DISPLACEMENT OF SELF-CONTINUITY

an illuminative heuristic inquiry into identity transition in an allegorical animation

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Dedication

I dedicate this thesis to Ozra Memarsadigh, my beautiful grandmother who, despite being able to neither read nor write, was the bright, illuminative source of wisdom and insight in our large family. Although her corporeal body left me, her celestial intellect and terrestrial motherhood have remained nestled near my heart throughout the writing and creation of this thesis.

This long journey into the unknown has been possible because of her warmth and the enduring presence of her bedtime stories.

This thesis is submitted to Auckland University of Technology
in partial fulfilment of the degree of Doctor of Philosophy.

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Abstract

This thesis considers how a fictional allegory might be employed to examine issues of acculturation, displacement and identity transition (Addis & Tippett, 2008). Using the story of a refugee family, the study explores through artistic practice the implications of identity reconstruction inside the body of a new culture.

The narrative of Stella is designed to serve as a provocative vehicle for considering the social implications of identity loss and transition. The practice is provided as a screenplay, a post-visualisation document and an indicative trailer.

Methodologically, the project is shaped by a Persian illuminationist ontological and epistemological approach that interfaces with a heuristic inquiry. Inside this journey, the researcher generates a narrative embodiment of experience and theory. In this process, a relationship results that elevates both the self (the writer/director/animator) and the body of knowledge, through making and reflection.

Beyond its contribution to understanding the processes and implications of acculturation, displacement and identity transition, the project's technological significance lies in its propensity to extend the application of and demonstrate the potential of deep learning algorithms, performance capture (using motion capture technology) and 3D laser scanning and photogrammetry.

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Finally, I would like to express my deepest gratitude to my wife, Zara Shamlou, who has been caring and loving throughout this long journey. She has remained devoted, resourceful, reassuring and fascinated by the project.

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

Hossein Najafi, 30th August 2022

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I retain copyright in all images and creative work produced and presented as part of this thesis, apart from the followng images that are the intellectual property of others listed below in the order they appear in this exegesis. However, I have secured copyright clearance for use of these images:

Hossein Najafi, 30th August 2022

Ethics Approval
and Consents

Given that Stella is an allegorical work,
where all contributing parties were contracted
as actors or technicians, no ethical approval
for the project was required.

INTRODUCTION

This exegesis (with appendices containing concept art, a written treatment, storyboards and content breakdowns), accompanies a body of practice formatted as a screenplay, a graphically realised indicative trailer and a post-visualisation document detailing anticipated treatments of the animated allegory Stella. Collectively, these elements constitute the thesis.

The inquiry considers what happens if a constantly changing environment severs an individual's thread to the past and proposes another future. Thus, in the narrative of Stella, we encounter characters who must navigate individual and interfacing journeys. During this time, they attempt to sustain their temporally persistent senses of self-continuity, in order to perceive themselves as the same person.

In writing, designing, directing, and animating the allegory, I have employed an illuminative heuristic inquiry to activate high levels of creative discovery in what is paradigmatically an artistic, practice-led research project.[1]

The thesis asks:

What is the potential of a narrative animated film as a device for unpacking and reflecting upon identity change in individuals who transition through states of displacement and integration?

DEFINITIONS OF KEY WORDS USED IN THIS THESIS

The thesis project draws on both Persian and Western European epistemologies as it artistically considers emerging technological innovations and thinking surrounding identity transition. Given this situation, it is useful at the outset to offer a brief discussion of nine significant terms used in the study.

Allegory

Etymology of this word can be traced to the Greek *allēgoria*, meaning to speak figuratively. The Oxford English dictionary defines allegory as: "A story, picture, etc., which uses symbols to convey a hidden or ulterior meaning, typically a moral or political one; a symbolic representation; an extended or continued metaphor." (Oxford English Dictionary, n.d.). In his discussion of

animated allegories against Nazi and Soviet oppression, Whybray (2020) defines allegory as a "rhetorical or pictorial form, in which surface content functions as an extended metaphor for hidden, symbolic meaning. This meaning tends to be of moral, spiritual or political import and will sometimes relate to a particular situation contemporaneous to the author/creator but will generally also contain a more universal or generalizable message applicable to all times and places" (p. 31). In this project, the symbolic world and events of the story are designed allegorically, to convey ideas about human displacement and identity. Thus, the characters and painting metaphors operate as allusions or interpretations of the experience of identity transformation, loss and reclamation.

Artificial Intelligence & Deep Learning

Broadly, Artificial Intelligence (AI) describes intelligence demonstrated by machines. This may be contrasted with natural intelligence displayed by humans (or animals). Initially deep learning was believed to be a manufactured machine that behaves in ways that seem intelligent and comparable to human-like behaviour (McCarthy et al., 1955), but AI theorists like Kaplan believe that attributing AI to the subjective concept of

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1. The impact of Covid-19 on the project's trajectory meant that the study's original vision of a fully completed animation became logistically impossible to realise. Consequently, the thesis has focused its concerns on the allegorical narrative and indications of its potential realisation. (The impact of Covid-19 is discussed in greater detail later in the exegesis).

human intelligence is problematic, because there is no clear consensus as to how we might ascribe intelligence to a manmade machine.

Throughout the history of AI, computers proved superiority in solving statistical and mathematical problems while failing to solve intuitive human cognitive problems like understanding words or recognising faces (Goodfellow et al., 2016). Goodfellow suggests that the solution to these types of problems is "to allow computers to learn from experience and understand the world in terms of a hierarchy of concepts, with each concept defined through its relation to simpler concepts. The hierarchy of concepts enables a computer to learn complicated concepts by building them out of simpler one" (Goodfellow et al., 2016, p. 2). In this exegesis, I use the term AI to refer to the processes that have been deployed to intelligently transfer painterly treatments onto the animated narrative.

Animated Film

Animated film describes a method in which figures and environments are manipulated so they appear as moving images. A simulation of movement is normally created when a series of drawn, painted or computer-generated images are assembled to create the appearance of smooth motion. To create the appearance of smooth motion the animator considers the number of consecutive images that are displayed each second. Traditionally, one image is shown for two frames, totalling 12 drawings per second. There are diverse forms of animated film including traditional animation, vector-based, 2D animation, 3D animation, motion graphics and stop motion. The Stella project explores the potentials of a 3D motion capture based realtime animation.

CGI

Computer Generated Imagery (CGI) is the use of computer graphics to create or enhance images. Such images may be dynamic or static. CGI most commonly refers to 3D computer graphics employed when creating characters, scenes and special effects in films and television. Since its introduction in the mid 1970s, CGI has become a foundational feature in modern filmmaking (Hayward & Wollen, 1993). Surman (2003) argues that CGI has shifted the perception of the film audience and the "digital image has ruptured what was once thought to be an image of unquestionable automatic mimesis" (p. 4). All the imagery generated in the Stella project may be described as CGI.

Identity Transition

Identity transition describes a process when humans embark on a volatile and changeable process of losing past identities and adopting new ones. In this progression, their identities are in the state of transition that usually has deep psychological impact on them (Van Knippenberg et al., 2002). In the animated allegory *Stella*, identity transition is narrativized and treated allegorically.

Illuminationism

Illuminationism or *the philosophy of illumination* حكمت الاشراق is an ancient Persian school of thought that was resurrected and reshaped by the 10th century Persian philosopher, Suhrawardi. Illuminationism highlights knowledge by presence and the role of intuition and immediacy (Ziai, 2005). In this study the concept is discussed in relation to the project's epistemologically distinctive research design.

Motion Capture

Motion capture describes a filmmaking technique where actors don specially designed suits that enable computers to track their movements. This data is subsequently employed in the creation of lifelike, animated characterisation. This method is unpacked in Chapter 3 of the exegesis.

Self-continuity

Self-continuity describes an individual's perceived associations between the present sense of self and their past and future selves. Chandler (1994) describes the phenomenon as the ability to perceive oneself as an entity that extends simultaneously backwards into the past and forwards into the future. This sense allows individuals to view themselves as being the same, despite the changes induced by time and environment.

VFX

Visual effects (VFX) is an acronym used in this thesis to describe imagery created, manipulated, or enhanced for moving media that cannot be accomplished during live-action shooting (Okun & Zwerman, 2020).

STRUCTURE OF THE EXEGESIS

This exegesis is divided into four chapters positioned between an Introduction and Conclusion. The text contains hyperlinks that enable the reader to seamlessly access supporting information. In Chapter 1, I position myself in relation to the inquiry. In so doing, I orient the study as an artistic, subjective project, partially shaped by my past experiences as a Persian man, animator, father and thinker.

In Chapter 2, I offer a review of knowledge impacting on or contextualising the study. The third chapter considers a blend of Persian and Western thought that shaped the research design underpinning the thesis.
The final chapter offers a critical commentary on my practice with specific attention paid to narrative structure, symbolism, colour, light and sound.

The exegesis then concludes with a consideration of the research question, a discussion of contributions to the field, a consideration of potentials for further research and a personal reflection.

The document's appendices contain work referred to in the body of the text:

- Early treatment
- Concept arts
- Storyboards
- CG Breakdowns

STORY SYNOPSIS

Stella and her mother are refugees from a war. Having fled their village and experienced a fraught ocean crossing, at night they take shelter in the empty room of an abandoned church. The next morning, exhausted and puzzled, they observe that the room has become a sealed compartment with running colour temporarily staining its walls. Although they feel trapped, eventually they realise that by painting themselves with the pigment they can transition forward through walls into other rooms. Each of these rooms affords incrementally better conditions. Because of Stella's willingness to relinquish traditional norms, she is more adaptable to the new environments and colours, but her mother has difficulty painting herself brightly and thereby divesting herself of previously held cultural values. As they progress through increasingly enhanced but more demanding rooms to survive, their relationship deteriorates to the point that the mother refuses to paint herself anymore and turns back, wanting to regain what she sees as her diminishing identity. Conversely, Stella adapts easily to increasingly changing conditions and she finally enters a new world with a refugee boyfriend who she has met in the rooms. This new world appears beautiful, but it is entirely painted.

Although she achieves a seemingly pleasant life here, her existence is haunted by bitter memories of losing her mother. In this new world Stella marries but her child is born unable to see and increasingly her sense of contentment begins to crumble. Finally, her husband leaves her, and the young mother takes her baby and decides to find her way back home where she hopes to

reconnect with her mother. When she eventually returns to the war zone the battle is over, and she locates her mother who has happily regained her identity.

RATIONALE

Although the phenomenon of identity transition among refugees has a long history (Harrell-Bond & Voutira, 1992), increasingly the issue of cultural displacement and transition for such groups has become a significantly researched arena (Abdi, 2005; Alkhaled & Sasaki, 2021; Colic-Peisker & Walker, 2003; Dona, 2015; Marfleet, 2016; McAdam, 2014; Tuttle, 2022; Zetter, 2021).

The word *refugee* is emotive and it has often become a political term used to categorise a large group of people who are living in a liminal situation.[2] The United Nations 1951 Refugee Convention describes a refugee as someone who:

... owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country.[3]

Currently, the world is facing the most catastrophic refugee crisis since World War II and more than 100 million people have been displaced against their will.[4] Added to these statistics are more than 26 million people who are displaced because of natural hazards and it is predicted that this number will rise exponentially because of the new wave of climate change refugees (Bell & Masys, 2020).[5]

Zetter (1991) associates the experience of refugees with a range of phenomena including stereotyping, identity confrontation and fragmentation. These are some of the issues that I explore in my allegorical narrative. The

politicissed institutionalised labelling of a group of people like refugees, has been shown to be influential in disaggregated identity because individuals and groups in critical situations are vulnerable to how others perceive and name them (Zetter, 1991). Refugees lose many of their connections to their previous geography and culture and at the same time they can struggle with an identity crisis wherein they must begin to reconstruct their identities inside the body of new culture. Colic-Peisker and Walker (2003) call this process *acculturation*. By undertaking this project, I am employing artistic practice to increase an awareness of identity issues experienced by refugees. In the context of impacting issues like cultural identity erasure (Taylor, 2003); identity theft and reconstruction (Ciechanowicz, 2010); and identity loss (Weigert & Hastings, 1977), a fictional narrative may serve as a provocative vehicle for considering the social implications of identity. It is intended that this project (as a provocative, fictional work)[6] may cause

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2. Although often associated with war, the word refugee may also describe a person leaving their country because of economic, political or environmental factors. McAdam (2014) suggests that the latter condition is likely to become increasingly prominent as a consequence of global warming.

3. United Nations 1951 Refugee Convention. (2022, July 14) www.unhcr.org/1951-refugee-convention.html

4. World Refugee Day 2019 statistics. (2022, July 14) https://reliefweb.int/report/world/world-refugee-day-record-100-million-people-now-forcibly-displaced

5. According to the International Committee of the Red Cross, "Refugees are people who have crossed an international frontier and are at risk or have been victims of persecution in their country of origin. Internally displaced persons (IDPs), on the other hand, have not crossed an international frontier, but have, for whatever reason, also fled their homes." (2022, July 14) https://www.icrc.org/en/doc/war-and-law/protected-persons/refugees-displaced-persons/overview-displaced-protected.htmt

6. Like Shafak (2010), I suggest that a fictional artistic narrative has the potential to communicate nuances of lived experience in a way that didactic analytical research cannot. This is because shared narratives not only enable us to "leap over cultural walls, embrace different experiences, feel what others feel" (para.1), they also enable the storyteller to use emphasising allegorical or metaphoric elements to add cultural and emotional depth and richness to the narrative discourse.

people to reconsider their existing conception of identity and re-evaluate the nature of the constructed self.

THE NATURE OF THE PRACTICE

The practical component of the thesis is in three parts.
- The first is the screenplay for an animated film called Stella. This is available as a discrete document (link).
- The second is a graphically realised, 3:20 minute, indicative trailer for the film (link).
- The third is a post-visualisation document that illustrates approaches to shots within the narrative (link).

The impact of Covid-19[7] lockdowns prevented the full film from being realised but the trailer demonstrates my employment of Artificial Intelligence and Deep Learning graphical processing, Computer-Generated Imagery [CGI] and Motion Capture techniques, to create a world where painterly effects will eventually operate as a metaphor for acculturation, loss of self-continuity and identity transition. Thus, in its current form the practical work constitutes an advanced Director's Vision ready for submission to potential funding agencies.

SIGNIFICANCE

Although the thesis engages with an artistic application of emerging digital deep learning[8] technologies, beyond this, the study posits two significant contributions.

The first of these is to the field of research design in artistic, practice-led inquiry. Specifically, it draws two cultural paradigms together, one Western and the other Persian, to create a framework for practice where research is understood as a journey of transitions. As the concept of practice-led inquiry within the academy expands and engages with wider forms of cultural knowing, it is useful to consider how epistemology might impact on methodology. In this regard the thesis offers an example of unique research design and implementation.

The second significant contribution the thesis makes is to the field of psychology. The study through a creative, allegorical examination of the limits to the encultured self, expands our understanding of self-continuity, its fragility and its persistence through processes of change. The thesis also contributes an example of an epistemologically blended study that may be described as postdisciplinary in nature (Hollinshead, 2016; Ings, 2019; Pernecky, 2019). As such, it integrates knowledge from within and outside of the academy, working creatively with the principles of plural knowability to synthesise what might be conventionally understood as disparate bodies of knowledge, into a coherent research trajectory and an

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7. The international Covid-19 pandemic struck New Zealand on February 28, 2020. A state of emergency was declared on March 25 the same year and the country moved into isolation at 11. 59 that evening. See https://www.rnz.co.nz/news/national/437359/timeline-the-year-of-covid-19-in-new-zealand. Lockdowns and periods of enforced isolation across two years, prevented me from working with postproduction teams and significantly limited access to high end technologies necessary to complete the full work. The compromise submission of a trailer demonstrating aesthetic and technological research, a screenplay and a post-visualisation rendering of the film's narrative was decided upon late in 2021 when it became evident that it would become impossible in the short term to regain access to postproduction crews and technologies to complete the initially imagined project. Accordingly, using original data collected before the pandemic, I undertook all technical work on the project and this is evidenced as indicative in the film's trailer.

8. LeCun et al. define deep learning as an algorithm that "… allows computational models that are composed of multiple processing layers to learn representations of data with multiple levels of abstraction. Deep learning discovers intricate structures in large data sets by using the backpropagation algorithm to indicate how a machine should change its internal parameters that are used to compute the representation in each layer from the representation in the previous layer. Deep convolutional nets have brought about breakthroughs in processing images, video, speech and audio." (LeCun et al., 2015, p. 436).

allegorical narrative. Thus, we encounter a project that is resourced by ancient Persian philosophy and poetry, psychology, cognitive neuroscience and emerging technological research. These realms are employed to shape an artistic inquiry that considers the contemporary, socio-cultural phenomenon of refugee experience.

