfort* (2022) (figure 22) and *Save Our Ship* (2023) (figure 23), I employ strategies similar to Ratté's, using digital manipulation to interrogate the fluid and dynamic nature of spaces and places. I explore the ambiguous and complex nature of

home by foregrounding the tension between comfort and alienation, longing and belonging, and the familiar and the unfamiliar through digital animation.



Fig. 22. Christel Liebenberg, *Broken Comfort* (2022).

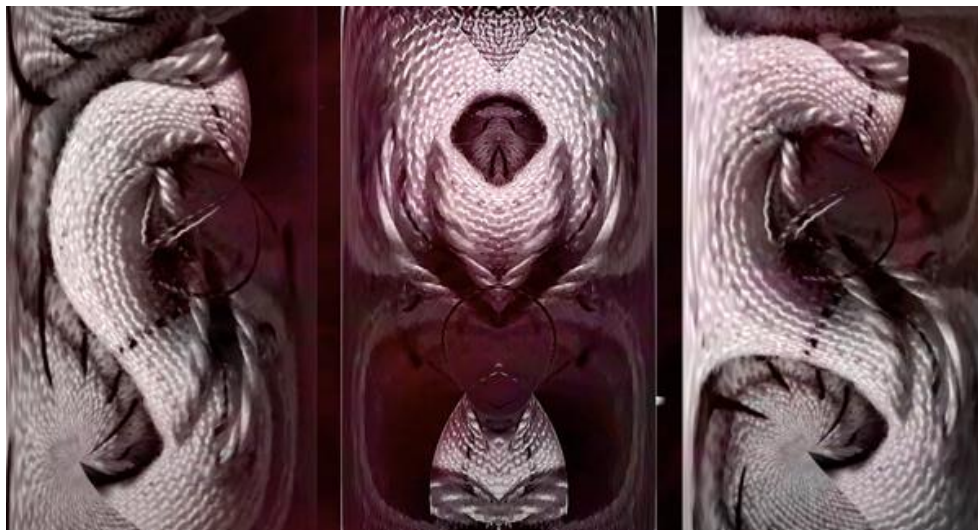


Fig. 23. Christel Liebenberg *Save our ship* (2023).

In both *Broken Comfort* (2022) and *Save Our Ship* (2023), I used fabric to create a human-like shape, which was then stitched together (figure 24) and photographed. Fabric was chosen for its general associations with comfort and protection, evoking both bodily intimacy and domesticity.



Fig. 24. Christel Liebenberg, *Stitched fabric* (2022).

The moving images in *Broken Comfort* (2022) (figure 25) have bodily associations. By layering the bleached film negatives over the animation, it not only evokes a sense of memory but also gives the moving image a skin colour, which amplifies the bodily associations. This adds to the tactility and sensory experience in the animation, which evokes a sense of comfort/discomfort. The morphing, mirror-like images are harmonic and symmetrical and evoke associations with the recognisable and nameable. It is not only an image of symmetry and harmony, but as it moves, it also becomes an image of integration and unity associated with the concept of home. Through its mirror-like qualities, it draws a correlation between apparent beauty and the sinister. It contains within it a duality that is also seen in the concepts of home and memory. The moving images in *Broken Comfort* (2022) have an oneiric quality, and in a similar way to Ratté's *Built-in Views* (2016), it creates an uncanny space that moves between the familiar and the unfamiliar.



Fig. 25. Christel Liebenberg, *Broken Comfort I* (2022).

Save Our Ship (2023) (figures 26 and 27) is a looping animation in which chromatic distortions slowly deteriorate the moving image until it completely disappears, only for the sequence to begin again. Caught in an endless cycle of transformation and erasure, it mirrors the processes of remembering and forgetting, where fragments are both retained and lost, and memory is reshaped each time. The chromatic distortion used in *Save Our Ship* (2023) extends from the analogue decay used in *Remembering Houses* (2022). Just as in Ratté's work, the chromatic distortions, although they have connotations with failure in electronic media, do not create a feeling of nostalgia. In the case of *Save Our Ship* (2023), the disintegration caused by the chromatic distortions evokes a sense of loss. This aligns with findings in chapter two that there is always some sense of loss attached to the concept of home. Furthermore, it also highlights the way that trauma and nostalgia are, as Legg (2004:99) states, theoretically and practically linked, where the power of loss often shapes the attachment to place.



Fig. 26. Christel Liebenberg, *Chromatic distortion in Save Our Ship* (2023).



Fig. 27. Christel Liebenberg, *Chromatic distortion in Save Our Ship* (2023).

In Ratté's animation, as well as my own, the still image is animated by applying digitally produced³² movement. Ji-Hoon Kim (2011:371) refers to this form of animation as "digital moving pictures," where the still photograph is brought to life or where the stillness embedded in moving images is highlighted using digital media. Kim (2011:372), in writing about the relationship between photography and film, argues that this practice creates hybrid visual forms that challenge the perceived differences between the recorded and manipulated image. In this regard, he explains that it results in the "dynamic coexistence of stasis and motion" (Kim 2011:373), an aspect that highlights the parallel experience of home as both a stable and fluid concept.

In terms of expanded cinema practices, this process of animating still photographs through digital manipulation aligns with the emphasis on blurring the boundaries between film and other art forms, such as photography or installation art. Furthermore, in a similar way to Ratté, the soundtrack in both *Broken Comfort* (2022) and *Save Our Ship* (2023) extends the spatial experience of the animation. The soundtrack features ambient sound with a dreamlike quality and minimal tonal variations. It was created by Erokia Sound Design³³ by applying the Paul Stretch effect in Audacity³⁴. This slows down a sound dramatically without altering its tone and produces a stretched, ethereal quality. Such soundscapes not only contribute to the ambiance of the work but also emphasise the fluid and dynamic nature of the visuals. In terms of expanded cinema, this strategy is used to create multisensory cinematic experiences.

³² In my own animations, a single photograph of the stitched fabric was imported into Adobe Premiere Pro, and 360-degree editing techniques were applied to the 180-degree image. That caused the still image to distort, and the movement was created through keyframing the distortions. While 360-degree editing techniques are typically used to edit video content captured with cameras like the GoPro Max, which can record 360-degree footage, they are not generally used to create 360-degree content from static images, as Premiere Pro lacks true 3D capabilities.

³³ Jordan Powell is Erokia Sound Design, and I found the soundtrack at <https://freesound.org/people/Erokia/>. I emailed the animation to him and asked permission to use the sound, which he approved on 22 December 2022. I also asked him how the sound was made, and he proceeded to explain it to me. I experimented with this technique and used a similar process in my final animations, discussed in chapter five.

³⁴ Audacity is sound editing software.

Through the digital manipulation of motion, *Broken Comfort* (2022) and *Save Our Ship* (2023) explore the complex and ambiguous nature of home and memory, where the familiar can suddenly become unfamiliar. In this way, the animations challenge the notion of home as a static, comforting space and instead present it as a dynamic and multifaceted environment. This reflects the broader understanding of home as not only a physical location but also a psychological landscape where longing and belonging coexist.

In concluding this chapter, both Ratté's and my own animations explore the ambiguity and fluidity of spaces, using digital manipulation to destabilise familiar forms and evoke a sense of simultaneous comfort and alienation, longing and belonging. With regards to expanded cinema practices, both Ratté and I explore the immersive and multisensory through digital manipulation, glitch aesthetics, and ambient soundscapes. The glitch aesthetics and movement created in both our animations create a sense of fragmentation and have connotations with the uncanny rather than nostalgia. It creates a space where the real and the virtual intersect to create a hybrid space that is neither comforting nor alienating.

The glitch aesthetics in Ratté's animation create a sense of memory fragmentation, highlighting the ways that memories are continuously constructed and reconstructed. Her use of glitch aesthetics references the fluid nature of spaces and places and the way that memories and feelings projected onto spaces alter the experience of places, such as home. This aligns with Bachelard's (1994 [1958]:141) notion that home is part of our innermost being, emphasising how memory imprints itself onto physical environments and influences our perception of them. In contrast, while my use of chromatic distortions also evokes the fading and distortion of memory, it also serves a different function. Rather than only representing fragmentation, it constructs an uncanny space. This interplay of distortion and recognition creates a dual sense of longing and belonging, reinforcing the ambiguous nature of home and memory.

In conclusion, through digital manipulation and the interplay between visuals and sound, experimental animation incorporates expanded cinema's emphasis on multisensory experience. These practices allow for a deeper investigation into the ways that home is a constructed, dynamic, and ambiguous space that is constantly open for negotiation.

Chapter 5: AUGMENTED SPACES, CONSTRUCTED PLACES

INTRODUCTION

This chapter investigates the potential of audience participation, interactivity, and immersivity in exploring home as a dynamic and constructed space. Drawing from expanded cinema's emphasis on the relationship between the viewer, the technology, the exhibition space, and the film, and their rejection of the passive spectator, the chapter focuses on spatial augmentation practices, which include augmented reality, virtual reality, and projection mapping. To address the final part of the research question, this chapter analyses selected experimental animations of Sabrina Ratté's exhibition *Aurae* (2022) as well as my own animations.