Having now introduced the project and outlined its rationale and significance, it is useful to position it as a subjective inquiry emanating from a trajectory of personal experience.

CHAPTER 1 | **POSITIONING THE RESEARCHER**

When I was 15, I created my first oil-on-canvas painting. It featured two swans, bending their long necks towards each other ((Figure 1:1).

Although I was inspired by one of those clichéd mainstream paintings, the work impressed my parents. Being in a painting class was a rapturous experience for me. I was deeply immersed in the ascendancy of beauty. One day, inspired by a drawing in the corner of the studio, I sketched the portrait of a serene, half naked Renaissance-style woman. When I showed it to my devout Muslim parents, they looked askance at each other and then placed it on the bookshelf. When I awoke the next morning, my drawing was still there but my mother had sketched a 'decent' dress for her. This was the world of my childhood, surrounded by a Persian culture that deeply appreciated the grace of art but tempered expression with religious caution.

Note. I completed this in 1994. The work is still hanging on the wall in my parents' house.

THE PRESENCE OF THE PAST

Although findings in psychology have only recently suggested that remembering the past and imagining the future emerge from the same realm of the mind (Schacter et al., 2007), in

Persian culture the past has been always been intertwined with the future (Ferdowsi, 2008). In his seminal work, *Hafiz and the Religion of Love in Classical Persian Poetry*, Lewisohn (2010) discusses the enduring enchantment of Persian literature and its role in the living present and imaginative future of Persian people. Lewisohn suggests that the "religion of love", this transcendental lustfulness, is deeply rooted in the collective consciousness of the Persian way of thinking (p. 99). Even after the adoption of Islam following the Arab invasion in the 5 century [9] (Zarrinkoub, 1957), religion could not take away this sensual outlook and eventually it merged into an oxymoronic mindset that today constitutes the Persian way of thinking. Thus, the wine worshipping, lustful poems of Hafiz are ubiquitous in the Persian cultural landscape and are often cited and referenced, even by the most religious of people. Surrounded by such literature, even Ayatollah Khomeini (the Islamic scholar and founder of the Islamic Revolution) in his gnostic collection of poems, adopted the poetic style of Hafiz, and like him, manifested transcendental, divine love into wine and the desire to unite with his beloved (Khomeini, 1997). Similarly, Rumi's [10] mystical teachings are ever present in Persian

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9. In his book "Two Centuries of Silence" Zarrinkoub discusses how the Arab invasion of Iran in 633 AD paused the evolution of Persian literature and art and for more than two centuries.

10. Rumi is called Mowlana مولانا in Persian literature.

culture. Tacitly Persians are aware of Rumi's love relationship with Shams Tabrizi (his mentor) (Papan-Matin, 2003), even though in the shadow of strict Islamic regulation, queer relationships are strongly condemned (Kligerman, 2007). The intimate connection of these men and the resulting richness of Rumi's literature are deeply appreciated and well-understood by Persian people and his writing is considered both esoteric and uplifting (Papan-Matin, 2003). Ancient art, poetry and literature permeate Iranian daily life. You can see intricate carpets or handcrafts in almost every home. Iranians use poetry and literature to communicate very sophisticated concepts through concise language (Figure 1:2). When a mother wants to express her disappointment to her child, when a convict seeks to influence court attendants, when a lover tries to express the depth of his devotion, when an old lady wants to complain about the insignificance of human existence, when two parties sign a contract and attempt to express their hope for a future of prosperous business dealings, and when politicians debate, they often express the heart of what they want to say by citing a few relevant, well known verses from the Persian poets, Hafiz, Saadi, Ferdowsi or Rumi. The historical wisdom of these writers transcends time.

Note. Photograph of my family entertaining circa. 2019. When many guests arrive, we will often dine in the traditional manner by sitting on the floor. The room shows a familiar array of fine carpets, ornamented furniture, cabinet-displayed items and decorated surfaces.

TALE OF THE REED

If I wish to find my place in the landscape of Persian art and literature, nothing can depict my identity conundrum as a man far from my home better than Rumi's Tale of the Reed. Here he describes the feelings of an exiled and alienated identity through the metaphor of a reed pulled from the sugarcane bed and turned into a musical flute that is positioned on the lips of a player. The reed as a flute can express exhaled emotions through its hollow body, and it makes poignant music.

بشنو این نی چون شکایت می‌کند
از جداییها حکایت می‌کند
کز نیستان تا مرا ببریده‌اند
در نفیرم مرد و زن نالیده‌اند
سینه خواهم شرحه شرحه از فراق
تا بگویم شرح درد اشتیاق
هر کسی کو دور ماند از اصل خویش
باز جوید روزگار وصل خویش

Hearken to the reed flute,
How it complains, lamenting its banishment from its home:
"Ever since they tore me from my osier bed, my plaintive notes have moved men and women to tears.
I burst my breast, striving to give vent to sighs, and to express the pangs of my yearning for my home.
He who abides far away from his home is ever longing for the day he shall return."

(Translated by E. H. Whinfield, 1898)

BEING AND BECOMING

Raised in an art-loving family, I grew up very creative, but at high school I excelled at maths and physics. I decided to become a physicist; someone who explores the unknown boundaries of the universe. However, in the final year of school, my history teacher moved me into new worlds. Although he was considered a conservative educator and would not tolerate a modicum of disorderly behaviour, he was a fountain of ideas. When reviewing historical facts, he was fearless in addressing the cultural abnormalities of our society. He showed us how the fabric of our ancient world was torn between tradition and modernity. He showed us how understanding the human being and the sophistication of social life surpasses the natural sciences in complexity and he critiqued how a concentration of high performing graduates into maths and engineering in Iran had created a rigid thinking, technocratic generation of politicians who were unable to grasp the nuances and fragilities of humanity. His class was a revelation to me. As young idealists, a group of us decided to study social science or the humanities at university rather than enrol in maths, physics or engineering courses. This decision should be understood in the context of Iranian society at the time, where only the lowest performing students studied the social sciences and humanities. It was considered an anomaly that intelligent students should deliberately face the shame of enrolling in such programmes.

On the other hand, following my strictly religious upbringing, I assumed that faith would be the answer to all human conundrums. Following this line of logic, I made an oath to go to Imam Sadiq University (ISU); an elite male-only boarding institution in Iran that combines Islamic studies and social sciences. The idea behind ISU was to train devout Muslim decision makers in order to groom them for government positions. Indeed, today numerous ISU alumni (including many of my friends) hold significant management positions in the Iranian government. ISU has a very difficult entrance exam. Not only does it examine intellectual excellence, but it also conducts a strict inquisition into an applicant's beliefs and lifestyle as well as those of his close relatives.

When I secured a position at ISU, I enrolled in a double major combining Islamic studies and management. I had idealistic ambitions … but the page soon turned. I found myself exposed to the paradoxical dilemma of religious studies. This was both awakening and depressing. The religion I learned from my parents was predicated on kindness, morality, tolerance and transcendental virtues but, the religion I was taught at ISU was concerned with jurisprudential rigidity, faithful intolerance and antagonism towards many of the delicacies of Persian culture. I didn't want to withdraw because I didn't want to disappoint my family, but I also didn't want to progress any further. As the second highest ranked student in high school, who could solve the most complicated calculus riddles, I soon became the worst student at the university, failing continuously in every paper. I was like a reed that had been cut and separated from its reedbed. The sad song of the flute exhaled through me and cried at its separation.

My sanctuary became the library. Here I read countless books and one day I came across J. Dudley Andrew's (1976) *The Major Film Theories*. I was suddenly drawn to it. I read it avidly and made copious notes. His thinking combined art, philosophy, humanities and history. Reading theories of cinema, from Eisenstein to Andre Bazin resonated like poetry to me. I tried to locate the classic movies referred in the book so I could understand what the theorists were talking about. It was a revolution within. I became a constant visitor to the media department of ISU (which was responsible for determining academic educational content). The large analogue editing consoles in this department looked like the gates of heaven to me. I volunteered to help them film and edit some of their interview material. It

was deeply satisfying. Eventually, I founded the ISU Film Society. Here we screened important classic movies for students and followed the film with reviews and critique sessions. However, we were constantly under pressure because of harsh censorship regulations. I began watching as much classic cinema as I could. What seemed absurd to others, was revelatory for me; I found the extremely long shots of Tarkovsky's *Stalker* (1979) spiritually uplifting.

DIDAR: THE MOMENT OF SEEING

Along with cinema, love also lifted me out of despondency. I married the girl I had loved for a long time. I was 20 and in less than two years, we had our son. I was not a young idealist looking to save the world anymore. I was just a family man trying to make a living. Alongside my indifferent studying, I began working in multiple jobs.

Then a simple change in our household shifted the course of my life forever. My twin brothers and I convinced my father to buy a personal computer powered by a Pentium processor and 128 megabytes of memory. For a middle-class low-income pharmacy man, buying a computer was a serious decision. It was 1999, the beginning of the digital movie era and a computer was the entry to the cinema of tomorrow. *The Matrix* (Wachowskis, 1999) was the first film we watched on our new device.

We were dazzled by the animation and visual effects, as well as the convoluted narration. I was certain that this was what I wanted to do with my life. My brothers and I began working day and night and finally opened a modest film and animation production house in a small room in my brother-in-law's office. We named our company Didar (which in Persian means 'the moment of seeing'). The more Didar grew, the more detached I became from my university studies … until I ignored them, and after eight years, I just managed to pass with the minimum score. My world had moved.

Leaving ISU was emancipating. I was free from the entanglement of ideologies but, at the same time I was separated from my idealism, my hope and the urge to transcend. I became a reed, that turned into a flute who cried the sorrows of others. The songs were not mine. I became a service provider.

Didar became one of the most successful animation and visual effects companies in Iran, with more than 30 staff. We had a long list of clients and some of our projects received awards in international festivals including the Annecy Animation Festival and the Stuttgart Festival of Animated Film. But amidst the cascade of ongoing projects, I increasingly felt a void within. I wanted to understand the 'art' of film better.

My world moved again when I made the decision to take the entrance exam to the Master's programme in cinema at the University of Tehran. This is the most prestigious academic institution for studying performing arts in Iran and each year from a pool of over six thousand applicants, after a written exam and two interviews, they accept only 15 students. Asghar Farhadi (the two-time Academy Award winner) and Abbas Kiarostami (the winner of the Cannes Palm D'or) were graduates of this school. I studied hard and of the fifteen accepted students, I was the fifteenth. Suddenly I found myself surrounded by a privileged, flamboyant society of artists, directors and actors who were motivated by things beyond religion. I began to dissociate from my past network of friends, ideas and places and I tried to establish new connections. Concurrently, at Didar we were attracting international projects from well-known animation production companies and managing outsourced projects required me to travel to London multiple times each year. Exposed to these creative communities I felt myself adapting.

DEPARTING

While Didar was at its climax, the Iran-US nuclear conflict resulted in strict economic sanctions against Iran and in less than a year many industries, including the creative industry, collapsed (Amuzegar, 1997). Didar was bankrupted and we were forced to lay off all of our staff. This was towards the end of the U.S. Bush administration and we found ourselves under the constant threat of war (Kozhanov, 2011). It was an unbearable situation, so my wife and I decided to move our small family to Istanbul (the media hub of Eastern Europe at that time). In this city there were job opportunities available for animation and visual effects artists. We experienced a new life in Istanbul for five years. I was not a creative director or a company manager anymore; I was just an animation artist - an employee. It was difficult at first because I was not accustomed to sitting at a desk all day. I was used to moving around, negotiating with clients, talking to talent, directing on set and teaching classes. I felt trapped and inert.

THE BIRTH OF AN IDEA

Blagrove (1992) and Sandor et. al, (2016) suggest that dreams can be reflections of the waking mind. In Istanbul, I once dreamed of a city where everything changes. Every day, roads, houses, work positions, classes, and friends morphed into something else. People in that protean city lived in a constantly shifting environment. I realised that this dream was a reflection of my life. I had become a mutable being, divorced from permanence, traversing shifting ground, seeking meaning and identity in a life that constantly changed. I decided to excavate my unconscious mind and re-examine myself. I began to study identity and memory. I wanted to see if a creative inquiry might help in exploring the hidden corners of these things. I was seeking the potential of creative thought over the analytical. I was looking for an art form that might be provocative … that might cause audiences to reconsider their ordinary conception of identity (Weigert & Hastings, 1977) and re-evaluate the nature of the constructed self (Ciechanowicz, 2010).
Like Rumi's reed, I longed to return to the roots of being. But the reedbed was no longer a geographical place for me, it was a realm of knowing.

AOTEAROA

Eventually I realised that I might need an academic environment to facilitate my inquiry. I was seeking a form of research that might emerge out of artistic practice, something that might be "simultaneously generative and reflective" (Gray, 1996, p. 10). I sought an internal navigation of the currently unknown (Ings, 2015), that would avoid the abyss of solipsism (Barrett & Bolt, 2007). As a consequence, I sought out a practice-led PhD programme that operated between and beyond disciplinary boundaries. I applied to Auckland University of Technology (AUT) and was admitted with the proposal that has developed into this thesis. Geographically, I was now at the other end of the world, a long way from my reedbed.

In order to support my family, alongside my studies I began working for New Zealand film, animation and postproduction companies. My industry background helped me to secure creatively rewarding contracts. In New Zealand, I worked on world-leading productions, like the multi-award-winning short film *Sparrow* (written and directed by Welby Ings, 2018) and the Cannes Lion winning commercial Palau Pledge (directed by Evan Viera, 2018).

A BREATHING HUMAN BEING

Separated from the roots and connections to who I was, I have considered my journey and those of others, through a practice-led, heuristic inquiry. I sought the richness of tacit knowing, the power of allegory and the potentials of emerging technologies to question the nature

of identity transition. Like Rumi, I have tried
to find a way of reflecting on my nature as a
human being who is dissociated from his roots. I
am reminded that he observed:

چه تدبیر ای مسلمانان که من خود را نمیدانم
نه ترسا نه یهودم من نه گبر و نه مسلمانم
نه   شرقیم نه غربیم نه بریم نه بحریم
نه از ارکان طبیعیم نه از افلاک گردانم
نه   از خاکم نه از آبم نه از   بادم نه از آتش
نه از عرشم نه از فرشم نه ازکونم نه از کانم
نه   از دنیا   نه از عقبی نه از جنت نه از دوزخ
نه از آدم نه از حوا   نه از فردوس و رضوانم
مکانم لا مکان باشد نشانم بی نشان باشد
نه تن باشد نه جان باشد که من از جان جانانم
دوئی را چون برون کردم دو عالم را یکی دیدم
یکی بینم یکی جویم یکی دانم یکی خوانم
هو الاول هوالاخر هو الظاهر هو الباطن
بغیر از هو و یا من هو دیگر چیزی نمی دانم

I am not Christian or Jew or Muslim, not Hindu
Buddhist, Sufi, or Zen. Not any religion
or cultural system. I am not from the East
or the West, not out of the ocean or up
from the ground, not natural or ethereal, not
composed of elements at all. I do not exist,
am not an entity in this world or in the next,
I did not descend from Adam and Eve or any
origin story. My place is placeless, a trace
of the traceless. Neither body or soul.
I belong to the beloved, have seen the two
worlds as one and that one call to and know,
first, last, outer, inner, only that
breath breathing human being.

(translated by Coleman Barks, 1997)

CHAPTER 2 | REVIEW OF CONTEXTUAL KNOWLEDGE

In this chapter, four strands of knowledge are considered discretely. However, in the project they coalesce in the screenplay and indicative treatments of the narrative. Given that I draw upon literature, technology and existing artistic practice, the chapter is called a Review of Contextual Knowledge rather than a literature review. The bodies of knowledge impacting on the inquiry may be divided into four sections:

• Self, identity and autobiographical memory
• Narrative structure and discourse
• Technological knowledge
• Animation theories.

Self, identity and autobiographical memory

Campbell (1949) has suggested that historically the soul was the dominant explanation used to explain the nature of humanity, but this was eventually replaced by notions of the self as a purposeful long-lasting kernel of a person. There is still no clear distinction between different definitions of constituents of a human identity and many terms like *reflexive*

consciousness, knowing oneself, self-concept, self and identity are used interchangeably (Breakwell, 1992; Ashmore & Jussim, 1997). Some researchers consider identity as a phenomenon with two forms, personal and social and these, although belonging to the same self, function differently in variable contexts (Abrams & Hogg, 2006). However, other theorists believe the same self processes different roles when interacting with different contexts (Breakwell, 1992). Although identity may have multiple dimensions including one's family, body, ideology, educatio,n etc., Turner (1982) and Rosenberg (1997) suggest that these are interconnected and create a cohesive unified sense of self. Markus and Nurius (1986) have argued that humans have the ability of experiencing 'possible selves' and can mind-travel to an imagined past and alternative futures, picturing what they might have become if certain events had occurred.[11]

In the Stella narrative, the protagonist temporarily loses memory of herself when her original experiences and identity become lost in a trajectory of transitions. In helping to understand this state, it is useful to overview theory in the field relating to autobiographical memory and the self. Prebble et al. (2013) suggest that we cannot

talk about self and identity without investigating memory. They observe, "There is something inherently human about both the capacity to contemplate who one is and the capacity to remember one's past" (p. 833).

AUTOBIOGRAPHICAL MEMORY

Early in the development of neuropsychological research on memory (as consequence of advancements in computer science in the 1960s) initial cognitive theories tended to "computerise" human memory by considering short-term and long-term forms in relation to specific and differing locations in the brain (Atkinson & Shiffrin, 1971). However, as neural and cognitive research developed, it became evident that the computerised explanation of how memory operates was incorrect. By 2006, Rubin was arguing that short-term memory may be understood as fast access, erasable memory within the central processor of the brain and a long-term memory is associated with passive, permanent storage.

According to current psychological theory, long term memory may be subdivided into *episodic* and *semantic* memory (Tulving, 1993; Schacter et al., 2000). Episodic memory deals with experiences of events at a specific time and

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11. Schacter et al. (2007) have demonstrated how remembering the past and imagining the future involve the same areas of the brain.

can be accompanied by contextual information. By recalling an episodic memory, we remember an event situated in a specific time and place in our life. For example, remembering last night's dinner is an episodic memory. Conversely, semantic memory is relatively independent of spatial and temporal events, and deals with general concepts, meanings and knowledge. For example, remembering one's favourite food is a semantic memory, and it is not necessary to remember exactly when and how this food became one's favourite in order to know that it is. However, these two states are not necessarily discrete. Episodic memories are infused with semantic knowledge (Moreland & Levine, 2002) and, as Baddeley and Wilson (1988) suggest, repeatedly recalling an episodic memory gradually transforms this experiential memory into a semanticised concept or 'fact'. Rubin (1988) and Conway (1990) have published significant research on autobiographical memory, which they suggest comprises all forms of memory that is personal in nature, including episodic and semantic memories about the self.

Semanticised forms of autobiographical memory are important, not only for the formation and maintenance of a mental representation of the objective self in the present moment, but also across time (Prebble et al., 2013, p. 815). Baumeister (1998) argues

that individuals have narratives that link all occurred and imagined past, present and future events, and these are attributable to a single entity that indwells within the individual. As an extension of this, recently McAdams (2019) has argued that one's life story schema helps to form an overall construction of a life story within the body of culture and it operates as the main feature of personal identity.

Hyman et al. (1995) suggest that contrary to our intuitive perception, autobiographical memory is not something solid, continuous, rigid and stable. It has a protean and changeable nature. In other words, autobiographical memories are constructed every time they are recalled. They suggest that people sometimes have very clear memories of the past, that are in fact imagination (or to be more accurate *false memories*). More commonly, however, people tend to have errors or distortions in their memories, such that elements of real experience and imagination are woven together (Devitt et al., 2016).

In 2000, Conway and Pleydell-Pearce introduced their *Self Memory System* to explain the structure of autobiographical memory and its relation to the self. According to their model, autobiographical memories are constructed, mental representations. Based

within these theorists' *Self Memory System*, the autobiographical knowledge base contains different forms of semantic memories that, in cooperation with each other and episodic memories, form autobiographical memories. These memories are categorised by their temporal duration. According to Conway and Pleydell-Pearce, episodic memories are the duration of individual experiences that are typically less than a day. Within the autobiographical knowledge base, general events are representations of repeated or extended events and span relatively longer time periods, (from days to months). Conversely, lifetime period memories are larger units spanning months to years (such as one's schooling or the period of the ownership of one's first car). One's life-story schema is made of normative structures that are the individual's contextual perception of one's entire life (Conway et al., 2019).

Conway et al. (2004) noted the significance of human experience, and the ways in which autobiographical memory is influenced by the goals of the self. They suggest that:

… autobiographical memory emerges from the intersection of two competing demands: the need to encode an experience-near record of ongoing goal activity and the simultaneous need to maintain a coherent and stable record of the self's interaction with the world that extends beyond the present moment. The first of these demands we call adaptive correspondence and the second, self-coherence. The flexibility of the self-memory system to answer each of these demands in an appropriate and calibrated manner defines the healthy functioning of memory and self. (Conway et al., 2004, p. 492)

Derived from one's current goals is a set of control processes called the working self. This part of the *Self Memory System* is responsible for organising and forming memories of ongoing experience in the psychological present (Vallacher & Nowak, 1997). According to Conway et al.:

> The working self, in generating a goal-oriented mental model of the psychological present, implicitly creates constraints placed on a record of a period (what one might call a psychological 'moment'). The psychological moment is

defined by goal instantiation at the start and close of the moment and by some goal-driven distribution of attentional resources in between these two points. Thus, as proposed in the original Self Memory System model, the working self, mediates the formation of memories. (2004, p. 503)

Conway et al. (2004) believe that in the short-term, the working self keeps track of all activities related to goal achievement, so it prevents us from repeating actions that we have already undertaken. At the boundary between goals, Zacks et al. (2001) suggest that some episodic memories will be lost but a few memories will be retained and will form our long-term memories. Similarly, Markus and Nurius (1986) suggest that during the day, many working-self memories will form in short term memory, but with the exception of those that are directly relevant to specific goals, most working-self memories are lost during sleep. Surviving working-self memories, they suggest, will slowly integrate into long-term forms of autobiographical memory. They conclude that "self-coherence binds the current working self to remembered reality and supports the generation of different images or versions of the self-in-the-past and the self-in-the-future" (1986, p. 191).

Rubin (2006) suggests that we know more about how autobiographical memory works than the actual phenomenon of identity. He suggests that, like other neurocognitive structures, the autobiographical memory system is not an overall integrated and "propositional cognitive structure of homogenized information" (Rubin, 2006, p. 11). More recently, he has argued that, autobiographical memory is actually composed of a complex set of different systems like senses, emotions and language and these are enhanced to process different types of data (Rubin, 2019).

In the Stella narrative, although the young woman tries to paint over and forget episodes of her past life, the essence of who she is means she cannot reliably remove them. For example, although Stella endeavours to enjoy the beauty of her new world, on a deeper level she realises that she needs the resonance of the world she left.

AUTOBIOGRAPHICAL MEMORY AND THE SELF

In the narrative, Stella and her mother pass through transitional phases of identity reconstruction that are allegorically depicted as painting and repainting one's self. Here we see illustrated Prebble et. al.'s (2013) 'present self'

in a state of constant transformation, frequently contrasting with Stella's 'phenomenological continuity'.

Prebble et al. (2013) have provided one of the most comprehensive explanations of the self. Their model considered both an objective and subjective self, within a temporal context. It positioned the study of the self in relation to an understanding of autobiographical memory. In their model (Figure 2:1 - p. 19), "I" is the self that subjectively experiences and "me" is the object of the self. The objective self, "me", is a semantic memory or as Conway (2019) calls it, the conceptual self. This construct includes self-knowledge and facts about the self, such as traits, beliefs, preferences, self-images and the evaluation of the self (for example, self-esteem). In this model, both aspects of the self can be temporally extended, providing a sense of continuity over time.

Erikson (1993) suggests that "inner sameness and continuity" might be at the core of identity. Baumeister (1998) argues that there is a cohesive wholeness attributed to identity and this goes beyond its constituents. He suggests that self-continuity is the reason that individuals feel the same, regardless of changes they might

experience in a lifetime. Addis and Tippet (2008) suggest that the contribution of autobiographical memory to the continuity of identity is evidential. They argue that we can mentally time-travel to the past and re-experience previous life episodes in the form of memory and nostalgia. This they suggest is how episodic memory gives us a sense of phenomenological continuity, as does the ability to pre-experience upcoming experiences with imagination and anticipation. Tulving (1993) suggests that this is potentially the unique contribution of episodic memory to the self; the intimate, experienced connection to our past and future selves which is part of autonoetic consciousness that enables us to consciously experience the self in other times.

More recently however, Hoyle et al. (2019) have considered the ways in which identity is situated in the context of social behaviour, examining how intersubjectivity, [12] intentionality, [13] social feedback, self-presentation and reflected appraisal contribute to a socially-constructed self. Their work echoes two influential theories of identity, social identity theory (Tajfel et al., 1979) and self-categorisation theory (Turner & Oakes, 1986), which argue that membership of

social groups determines an important part of identity: social identity.

THE ENCULTURED SELF

In the narrative of Stella, a young woman suffers a disintegration of the functioning relationship between her personal and social selves. She pursues an *encultured self* through a relationship with another refugee (Tim), who appears to have adopted a form of invisible group membership with a culture into which she wishes to transition. However, her decision to transition proves to be flawed and she is eventually unable to unify her sense of self over time and thus she fails to maintain a sense of social wellbeing.

Turner (1982) suggests that the self is multifaceted; it includes both personal and social identities. Ellemers et al., (2002) argue that a dynamic interplay between the two types of identities provides us with an integrated sense of self, which is particularly evident during social identity development. Nelson (2000) suggests that, through exposure to and interactions with other people and objects, children gradually develop an encultured self. She suggests that this encultured self develops gradually through

12. Intersubjectivity describes what a person develops in the early stages of their life through interconnectedness and reciprocal understandings with others (Trevarthen, 1993).

13. Intentionality is when one's identity is shaped by selective behaviour of others, especially one's immediate family and caregivers (Hoyle et al., 2019)

A comprehensive model of the self, proposed by Prebble et al. (2013).

	Subjective sense of self (I -self)	Content of self (Me-self)
Present self (synchronic unity)	*Subjective sense of self* • Prereflective self experience • Self awareness	*Self concept* • Conceptual self knowledge • Self esteem • Self image

Temporally extended self (diachronic unity)	*Phenomenological continuity*
	• Autonoetic consciousness
	   ○ Autonoetic recollection
	   ○ Autonoetic imagining
		Semantic continuity
		• Temporally extended self concept
		• Semantic temporal chronology
		• Narrative continuity

Note. This table shows the subjective and objective aspects of the self within a temporal context. The graphic is adapted from Prebble, Addis and Tippett's (2013) '*Autobiographical memory and sense of self*'. Their model focuses on the ways in which our personal memories of ourselves are used to construct a sense of personal identity.

collaborations between one's personal and social identities, and between the individual and others in their cultural world. She posits that the individual defines and differentiates their personal identity from that of others by being exposed to ideological and religious agendas and through realisations of distinguishing features of their social identities (such as race or wealth). In addition she believes that we form social identities in reference to our personal identity. At the same time that individuals become members of certain groups (for example, a nationality or a religious community), they form social identities with reference to that personal identity. Fearon (1999) suggests that membership frameworks for such groups follow certain behavioural expectations and identity is shaped through these expectations. Moffet (2019) observes that human beings are highly adaptive to new groups and are the only vertebrate that lives in groups of more than 200 members. He also suggests that we are wired to accept anonymous groups. He posits that it is an evolutionary feature of our species that humans consent to the inclusion of stranger groups. Sani et al. (2008) suggest that within an encultured self, the social identity structures related to group membership have distinguishing features that enable human beings to sense continuity in a collective manner with other members of the group. These researchers argue that individuals

feel that the groups to which they belong are persistent and this unifies their sense of self over time, and increases social well-being. As an extension of this, Ellemers and Barreto (2003) conclude that psychological perceptions and internal experiences of a person are largely influenced by features of the groups to which they are linked.

IDENTITY TRANSITION

In the story of Stella, the young woman transitions her identity from that of a daughter in one culture to a lover and then mother in another. Identity transition describes an indeterminate state in which a person is in the process of disconnecting from their previous identity links and forming new ones. This transition is usually accompanied by a redefining of the self (Iyer et al., 2010; Ladge et al., 2012). Breakwell (1992) notes that sometimes people are unwillingly forced into losing identities and developing new identities, and this can produce significant negative psychological consequences. Knippenberg et al. (2002) suggest that such negative impacts are especially likely when the transition phase requires relatively high levels of change because individuals have to deal with uncertainty and feelings of disconnection, particularly when change is not by choice. This, they suggest, may be because such changes

require individuals to redirect their identities and recategorise themselves in order to be accepted by new identity groups as a new member. Iyer et al. (2010) note that an individual can belong to multiple groups, and the size and structure of this network of identities plays a critical role in identity transition. They suggest that a larger identity network facilitates identity transitions as it provides psychological and social resources that support the individual. Building new social identities reformats one's current network of identities, which is easier if the new identity is compatible with existing identities. In other words, identity transition occurs through constant reference to this network. Their work suggests that this process may have positive or negative consequences for individuals, based on the success of this reformatting and referencing.

Moreland and Levine (2002) note that individuals encountering transitional change blend into the new groups by adopting new standards and by revising their connection to former groups. This is shown in the screenplay and post-visualisation as Stella progresses through the rooms, increasingly shifting her loyalty and association with her mother and progressively aligning herself with the enticements of the labyrinth (eventually personified in her relationship with Tim). In this liminal state, Moreland and Levine suggest that

people whose identities are in transition may feel disconnected because they have to continuously provide verifications of themselves to the new groups so that they are able to merge with them (Noel et al., 1995). At the same time, they may be threatened by rejection from members of the former groups with whom they identified (Branscombe et al., 1999). Once they begin to feel connected to new social groups, individuals may be able to identify with them and overcome feelings of insecurity and distress. Hirsch (1981) suggests that this can lead to a higher sense of wellbeing identification when social groups provide collective continuity (because it can facilitate purposefulness for the members and protect them from potential threats from other groups). Haslam et al., (2002) suggest that a social group relationship can often create meaningfulness for the members through the group framework and this secures stability for them, especially when they are encountering a transitional phase. [14] However, in the story of Stella this does not occur because the young woman is isolated in a singular relationship.

Allegorically and stylistically Stella's identity transitions are marked by colour changes and an increase in painterly texture. These changes

begin gradually as she progresses through each room so, by the time she leaves the labyrinth, she and her new context are integrated into a stylistically cohesive visualisation that holds original form but is eventually presented in an entirely painterly fashion (Figure 2:2).

FIGURE 2:2.

Comparison of film grabs showing how painting is used as an allegorical device to illustrate identity transition.

Note. Frame one shows Stella in a non-painterly manner when she is in her home before being forced to flee. In frame two we see a subtle transition inside the labyrinth as she begins to adopt a new identity. Here her appearance and background become increasingly textured. The third frame is from the time when the young woman is immersed in the new world before she rethinks her isolation and the damage she and her baby have experienced as a result of enculturation.

SUMMARY OF IDENTITY THEORIES AND THEIR IMPACT ON THE NARRATIVE AND TREATMENT OF STELLA

Stella allegorically explores the nature and implications of autobiographical memory and self-identity. The work asks what happens if a constantly changing environment cuts an individual's thread to the past and proposes another, uncertain future. In concluding this section, I outline the core ideas of the narrative in relation to specific theorists hitherto discussed.

Moffet (2019) notes that we are social animals who are shaped through our connection to other groups of people with different values. Stella, as a young refugee, is lost in a protean world that rewards or punishes her based on how she interacts with it. Beginning with Nelson's (2000) idea of the encultured self that is constructed through a broad range of connections to groups with whom she has traditionally identified (Iyer et al., 2010), we trace Stella and her mother's journey through a dynamic environment where they are expected to paint themselves again and again so they can progress into increasingly

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14. Holmbeck and Wandrei (1993) note that people may adopt different strategies to overcome negative effects of insecurity.
They suggest some individuals may attempt to posture a distinguishing feature like masculinity or maturity to alleviate the difficult nature of transition.
Others may use adaptation strategies to manage distress (Lazarus & Folkman, 1984) or may seek social support from others (Underwood, 2012).

rewarded lives. Stella's encultured self (Nelson, 2000) becomes incrementally less able to function by simply using values established in previous social networks. In this state, we see her navigating a transition phase (Levine et al., 2019) where she feels lost and disconnected. Her behaviour may be likened to Iyer et al.'s (2010) reformatting of her network of social identities where the individual is constantly making referential identifications to update her identity network. However Stella's mother is not as adaptive, so she is unable to merge new social identities and values into her identity network. As a consequence, she fails to verify her position in the new cultural setting and navigates a state that can be likened to Noel et al's (1995) limbo. Branscombe et al.'s, (1999) research offers a useful consideration of the resulting feelings of distress and insecurity that the mother experiences in limbo, exacerbated because she has already begun reformatting her identity network to survive (and cope) with requirements of the new world challenges. Haslam et al. (2002) would frame her situation as an individual who has loosened her references with her network of social identities and personal beliefs, but is unable to fully re-emerge with a new network, and thus activate a collective continuity that facilitates purposefulness. This situation results in her sense of instability, although

memories provide explicit links with the past and future self.