5.1 IMMERSIVE AND INTERACTIVE SPACE

In early expanded cinema, there was an awareness of cinema's spatiality (Uroskie 2014:11), and, as mentioned earlier, the shift in the understanding of the relationship between the exhibition space, the viewer, and the film was one of the main tenets of early expanded cinema practice. Walley (2021:42) notes that the term 'expanded cinema' is, in fact, a spatial metaphor since it refers to the expansion of cinema into new territories. Cinema moved from the darkened theatre to occupy spaces such as the art gallery in the form of moving image installations.

Birgitta Hosea (2018:258), however, notes that exhibiting moving image works in an art gallery does not necessarily mean that it is a moving image installation. Nicky Hamlyn (2012:265) and Catherine Elwes (2015:4) both argue that works that are merely relocated to the art gallery only recreate the cinematic experience in the gallery. Therefore, according to Hosea (2018), Hamlyn (2012), and Elwes (2015), for an animation to be considered an animation installation, the installation needs to consider the physical exploration of space as well as the viewer being mobile. In other words, there needs to be a degree of interactivity between the viewer, the film, and the technology in the exhibition space.

Authors such as Felix Palazuelos and Andréia Oliveira (2020) as well as Ceci Moss (2019) have explored this notion further through Gilbert Simondon's (1924-1989) concept of the associated milieu.³⁵ Simondon's concept of the associated milieu refers to the idea that objects, living organisms, or systems do not exist in isolation but always function in relation to their environment. The associated milieu is therefore an environment that is both shaped by and shapes the object or system that exists within it (Palazuelos and Oliveira 2020:218). Palazuelos and Oliveira (2020:217) apply the notion of the associated milieu to video installations³⁶ to investigate interactivity through the relationship between bodies and milieus. In other words, in the context of an animation installation, the associated milieu consists of the relationship between the system, such as projectors, screens, and software, and its surroundings, such as the gallery space and the viewer.

While Simondon's focus is on relational mechanics and how technological ecologies are formed, authors such as Oliveira (2022) and Bruno (2022) focus on how these environments are experienced emotionally and sensorially. In audio-visual installations, the use of multiple screens, for instance, encourages the viewer to wander through the space. Oliveira (2022:2) explains that this allows the viewer to change their spatiotemporal perception and, in this way, creates an embodied experience. The relations created between the viewer, the artwork, and the environment in which it is exhibited are not simply a material assemblage but an experiential one too.

The exhibition space is not simply a container in which the event takes place, but the environment also affects the way the viewer interacts with the artwork and how the artwork in turn shapes the viewer's perception of space. This resonates with Bruno's (2022:27) argument that technologies such as cinema, television, screens, and projections, create technological ecosystems where our senses constantly interact with media. These technologies do not exist in isolation. They are interconnected, creating a layered and mediated world that shapes and is shaped by the environment in which they exist.

³⁵ Gilbert Simondon's notion of the associated milieu refers to an ensemble of external conditions within which a living being, a technical object, or a system exists. It can be understood as a constellation of material objects and physical circumstances that come together to create the dynamic interaction that facilitates the sustenance of an ecosystem (Rebolledo and Oliveira 2010:218).

³⁶ Oliveira (2022) discusses the video work of Eija-Liisa Ahtila.

This resonates with the broader themes in the study, namely that social interactions are not separate from the environment in which they happen but rather deeply rooted in and shaped by it. As mentioned in chapter two ([section 2.1.2](#)) of this study, spaces and places are constructed through social and cultural practices, and in the contemporary era, these practices and interactions are increasingly constructed through the interplay between the real and the virtual. Ratté's animations and installations engage with the interplay between physical and virtual spaces, where she creates environments where the viewer's movement and interaction become integral to understanding the constructed nature of spaces and places.

5.2 SABRINA RATTÉ'S *AURAE* (2022) EXHIBITION

Ratté's exhibition, *Aurae* (2022)³⁷ (figures 28 and 29), is a site-specific installation that consists of ten of her animations,³⁸ prints, sculptures, virtual reality, and an interactive installation. The installation was designed specifically for the architectural context of the Gaîté Lyrique in Paris. In an interview with Catherine Bédard (2022: [sp]), Ratté explains that the space of the exhibition influences the way the work is perceived, and for the *Aurae* (2022) exhibition, she was interested in the way that the installation art created an environment or an ecosystem.

³⁷ The exhibition was designed in collaboration with the curator, Jos Auzende, the designer, Antonin Sorel, who was responsible for scenography, and the musician Roger Tellier-Craig, who composes the soundtracks for most of her animations (Gaîté Lyrique: [sa]).

³⁸ *Undream*, *Inscape*, *Activated Memories*, *Aurae*, *Biomes*, *Built-in-views*, *Domestic Landscape*, *Machine for living*, *Aire*, and *Seaside resort* are included in her *Aurae* (2022) exhibition, which was held at the Gaîté Lyrique in 2022 in Paris (Gaîté Lyrique: [sa]).



Fig. 28. Sabrina Ratté, *Aurae* (2022).



Fig. 29. Sabrina Ratté, *Aurae* (2022).

Ratté's animations mostly feature empty architectural spaces and landscapes, devoid of human beings. Within the exhibition space, the audience becomes the inhabitants of these spaces as they navigate and engage with the installation. The exhibition becomes a

relational space and a site of embodied participation and aligns with expanded cinema practices where passive spectatorship is rejected, particularly in how her installation does not merely relocate animation to the gallery but actively engages with spatiality, interactivity, and the viewer's embodied experience.

Through the interplay between moving images, sculptural elements, and virtual environments, *Aurae* (2022) creates an associated milieu where technology, space, and the viewer are dynamically interconnected. This echoes Simondon's (in Rebolledo and Oliveira 2010) notion that technological systems exist in relational ecologies, which shape and are shaped by their surroundings. Moreover, Ratté's immersive environment fosters a sensory engagement that resonates with Bruno's (2022) perspective on technological ecosystems. By integrating multiple media and encouraging physical navigation, *Aurae* exemplifies how expanded cinema practices can construct spaces that are not only materially and technologically layered but also experientially and emotionally charged. The next section discusses selected works from Ratté's exhibition *Aurae* (2022).

5.2.1 The real and virtual in Sabrina Ratté's animations

In her animation, *Machines for Living: Montigny-le-Bretonneux* (2018) (figure 30), Ratté explores the brutalist architecture around Paris. The title of the work references Le Corbusier's (2007:151 [1928]) concept of a house as a "machine for living" where architecture is meant to serve as a functional space, designed to improve human life. The looping animation depicts a building, devoid of human life, with digitally produced textures moving through it.



Fig. 30. Sabrina Ratté, *Machine for Living: Montigny-le-Bretonneux* (2018).

Ratté explores the interplay between the real and the virtual by transferring 2D images into 3D space and 3D objects into physical space through practices such as sculpture, projection, augmented reality, and virtual reality. The animation, *Machine for Living: Montigny-le-Bretonneux* (2018), was created using photographs Ratté took of building facades in Paris. These images were imported into 3D software, where the edges of the 2D photographs were extruded to generate 3D models, which were then animated. As Ratté explains (Vanier College Television, 2024), by transitioning 2D photographs into a 3D space, she explores the convergence between physical and virtual environments. This process allows the object or image to exist and be interacted with in multiple spatial dimensions.

In *Machines for Living: Montigny-le-Bretonneux* (2018), the digital image has multiple manifestations. After the 3D models were created from 2D images, Ratté created a 3D-printed sculpture based on the animation and then projected the animation back onto the sculpture, highlighting the interplay between digital and physical realities (figures 31 and 32). This is done through projection mapping, a technique that uses projectors, computers, and software to project moving images onto irregular shaped surfaces such as buildings, sculptures or objects. As a form of spatial augmentation, projection mapping moves beyond single-screen practices to transform architectural facades or everyday objects into dynamic sites that generate affective environments. This strategy not only blurs the real and the virtual but also reveals how technology does not only represent spaces but actively constructs it. This aligns with Bruno's (2022:19) notion of 'environmentality,' where

projection functions as a material force that shapes space, perception, and the body's interaction with the world.



Fig. 31. Sabrina Ratté, Projection mapping onto 3D printed sculpture from *Machine for Living: Montigny-le-Bretonneux* (2018).



Fig. 32. Sabrina Ratté, projection mapping onto 3d printed sculpture (2022).

Exploring the convergence between physical and virtual environments is a recurring aspect of Ratté's work, and in *Floralia* (2021) (figure 33), she used a process called photogrammetry to create 3D models of plants that were used in the animation. Photogrammetry is the technique of obtaining precise measurements through photographs. It is a geographical technique that dates back to the 19th century and became popular during the two World Wars when aerial photography was used for mapmaking and military planning. During the 1990s it was used in geographical information systems, such as Google Maps, and today it is used for all types of 3D modelling (The Engineering Community 2019: [sp]).



Fig. 33. Sabrina Ratté, *Floralia II* (2021).

Traditionally, the process of photogrammetry involved taking multiple overlapping photographs of an object or environment from different angles. The 2D images are then imported into specialised software, such as *Adobe Substance Sampler* or *Meshroom*, where the images are stitched together to produce a 3D model. Today it can be done with a mobile device, such as a phone or a tablet, using mobile applications such as *Kiri Engine*³⁹ or *3D Scanner App*^{™. 40}

³⁹ <https://apps.apple.com/za/app/kiri-engine-3d-scanner-lidar/id1577127142>.