Stella's strategy to overcome the transitional sense of being adrift and uncertain contrasts with the behaviour of her mother. Stella develops adaptation strategies (Lazarus & Folkman, 1984) while her mother intensifies her distinguishing features to alleviate the difficulty of forced transition (Holmbeck & Wandrei, 1993). In this regard her mother's reaction functions as a form of protective psychological relief, rather than a solution to the situation.

In Stella's transitional liminal state, I employ running paint as a metaphor for the flow of identity displacement. The concept of the incrementally rewarding or punishing sequence of rooms operates as a symbol of the new, complex conditions of liminal states. Drawing on Fearon's (1999) theories, we encounter in these spaces a dynamic interaction between the spaces and their dwellers. The reward and punishment the refugees encounter, stimulates them to behave in certain ways and plays a crucial role in driving them to reshape their identities.

Narratology: structure and discourse

The second body of knowledge impacting on the design of Stella's story relates to the field of narratology. Influences are drawn in this section from both Western and Persian discourses.

THE EVOLUTION OF WESTERN NARRATOLOGY

Gottschall (2013) asserts that stories in any medium, be it written, audial or visual, can change us. Lewis (1978) suggests that they heighten reality and communicate underlying ideas about the human condition. Hühn et al. (2009) indicates that narrative prose has been accepted in the literary world since the 18th century, and Blanckenburg (1774/1965) notes that the first inquiries into narrative were primarily focused on normative qualities like the validity of prose to fulfil the requirements of epos. In the West, one of the earliest attempts to signify narrative form and its constituents was undertaken by Spielhagen (1883), when he analysed and compared the complexity, characters, and plot designs of novels and novellas. His studies facilitated an understanding of differences between first and third person narration and also relationships between the writer and the narrator. In 1910, Friedemann developed Plato's concept of *epos* by introducing the idea as the inherent essence of a narrative rather than an addition (Friedemann, 1910). In the same year what became known as the Finnish School (initiated by Aarne and Thompson) enriched and broadened studies of narrative discourse and structure by considering the nature of folklore stories. Based on these studies, Propp (1928/2010) attempted to abstract basic elements from Russian fairy tales and explain how they were combined to generate narratives. Alongside these studies, Forster (1927/1985) sought to identify universal mechanisms in narratives. French structuralists like Lévi-Strauss (1976) embraced Propp's studies and developed their analysis to include non-linear, multilevel narrations.

Accompanying these studies, Šklovskij (1917) attempted to redefine literature by using formal features like principles of defamiliarisation. Based on his work, Tomaševskij (1925) introduced the formalist dichotomy of fabula and sujet[15], which became influential in the work of later scholars like Bal (1977).[16]

In 2009, Hühn et al. used the abstractions developed by the structuralists to explore semiotic structures, but this work did not explain narrated events and characters; in other words, the surface level of narration (Hühn et al., 2009). In 1972, Genette addressed this issue in a meticulous analysis of Proust's *In Search of Lost Time*. Here he examined the narration in three aspects: time, mode and gathering of information (Genette, 1988).

However, it was only in 1969 that the term narratology (narratologie in French) was introduced by Todorov. He proposed a transition from studying words and sentences to a consideration of the overall logical features of a narrative.[17] Chatman (1980) extended this work by demonstrating how certain tenets of

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15. Taken from Russian formalism, fabula describes the "raw material of a story", and sujet describes "the way a story is organised". The terms were originally used in this sense by both Propp (1928) and Šklovskij (1917).

16. Bal (1977) notes that Genette (1988) was not interested in postulating a coherent theory because it was against the common concerns of the traditional narratologist to theorise universals in narrative.

17. What he called the "science of narrative" (Todorov, 1980, p. 10).

narratology can be applied to visual narratives and, along with Bal (1977), he demonstrated how narrative can be intertextual.

Pavel (1986) and Doležel (1988), introduced the theory of possible worlds in narrative to describe the parallel virtual universes within a story that live in the thoughts, hopes and wishes of fictional characters but may not become explicit in the narrative. Ryan (1991) used this theory to facilitate his artificial intelligence simulations. In this decade, the idea of generative grammar[18] (first introduced by linguist Noam Chomsky) also became a concern of narratology, specifically in the work of Pavel (1986) and later in Bringsjord and Ferrucci's (1999) research into the use of artificial intelligence in designing virtual storytelling.

In 1999, Herman sought to combine the structuralists' approaches with cultural, historical and ideological ideas by introducing the plural term "narratologies" (Herman, 1999). Then in 2003, in a broad study of narratological theories, Nünning (2003) proposed three dominant paradigms in contemporary narratology:

- Contextualist narratology, which relates the narrative to relevant contexts such as cultural or historical issues;
- Cognitive narratology, which is more concerned with the human psyche and how the mind processes narrative, not only in literature but also in everyday oral articulations;[19]
- Transgeneric theories, which reach beyond textual literary narrative and explore narratological concepts in other media such as film and videogames.

In 2008, Gubrium and Holstein developed the concept of narrative ethnography to study the complex relations between "experience, storying practices, descriptive resources, purposes at hand, audiences, and the environments that condition storytelling" (2008, p. 250). Their research built on earlier writing by Lanser (1986), who had previously explored a feminist approach to narratology by indicating gender as a point of view and a mode of presentation. In 2015, she collaborated with Warhol to produce a comprehensive study of queer and feminist approaches to narratological theory.

Other recent interdisciplinary lenses have brought new insights into the study of narratology. Lambert (2015) has demonstrated how understanding the mathematical topology of surfaces, graphs and shapes can contribute not only to the visualisation but also the creation of complex narrative structures. These sophisticated narrative structures raise questions about the cognitive thresholds of reader/audience perception. Narratology has also been expanded by the work of Marie-Laure Ryan who developed the concept of *Possible Worlds,* based on Kripke's (1963) Leibnizian modal logic. In 2019, Ryan explored the narratological *storyworld* in the light of previously investigated possible worlds. The storyworld in narrative consolidates a universe where the characters and their stories continue to live without being written or read about. Here, she explains, "texts are imagined as existing independently of the medium and contain more than the text can describe" (Ryan, 2019, p. 81). The storyworld, she suggests, gives an experience of immersion to the reader/audience because they are able to immerse themselves in a world that continues to exist beyond characters and events. Based on

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18. "The underlying thesis of generative grammar is that sentences are generated by a subconscious set of procedures. These procedures are part of our minds. The goal of syntactic theory is to model these procedures." (Carnie, 2012, p. 13).

19. These studies became important for modelling artificial intelligence simulated narratives.

this idea, she discusses a phenomenon she calls "transficionality". She suggests:

> If worlds are imagined as existing independently of texts, they escape the control of the original author, and they become expandable. The characters acquire a life of their own, and they can be placed in other circumstances than those described in the original text. And since possible worlds theory tells us that "things could have been different from what they are," it becomes feasible to create alternatives to established fictional worlds. (Ryan, 2019, p. 81)

Within such storyworlds, the propositional message of the story is a secondary consideration; the immersive, simulated, imaginative experience of the narrative has priority for the reader/audience. In her discussion of storyworlds, she also analyses the nature and role of fans in contemporary narrative. Ryan notes that fans create cosplays, parallel stories, additional fictional characters and toys, to enhance their ability to immerse themselves in a storyworld and contribute to its nature. She explains:

> The notion of storyworld does not reduce all fictions to a uniform model, because "worldness" can be realized to different degrees. The narrativity of a text is a function of its worldness, and its worldness is a function of its ability to build a mental representation that satisfies the three conditions discussed in this chapter: being logically consistent, large enough to stimulate the imagination, and experienced as complete. (Ryan, 2019, p. 82)

In findings aligned with Ryan's (2019) discussion of the reader's depth of engagement with narrative, Mia Consalvo has noted how game players can become part of constructing and extending the parameters of the narrative within the game storyworlds they occupy. She suggests that intertextuality often functions as a method fans employ to extend meaning in a text (Consalvo, 2003).

NARRATOLOGY AND PERSIAN CLASSICAL LITERATURE

Given that the thesis draws upon both Western and Persian thought, it is useful at this point to consider narrative features in Persian literature. In traditional Persian literary experience, fact and fantasy are often blended together (Utas, 2014). There are no specific words in either traditional or modern Persian that equate to

the Western notions of 'fiction' or 'fictional narrative'. De Bruijn (2012) notes that the closest possible word, *Dastan* داستان, does not necessarily refer to imaginative narratives. Utas observes that in the period of classical Persian literature (8th/9th centuries), national storytelling could not be:

> expected to differentiate between legendary and real history, and this seems to be a pattern that is repeated all through the extremely rich repository of traditional stories from which tales, exempla, parables and allegories were drawn in popular as well as literary compositions in various genres during the whole Classical period. (Utas, 2014, p. 168)

During this period, with the revival of ancient mysticism and illuminationism, literary texts about wine, love, dance, warriorship, kingship and valour were used allegorically to convey transcendental ecstasy and rapture. This feature was especially evident in the works of Rumi and Attar.

In the hands of the major figures of Persian Classics, narrative transcended the status of fine literature and was distinguished by its intuitive,

euphoric nature. For example, Utas (2014) observes that:

> Rumi's poetry was motivated by love and the Divine origin of the universe, the only truly existing reality, and inspired by the mirrored image of the Divine in the terrestrial – by the beauty of a human being, by the fragrance of the spice shops, by the rhythm of the hammers in the bazaar of the silversmiths. (Utas, 2014, p. 174)

Williams (2013) notes that much classical Persian literature, including the works of Rumi and Attar, is "written in many voices, or instruments of discourse: this forms a polyphonic narrative of poetic intensification that tends towards mystical ecstasy" (p. 50).

Narratologically, classical Persian literature profiles a number of distinctive features. Of these, seven warrant mention.

Story within story

First, in classical Persian literature one often encounters interwoven stories within stories. Rumi's Masnavi ye Manavi serves as an example of this approach to narrative structure. Williams (2013) notes that often Rumi interrupts the main narrative with the second one. Part way

through this second narrative it is interrupted by the third narrative or a homily, and by extension, the third narrative is intersected by a fourth. At this point, the writer then deftly travels up through the network of entangled stories to conclude his main point or present his reflective thoughts. Structurally, such storytelling is both multilayered and multifaceted (Williams, 2013); featuring a horizontal storyline and vertical narratives that intersect with it.

Prior to Williams' analysis, King (1989) also observed this structure. He noted:

> Motifs from several stories are called upon to enrich each other, and the most tenuous implications of the main story are pulled and twisted about, several narratives and interpretations thoroughly interwoven with each other. The result is a multi-levelled, multi-pronged examination of some significant area of experience, from many different angles. Narrative thus becomes a kind of probe into other realities, with fingers examining this element and that, finding sometimes nothing, sometimes truths of great importance. (p. 277)

The journey

Second, much classical Persian narrative is concerned with a physical, exterior journey that is accompanied by an interior transcending journey. King (1989) notes that the concept of a journey permeates both the discourse and shape of Persian narratives and he suggests that the device is employed to heighten levels of awareness in readers.

Allegory

A third feature of many classical Persian narratives is the use of allegory. In the thinking of many Persian writers, language is a fragile, flawed conveyer of thought. Accordingly, they employ high levels of allegorical and metaphorical language to assist the reader in seeing through the limitations of words. It was believed that to connect terrestrial language to a celestial source of concepts, the reader must be elevated, or as Rumi states the reader requires a "well illumined eye" (Rumi & Nicholson, 1985, p. 273). King (1989) notes that although the language and structure of classical Persian literature is meticulously crafted, writers consistently urge the reader to transcend the cage of words in the pursuit of core ideas. Rumi, in his poetic manner, describes the idea like this: "Old words fall short of new meaning" (Rumi & Nicholson, 1985, p. 65) or

"Eloquent speech comes as from a sea" (Rumi & Nicholson, 1985, p. 265).

The untold ending

Another feature of many stories in Persian classical style is the phenomenon of the 'untold ending'. The untold ending, as Alan Williams (2013) explains, creates a moment of silence after the passage. This device he suggests, accommodates "moments of illumination in ekstasis, in a hiatus shared between the poet and the reader" (Williams, 2013, p. 53).

Literary ecstasy

A fifth feature of this literature is the occurrence of 'literary ecstasy'. William (2013) suggests that the ultimate purpose of Persian classical writers was not to entertain or edify the reader, but to employ narrative tools to raise an ecstatic awareness in the reader through a process of "profound intensification and sublime elevation" (Williams, 2013, p. 77). This purpose is especially reflected in the literary works of Rumi and Attar. Here, although a reader may sometimes be confused or lost in a story's multi-layered allegorical structure, they concurrently experience a rapture of ideas and allusion. They are uplifted by the poetics of thought and the manner in which a subtle, yet complex, narrative

can transcend the prosaic nature of linear storytelling.

Polyvocality

A sixth feature relates to polyvocality. Polyvocality is a narratological construct where a work may have multiple narrators or follow diverse narrative voices and character perspectives. In classical Persian narrative there is rarely an adherence to a dominant, single narrator. Instead, one commonly encounters a form of verbal modulation where modes of discourse switch dynamically. Williams (2013) notes that such an approach may employ both a plurality of voices and significant shifts in time.

The circle

Finally, because the Golden Age of Islam synchronised with the Persian Classical era of literature, there were significant exchanges between science, philosophy and literature. Surfacing from this was a 'transcendental geography' that permeated a significant body of classical writing. Evidence of this can be seen in the reccurrence of the circle motif as a symbol of life, eternity and creation (Bozorg-Bigdeli et al., 2007) and as a metaphor for the continuous transcendental progression of the self through the cosmos (Panahi & Bahmani, 2014). While the circle motif is evidenced in much classical

literature, Ghayoori and Yusofpoor (2015), note that the celestial concept of the circle is also reflected in cyclical pattern of narrative structures of the period. I deployed the concept of the circle and cyclical narrative structure in the allegory Stella and we see her transition in understandings until eventually she returns to her homeland (Figure 2:3 - p. 28).

INFLUENTIAL NARRATOLOGICAL DEVICES IMPACTING ON THE DESIGN OF STELLA

Given the ongoing evolution and expansion of narratology, it is useful to note the ways in which certain ideas have been used in the Stella narrative. Chatman (1980, p. 9) states:

> … each narrative has two parts: a story (histoire), the content or chain of events (actions, happenings), plus what may be called the existents (characters, items of setting); and a discourse (discours), that is, the expression, the means by which the content is communicated. In simple terms, the story is the what in a narrative that is depicted, discourse the how.

In the design of Stella, the two dimensions of story and discourse intersect but it is the film's

Comparative sequences of Stella fleeing then rowing back to her homeland.

Note. In the narrative Stella flees her homeland when war threatens. She travels across the ocean and then through a labyrinth of transition rooms, experiencing a subsequent marriage in the new world. These chronological events may be seen as episodes on a cycle that eventually brings her back to a return journey across the water to her homeland. Inside this cycle the young woman transforms from an adolescent who is relatively self-centred, to a woman who has found meaning and value through a process of disillusion and reawakening.

concerns with presenting a 'painterly' linear allegory[20] that constitute its primary aesthetic and structural character. The emphasis on allegory as a narratological device is deeply embedded in Persian Classical literature and in Stella it serves to suggest deeper ideas about identity transition (Iyer et al., 2010), the nature of autobiographical memory (Addis & Tippett, 2008), and the nature of cultural seduction. Using metaphors such as paint, the labyrinth and blindness (Figure 2:4 - p.30), I provide the audience with the opportunity to transcend a linear storyline and consider what might lie beyond the surface (King, 1989).

As an extension of the allegorical, like much classical Persian literature, Stella adopts the metaphor of a journey where characters must pass through symbolic environments. These phases of the journey are differentiable within the labyrinth's room structures and in the two worlds that flank them. The story's journey is both a physical and an interior transcendence into a realm of greater knowing (King, 1989). Here, wisdom is movement and the path to wisdom is shaped by the process of journeying (Afshari-Mofrad et al., 2016).

Stella is also an enacted, polyvocal story. Drawing on a narrational device evident in classical Persian literature, the story's central focus shifts between characters (Williams, 2013). Sometimes the protagonist is Stella, sometimes it is her mother and occasionally the emphasis moves temporarily to an all-knowing third person.

Like much classical Persian literature, the narrative's structure is also cyclic (Ghayoori & Yusofpoor, 2015). Accordingly, we begin and end in the same physical world (the village), but an internal transition has happened where Stella has journeyed from a state of unknowing through intuitive revelation of intellectual light to a state of greater wisdom (Berenjkar, 2019).

Finally, although in the design of the work I have created a discrete story, I am aware that when the project is fully realised, it will be lodged in a realm where it may become part of a wider storyworld where its 'propositional narrative message' (Ryan, 2019), might become part of a realm where people who view the work construct alternative texts that expand upon what has been created.

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20. By allegory I mean "the expression by means of symbolic fictional figures and actions of truths or generalizations about human existence" (Merriam Webster Dictionary, 1984, p. 35). In using this term, I draw on its etymology from the Greek allēgoria, meaning to speak figuratively. Thus, the characters and painting metaphors operate as allusions or interpretations of the experience of identity transformation, loss and reclamation.

FIGURE 2:4.

Comparative frame grabs of Stella's baby.

Note. In the narrative, the construct of blindness is physically invisible in Stella but it is made evident in her baby. The child's initial blindness is an allegorical reference to Stella's inability to perceive the false value of the world she has chosen. She cannot recognise that in her quest for identity transformation, she has lost autobiographical memory and she is consequently living falsely in a false world. However, through her baby's blindness she can recognise that something is wrong. When she returns to her homeland and washes the child in the waters of her country, the child can suddenly see (an allegorical reference to Stella's awakening of illumination).

Technological explorations in the Stella project

The third body of knowledge impacting on the thesis project concerns technological innovation. Central to this are emerging discoveries and advanced applications that have been used to craft initial drafts of the physical appearance of the proposed animation, in particular its painterly allegory.

DEEP LEARNING IN PAINTERLY EFFECTS SIMULATION

In Stella, the allegory of paint plays a pivotal part in relaying meaning. The painterly world and moving painted patterns constitute metaphorical elements in the story. To achieve this effect, a traditional approach would have been to undertake manual frame-by-frame animated painting, as evidenced in Kobiela and Welchman's *Loving Vincent* (2017).

A well-documented paper by Mackiewicz and Melendez, (2016), presented at SIGGRAPH[21] illustrated the sophisticated, labour-intensive workflow of creating this film. Considering that most of the production and postproduction in Stella I undertook myself, such an approach was not feasible. Thus I explored the potentials of artificial intelligence (AI) software to simulate animated painted effects. Recent advancements in neural network computing and deep learning algorithms were studied and applied to streamline an alternative approach to the production of Stella. The use of AI in simulating art styles is a relatively recent technological development. In one of the earliest attempts, Gatys et al. (2015) demonstrated how deep neural network algorithms can be used to create artistic images with high perceptual quality that resemble the complexity of traditional painting (Figure 2:5).

One year later, Li and Wand (2016) demonstrated that by combining Markov Random Fields[22] with Gatys et al.'s (2015) solution, more refined results could be achieved. In the same year, DiPaola and McCaig (2016)

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21. The Special Interest Group on Computer Graphics and Interactive Techniques [SIGGRAPH] is an annual conference associated with computer graphics. It is organised by the Association for Computing Machinery [ACM]. It is considered to be one of the most highly regarded academic events in the field of computer graphics.

22. Witten et al. (2017, para. 1) note that "Markov random fields define another factorized model for a set of random variables X, where these variables are divided into so-called 'cliques' X_c and a factor $\Psi_c(X_c)$ is defined for each clique: $P(X)=1Z\prod c=1C\Psi_c(X_c)$."

also presented novel machine learning based techniques for non-photorealistic rendering (NPR) of portrait photographs. This technique is capable of creating abstract, painterly style effects (Figure 2:6). Because this method works on a single frame, it is also able to be applied to an image sequence.
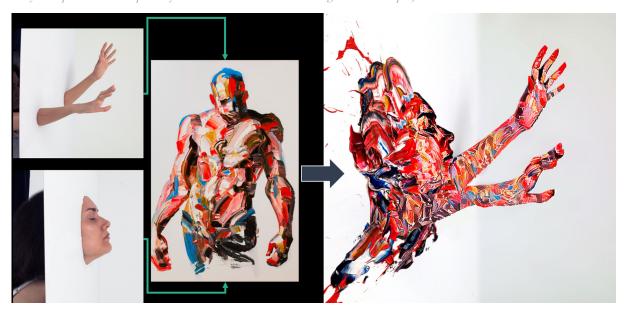
In the early visualisations of Stella project, I experimented with Gatys et al.'s (2015) method, to apply a simulated abstract painting effect on my photographed model (Figure 2:7).

Although I explored the potential of these approaches early in project development, it was a technique developed and presented in a paper delivered at SIGGRAPH in 2019 by Jamriska et al. that became influential in my project. Their method incorporated a combination of AI driven painterly effect simulation and manually-guided painted stylisation samples. This method affords a higher level of accuracy and is less compromised by computational artefacts. In addition, the artist can have a high level of control over the outcomes.

FIGURE 2:7.
Early attempts to simulate a painterly effect at the initial visualisation stage of the Stella project

Note. This piece was created in February 2017. The method used here is based on a SIGGRAPH paper by Gatys et al. (2015).

As demonstrated in Figure 2:8, a single, digitally-painted frame can drive the transformation of other frames in an extended video sequence. Here, the pattern in one frame is correlated with subsequent frames. Aesthetically and technically, the look afforded by this AI based solution comes closest to the traditional, single frame painting technique used in *Loving Vincent*.

MOTION CAPTURE

A select body of knowledge relating to motion capture technology has been useful in developing the Stella project. Delbridge defines motion capture as "a filmmaking technique where actors wear specially designed suits allowing computers to track their movements, which are used as the basis for lifelike animated characterisation"(2014, p. 11). Pizzo extends this, noting that motion capture is "a method of recording the movements of a real body in 3D space as data which is then mapped onto a computer-generated body" (2016, p. 1).

Jason Kennedy argues that motion capture can enhance the animation production procedure by providing an enriched experience to CGI animators as an "emotionally-connected/ authentic animation reference" (Kennedy, 2015, p. 941).

By accurately recording subtle body and facial movements of a performing actor, I have been able to integrate emotions into my fictional animated characters. The comprehensive movement capturing method I have employed is called performance capture (Delbridge, 2014). In his 2014 practice-led PhD research project, Matt Delbridge argued that performance capture is a "new and distinct interdisciplinary discourse in the fields of theatre, animation, performance studies and film" (Delbridge, 2014, p. 2).

Pizzo (2016, p. 20) suggests that an essential feature of motion capture technology is that "the actor loses both the notion of camera framing and/or the audience's point of view." In the production of Stella, the traditional filmmaking frame is replaced by a theatrical experience of the stage where actors freely perform, and the director can decide on the size and the angle of the camera later (Figure 2:9 - p. 34). This potential creates a crucial distinction from traditional filmmaking. Delbridge states:

FIGURE 2:8.
Guided stylisation of video

Note. Using a solution developed by Jamriska et al., the deep-learning based stylisation is guided by manual painted examples. The image is adapted from "Stylizing Video by Example" by O. Jamriska et al. (2019). ACM Transactions on Graphics (TOG), 38.4: 1-11.

Note. Actors performing without having to be directed towards a cinematic camera (February 2018).

… [motion capture] eases frame selection in the generation of content and allows editing to be completed after the act. The freedom performance capture allows is clear of the traditional hurdles encountered in the profilmic set up and continuity of film production. It abandons the onerous repetition required for the ongoing reset and reframing of physical environments, enabling performance to occur and its inherent *theatricality* to re-emerge. (emphasis added; Delbridge, 2014, p. 17)

DIGITAL HUMAN, 3D LASER SCANNING AND PHOTOGRAMMETRY

Efforts to create digital creatures using Computer Generated Imagery (CGI) may be identified as early as 1985 in the creation of the glass knight in Barry Levinson's *Young Sherlock Holmes* (1985). Similar technology was employed to create the water creature in James Cameron's *The Abyss* (1989). However, the first full manifestation of a digitally realised human being appeared in the shape shifting *T-1000* character in James Cameron's *Terminator 2* (1991).

Letteri suggests that with the appearance of John Lasseter's *Toy Story* (1994), "software was becoming sophisticated enough to tackle the creation of a character's performance" and it "proved that three-dimensional computer animation could be used to create an entire film" (Letteri, 2013, p. 214).

Peter Jackson's *The Lord of the Rings* (2001) is widely acknowledged for the creation of its highly detailed main digital character, Gollum, that performs throughout the trilogy.

Letteri suggests that creating such a character in a digital realm was a significant challenge because humans "are attuned to recognizing all aspects of human motion and behaviour, no matter how subtle" (Letteri, 2013, p. 215). He notes that the character of Gollum (performed by the motion capture actor Andy Serkis) was one of the earliest successful adoptions of performance capture enhanced by keyframe animation (Letteri, 2013, p. 215). Subsequent technical advancements made it possible to record the entirety of an actor's performance using combined body and facial capturing. This technique was graphically realised in James Cameron's *Avatar* (2009).

From *Lord of the Rings* (2001) forward, producers were able to precisely capture subtle facial movements using a virtual muscle triggering system based on the standard Facial Action Coding System (FACS) developed by the American psychologist Paul Ekman (1978) and kman et al. (2002).

With FACS, Ekman et al. (2002) have shown that we can reduce the complicated facial expressions into individual components of muscle movements, what they called Action Units (AUs), and by deconstructing and analysing these AUs a facial expression can be studied (Ekman et al., 2002).

Long before the emergence of digitally-created humans, Masahiro Mori, a robotics professor at the Tokyo Institute of Technology, coined the term *uncanny valley*, a significant concept that was later adopted by computer graphics artists (Mori, 1970). Mori realised that although people will sympathise with robots that are not realistic, our approach to robots that are almost realistic "will abruptly shift from empathy to revulsion" if the animation fails to maintain a lifelike appearance (Mori et al., 2012, p. 98). He describes this sudden drop in affinity as the uncanny valley, and he maintains that if robots are rendered highly lifelike, it is possible to ascend out of the valley. This observation from the realm of robotics alerted CGI artists to the fact that their digitally generated humans must be 'believable' or audiences will reject them as eerie.

Early attempts to create lifelike realistic humans using computer graphics imagery suffered the fate of Mori's prediction. Robert Zemeckis' *The Polar Express* (2004) and then *Beowulf* (2007) were both considered uncanny in appearance because the technology used was unable to achieve the level of realism necessary to pull the characters out of the uncanny valley (Figure 2:10).

FIGURE 2:10.
Uncanny photorealism in early attempts to create digital humans.

Note. Robert Zemeckis' (2004) film *The Polar Express* was criticised for the unsettling appearance of its animated characters. Image copyrighted by Warner Brothers (2004).

In 2009 researchers from the Institute for Creative Technologies at the University of Southern California (USC ICT), directed by Professor Paul Debevec, worked on a project called *Digital Emily* (Alexander et al., 2010).

In this project they attempted to create a photorealistic digital actor that could ascend out of the uncanny valley (Figure 2:11). Alexander et al., suggest that the Digital Emily project "generated one of the first photorealistic digital faces to speak and emote convincingly in a medium close-up" (Alexander et al., 2010, p. 20).

FIGURE 2:11.
Digital Emily project.

Note. The final rendering of actor Emily O'Brien from the Digital Emily project. This is one of the earliest attempts to ascend a character out of the uncanny valley. Adapted from "The Digital Emily project: Achieving a photorealistic digital actor" by Alexander et al. (2010), IEEE Computer Graphics and Applications. Copyright by Alexander et al. (Used with permission).

Debevec developed a large apparatus called Light Stage (Figure 2:12) that was capable of efficiently capturing the details of an actor's face when lit from every possible direction. This data was then used to convert details into realistic, virtual renditions of the actor's face (Debevec, 2012).

FIGURE 2:12.
The Light Stage.

Note. The Light Stage photogrammetry setup, used in the Digital Emily project. Adapted from "The Digital Emily project: Achieving a photorealistic digital actor" by Alexander et al. (2010), IEEE Computer Graphics and Applications. Copyright by Alexander et al. (Used with permission)

In 2015, Debevec and his colleagues demonstrated how multiview facial capture implemented in their Light Stage was capable of capturing diverse photometric information of facial skin, including diffuse and specular data (Debevec et al., 2015). In the same year, researchers from the Disney Research Studio produced a very accurate method for capturing high-fidelity facial performances in real-time (Cao et al., 2015) (Figure 2:13).

Gotardo et al. maintain that creating a realistic, virtual human face requires simulating multiple dynamic properties of facial skin like "dynamic diffuse albedo encoding blood flow, dynamic specular intensity, and per-frame high resolution normal maps" (Gotardo et al., 2018, p. 1). In 2018, these researchers proposed a method for acquiring all of these properties from a purely passive multicamera setup.

Interestingly, deep learning and neural network researchers have been used recently in the creation of digital humans. Based on previous studies by Debevec and his team, Meka et al. (2019) demonstrated a method where deep neural networks can be used to enhance photorealistic relighting of non-static faces.

FIGURE 2:13.
High-fidelity facial capturing.

Note. Capturing high-fidelity facial performances in real-time. Adapted from "Real-Time High-Fidelity Facial Performance Capture | Disney Research Studios" by Cao et al. (2015), ACM SIGGRAPH 2015.

TECHNOLOGICAL KNOWLEDGE EMPLOYED IN THE REALISATION OF STELLA

In developing the allegory Stella, I examined two different methods for capturing the facial volumetric data of my actors: 3D laser scanning and photogrammetry. For 3D laser scanning I used a GoScan laser scanner (Figure 2:14).

FIGURE 2:14.
3D laser scanning

Note. Laser scanning of the lead actor's face (Melanie Mirfin) using GoScan (February 2018).

For photogrammetry, I followed Debevec's Light Stage (2012) and, considering my limited resources, I constructed a photogrammetry setup with three cameras on a moving stand that rotated in a circular manner around the actor (Figure 2:15).
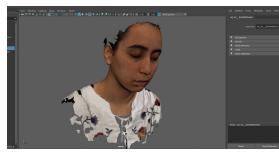
FIGURE 2:15.
Photogrammetry setup.

Note. A simple photogrammetry setup made for Stella (February 2018).

Because scanned data normally appears with numerous artefacts (Figure 2:16), I was not able to use it directly. Instead I processed it using a combination of Maya, ZBrush and Wrap3 software applications so I had cleaner data for modelling and texturing procedures. This stage is called 'clean-up' (referring to removing artefacts and generating a seamless geometrical mesh).

FIGURE 2:16.
Raw scanned data.

Note. The scanned data of the actor (Melanie Mirfin) before clean-up processing in Maya (February 2018).

To cross Mori et al's (2012) 'uncanny valley' and achieve a degree of believability, I studied the translucency and subsurface scattering qualities of human skin. This research was undertaken in an effort to produce lifelike details in the film's characters (Figure 2:17). However, limitations resulting from Covid-19 lockdowns curtailed advancing my experiments, so what is presented in the post-visulaisation document and indicative trailer constitutes evidence of early inquiry.

FIGURE 2:17.
Early renderings of Stella using Maya software (March 2019).

Animation theories

Animation involves the creation of an illusion of motion and change by rapidly displaying a sequence of static images that minimally differ from each other. This can be achieved using a variety of techniques, including hand-drawing, computer-generated imagery (CGI), and stop motion. Wells defines animation as "the creative interpretation of 'motion' as it is executed through the process of profilmic graphic execution and/or material construction, and configured as a recorded, time-based outcome" (Wells, 2007, p. 12).

Although animation is primarily considered as a genre of film, it precedes and initiates the history of cinema. Indicative of this is a range of pre-film, Victorian devices. Notable among these was the Zoetrope (a toy that produced an illusion of motion by displaying a sequence of drawings or photographs in progressive phases of movement. This artefact was a cylindrical variation of the phenakistiscope that was marketed soon after these stroboscopic discs were introduced in 1833.) Also significant was the Magic Lantern (believed to be the first projector, projecting oil painted translucent images using a single lamp) and the thaumatrope (a circular rotating card disk with animated images on each card). In addition, the traditional flipbook (a set of sequential images manually 'flipped' in rapid succession), may also be argued as a form of early animation (Connelly & Connelly, 2011). Although Beckman (2014), suggests that early advances in animation were treated as a subsidiary to the evolution of classic cinema, by the emergence of digital cinema and CGI, this form of visual storytelling had moved to the forefront of cinema again.