⁴⁰ <https://apps.apple.com/za/app/3d-scanner-app/id1419913995>.

Both photogrammetry and projection mapping enable Ratté to explore the constructed nature of space and memory. Photogrammetry allows for the recontextualization of physical objects into virtual spaces. Although the process allows one to capture highly detailed 3D models of objects or places, the technology often introduces distortions through incomplete scans. These imperfections parallel memory's unreliability, where gaps and errors become part of the narrative. Projection mapping, on the other hand, alters the perception of a place in real time. By layering digital animations onto physical structures and objects, Ratté transforms static environments into dynamic spaces, reflecting the constructed nature of home and memory. In this way, photogrammetry and projection mapping become conceptual frameworks through which Ratté explores the constructed nature of space and place and challenges fixed notions of place and memory.

Floralia (2021) consists of four animations, which are exhibited in multiple formats, including virtual reality, augmented reality, multiscreen installation, projection mapping, and digital prints. Conceptually, the animations act as a speculative archive of plants and flowers that exists in a future where the natural world is only accessible through the virtual. Although the artist's intended meaning and the predominant interpretation of the work focus on ecological concerns, this chapter considers the ways that the animations create immersive and interactive environments through different technological systems that engage the viewer as an active participant. In terms of expanded cinema practice, this emphasises the spatialisation of media, where the real and the virtual converge to create interactive and immersive environments.

The plants featured in the animation, which includes hydrangeas and roses, are made from photogrammetric 3D scans from the artist's own garden, where she resided during the COVID-19 pandemic. Through 3D scans, objects from the real world are brought into the virtual world, where she animated them with 3D software. The animations all depict a digital cube-like space with plants. One version depicts hydrangeas, another roses, and the other two tree stumps. The scenes are lit with artificial lighting that resembles a faulty fluorescent light. The camera movement is deliberately slow, and as it moves through the scenes, the 3D models move apart and turn around, giving the viewer a close-up view of the 3D models. *Floralia IV* (2021), one of the animations that depicts a tree stump, contains

digital distortions, much like those used in *Built-in Views* (2016), and recalls the malleable and changing nature of memory.

Floralia (2021) was exhibited at various locations. In 2022 it was exhibited at the Eternal Art Space in Tokyo, Japan (Ratté: [sa]) as a large-scale immersive projection (figure 34). Unlike the projection in *Machine for Living: Montigny-le-Bretonneux* (2018), the immersive aspect in this exhibition was created through scale. The viewer, although seated, was enveloped by a cinematic environment that was much larger than the spectator in a space where all four animations were projected simultaneously. Although this form of projection can be understood as a form of expanded cinema, it is often associated with more traditional forms of immersive cinema, such as IMAX.



Fig. 34. Sabrina Ratté, Immersive projection of *Floralia* (2022).

Bruno (2023:34) is critical of large-scale projections and uses the term “optical immersion” to describe immersive experiences that are created through scale alone. She argues against a human-centred visual experience and asserts that immersion should be understood as an environmental and spatial phenomenon, where projection, movement, and atmosphere shape the viewer’s experience. Although Bruno’s (2022, 2023) ideas are not discussed in depth in this study, her ideas resonate with Hosea (2018), Hamlyn (2012), and Elwes’ (2015) argument that there needs to be a degree of interactivity between the viewer, the film, the technology, and the exhibition space to create immersive spaces, and that it requires the viewer to be mobile.

Ratté's exploration into the interplay between the real and the virtual also included augmented reality and virtual reality. *Floralia IV* (2021) (figure 35) was exhibited in a public space as an augmented reality work where the digital image was brought back into the real world by overlaying the digital image onto real space. In 2023, it was exhibited at the MacKenzie Art Gallery in Canada as a VR experience (figure 36). In terms of spatial augmentation, VR operates at the opposite end of AR. While AR technologies add to a physical place by overlaying digital content onto the real world, VR technologies substitute real space with a virtual one, thereby erasing the physical environment. Both AR and VR do, however, extend expanded cinema's goal of redefining spatial relationships between the viewer, the technology, and the environment. AR can be understood as an extension of expanded cinema's emphasis on interactivity, while VR aligns with its ambition to create immersive and alternate realities, such as Stan VanDerBeek's *Movie-Drome* (1965), mentioned in chapter two ([section 2.4.2](#) figure 3) of this study.

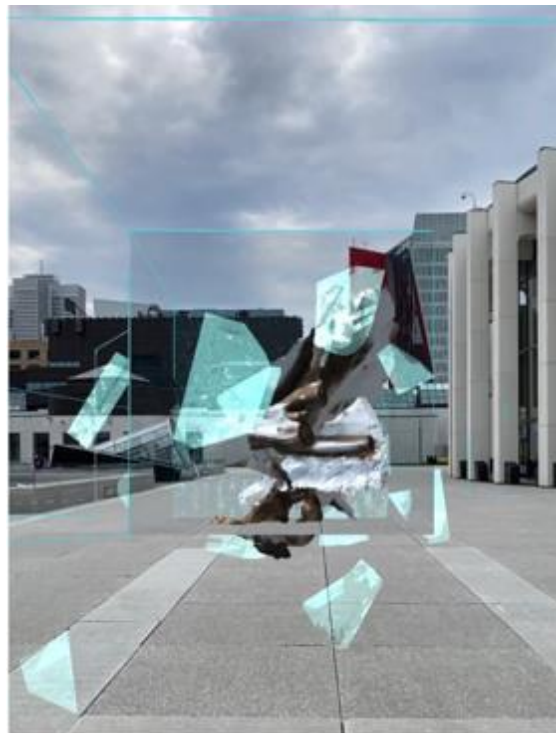


Fig. 35. Sabrina Ratté, AR version of *Floralia IV* (2021).

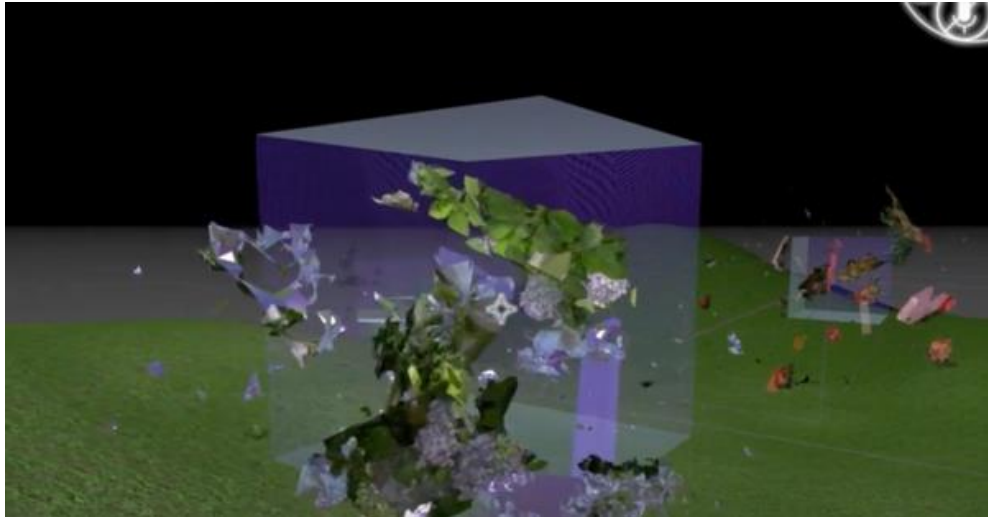


Fig. 36. Sabrina Ratté, VR version of *Floralia* (2023).

In conclusion, Ratté's virtual gardens can be seen as metaphors for personal and collective memory, where the digital archive functions as a memorial. By blurring the boundaries between physical, digital, and imaginary spaces, Ratté highlights the ways memory, as it relates to place, is always constructed and reconstructed through the interplay between people, objects, places, and technologies. Her practice resonates with key concepts in chapter two, where place and memory are defined as dynamic, relational, and interactive. Furthermore, Ratté's practice demonstrates how expanded cinema's emphasis on spatial interactivity, embodied participation, and the rejection of passive spectatorship can be used to explore the constructed nature of home and memory. By weaving together physical and virtual architectures, she highlights the role of technology not only in representing space but also in actively shaping it.

5.3 SPATIAL AUGMENTATION IN *FRAGMENTS OF FAMILIARITY* (2022-2024)

5.3.1 Augmented reality

As mentioned in the introduction of this study, I have incorporated a variety of digital tools in my practice. Central to this has been my experimentation with augmented reality, which has allowed me to expand both the conceptual and material boundaries of my creative process. Augmented reality traditionally belongs to the disciplines of computer science and engineering. Although it is often perceived as a novel innovation, augmented reality has infiltrated everyday life in the form of virtual or voice-activated assistants, such as Siri, or

navigational tools like Google Maps. While voice-activated AR has become seamlessly integrated into everyday life, the development of visual AR remains more complex. This is due to technical challenges, such as the requirement of advanced hardware and software and complex spatial computing necessary to overlay digital imagery onto physical environments.