Both Gunning (2007) and Manovich (2000), believe that animation has been largely neglected in film studies and Gunning sees this side-lining as "one of the scandals of film theory" (Gunning, 2007, p. 38). French philosopher Edgar Morin, who has made a substantial contribution to media studies, believes that animation "completes, expands and exalts the animism implied in the cinema" (2005, p. 68).

In the realm of animation theory, Wells' research focuses on movement and how animations constitute "abstract forms in motion" (2013, p. 44). However, Kubelka rejects the emphasis on movement and proposes the idea of a frame-by-frame process when he asserts that "Cinema is not movement. Cinema is a projection of stills in a very quick rhythm [through which] you can give the illusion of the movements, of course, but this is a special case" (1978, p. 141). Kubelka urges us to consider individual frames, not shots, as the basic unit of cinema, (especially in the case of animation), which he proposes is essentially a frame-by-frame practice of filmmaking.

Halberstam, in The Queer Art of Failure (2011) examines Pixar movies as spaces that facilitate the evolution of an "animated self" that unsettles the idea of "a timeless and natural humanity." These spaces he argues, are for those "who believe that things like toys, nonhuman animals, rocks and sponges, are as lively as humans" (Halberstam, 2011, p. 46). On the other hand, Cavell (1979) considers animated space as a real universe populated by known beings with soul and prone to death" (Cavell, 1979, p. 170).

THE RATIONALE FOR STELLA AS AN ANIMATION

The screenplay for Stella was progressed into animated form through frame-by-frame practice. Although the story was an imaginary allegory, I wanted to create a realm in which the self-generative, timeless humanity of the characters and elements of the story world might become manifest (Halberstam, 2011). Shaping Stella as an animated narrative, provided me with a level of plasticity that enabled me to mould my imagination so it reflected disruptions in self-continuity in very articulate ways. Here, I

could navigate spaces between the narratively didactic and the 'impossibly real', fusing what was recognisable with what was metaphorical. In addition, although I was resident in New Zealand, I was able to position my characters in real or imaginary locations that were impossible to film as live action.

Conclusion

Stella called diverse realms of knowledge into its development. In this chapter I have contextualised my practice with an overview of knowledge surfacing from three arenas. In some instances, this knowledge serves as a review of evolutionary thinking in the field, but where specific research has impacted on the design of the work, I have explained correlations between theory and practice. Thus, we may see the screenplay as an artefact that was partially shaped by a consideration of research into the self, identity and autobiographical memory. Theories relating to narrative and discourse either guided the story structure or were useful in exegetical writing (later in this document) where I discuss the architecture of the allegory. Finally, technological knowledge and animation theories impacted on early experiments that lead to potential treatments appearing in the post-visualisation document and indicative trailer.

Having now discussed this material, it isuseful to consider the research design underpinning the project.

CHAPTER 3 | RESEARCH DESIGN
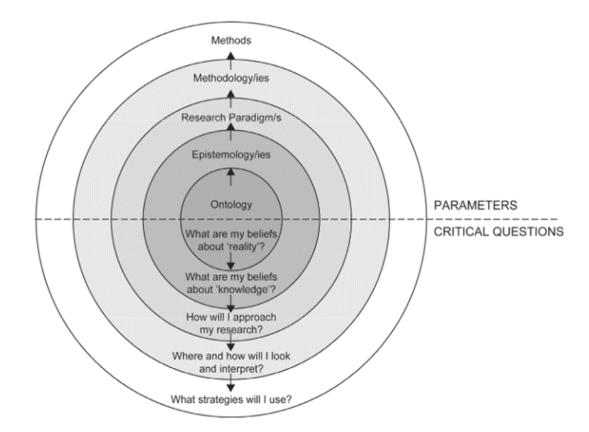
This chapter considers the research design developed for the thesis through a discussion of its research paradigm, methodology and methods.

Mockler (2011) and Wagner et al. (2012) suggest that research design emanates from the way a researcher sees the world and that the nature of reality and ways of knowing lie at the heart of a research paradigm. They suggest that once a research paradigm is established, then the researcher considers how to study the world through a systematic inquiry by asking certain questions that shape the research methodology, and then specific methods are employed to answer those questions. Mockler (2011) argues that the research's paradigm, methodology and methods are all linked to the researcher's ontology and epistemology (Figure 3:1).

Note. Multiple levels of the research are interconnected. Diagram adapted from "Being Me: In Search of Authenticity" by N. Mockler, (2011, p. 160), Creative Spaces for Qualitative Researching.

This chapter is structured into four parts. The first considers the research paradigm that orients the study and how it emanates from my ontological being that has been significantly shaped by Persian Illuminationism, especially the works of the Persian philosopher Suhrawardi. His illuminationist way of knowing, 'knowledge by presence', has enabled me to approach the inquiry through a relationship between intuition and praxis.

The second section of the chapter is concerned with methodology. Here I explain how my illuminationism is consolidated through a heuristic inquiry. I posit a journey that comprises seven stages of self-realisation drawn from *The Conference of the Birds*, a classical illuminationist Persian text by Attar of Nishapur. These stages correlate somewhat with Moustakas' (1990) seven essential concepts of heuristic inquiry. However, I argue that where Moustakas' concepts eventually focus on meeting the requirements of producing research outcomes, Attar's illuminationist framework preserves the openness of inquiry and may facilitate ongoing discovery.

The third section of the chapter considers the methods employed in the research and the manner in which they were implemented.

The chapter concludes with a critique of the research design where I consider the strengths and challenges of the methodology.

Research Paradigm

A paradigm is "a body of beliefs and values, laws and practices that govern a community of practitioners" (Carroll, 1997, p. 171). Paradigmatically, this thesis may be understood as an artistic research project (Klein, 2010) that employs practice-led inquiry. However, the research's orientation is influenced by Persian literature and philosophy, such that underpinning the project there is an integration of illuminationism (Ishraq اشراق) with Western research design thinking. Thus, we may consider the study paradigmatically as an illuminationist, artistic, practice-led project.

ARTISTIC RESEARCH

In 2010, Julian Klein discussed a research orientation he called Artistic Research. He proposed that if we consider art as a mode of perception, then we can think of artistic research as the mode of a process. In such a paradigm, reflection on research occurs inside the artistic experience itself (Klein, 2010).

Most challenges, questions and problems in artistic inquiries are shaped through the creative endeavours of the practitioner who engages practical methods that emerge from internal experiences (Gray, 1996). Practice may engage a multitude of methods (Haseman, 2006) that are exercised in a process of intervention, creation and conversion that may either produce knowledge or heighten experience (Scrivener, 2000). Barrett and Bolt (2007) suggest that it is through a process of elucidation and clarification that new knowledge emerges, that moves beyond the artist's solipsistic, reflective, practice-generated theory.

PRACTICE-LED RESEARCH

I use the term practice-led research to describe an inquiry that is led through practice. In other words, the researcher employs practice as both an agent of questioning and discovery.

In practice-led artistic research, Hamilton (2011) and Ings (2015) suggest a dynamic exists between theory and practice, such that while engaged in practice, as I shape work, I am shaped by unexpected questioning and discoveries. The research calls theory to itself and theory is questioned and shaped within one's practice. I would argue that, as

a consequence, theory merges with the self through an embodiment that invigorates and revitalises the inner voice. This is because practice-led artistic research is "simultaneously generative and reflective" (Gray, 1996, p. 10). The relationship between what is interior and what is generated through practice, may result in elevating both the self (the artist) and the body of knowledge (Chen, 2018; Ings, 2018; Pouwhare, 2020).[27]

ILLUMINATIONISM

Interfacing with the concept of practice-led artistic research is the Persian concept of Illuminationism. The golden age of Islam and the achievements in algebra, astronomy, medicine, geography and philosophy, was profoundly influenced by both Aristotelian rationalism (Bertolacci, 2018) and Avicennan Peripateticism (Marcotte, 2019). During this period, a Persian philosopher, Suhrawardi, amalgamated a corpus of ancient pre-Aristotelian, Zoroastrian, Hermetic, Buddhistic and Mystic texts (Walbridge, 2001).[28] By

synthesising them with Islamic literature he established a meta-paradigmatic (Nikfarid et al., 2018) philosophical-epistemological tradition called the Philosophy of Illumination (Hikmat al-Ishraq حكمت الاشراق). His work shaped a new way of conceiving intellectualisation and practice in the Iranian-Islamic world, and his thinking remains delicately manifested in much Iranian-Islamic art and architecture (Rahbarnia & Rouzbahani, 2014). Both Aminrazavi & Nasr (2013) and Ziai (1990) suggest that Suhrawardi's legacy still permeates Iranian cultural and academic understanding..

Suhrawardi's philosophy of Illumination uses a non-corporal allegorical ontology of light as an intellectual substrate. His thinking took diverse forms including symbolic and mystical narratives that considered the journey of a soul across the cosmos to a "state of deliverance and illumination" (Nasr, 1964, p. 59). Significantly, the philosophy of Illumination considers practice as a mode of intellectual engagement (Ziai, 1990) and it places emphasis on intuition

and 'knowledge by presence'.[29] It also positions imagination and innovation at the centre of its ontology (Marcotte, 2019).

Although Suhrawardi's *The Philosophy of Illumination* (حكمت الاشراق) is considered a seminal text on illuminationism, Dabbagh (2009) notes that his thinking permeated the work of many intellectuals, artists and poets of the period. Even Ibn Sina, the most prominent Aristotelian Peripatetic philosopher in the Islamic world (known as Avicenna in the West) wrote three treatises on illuminationism towards the end of his life (Aminrazavi & Nasr, 2013).

In considering the concept of illuminationism in this thesis, I have drawn on the thinking of two philosophers, Ibn Sina and Suhrawardi, and two poets, Rumi and Attar.[30]

PHILOSOPHY OF ILLUMINATION: KNOWING THROUGH PRAXIS

Qutb al-Din al-Shirazi (1236–1311), one of the earliest commentators on Suhrawardi, suggests

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27. This might be likened to the Chinese concept of Zhe Jiang where tenacity leads to reverence; reverence leads to expertise; expertise leads to vision; and vision leads to the researcher not only increasing artistic ability but also becoming a better person (Chen, 2018).

28. Suhrawardi was executed at the age of 37 because his progressive thinking challenged the religious agenda of his time. Before his death, he wrote over 50 books and treatises. (Dabbagh, 2009).

29. Suhrawardi argued that knowledge is the "presence and the emergence of things to the intellectual self" (Beheshti, 2015).
This "knowledge by presence" he suggested, is achieved through the process of increasing self-awareness and the feeling of existential states (Yazdi, 1992).

30. Hossein Ziai has written extensively about the history and the evolution of the idea of illuminationism, (see https://hosseinziai.com/publications/books/)

that illuminationism is the intuitive revelation of intellectual lights and their overflow into the self (Berenjkar, 2019). According to Aminrazavi and Nasr (2013, p. 130), "both metaphysically and historically, illuminationist (اشراق) philosophy relates to a pre-discursive mode of thought that is intuitive (ذوق) rather than discursive (بحثی) that which seeks to reach illumination through asceticism and purification."

Historically, the arts and literature have become the meta-language of illumination and the vehicle for achieving knowledge. Ziai (1990, p. 216) maintains that this knowledge passes through "the experienced and the imagined". He suggests that poetic language and the use of metaphors, allegory, symbolism and referring to myths and legends may function as ways of contemplating and internalising knowledge of things. This process also enables thinkers to reach beyond discrete philosophical discourse and reach out to a wider audience. This, he suggests, is why we see the elements of illuminationism in everyday culture like poetry, architecture, clothing patterns and traditions in Iran and other Middle Eastern nations (Ziai, 1990).

Suhrawardi (1186) at the beginning of his book says:

Although before the composition of this book I composed several treatises on Aristotelian philosophy, this book differs from them and has a method peculiar to itself. All of its material has not been assembled by thought and reasoning; rather, intellectual intuition, contemplation and ascetic practices have played a large role in it. Since our sayings have not come by means of rational demonstration but by inner vision and contemplation, they cannot be destroyed by the doubts and temptations of the sceptics. Whoever is a traveller on the road to Truth is my companion and aid on this path (translated by Nasr, 1964).

It is important to understand that in the philosophy of Illumination, Suhrawardi is not refusing reasoning and rationality even though he discusses 'the primacy of experience' and the prioritising of direct innate knowledge (Ziai, 1990). When it comes to acknowledging and explaining intuitively attained knowledge, he still proposes using rational reasoning and classical mechanisms of logic. The main difference for him is the initiation of the thought process. Ibn Sina and peripatetic traditions suggest beginning from discursive and empirical knowledge then employing intuition if needed, whereas illuminationism asks one to engage with intuition through praxis and then construct reasoning from this process. This is why many scholars consider illuminationism as an example of a synthesis of Platonian intuitionism and Aristotelian rationalism (Corbin, 1964; Marcotte, 2019; Nasr, 1964; Walbridge, 2001; Ziai, 1990). Contrary to the peripatetic philosophers, Suhrawardi believes in the principality of essence rather than existence. He also rejects the peripatetic notion that we are incapable of knowing the essence of things (Beheshti, 2016). He argues that the sole act of constructing the definition of a thing does not reveal its essence and we are basically simply converting one concept to another – what he calls a tautology (تبدیل الالفاظ). What Suhrawardi promotes is the idea of 'illuminationist vision' (مشاهده اشراق). Here, the researcher opens the inner eye through an act or a journey that begins with quest and demands practice and engagement. The object of study becomes luminous and excites a state of illumination and then becomes knowable to the researcher, this time in the realm of memory, experience and imagination (Ziai, 1990). In other words, according to Suhrawardi, vision is "seeing through praxis" (Ziai, 1990, p. 218). Henry Corbin (1964), the first translator of Suhrawardi into a Latin language, calls this realm *mundus imaginalis*.

Suhrawardi's world of lights and illumination should not be read as Platonic theory of forms and ideas, even though he has borrowed some components from Plato. The difference with his

thinking is the plasticity of his world of lights. Creators as artistic researchers in Suhrawardi's philosophy attain illumination through rigorous practice and reach a state that he calls the State of Be (مقام کون), and by their luminosity they can shape celestial forms by themselves and bring these to the terrestrial domain where they turn into the works of art or abstracted concepts (Shafi & Bolkhari, 2012). Thus, for Suhrawardi, there is a dynamic dialogue between the realm of imagination, *mundus imaginalis*, and the domain of the earthly self. To Corbin, this world is imaginal not imaginary as it is shaped by images that own utter reality; this world is not of irreality but of "autonomous forms and images" that cannot be understood by the rational mind and is conceivable only by "imaginative consciousness" (Corbin, 1966, p. 406). In studying Rumi's narrative style, which belongs to the illuminative school of the same era, James Roy King (1989) notices similar attributes. He says:

> The concept of a 'world of non-existence' back of the world of similitudes is critical for any attempt to grasp Rumi's views about poetic inspiration and narrative technique. It suggests that he was responding to pressures and inspiration other than the logical and the lineal. (King, 1989, p. 281)

Research Methodology: illuminative heuristic inquiry

Having discussed the nature of this thinking it is useful to consider how it impacted on the research methodology underpinning this project. Kawulich (2012, p. 1) maintains that "Methodology is where assumptions about the nature of reality and knowledge, values, theory and practice on a given topic come together." In this project I utilise heuristic inquiry as the core research methodology and look into it through the lens of Suhrawardi's Persian illuminationism. In exercising this connection between Western and Persian methodological thinking, I draw upon the metaphors of another Persian illuminationist, the poet Attar of Nishapur, whose famous poem *The Conference of the Birds* describes the journey of the self through an allegorical narrative.

HEURISTIC INQUIRY

Heuristic inquiry can be defined as a form of discovery achieved and elevated through practical experience and questioning. Through the process of one's practice, a researcher works without a predefined formula, using astute observation and questioning to incrementally explore and develop potentials within the work. Accordingly, the direction of the enquiry may change or be adjusted and new questions may arise (Douglass & Moustakas, 1985; Ings, 2011; Kleining & Witt, 2000; Moustakas, 1990; Ventling, 2017).