In my practice, I experimented with several AR applications as well as WebAR⁴¹. My decision on which one to use came down to user friendliness. Two of my AR works were activated with *Artivive*⁴² and one through the *Adobe Aero*⁴³ application. Both these applications are easy to use but have their limitations. For the visitor to view the augmented animations with the *Artivive* application, they were required to download the app onto their mobile devices. Although *Adobe Aero* does not require the user to download the application to view the AR installation, it is still in beta and only works on newer iPhones.

Protecting Loss (2023) (figure 39) and *Belonging Elsewhere* (2023) (figure 40) stem from the iterative process of creating *Broken Comfort* (2023) (figure 25 in chapter four). The still images were exhibited as wall works that acted as trigger images for a looping animation that could be viewed on a mobile device through the *Artivive* application. These works draw from Ratté's practice, where she explores the multiple possible manifestations of the digital image and the interplay between physical and virtual spaces.

Beginning as stitched fabric sculptures (figures 37 and 38), both *Protecting Loss* (2023) and *Belonging Elsewhere* (2023) are tactile objects in the physical world. The sculptural objects were migrated into the virtual world through photography and digital animation. Thereafter it was printed and framed and existed as a physical object in the gallery (figures 29 and 30). The wall works acted as trigger images to activate the looping augmented animation virtually, which was then experienced in the physical world on a mobile device.

⁴¹ Unlike AR applications, such as *Artivive*, WebAR does not require an app to view the augmented experience. It can be viewed on a mobile device in a browser, such as Safari or Google Chrome. It does, however, involve some coding and is often not very user-friendly.

⁴² <https://www.artivive.com/>

⁴³ <https://www.adobe.com/africa/learn/aero>



Fig. 37. Christel Liebenberg, Small stitched fabric used in *Protecting Loss* (2023).



Fig. 38. Christel Liebenberg, Small stitched fabric used for *Belonging Elsewhere* (2023).



Fig. 39. Christel Liebenberg, *Protecting Loss* (2023).



Fig. 40. Christel Liebenberg, *Belonging Elsewhere* (2023).

Informed by Ratté's practice, this strategy was used throughout my body of work to investigate the ways that the interplay between the physical world and the virtual realm can contribute to creating new meaning. In the context of this study, this idea was first explored

in chapter three through Marks' (2002) notion of analogue nostalgia, where obsolete media, when used in the digital era, can be understood in terms of its thematical associations.

Both *Protecting Loss* (2023) and *Belonging Elsewhere* (2023) build on the aesthetic and conceptual foundations of *Broken Comfort* (2022) (figure 25 in chapter 4). The morphing, mirror-like images also evoke associations with the recognisable and nameable while simultaneously evoking a sense of the uncanny. The morphing figure in *Belonging Elsewhere* (2023), for instance, shifts between what appears to be a woman and an insect and heightens the uncanny effect. While *Broken Comfort* (2022) explored primarily the ambiguous nature of home, these AR works expand on these themes to explore multilayered, interactive spaces where physical and virtual elements intersect.

By layering digital animations onto physical objects, the work explores the interrelated nature of real and imagined spaces, and in doing so, it interrogates how home, and memory are constructed through similar processes between the material traces of the past and their digital reimagining in the present. *Protecting Loss* (2023) and *Belonging Elsewhere* (2023) functioned as preliminary explorations of AR's potential, leading to my final augmented reality work, *Forgotten Corners* (2024), a fully immersive AR installation. While these works rely on framed trigger images, *Forgotten Corners* (2024) expands interactivity further, allowing viewers to physically navigate an augmented space.

Forgotten Corners (2024) (figure 41) is a site-specific augmented reality installation designed specifically for the exhibition space at 6 Spin Street Gallery, Cape Town. It was made using the *Adobe Aero* desktop application, which was instrumental in translating these digital elements into an immersive three-dimensional space. Unlike more static AR applications such as *Artivive*, *Aero* enabled me to use any flat surface, such as walls or floors, to trigger the immersive AR experience. This interactivity, although still limited in resolution, also allows for the incorporation of 3D objects, creating a more immersive encounter.



Fig. 41. Christel Liebenberg, *Forgotten Corners* AR installation screenshots (2024).



Fig. 42. Christel Liebenberg, QR code for *Forgotten Corners* (2024).

Forgotten Corners (2024) is an imagined space that was created in *Adobe Photoshop* through a process of copying and pasting textures and structures, such as walls and windows. The installation features a series of repeating walls, doors, and windows. It draws from the idea of a labyrinth where each turn one takes feels familiar and is triggered by a QR code⁴⁴ (figure 42). Although it was designed specifically for the exhibition space, it can be activated in any location by scanning the QR code with the camera on an iPhone and selecting the floor as the surface for the AR experience.

Just as Ratté's digital spaces are devoid of human figures, inviting the viewer to inhabit and navigate them, *Forgotten Corners* (2023) engages the audience as active participants. This reflects the expanded cinema tradition of redefining the relationship between the artwork, the technology, and the audience, while simultaneously speaking to the themes of place in human geography. In this sense, the augmented installation functions not only as a digital representation but also as an immersive environment where the physical and virtual coexist, mirroring the dynamic interplay between home and memory.

Although on a much smaller scale than Ratté's *Aurae* (2022) exhibition, *Forgotten Corners* (2023) invites viewers to physically navigate through the digital environment. In terms of expanded cinema practices, and in line with Hosea's (2018) view that installation art requires the viewer to be mobile, *Forgotten Corners* (2023) creates a hybrid environment where the viewer's spatiotemporal experience is reshaped through movement and sensory engagement (Oliveira 2022).

5.3.2 Photogrammetry

Following the AR explorations, my experimentation expanded into more detailed 3D modelling using photogrammetry, a technique I had previously discussed in this chapter. Drawing inspiration from Ratté's work *Floralia* (2020), I used photogrammetry to create highly detailed 3D models of the sculptural forms (figure 24 under section 4.2) used to make *Broken Comfort* (2022). These models, constructed from the fabric sculptures, were generated from photographs and processed through *Adobe Substance Sampler*. Despite the

⁴⁴ Adobe Aero is currently still in beta and is compatible only with newer iPhone models, starting from the iPhone 6s and later.

slow rendering process and the heavy demands on computational resources, the final models offered an exceptional level of detail and texture, emphasising the capacity of digital technologies to enhance the materiality of virtual objects (figure 43).

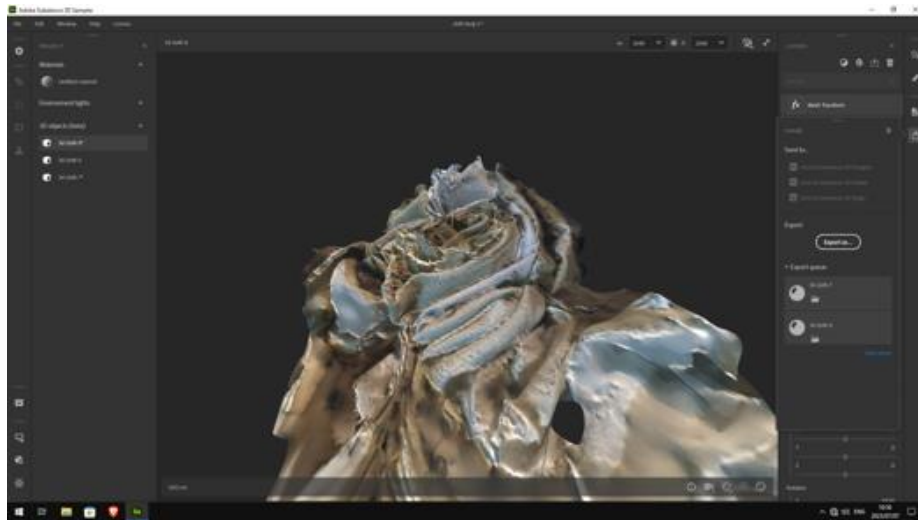


Fig. 43. Christel Liebenberg, 3D object made with photogrammetry in Adobe Substance Sampler (2023).

Additionally, I experimented with mobile applications such as 3D Scanner App™ and Kiri Engine, which allowed me to scan and create 3D models without taking photographs. These applications use the LIDAR⁴⁵ sensor on a mobile phone to scan an object or environment. It produces high-resolution, accurate 3D models and significantly reduces the time to make the 3D models. While offering practical solutions, these mobile technologies also revealed the limitations inherent in scanning technology. I engaged creatively with the application's flaws to inform my creative practice. Incomplete scans produced fragmented 3D objects, with missing data manifesting as holes or disconnected floating pieces (figure 44).

⁴⁵ LIDAR (Light Detection and Ranging) is a remote sensing technology that sends a laser from a device to an object and measures the time it takes for the light to travel. This information is used to create high-resolution 3d models and maps and allows for the precise mapping of landscapes, buildings, and objects (IBM 2023: [sp]).

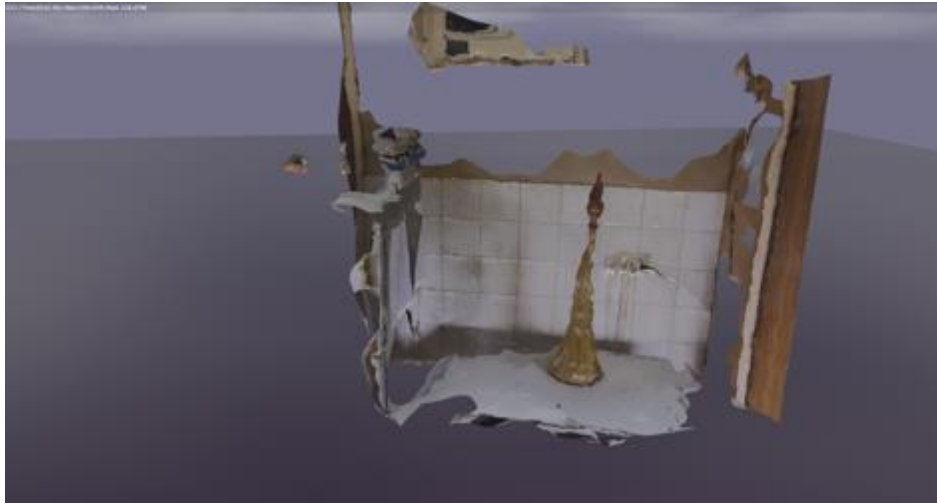


Fig. 44. Christel Liebenberg, 3D object made with photogrammetry in Kiri Engine (2023).

These fragmented forms reflect the imperfections of memory, especially in the context of place and memory. Echoing the ways in which memory is often incomplete and selectively constructed, it can also be related to how Boym's (2001) notion of reflective nostalgia operates. It is less about the exact reconstruction of the past but rather about dwelling on ruins (Boym 2001:41) and engaging with the selective and incomplete nature of memory.

5.3.3 Projection mapping and virtual reality

Fragments of Familiarity I, II, III, and IV (2024) is the final part of my body of work. It consists of four animations that depict fragmented surreal interior spaces. Three of the animations (figures 45, 46, and 47) were exhibited as an animation installation that made use of projection mapping (figures 48 and 49), and the fourth is a 360-degree animation that is viewed on a VR headset (figure 50). *Fragments of Familiarity* (2024) explores the interplay between the real and the virtual through processes such as photogrammetry, where objects in the physical world are scanned to create virtual objects, which are then projected back into the real world through projection mapping and VR. In terms of expanded cinema, it investigates strategies that can be used to examine how audience participation and interactivity can create immersive environments that explore the constructed nature of home and memory.

Fragments of Familiarity (2024) draws its meaning from my domestic environment. I live in an inherited house, where everyday objects, shaped by generations of history, act as vessels of memory and belonging. These objects, passed down through family, are more than just functional items. They hold stories and memories of those who came before me, connecting me to a shared heritage. The fragmented, surreal aesthetic emerged through my process of experimenting with 3D scanning technology. Its limitations, discussed earlier in this chapter, inadvertently reflect the instability of memory and mirror the way that memory is never fixed but always shifting. As the scanner captured the objects, it distorted their textures and warped their shapes. This process became a metaphor for how memory works, not as a precise record, but as an imperfect, constantly evolving process of reconstruction. The tension between the familiar objects and their uncanny digital representations captures the way that home is both a physical place and an imagined space.

After scanning the objects, the 3D models were imported into Blender⁴⁶ where the scenes were built and animated in 3D space. The movement in the animations was created using a similar approach to Ratté in her work *Floralia* (2021). While some of the 3D models were moved and rotated, most of the movement was created through a virtual camera, which slowly rotated around the scenes. Referring to Kim (2011:371), discussed in chapter four, this strategy creates “digital moving pictures” that challenge the distinction between the recorded and the manipulated image. This not only highlights the interplay between the real and imagined and the physical and the virtual, but also the constructed nature of home and memory.

The animation installation part of *Fragments of Familiarity* (2024) consists of three animations that were projected in a separate room at the back of the gallery through projection mapping (figure 48). It was done using 3 projectors, a laptop, a desktop computer, and speakers (figure 49). The equipment used for projection mapping was not hidden and was placed on tables in the centre of the room. The viewer was able to walk around the equipment and in front of the projection, blocking the light and casting shadows on the work. This strategy is informed by Hosea’s (2018) assertion about the mobile viewer,

⁴⁶ Blender is an open-source 3D program that is used for creating animated films, visual effects, 3D models, and interactive content.

as well as expanded cinema's practice of exposing technology and treating it as sculptural elements that interact and shape space and the viewer's experience of it.



Fig. 45. Christel Liebenberg, *Fragments of Familiarity I* (2024).



Fig. 46. Christel Liebenberg, *Fragments of Familiarity II* (2024).



Fig. 47. Christel Liebenberg, *Fragments of Familiarity III* (2024).



Fig. 48. Christel Liebenberg, *Fragments of Familiarity* (installation view) (2024).



Fig. 49. Christel Liebenberg, *Fragments of Familiarity* (set up) (2024).

The soundtrack was created using the same approach as the sound for *Broken Comfort* (2022). I recorded a violin chord, imported it into Audacity, and applied the Paul Stretch effect. This transformed it into a dreamlike ambient sound lasting 40 minutes. I then edited it down to 2 minutes and 36 seconds. The speakers were placed on the wooden floor beneath a table, creating a subtle vibration that enhanced the immersive, multisensory experience.

Fragments of Familiarity IV (2024) (figure 50) is a 360-degree animation designed for viewing with a VR headset. It depicts a similarly fragmented and surreal space as in *Fragments of Familiarity I, II, and III* (2024) but incorporates numerous reflective surfaces, causing objects to appear multiple times. It is a looping animation that draws from expanded cinema's emphasis on immersive environments and how this can be used to explore the constructed nature of home and memory. The 360-degree animation was very well received, and for many visitors, it was their first experience with VR.



Fig. 50. Christel Liebenberg, *Fragments of Familiarity IV* (VR) (2024).

Within cinematic immersion, proximity is affected through distance, and Casetti (2015:205) notes that in this environment, darkness is often an essential part of cinema. The darkened theatre creates a space where one spends time in close proximity to others, but the darkness displaces one from the theatre and places one in the film. The headset used to view *Fragments of Familiarity IV* (2024) performs a similar function as the darkness in the theatre by disconnecting the viewer from the real world and placing them in a fully virtual realm.

To Ariel Rogers (2019:139), scale is an important aspect of cinematic immersion, and he explains that to be immersed, one must be surrounded, enveloped, or enclosed by the film, and therefore the cinematic environment must be larger than the spectator. Elcott (2020:296) also writes that within the cinematic, immersion relies on “spectorial displacement” and that it is an essential aspect of cinematic immersion. In this regard, *Fragments of Familiarity IV* (2024) is a fully immersive experience that relies on spectral displacement and scale to explore the fluid and multifaceted nature of home and memory.

However, from Bruno’s (2023:34) perspective, VR is a form of optical immersion where the viewer is separated from the surrounding environment. In VR, the viewer’s position is always the centre, which, as Bruno (2023:34) states, reinforces a human-centric view of immersion. Even though the technology creates an immersive environment, and these

environments can produce sensory and tactile experiences, because the viewer is placed at the centre, they are, in fact, not a mobile viewer. This approach aligns with cultural geographers who, as mentioned in chapter two ([section 2.1.2](#)), moved away from the human-centred approach to place to understand place, and therefore home, as constructed through the constant interaction between people, spaces, memories, goods, and technologies.

Movement, therefore, is an important aspect of how places are constructed. Sarah Pink (2014:180) notes that routines are not only performed in the home, but they also actively contribute to the continuous construction and experience of home, its atmosphere, and the everyday life within it. It is, however, not only physical movement through space but also movement through time that contributes to the construction of home. Charisma Ratnam (2017:10), in writing about the experiences of migrants, explains that 'home' for the migrant often involves "spatialised social practices" where they attempt to reconstruct and possibly rebuild meaningful home-like spaces. Through memories, values, and traditions, they recreate links with past homes to create a sense of community and a feeling of belonging in the present. Home, as a spatialised practice, means that it is constructed through the interactions with various spaces that range from the physical and the virtual.

Chapter 6: CONCLUSION

6.1 CORE DISCUSSIONS

This practice-led study investigated the extent to which expanded cinema practices can be used in experimental animation to enhance the exploration of home and memory in the digital era. The key theoretical frameworks employed in this study were located in the fields of expanded cinema theory and human geography. Drawing from authors such as Doreen Massey (2005) as well as Alison Blunt and Robyn Dowling (2006), the research explored home as a dynamic and relational space. The study emphasised home's ambiguity as both a site of longing and belonging as well as a product of physical and virtual interactions. In this regard, reference was made to the *Heimlich* and *Unheimlich*. The relationship between home and memory was informed by authors such as Svetlana Boym (2002) and Gaston Bachelard (1994 [1958]), and particular attention was given to home and trauma and home and nostalgia.

The expanded cinema framework was informed by early expanded cinema theorists such as Gene Youngblood (1970) and Malcolm Le Grice (1972) as well as contemporary writers such as Jonathan Walley (2020). These authors emphasise the spatial and relational aspects of cinema, and these ideas were extended to include Giuliana Bruno's (2022:27) emphasis on how these spaces form technological ecosystems in which experience takes place.