Heuristic inquiry has a significant history in artistic doctoral inquiry (Ings, 2005; Pouwhare, 2020; Steagall, 2019; Ventling, 2017) and a wide application in research across a range of other fields, including mathematics (Gigerenzer et al., 2015), engineering (Rothlauf, 2011), nursing (Kenny, 2012), acculturation and identity reconstruction (Djuraskovic & Arthur, 2010), and politics and psychology (Petersen, 2015). The protean nature of heuristic inquiry affords an adaptive framework because not only the process but also the questions and problems that arise from it, can be intuitively adjusted. In creating the allegorical narrative of *Stella*, I function as a critical insider (Duncan, 2004). This is because as a researcher, I am surrounded by the practice and the context of the inquiry and as such I am central to its exploration (Griffiths, 2010) and embedded within every aspect of it (Mockler, 2011). Because of this embeddedness, and the nature of the project itself as a navigation of the currently unknown

(Ings, 2015), I employ a heuristic methodology that characteristically employs both explicit and tacit knowledge and involves lived experiences, phenomenologically reincarnated reminiscences and internalised wisdom that can result in new approaches (Douglass & Moustakas, 1985). Moustakas (1990) suggests this is because heuristic research is concerned with interrelated and integrated elements, that constitute derived knowledge (as a form of creative discovery) that accompanies intuition and tacit knowledge. The research process, he suggests, begins within the practitioner in deep internal dialogue with the self, therefore one cannot expect the predictability factors and casual relations that we encounter in empirical inquiries. Interestingly, Moustakas (2001, p. 279) observes that such research "is illuminated through careful descriptions, illustrations, metaphors, poetry, dialogue, and other creative renderings rather than by measurements, ratings, or scores."

SEVEN FEATURES OF A HEURISTIC INQUIRY

In his book, *Heuristic Research*, Moustakas (1990) suggests seven concepts that underpin a heuristic inquiry. These are:

1- Identifying with the focus of the inquiry:

In describing this concept, Moustakas (1990) uses ideas very similar to Suhrawardi, including the unification of the researcher with the question, internalising a question, and "immersion in active experience" (p. 15) which is attained by delving freely into one's self. Through this process, the inquiry becomes identifiable.

2- Self-dialogue:

This concept is concerned with the researcher becoming one with the subject of the study. By facing the inner self, the researcher encounters the research question, and this self-discovery leads to finding diverse aspects of an experience. Through a process of self-dialogue, Moustakas (1990) suggests that "the phenomenon will speak directly to one's experience" (p. 16).

3- Tacit knowing:

Drawing on Polanyi's (1966) *The Tacit Dimension*, Moustakas says the researcher tries to validate revelatory ambiguous knowing. Here, the researcher engages with inner dimensions of tacit knowing.[5]   According to Douglas and Moustakas (1985), "Tacit knowing is a basic

capacity of the self of the researcher and gives birth to the hunches and vague, formless insights that characterize heuristic discovery" (p. 49).

4- Intuition:

This concept may be described as a journey taken between tacit/implicit knowledge and explicit definable knowledge. Using intuition, the researcher drives their thinking purposefully, often circumventing logical reasoning. Moustakas (1990) suggests that "in intuition we perceive something, observe it, and look and look again from clue to clue - until we surmise the truth" (p. 23).

5- Indwelling:

This is a concept where the researcher is immersed or living within the depth of their experience of the research question and reflecting on details of what is being discovered. Moustakas says "Indwelling is a painstaking, deliberate process. Patience and incremental understanding are the guidelines. Through indwelling the heuristic instigator finally turns the corner and moves toward the ultimate creative synthesis that portrays the essential qualities and meanings of an experience" (1990, p. 24).

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31. Tacit knowledge can be differentiated from formal, codified or explicit knowledge. It is often informally accrued (it is not formally taught) and although it is employed significantly in practice (Schön, 1938), it is normally difficult to transfer by means of verbalisation.

6- Focusing:

This concept deals with an action where the researcher clears away disparate qualities and concentrates on core meanings that define the experience. Douglass and Moustakas (1985) suggest that focusing is about "refinement of meaning and perception that register as internal shifts and alterations of behaviour" (p. 51).

7- The Internal frame of reference:

All of Moustakas' (1990) concepts function within the internal frame of the subject of the study and the researcher. Moustakas proposes that to be able to structure the outcome of the research, the heuristic researcher must employ an internal frame of reference so what is being studied becomes relevant (p. 26).

ATTAR'S ILLUMINATIONIST JOURNEY OF SELF

Having considered Moustakas' seven concepts underpinning a heuristic inquiry, it is useful to turn to the thinking of Attar of Nishapur (1145–1221), a prominent Persian poet and mystic whose works shaped the landscape of Persian literature during 12th century. Attar pursued a form of illuminationist self-discovery (Zwanzig, 2009).[32]

In contrast to the philosophical approach of Suhrawardi, Attar approached illuminationism from the position of a practitioner. Like Suhrawardi, Attar believed that wisdom is 'moving' and the path to wisdom is not predetermined, but is shaped by 'going' (Afshari-Mofrad et al., 2016). In a structured, well-explained expedition, Attar elaborately documents the gradual progression of an internal exploration. As an adroit Persian poet, he uses a clearer language to express the illuminationist internal journey of self-realisation and self-discovery. He is not the first person who talks about the seven stages of a mystic journey, but he is one of the earliest who constructs a framework and clarifies his system through an allegorical narrative, while providing examples to elucidate each stage. While Moustakas (1990) discusses seven concepts underpinning a heuristic inquiry, Attar offers similar ideas that he presents as phases in a journey. For these reasons, I adopt Attar's concepts (over Suhrawardi's) in shaping my Persian heuristic methodology.

Although many intellectuals during the Islamic Golden Age wrote stories using bird metaphors,[33] Bahonar (2010) suggests that Attar's *The Conference of the Birds* is the finest example, both in terms of literature and conceptual cohesion.

Attar's *The Conference of the Birds* begins with a question posed among all of the birds: 'Who is our king?' The Hoopoe, the wisest of all, informs them of Simurgh, a divine bird who is the source of all the life and diversity in the universe. He claims the magnificence of China, the splendour of Persia and all varieties of beauty around the world exist because the Simurgh has flown over those lands and, on each, one of her glorious feathers has fallen. Her nest, he says, is on the Tree of Knowledge located on Mount Qaf, the peak of the world. The letter Q (ق) is a sacred letter in the Quran and by itself it can contain a dense meaning. The sole letter Q (ق) in some sentences may mean: "Reclaim your abstinence". To be able

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32. Although he lived at the same time as Suhrawardi, there is no historical record indicating that the thinkers met or maintained any form of correspondence (Mojtahedi, 2015). However, Bahonar (2010) notes that the language, mythology, references, symbolism and especially the illuminationism in his works, particularly in *The Conference of The Birds*, is very akin to Suhrawardi's.

33. Ibn Sina was one of the earliest writers who used this allegory. Towards the end of his life, when he began proposing the idea of illuminationism, he wrote *Treatise of the Birds*. This describes the journey of the soul to its celestial home. Even Suhrawardi has written a commentary on Ibn Sina's *Treatise of the Birds*. In addition, it is of interest to note that Suhrawardi's philosophical novel, *The Red Intellect*, is narrated through the language of a bird.

to reach Mount Qaf, the birds have to travel on an arduous journey through seven valleys. Most of the birds give up, return, or die. Finally, out of thousands, only 30 birds arrive at the magnificent throne of the Simurgh … but she is not there. At this point in the narrative, Attar employs the feature of poly-synonymy inherent in the Persian language. If Simurgh is read in a separated form, Si + Murgh, it means 30 birds. Towards the dawn, when the sun illuminates, the 30 birds see their shadows on the throne. They realise that each one of them contributes to a composite that is Simurgh.[34]

I will now discuss the Seven Valleys, that comprise the seven stages of a mystic journey, selecting a few lines from Attar's poem to depict the core meanings of each concept.[35]

The Valley of the Quest

When all birds, motivated by Hoopoe's speech, decide to begin their journey to find Simurgh, the first valley that challenges them is the valley of the quest. The first stage in Moustakas' (1990) heuristic journey is identifying and unifying with the subject of inquiry. This may be compared to Attar's urging the birds to free their hands and minds from all distractions and to internalise their quest and let their longing hearts be illuminated by the splendour of their passion.

> Renounce the world,
> your power and all you own,
> And in your heart's blood journey
> on alone.
> When once your hands are empty,
> then your heart
> Must purify itself and move apart
> From everything that is,
> when this is done,
> The divine light blazes brighter
> than the sun,
> Your heart is bathed in
> splendour and the quest
> Expanding a thousandfold
> within your breast.

ملک اینجا بایدت انداختن
ملک اینجا بایدت در باختن
در میان خونت باید آمدن
وز همه بیرونت باید آمدن
چون نماند هیچ معلومت به دست
دل بباید پاک کرد از هرچ هست
چون دل تو پاک گردد از صفات
تافتن گیرد ز حضرت نور ذات
چون شود آن نور بر دل آشکار
در دل تو یک طلب گردد هزار

The Valley of Love

The second valley, the Valley of Love, refers to introspective and contemplative love rather than a biological attraction.[36] It has the quality of self-dialogue similar to Moustakas' (1990) concept. Moustakas mentions that when the researcher has already identified with the subject of study they become 'one' with it. This may not be a state prescribed by rational thought; it is a stage where the researcher is engaged in self-dialogue where they are questioning and talking with the subject of study. In Attar's stage of love, the wayfarer (researcher) becomes attuned with their own presence and constituents.

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34. The significance of Attar's story is that it transcends the limitations of religion, race and sexuality to employ a shared language that exposes the human condition and experiences (Rafi, 2016). In her PhD thesis, *God Does Not Regard Your Forms: Gender and Literary Representation in the Works of Farid al-Din Attar Nishapuri*, Michelle Quay (2018) demonstrates how a large corpus of Persian literature of the period, including Attar's works, is gender-egalitarian and even recognises homosexuality as a form of divine love. This feature is evident in Attar's beer-seller story.

35. All of the translations are taken from Darbandi (1984).

36. Here, Attar is talking about the state of self-exploratory love that lifts the lover to a state beyond morality, where good and evil seem the same.

If you could seek the unseen
you would find
Love's home, which is not reason
or the mind
And see the world's wild atoms,
 you would know
That reason's eyes will never
 glimpse one spark
Of shining love to mitigate the dark.
Love leads whoever starts along our Way

گر ز غیبت دیده‌ای بخشند راست
اصل عشق اینجا ببینی کز کجاست
گر ترا آن چشم غیبی باز شد
با تو ذرات جهان هم راز شد
ور به چشم عقل بگشایی نظر
عشق را هرگز نبینی پا و سر

The Valley of Knowledge

While Moustakas (1990) discusses the importance
of tacit knowing, Attar defines this as 'intuitive'
knowledge that enables one to realise unique
personal qualities. At this stage in the journey, the
birds must come to an innate knowledge of their
own specific road; a path that is different for each
bird. Each must navigate "the internal pathways
of the self" (Douglass & Moustakas, 1985, p. 39),

and their routes will therefore be very different.
As in heuristic inquiry, there is no universal
formula or template; here, no other bird can
understand or is able to know of another bird's
secret route because each journey is predicated on
self-knowing.[37]

Here every pilgrim takes a different way,
And different spirits different rules obey
Each soul and body has its level here
And climbs or falls within its
proper sphere
There are so many roads, and each is fit
For that one pilgrim who must follow it.
How could a spider or a tiny ant,
Tread the same path as some
 huge elephant?
Each pilgrim's progress is commensurate
With his specific qualities and state
Our pathways differ, no bird ever knows
The secret route by which another goes

هیچ کس نبود که او این جایگاه
مختلف گردد ز بسیاری راه
هیچ ره دروی نه هم آن دیگرست
سالک تن، سالک جان، دیگرست
باز جان و تن ز نقصان و کمال
هست دایم در ترقی و زوال

لاجرم بس ره که پیش آمد پدید
هر یکی بر حد خویش آمد پدید
کی تواند شد درین راه خلیل
عنکبوت مبتلا هم سیر پیل
سیر هر کس تا کمال وی بود
قرب هر کس حسب حال وی بود
لاجرم چون مختلف افتاد سیر
هم روش هرگز نیفتد هیچ طیر

The Valley of Detachment

After intuitively knowing their unique qualities,
Attar says that the searcher will recognise the
insignificance of man within the cosmos. This
produces a state where an individual becomes
detached from anything extraneous that might
hinder the advancement of the journey.

If all the stars and heavens came to grief,
They'd be the shedding of
one withered leaf;
If all the worlds were swept away to hell,
They'd be a crawling ant trapped
down a well;
If earth and heaven were to pass away,
One grain of gravel would
have gone astray;
If men and friends never seen again,
They'd vanish like a tiny splash of rain

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37. Later in this part of the book, Attar explains that when a wayfarer becomes aware of their unique quality, they become illuminated and aware of all their atoms and their terrestrial furnace of living becomes a celestial heaven.

گر بریخت افلاک و انجم لخت لخت
در جهان کم گیر برگی از درخت
گر ز ماهی در عدم شد تا به ماه
پای مور لنگ شد در قعر چاه
گر دو عالم شد همه یک بارنیست
در زمین ریگی همان انگار نیست
گر نماند از دیو وز مردم اثر
از سر یک قطره باران درگذر

The Valley of Unity

By indwelling in the state of detachment Attar suggests that an eventual illumination occurs where the wayfarer's veils fade and the hidden sun inside shines through. Here, the self is united with its hidden essence: the celestial state of existence. This is a state where the birds indwell for a long period. For many mystic teachers, this was assumed to be the end of the journey. However, Attar suggests two further stages that contain concepts outside of Moustakas' (1990) framework.

> Be lost in Unity's inclusive span,
> Or you are human but not yet a man.
> Whoever lives, the wicked and the blessed,
> Contains a hidden sun within his breast
> Its light must dawn though dogged by long delay;
> The clouds that veil it must be torn away
> Whoever reaches to his hidden sun

Surpasses good and bad and knows One.
This good and bad are here while
You are here;
Surpass yourself and they will disappear

هرک در دریای وحدت گم نشد
گر همه آدم بود مردم نشد
هر یک از اهل هنر وز اهل عیب
آفتابی دارد اندر غیب غیب
عاقبت روزی بود کان آفتاب
با خودش گیرد، براندازد نقاب
هرک او در آفتاب خود رسید
تو یقین می‌دان که نیک و بد رسید
تا تو باشی، نیک و بد اینجا بود
چون تو گم گشتی همه سودا بود

The Valley of Wonderment

After unification and an elevation of the state of the self, Attar believes that the searcher will face an identity crisis. Because they are no longer their previous self, they can become disoriented. The searcher loses their sense of totality. In Attar's story, many birds perish in this valley because they can no longer recognise who they are. He suggests that what can save a searcher in crisis is an overwhelming love that is still burning - and illuminationist within.

> He is lost, with indecisive steps you stray,
> the Unity you knew has gone; your soul

is scattered and knows nothing of the Whole.
If someone asks: 'what is your present state?
is drunkenness or sober, sense your fate,
and do you flourish now or fade away?'
the pilgrim will confess: 'I cannot say;
I have no certain knowledge anymore;
I doubt my doubt, doubt itself is unsure;
I love, but who is it for whom I sigh?
Not Muslim, yet not heathen; who am I?
My heart is empty, yet with love is full;
my own love is to me incredible.'

مرد حیران چون رسد این جایگاه
در تحیر مانده و گم کرده راه
هرچ زد توحید بر جانش رقم
جمله گم گردد از و گم نیز هم
گر بدو گویند مستی یا نه‌ای
نیستی گویی که هستی یا نه‌ای
در میانی یا برونی از میان
بر کناری یا نهانی یا عیان
فانیی یا باقیی یا هر دوی
یا نهٔ هر دو توی یا نه توی
گوید اصلا می‌ندانم چیز من
وان ندانم هم ندانم نیز من
عاشقم اما ندانم بر کیم
نه مسلمانم نه کافر، پس چیم
لیکن از عشقم ندارم آگهی
هم دلی پرعشق دارم هم تهی

/   51   /

The Valley of Selflessness

Attar's final stage exists for those who survive the realm of uncertain knowledge. Leaving the Valley of Wonderment, the searcher reaches the state of Fana (فنا). This word is difficult to translate. Some writers have interpreted it as annihilation or even death, but this interpretation only considers the literal meaning and it fails to reflect the subtle ethos of the word.[38] None of the 30 birds who arrive to the court of Simurgh die or disappear. Instead, their egos fade away, and their inner excellence illuminates their surroundings to such an extent that their self, a realm of shadows, cannot be seen anymore, even though they are still existent. I would suggest that the 'annihilation' therefore, is not death but the emergence of a different state of being, a resolution where the self disappears (self-loss). The searcher is subsumed within beauty, they are no longer what existed but something dissipated but present. This state has been interpreted across generations in many masterpieces of Iranian-Islamic art and the reason these works are not signed is because the 'self' of the creator is absorbed into the excellence of their artwork.