Expanded cinema's materiality, interactivity, and multisensory engagement were positioned as creative strategies to explore the spatial and emotional dimensions of home and memory. Expanded cinema's focus on reshaping cinematic space corresponds with human geography's view of space and place as fluid and constructed. Both perspectives reject static conceptions of space, finding common ground in their shared focus on spatiality and relationality. These theoretical insights informed the analysis of Lei Lei and Thomas Sauvin's and Sabrina Ratté's animations, as well as the production of my body of work, *Fragments of Familiarity* (2022-2024).

6.2 KEY FINDINGS

Drawing from early expanded cinema practices that involved working directly on celluloid film, the study has explored the ways that analogue media, when used in the digital era, can trigger and evoke place memories. Informed by Marks' (2002) notion of analogue nostalgia, it explored how the material and tactile qualities of film media can prompt a sensory experience. The critical analysis of Lei and Sauvin's *Recycled* (2013) as well as my own animations, *All the Years I've Waited for You* (2022) and *Nothing Ever Happens Here* (2022), revealed that analogue media, such as celluloid film, not only trigger place memories, but that the signs of analogue decay, visible sprocket holes, and light leaks also evoke memories of a certain era, and in this way, link individual and cultural forms of remembering and belonging.

However, materiality in expanded cinema is not only limited to analogue media or processes. It has been shown that digital processes such as photogrammetry, glitch aesthetics, and projection mapping also function as forms of cinematic tactility that can evoke and trigger place memories. While analogue nostalgia highlights the remains of the past in the present, digital processes such as photogrammetry, glitch aesthetics, and projection mapping can create sensory and emotional responses as well as embodied experiences equal to that of analogue media (Harris 2019: 129). These processes highlight how contemporary digital practices do not depart from the materialist practices found in early expanded cinema.

Although digital manipulation, such as Murata's use of datamoshing in *Monster Movie* (2015) and Ratté's glitch aesthetics in *Built-in Views* (2016), as well as my use of chromatic distortions in *Save Our Ship* (2023), evoke a sense of memory, particularly its fragmented nature, they do not necessarily create a sense of nostalgia in the same way as the decay in analogue media. Unlike analogue decay, which could be criticised for romanticising the past, digital manipulation suggests a disruption in continuity that can be linked to the ways that traumatic place memories can turn home into an ambiguous site of both belonging and alienation. The use of looping animations further reinforces this idea, suggesting the ways that past spatial experiences continue to inform the experience of future places (Cieraad

2010:93). Furthermore, these methods demonstrate how fixed representations of home and memory could be destabilised to reflect the inherently ambiguous and dynamic nature of home and memory.

A key insight from my exhibition was the strong audience engagement with the interactive elements in *Protecting Loss* (2023), *Belonging Elsewhere* (2023), and *Forgotten Corners* (2024). Viewers were particularly drawn to *Forgotten Corners* (2024), which encouraged participation, exploration, and physical movement. The 360-degree animation *Fragments of Familiarity* (2024) was also well received. Despite this, these technologies had certain conceptual limitations. Firstly, AR technologies superimpose digital content onto the real world. Although the viewer can interact with the digital content in the physical world, there is no reciprocal interaction between the physical world and the virtual realm. With regards to the concepts of home and memory, the study has shown (in chapter 2, section 2.1.3) that the geographies of home are increasingly defined by the complex interplay between the real and the virtual (Ash, Kitchin, and Leszczynski 2019:5). Because AR does not allow for true integration between these realms, its ability to fully explore the fluid and relational nature of home and memory remains limited.

With regards to VR technologies, the study already mentioned its limitations in chapter five (section 5.4.3). VR technologies separate the viewer from the real world and transport them to a fully virtual space. Although VR does create immersive and embodied experiences, Bruno's (2023:34) critique of optical immersion raises questions about the nature of spatial engagement and the loss of physical context in VR. Bruno (2023:34) explains that since VR immersion is a visual and perceptual experience, and because the viewer remains physically static, it is not an environmental experience.

While VR allows for the reconstruction of spaces from memory, its detachment from the real world limits its ability to explore the affective dimensions of home and memory. With regards to expanded cinema practices, VR and AR can be understood as forms of visual spectacle and experimentation with technologies, especially in the context of Youngblood's (1970) version of expanded cinema. However, expanded cinema rejects passive spectatorship, which raises questions about Biggio's (2020:174) argument (discussed in

[chapter 2 section 2.3.2](#)) that AR, VR, and artificial intelligence are the new expanded cinema. While these technologies do expand the visual and experiential possibilities of cinema, they contradict expanded cinema's historical emphasis on spatial and relational engagement.

In this study, projection mapping emerged as a method to explore the fluid and constructed nature of home and memory. In terms of expanded cinema, projection mapping extends the cinematic experience beyond the surface of the screen and transforms static surfaces into dynamic and immersive environments. Unlike VR, which removes the viewer from the real-world space, projection mapping integrates the moving images into the physical environment, allowing for a more spatially engaged experience. While both VR and projection mapping are forms of spatial augmentation, the VR experience has a sense of artificiality, which is not present in projection mapping.

As mentioned in chapter 1 ([section 1.6.2](#)), Bruno (2020:9) relates cinematic projection to psychological projection, suggesting that the act of projecting images onto surfaces mirrors the ways that memories imprint themselves onto places. This metaphorical use of projection is particularly relevant to this study since it emphasises how cinematic techniques can be used to explore the ways that memory alters the perception and experience of spaces and places.

Furthermore, the study finds that the materiality of projection plays an important role in shaping spatial experience. As the light beam of the projector interacts with a surface, it creates a unique ambiance and atmosphere with affective qualities that influence how space and place are perceived and experienced. This finding aligns with expanded cinema, which views the cinematic experience as a relational event where neither the film, technology, viewer, nor exhibition space exists independently of each other. Projection mapping emerged as a particularly salient method for exploring the constructed nature of home and memory and opens possibilities for future research into the intersection between cinematic technologies and spatial experience.

6.4 FUTURE RESEARCH

Future research could build on this study by further exploring Bruno's (2022) concept of 'environmentality,' which was only briefly addressed in this study. In particular, there is potential to investigate how experimental animation installations create affective environments, with a focus on the relationship between cinematic technologies and spatial experience.

LIST OF SOURCES

- Aakær, CR. 2018. Idealized Nationalism in Downton Abbey: A study of the Identity of Englishness in Heritage Film. *Leviathan: Interdisciplinary Journal in English* 3:6-17.
- Arsenal Contemporary Art New York. 2022. *Sabrina Ratté: Reality – Arsenal Contemporary Art*. Available at: <https://www.youtube.com/watch?v=9z0c9YG3NHQ> (accessed on 21/9/2024).
- Ash, J, Kitchin, R, & Leszczynski, A. 2018. Digital turn, digital geographies? *Progress in Human Geography*, 42(1), 25-43.
- Assmann, J. 1995. Collective Memory and Cultural identity. *New German Critique* 65:125–34.
- Avery, D. 2014. *Unhomely cinema: Home and place in global cinema*. New York: Anthem Press.
- Bammer, A. 1992. *Question of home*. London: Lawrence & Wishart.
- Bachelard, G. 1994 (1958). *The Poetics of Space: The classic look at how we experience intimate places*. Translated by Maria Jolas. Boston: Beacon Press.
- Bao, W, Jacob, G & Daniel, M (2023). Introduction: Medium/Environment. *Critical Inquiry* 49 (3):301-314.
- Bédard, C. 2022. Rencontre #5 - Sabrina Ratté, Une réflexion sur l’imaginaire collectif du futur Série 50/50. Available at : <https://www.youtube.com/watch?v=iEb-Oi11p4s&t=909s> (accessed on 20/9/2024).
- Biggio, F. 2020. Augmented consciousness: Artificial gazes fifty years after Gene Youngblood’s Expanded Cinema. *NECSUS_European Journal of Media Studies*. 1:173-192.
- Bhabha, H. 1992. The World and the Home. *Social Text, Third World and Post-Colonial Issues* 31/32: 141-153.
- Blunt, A & Dowling, R. 2006. *Home*. New York: Routledge.
- Bonnett, A. The Geography of Nostalgia: Global and Local Perspectives on Modernity and Loss. (2016). *European Journal of Communication*, 31(3), 363-363.
- Bowlby, R. Domestication in *Feminism Beside Itself*, edited by Diane Elam and Robyn Wiegman London: Routledge: 71-91.
- Boym, S. 2001. *The Future of Nostalgia*. New York: Basic books.
- Brickell, K. 2012. ‘Mapping’ and ‘doing’ critical geographies of home. *Progress in Human Geography* 36(2): 225–244.
- Bruno, G. 2022. *Atmospheres of Projection: Environmentality in Art and Screen Media*. Chicago: University of Chicago Press.

- Bruno, G., 2023. The Environmentality of Immersive Projection: The Nature of Scale. *AN-ICON. Studies in Environmental Images* [ISSN 2785-7433], 2(1):29-55.
- Callahan, S. 2018. "The Analogue": Conceptual Connotations of a Historical Medium in *The power of the in-between: Intermediality as a tool for aesthetic analysis and critical reflection*, edited by Petersson, S, Johansson, C, Holdar, M, & Callahan, S. Stockholm: Stockholm University Press:287-320.
- Casetti, F. 2012. The relocation of cinema. In: *NECSUS. European Journal of Media Studies*, 2:5-34.
- Casetti, F. 2015. *The Lumiere galaxy: Seven keywords from the cinema to come*. New York: Columbia University Press.
- Casey, E. 2000. *Remembering: A Phenomenological Study*. Bloomington: Indiana University Press.
- Castree, N., Kitchin, R., & Rogers, A. (2013). *A Dictionary of Human Geography*. SV 'Human Geography'. London: Oxford University Press.
- Chambers, D. 2003. Family as Place: Family Photograph Albums and the Domestication of Public and Private Space in *Picturing place: Photography and the Geographical Imagination* edited by Joan M. Schwartz and James R. Ryan. New York: Routledge: 96-114.
- Cieraad, I. 2010. Homes from home: Memories and projections. *Home Cultures*, 7(1): 85-102.
- Cosgrove, D. 1999. Introduction: Mapping meaning in *Mapping* edited by Denis Cosgrove. London: Reaktion Books: 1-23.
- Creswell, T. 2009. Place in *International Encyclopedia of Human Geography, Volume 8*, edited by Kitchin R & Thrift N. Oxford: Elsevier: 169-177.
- Crocker, S. 2007. Sounds Complicated: What Sixties Audio Experiments Can Teach Us about the New Media Environments in *Fluid screens, expanded cinema* edited by Marchessault, J & Lord, S. Toronto: University of Toronto Press:52-73.
- De Andrade, TN. 2008 Technology and environment: Gilbert Simondon's contributions, *Environmental Sciences*, 5:1, 7-15.
- Donohoe, J., 2014. *Remembering places: A phenomenological study of the relationship between memory and place*. Maryland: Lexington Books.
- Dovey, K. 1985. Home and Homelessness: Introduction in *Home Environments. Human Behaviour and Environment: Advances in Theory and Research* edited by Altman, Irwin and Carol M. Werner. Vol 8. New York: Plenum Press:33-64.
- Durcan, S. 2021. *Memory and Intermediality in Artists' Moving Image*. London: Palgrave MacMillan.

- Elcott, N. 2020. The Phantasmagoric Dispositf: An Assemble of Bodies and Images in Real Time and Space in *Screen Space Reconfigured* edited by S, Sæther & S, Bull. Amsterdam: Amsterrrdam University Press: 283-316.
- Elder, B. 2008. *Harmony and Dissent: Film and avant-gard moevements in the early twentieth century*. Canada: Wilfred Laurier University press.
- Elwes, C. (2015:4) *Installation and the moving image*. London: Wallflower press.
- EXPORT, V. 2003. Expanded cinema as expanded reality. *Senses of cinema*. Issue 28. Available at: https://www.sensesofcinema.com/2003/peter-tscherkassky-the-austrian-avant-garde/expanded_cinema/ (Accessed on 3/12/2021).
- Fisher, M. 2012. What is hauntology. *Film Quaterly* 66(1):16-24.
- Fisher, M. 2014. *Ghosts of my life: Writings on depression, hauntology and lost futures*. John Hunt Publishing. Washington.
- Flanders, J. 2014. *The making of home: The 500-year story of how our houses became our homes*. New York: Thomas Dunne Books.
- Frieling, R. 2016. Online Screening: Monster Movie. [Online]. Available at: <https://www.sfmoma.org/read/takeshi-murata-monster-movie/> (accessed on 24/7/2023).
- Freud, S. 2003 [1919]. *The Uncanny* translated by McIntock, D. London: Penguin Books.
- Freud, S. 1963. *Civilization and its discontents* translated by J Riviere. London: Hogarth Press.
- Gaîté Lyrique. nd. Augmented visits in images: Screenings of works by Sabrina Ratté. Available at: <https://www.gaite-lyrique.net/evenement/visites-augmentees-en-images> (accessed on 15/9/2024).
- Garde-Hansen, J & Jones, O. (2012). Introduction in *Geography and Memory: Identity, Place and Becoming* edited by Garde-Hansen, J & Jones, O. New York: Palgrave MacMillan: 1-24.
- Grainge, P. 2003 Introduction: memory and popular film in *Memory and Popular Film* edited by Grainge P. Manchester: Manchester university Press:1-20.
- Gregory, D. Johnston, R. Pratt, G. Watts, M. and Whatmore, S. 2009. *The dictionary of human geography*. New Jersey: John Wiley & Sons.
- Hamilton, O. 2017. Senses of home in *Re-imaging home in the 21st century* edited by J, Lloyd & E, Vista. Massachusettes: Edward Elgar Publishing:179-191.
- Hamlyn, Nicky. 2012. What's Wrong with Cinema in the Gallery. *Moving Image Review & Art Journal* 1 (2): 264–269.
- Hareven, T. 1991. The Home and the Family in Historical Perspective. *Social Research* 58(1): 253-285.

- Harris, M, Taberham, P, Husbands, L (eds). (2019). Introduction in *Experimental animation: from Analogue to Digital*, edited by Smith, V. & Hamlyn, N. New York: Routledge: 1-14.
- Heidegger, M. 1971. Building, dwelling, being in *Poetry, language, thought*. New York: Perennial Classics: 141-160.
- Higgins, D. 1966. Intermedia. *The something else newsletter*. 1(1). Available at https://www.primaryinformation.org/oldsite/SEP/Something-Else-Press_Newsletter_V1N1.pdf (accessed on 25/4/2022).
- Hoelscher, S & Alderman, D (2004) Memory and place: geographies of a critical relationship. *Cultural Geography*, 5:3, 347-355.
- Holl, U. 2014. Nostalgia, Tinted Memories and Cinematic Historiography: On Otto Preminger's *Bonjour Tristesse* (1958) in *Media and Nostalgia Yearning for the Past, Present and Future*. New York: Palgrave Macmillan: 160-178.
- Hoelsche, S & Alderman, DH. 2004. Memory and Place: Geographies of a Critical Relationship, *Social and Cultural Geography*, 5(3): 347-355.
- Hosea, B. (2018) Siting animation: The affect of place. In *Experimental and expanded animation: New Perspectives and practices*. Palgrave Macmillan, Basingstoke, pp. 257-278.
- Husbands, L. 2019. A hermeneutic of polyvalence: Deciphering narrative in Lewis Klahr's *The Pettifogger* (2011) in *Experimental Animation: From Analogue to Digital*, edited by Harris, M, Taberham, P, Husbands, L. New York: Routledge: 169-185.
- IBM. 2023. What is LiDAR? [Online] Available at: <https://www.ibm.com/think/topics/lidar> (accessed on 12/2/2024).
- Kittler, F.A. 1999. *Gramophone, film, typewriter*. California: Stanford University Press.
- Kim, J. 2011. Animating the Photographic Trace. *Animation: An interdisciplinary journal* 6(3): 371-386.
- Kim, J. 2016. *Between Film, Video, and the Digital: Hybrid Moving Images in the Post-media age*. Bloomsbury: New York.
- Kitchin, R. 2009. Space II in *The International Encyclopedia of Human Geography, Volume 10*, edited by Kitchin, R & Thrift, N. Oxford: Elsevier: 268-275.
- Klopper, D. 2016. The problem of nostalgia. *English n Africa, South African Literary History Project: Special issue: Nostalgia* 43(3): 9-17.
- Knowles, K. 2020. *Experimental Film and Photochemical Practices*. London: Palgrave Macmillan.
- Le Corbusier, 2007 [1928]. *Toward an Architecture*, translated by Goodman, J. Los Angeles: Getty Research Institute.
- Le Grice, M. 2001. 'Real time/space' in *Experimental cinema in the digital age* edited by Le Grice, M. London: 155-163.
- Lefebvre, H. 1991. *The Production of Space*. Translated by D, Nicholson-Smith. Massachusetts: Basil Blackwell Inc.

- Legg, S. 2004. Memory and nostalgia. *Cultural Geographies*, 11(1), 99-107.
- Legg, S. 2024. Contesting monuments: Heritage and Historical Geographies of Inequality, an introduction. *Journal of Historical Geography* Vol 87: 1-12.
- Leszczynski, A. 2019. Spatialities in *Digital Geographies* edited by J. Ash, R. Kitchin and A. Leszczynski. London: SAGE:13-23.
- Lloyd, J & Vasta, E. 2017. Reimagining home in the 21st century in *Reimagining home in the 21st century* edited by J, Lloyd and E, Vasta. Northampton: Edward Elgar Publishing: 1-20.
- Longhurst, R. (2013). Using Skype to Mother: Bodies, Emotions, Visuality, and Screens. *Environment and Planning*, 31(4): 664-679.
- MacDonald, K. (2013). Chinese Family Memories, Recycled in New York Times <https://archive.nytimes.com/lens.blogs.nytimes.com/2013/03/01/chinese-family-memories-recycled/> (accessed on 12/9/2024).
- Moss, C. 2019. *Expanded Internet Art: Twenty-First-Century Artistic Practice and the Informational Milieu*. New York : Bloomsbury, 2019.
- Leszczynski, A. 2019. Spatialities in *Digital geographies* edited by James Ash, Rob Kitchin, and Agnieszka Leszczynski. London: Sage Publications: 13-23.
- Mallett, S. 2004. Understanding home: A critical review of the literature. *Sociological Review*, 52 (1), 62–89.
- Marks, L. 2002. *Touch: Sensuous theory and multisensory media*. Minnesota: University of Minnesota Press.
- Marchessault, J. 2007. Multi-screens and future cinema: The Labyrinth Project at Expo 67 in *Fluid screen, Expanded Cinema* edited by Marchessault, J & Lord, S. Toronto: Universty of Toronto Press:29-51.
- Massey, D. 1994. Double articulation: A place in the world in *Displacements: Cultural Identities in Question, Theories of Contemporary Culture*, edited by A, Bammer. Indiana University Press, Bloomington.
- Massey, D. 2005. *For space*. London: Sage Publications.
- McLuhan, M. 1964. *Understanding media: The extensions of man*. Cambridge: MIT Press.
- Oliveira, A. (2022). Intersections between Eija-Liisa Ahtila and Gilbert Simondon: imagistic experience in the associated milieu. *Journal of Aesthetics & Culture*, 14(1):1-17.
- Pink, S. & Leder Mackley, K. (2014). Moving, Making and Atmosphere: Routines of Home as Sites for Mundane Improvisation. *Mobilities*, 11(2), 171–187.

- Pollmann, I. 2013. Invisible worlds, visible: Uexküll's Umwelt, film, and film theory. *Critical Inquiry*, 39(4), pp.777-816.
- Prieto, E. 2017. Phenomenology, place, and the spatial turn in *The Routledge Handbook of Literature and Space*, edited by Tally, R. New York: Routledge: 60-69.
- Proust, M, 2003. *In Search of lost time: finding time again*. London: Penguin.
- Rebolledo, F & and Oliveira, A. 2020. Imagistic Projection as Relational Becoming in *Practices of Projection: Histories and Technologies* edited by Menotti, G & Crisp, V. New York, Oxford Academic: 263-282.
- Rogers, A. 2019. 'Taking the Plunge': The New Immersive Screens in *Screen Genealogies: From Optical Device to Environmental Medium* edited by Buckley, R. Campe, & F. Casetti. Amsterdam: Amsterdam University Press: 135-158.
- Ratnam, C. 2018. Creating home: Intersections of memory and identity. *Geography Compass*. 12(4):1-11.
- Ratté, S. sa. *Sabrina Ratté*. Available at: <https://sabrinaratte.com/> (accessed on 3/3/2022).
- Rees A.L. 2011. *A History of Experimental Film and Video: From the Canonical Avant-garde to Contemporary British Practice*. London: Palgrave Macmillan.
- Relph, E. 1976. *Place and Placelessness*. London: Pion.
- Reynolds, S. 2011. *Retromania: Pop culture's addiction to its own past*. New York: Faber and Faber Inc.
- Rose, G. 1993. *Feminism and Geography: The Limits of Geographical Knowledge*. Cambridge: Polity.
- Schrey, D. 2014. Analogue Nostalgia and the Aesthetics of Digital Remediation in *Media and Nostalgia* edited by Niemeyer, K. London: Palgrave MacMillan: 27-38.
- Schröder, N. 2006. *Spaces and Places in Motion: Spatial Concepts in Contemporary American Literature*. Tübingen: Gunter Narr Verlag.
- Schofield M. 2021. Loss in Space: Deconstructing Urban Rephotography in *Narrating the City: Mediated Representations of Architecture, Urban Forms and Social Life* edited by Kavakoğlu AA, Cairns G, Hacıömeroğlu TN & Landrum L. Bristol: Intellect: 181-196.
- Sapio, G. 2014. Homesick for aged home movies: Why do we shoot contemporary family videos in old-fashioned ways? In *Media and Nostalgia: Yearning for the Past, Present, and Future*, edited by Niemeyer, K. London: Palgrave Macmillan: 39-50.
- Shone, R. 2000. A Cast in Time in *Rachel Whiteread's House* edited by James Lingwood London: Phaidon: 50-61.
- Smith, V., 2018. Not (A) Part: Handmade animation, materialism and eco-aesthetic cinema. *Animation Practice, Process & Production*, 7(1): 139-155.

- Smith, V. & Hamlyn, N (eds). 2018. Introduction in *Experimental and Expanded Animation New Perspectives and Practices*. London: Palgrave Macmillan:1-18.
- Sprenger, F. 2023. Surrounding and surrounded: Toward a conceptual history of environment. *Critical Inquiry*, 49(3): 406-427.
- Somaini, A 2019. The Atmospheric Screen: Turner, Hazlitt, Ruskin in *Screen Genealogies From Optical Device to Environmental Medium* edited by Buckley, C, Campe, R & Casetti, F. Amsterdam: Amsterdam University Press:159-186.
- Sommerlad, E. 2022. Film geography in *Routledge Handbook of Media Geographies* edited by PC Adams & B Warf. London: Routledge: 118-131.
- Sutton, G. 2015. *The Experience Machine: Stan VanDerBeek's Movie-Drome and Expanded Cinema*. New York: MIT Press.
- Taberham, P. 2019. It is alive if you are: Defining experimental animation in *Experimental Animation: From Analogue to Digital*, edited by Harris, M, Taberham, P, Husbands, L. New York: Routledge:17-36.
- Tally, R. 2012. *Spatiality*. New York: Routledge.
- Till, K. 2003. Places of memory in *A companion to political geography* edited by John A. Agnew, Katharyne Mitchell & Gerard Toal. Oxford: Blackwell Publishing: 289-301.
- The Engineering Community. 2019. Learn what is photogrammetry and its various applications. [Online] available at: <https://www.theengineeringcommunity.org/learn-what-is-photogrammetry-and-its-various-applications/> (accessed on 12/6/2023).
- Torre, D. 2017. *Animation? Process, Cognition and Actuality*. New York: Bloomsbury Publishing
- Tuan, Y.F. 1975. Place: An experiential perspective. *Geographical review*. 65(2): 151-165.
- Tuan, Y. 1977. *Space and place: the perspective of experience*. Minneapolis. University of Minnesota Press.
- Tuan, YF. 1979. Space and Place: Humanistic Perspective in *Philosophy in Geography* edited by Gale, S & Olsson, G. Springer, Dordrecht: 387-427.
- Tuan, Y.F, 1980. Rootedness versus sense of place. *Landscape*, 24:3-8.
- University of South Africa. 2016. *Policy on Research Ethics*. Available at: https://www.unisa.ac.za/static/corporate_web/Content/Research%20&%20innovation/Research%20ethics/Documents/Policy%20on%20Research%20Ethics%20-%20rev%20appr%20-%20Council%20-%202015.09.2016-.pdf (accessed on 15 November 2021).
- Uroskie, AV. 2014. *Between the black box and the white cube: Expanded cinema and postwar art*. Chicago: University of Chicago Press.

- Van Gageldonk, M, Munteán, L & Shobeiri A. 2020. Introduction in *Animation and memory* edited by van Gageldonk, M, Munteán, L & Shobeiri A. Switzerland: Palgrave MacMillan: 1-20.
- Vanier College Television, 2024. *Humanities Symposium 2024 – Sabrina Ratté*. Available at: <https://www.youtube.com/watch?v=oB4X1QMNZlo> (accessed on 22 September 2024).
- Vidler, A. 1992. *The architectural uncanny: Essays in the modern unhomely*. Massachusetts: MIT Press.
- Walden, VG. 2019. Animation and memory in *The animation studies reader*, edited by Dobson, N, Roe, A, Ratelle, A & Ruddell, C. New York: Bloombury: 81-90.
- Walley, J. 2003. The material of film and the idea of cinema: Contrasting practices in sixties and seventies avant-garde film. *October*, 103:15-30.
- Walley, J. 2020. *Cinema expanded: Avant-garde film in the age of intermedia*. New York: Oxford University Press.
- Weedon, A. 2021. China's rapid capitalist transition documented in the found images of the Beijing Silvermine on ABC News [Online]. Available at: <https://www.abc.net.au/news/2021-02-08/introducing-the-beijing-silvermine-thomas-sauvin-china/13092150> (accessed on 11/3/2024).
- Wells, P. 1998. *Understanding Animation*. London: Routledge.
- White, D. 2011. Expanded cinema: The live record in *Expanded cinema: Art, Performance, Film*. Edited by Curtis, D., Rees, A.L., White, D. and Ball, S. London: Tate Publishing:24-38.
- Wolfe, E. 2013. Homely, unhomely: Uncanny architecture and haunted Palestian regugees. *Historical Hauntings & Modern-Day Manifestations* Issue 1. Available at: <https://blogs.bsu.edu/dlr/2013/11/19/homely-unhomely-uncanny-architecture-and-haunted-palestinian-refugee-camps/> (accessed on 30/3/2023).
- Youngblood, G. 1970. *Expanded cinema*. New York: P. Dutton & Co.
- Youngblood, G. 1989. Cinema and the code. *Leonardo. Supplemental Issue* 2:27-30.