When sunlight penetrates the atmosphere,
A hundred thousand shadows disappear
And when the sea arises what can save
The patterns on the surface of each wave?
Whoever sinks within this sea is blessed
All in self-loss obtains eternal rest
The heart that would be lost
 in this wide sea
Disperses in profound tranquillity,
And if it should emerge again it knows,
The secret ways in which the world arose.
And evil souls sunk in this mighty sea
Retain unchanged their base identity;
But if a pure soul sinks the waves surround
His fading form, in beauty he is drowned
He is not, yet he is;
what could this mean?
It is a state the mind has never seen

صد هزاران سایهٔ جاوید تو
گم شده بینی ز یک خورشید تو
بحرکلی چون بجنبش کرد رای
نقشها بر بحر کی ماند بجای
هر دو عالم نقش آن دریاست بس
هرک گوید نیست این سوداست بس
هرک در دریای کل گم بوده شد
دایما گم بودهٔ آسوده شد
گر پلیدی گم شود در بحر کل
در صفات خود فروماند بذل
لیک اگر پاکی درین دریا بود
او چون بود در میان زیبا بود
نبود او و او بود، چون باشد این
از خیال عقل بیرون باشد این
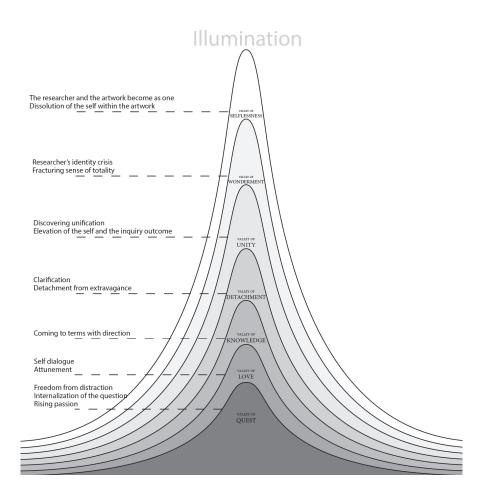
If we summarise the search journey through the valleys we observe a move from a state where researchers free themselves from distraction and internalise their quest, to a state where they are subsumed within the work (dissipated but present). Unlike many Western concepts of a research journey that might end at the fifth stage of realisation resulting from unification, Attar's concept includes two additional phases that culminate in the researcher being transformed by the inquiry's journey (Figure 3:2 - p. 53).

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38. Such an interpretation is like translating the Greek word Nous to mind, ignoring the concept's historical and philosophical associations.

FIGURE 3:2.
Diagram showing an inquiry as
the researcher progresses through the Seven Valleys.

ATTAR'S SEVEN VALLEYS

Illumination

The researcher and the artwork become as one
Dissolution of the self within the artwork

VALLEY OF
SELFLESSNESS

Researcher's identity crisis
Fracturing sense of totality

VALLEY OF
WONDERMENT

Discovering unification
Elevation of the self and the inquiry outcome

VALLEY OF
UNITY

Clarification
Detachment from extravagance

VALLEY OF
DETACHMENT

Coming to terms with direction

VALLEY OF
KNOWLEDGE

Self dialogue
Attunement

VALLEY OF
LOVE

Freedom from distraction
Internalization of the question
Rising passion

VALLEY OF
QUEST

A COMPARISON BETWEEN MOUSTAKAS' HEURISTICS AND ATTAR'S ILLUMINATIONIST JOURNEY OF THE SELF

Moustakas' and Attar's concepts have certain affinities. Although Moustakas' (1990) heuristic inquiry represents a scientific search based on seven concepts, his methodology is designed to help a heuristic researcher discover "the nature and meaning of phenomenon through internal self-search, exploration, and discovery" (Djuraskovic & Arthur, 2010, p. 1569). Moustakas encourages the researcher to explore and pursue a creative journey that is initiated internally and "ultimately uncovers its direction and meaning through internal discovery" (Djuraskovic & Arthur, 2010, p. 1569). Thus, heuristic inquiry is a means to an end, rather than a process that is integral to, and inseparable from, the outcomes.

While I accept that Moustakas' heuristics is essentially an academic discourse and Attar's poem is an artwork that metaphorically illustrates the pursuit of self-realisation, I found Attar's thinking useful in constructing a heuristic framework for this study, and despite certain stylistic differences, the approaches of both thinkers have features in common.

Both acknowledge the importance of tacit knowing (or intuition) that enables subjective and creative connections between the (re) searcher and phenomena. Both propose self-dialogue as integral to development and both emphasise reflection. In both bodies of thought, the (re)searcher chooses to become deeply engaged in the pursuit of knowing and to utilise self-experience in the process. Like Attar's illuminationist journey of the self, Moustakas' (1990) heuristic inquiry also encourages the researcher "to explore openly and pursue the creative path that originates inside of one's being and discovers its direction and meaning within oneself" (Djuraskovic & Arthur, 2010, p. 1572).

However, significant differences lie in Attar's last two stages, wonderment and selflessness. This may be because these 'valleys' emanate from an eastern gnostic perspective with little equivalence in Western thought. Accordingly, they contain ideas that fall outside of Moustakas' considerations. While Moustakas' concepts raise an awareness of intuitive self-reflection in the realm of the social sciences and artistic research, the Valleys of Wonderment and Selflessness in Attar's journey are more metaphysical stances. The Valley of Wonderment, where the searcher dispels identities, is related to the mystic belief

that humans are distanced from their divinity (as is reflected in Rumi's Tale of the Reed). This concept may be described as Fana (selflessness). This is an illuminationist idea that attributes material bodies to the world of shadows. When the self of the searcher annihilates symbolically, divine light is able to shine within the self and also pass through the searcher. Consequently, the entirety of the searcher turns into an allegorically illuminating being that brightens their surroundings.

THE ILLUMINATIONIST HEURISTIC METHODOLOGY: SYNTHESISING THE CONCEPTS OF MOUSTAKAS AND ATTAR

A synthesis of illuminationism and heuristic inquiry has resulted in the design of a culturally-influenced[39] methodology that has shaped my research framework. Illuminative heuristic inquiry offers a unique method "in which the lived experience of the researcher becomes the main focus of the study, and it is used as an instrument in the process of understanding a given phenomenon" (Brisola & Cury, 2016, p. 95).

My project begins with *intuitive introspection* (Moustakas, 1990), or *knowledge by presence* (Suhrawardi, 1186). The primacy of intuition

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39. By this I mean the thinking emanating from the Illuminative (being Persian in origin) is concordant with my culture.

doesn't predicate a rejection of reasoning in either illuminationism or heuristic inquiry, because rational thinking resources *knowledge by presence* (Ziai, 1990) and explication and creative synthesis (Moustakas, 1990). In illuminative heuristic inquiry, although I began with intuitive understanding of my subject of inquiry, later iterations of the research became comprehensible and progressed through a combination of creative and rational thought.

According to *knowledge by presence*, when the essence of a phenomenon becomes present to the self of the searcher/researcher, they will experience it as an immediate and unmediated knowledge of themselves. To an illuminationist, to know something, the (re)searcher must elevate themselves through praxis. 'Knowing' is more than being informed; it must constitute an active engagement with the object of inquiry. The knowing being and the known thing are different gradations of allegorical light. To be able to know a thing, both the (re)searcher and the object of inquiry have to be uplifted

from darkness. The searcher/researcher will be illuminated by journeying. Such a journey takes the form of a vigorous, dynamic engagement with the context and content of the research, in such a way that the self of the (re)searcher becomes increasingly conscious of the self and the subject. In other words, they become illuminated. In Suhrawardi's illuminationist thinking (1186), the dedicated work of the (re)searcher throughout a journey not only illuminates the self but also excites the object of inquiry to the state of illumination.

In this process, the self is internalised into the unmediated, immediate subject of inquiry.[40] Although the subject of inquiry might have been previously illuminated through the praxis of others, the darker self of the (re)-searcher will, up until the journey of the inquiry, have been able to see the illumination. Once the (re)searcher becomes illuminated, the light of the self is able to unite with the light of the subject of the inquiry and the two merge. The knowledge that surfaces out of this unified state

is innate, intuitive, immediate knowledge that is recognisably present, and the (re)searcher instantaneously comes to the state of knowing it.

This knowledge by presence can be so direct that the (re)searcher often needs to pause and look back in the journey to understand it. Sometimes the (re)searcher is so immersed that this reflective understanding becomes impossible, so an external critic is required to observe the process from an objective standpoint. The external critic (in illuminationist terminology) functions as a mirror that reflects the irradiated light of the (re)searcher back to themselves so they can recognise their own light.[41] In a project such as this thesis, the (re)searcher calls upon help during the journey.[42] Collaborators may be understood as essentially illuminating beings who intensify and catalyse the process of becoming illuminated. They 'climb inside' the subject of inquiry and cast light into dark corners of the pathway.

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40. Here we see a partial correlation with heuristic inquiry's emphasis on the internal self as a subject of inquiry. In heuristic inquiry, self-search, exploration and discovery enable the researcher to pursue a "creative journey that begins inside one's being and ultimately uncovers its direction and meaning through internal discovery" (Djuraskovic & Arthur, 2010, p. 1569). However, in heuristic inquiry, the self as the subject of inquiry can be differentiated from Attar's Illuminationism, because the journey is neither predicated on illumination of the darker self nor the self's eventual symbolic annihilation.

41. For example, in my research my supervisor often questioned me reflectively, framing queries in language I had used so I was able to 'hear' my own thinking and through this draw what was often tacit into explicit expression.

42. In the instance of this research, such support came from actors, CGI artists, motion capture artists and musicians.

Like Suhrawardi's and Attar's illuminationism, my research indwells in a state of unknowing. The knowledge I seek emerges out of bewilderment and perplexity, a state that Keats described as "negative capability", where one "is capable of being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason" (Keats & Scudde, 1899, p. 277).

Methods

Within the illuminationist heuristic inquiry, specific methods are employed to exhume and reflect upon ideas so they can produce potential artistic relationships. These methods are generally designed to work in non-formulaic environments where the artist scholar is negotiating flexible processes and high levels of reflection on experience and practice. For this research, I employed different methods in four aspects of the inquiry: preproduction, production, postproduction and external feedback.

METHODS USED IN THE PREPRODUCTION STAGE
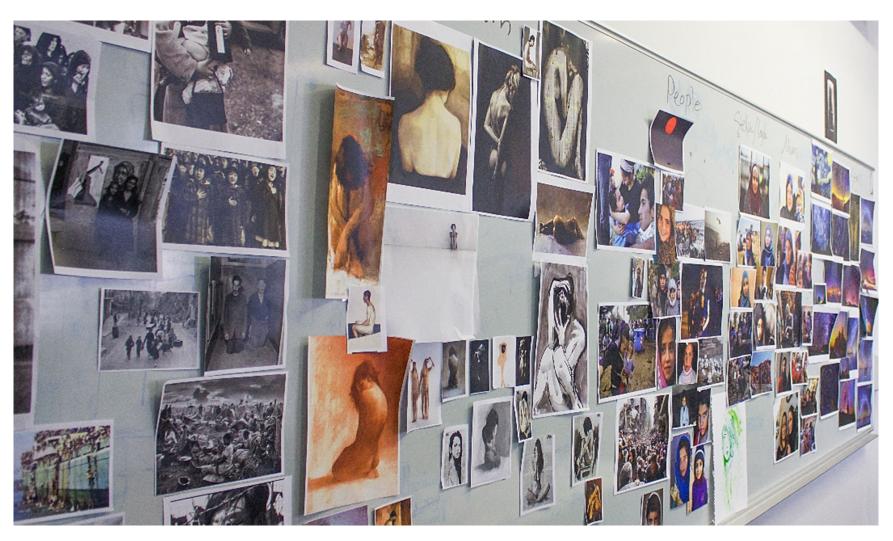
There were six discrete but interrelated methods used in the story development of the project:

- An immersive research board
- Painting and drawing journals
- Structural diagrams
- Exploratory photographic shoots and image constructions
- Spontaneous writing
- Treatment and iterative script writing.

The immersive research board

At the outset of the project, in Attar's Valley of the Quest, the research question took the form of an immersive research board. Here the question of a story was internalised and driven by a passion to discover. This device afforded a form of image indwelling where I sought to submerge myself inside the research question by surrounding myself with diverse visual references that might resonate with the story's potential diegesis (Figure 3:3 - p. 57). Using this method, I gathered images and covered walls in my studio. These pictures operated as 'voices' that reached beyond written language and although they rarely directed inspiration, collectively they formed a kind of denkraum (thinking space) wherein a "sense of meaning and direction" surfaced and the problem became more recognisable and more approachable (Douglass & Moustakas, 1985, p.40). In this regard the method spanned both the internalisation of the Valley of the Quest and the self-dialogue indicative of the Valley of Love.

Note. Research Board for the narrative (November 2016). This iteration of the board was photographed while I was drafting and refining 'treatments' for the story. Related historical, aesthetic and anthropological images helped me to indulge myself in potential narrative and aesthetic dialogue.

Painting and drawing journals

A second method involved sketching in pencil and ink as a way of giving form to emerging ideas (e.g. Figure 3:4). Rosenberg (2008, p. 248) notes that sketches can be the:

> … embodiment of knowing yet unknowing, where intentionality and technical and operational competencies … osmose with tacit knowledge, intuition and free association, forming an engagement that enables performance in the face of high risk, radical instability and failure.

As methods, painting and drawing surfaced in the Valley of Love then accompanied the project through the Valleys of Knowledge. This is because the method enabled me to think about texture, emotional tone, and representation outside of digital construction. Drawing and painting were rarely used to 'give form' to visual compositions in the film, rather they held me in a state of 'knowing but unknowing' where I could think around possibility. As such they can be associated with Valleys where the researcher is working introspectively and contemplatively in a dialogue with the self and the broader journey (exploring and coming to terms with direction), not in a strategic, rational manner but as an attuning of the self with the subject of study.

FIGURE 3:4.
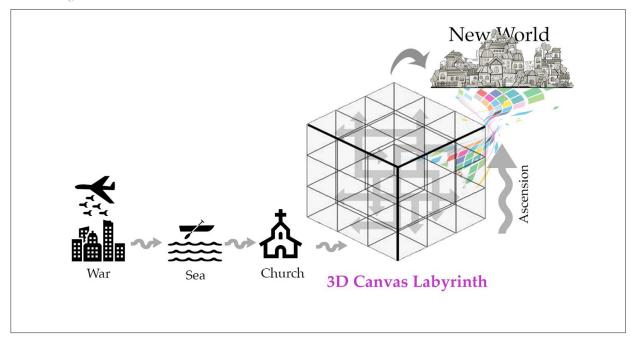
Exploratory painting.

Note. Diverse, exploratory sketches developed in the process of designing the visual diegesis of the narrative (November 2016). I found that the fluidity of watercolour painting could express something of the liminal state and a sense of transition. I did not use these paintings in the context of the story, but they contributed to the heuristic exploration of the conceptual essence of the narrative.

Structural diagrams

The narrative of Stella is structured with an internal coherence such that plot points, actions and reactions, and metaphorical references form an internally coherent logic. Often when I was uncertain about the effectiveness of a plot point, I created an annotated diagram (Figure 3.5) so I could 'see' the trajectory or pattern within which an idea was occurring. This method spanned the Valleys of Knowledge and Detachment because, with these diagrams, I was trying to link nodes together and identify harmonies and analogies and to detach the inquiry from what was extraneous. Such diagrams allowed me to visualise "tentative groupings" (Kleining & Witt, 2000) where patterns became more easily identified, and the framework and structural foundation was able to be checked and altered as needed. Although refined examples of this kind of thinking are evidenced in Figures 4.1 and 4.5, Figure 3:5 is an example of how I began considering the story world in sequential phases.

FIGURE 3:5.
Structural diagram.

Note. Early diagrams like this were used to clarify both the physical and spiritual journey of the characters. Being able to view the whole story structure helped me to establish more plausible relationships within the narrative (February 2017).

Exploratory thumbnail visualisations

I used thumbnails as a method for thinking about imagery once the diegesis of the story became more tangible. This enabled me to work beyond the limitations of words and think through (and with) visual materialisations of the story world before I moved into production.

I approached this in two ways. First, I created visualisations of episodes in the narrative. These helped me to think through 'presence' and emotional tone in the world of the film (e.g. Figure 3:6) and enabled me to refine the treatments I was writing because I was able to 'visually' dwell inside the story world I was shaping. However, at this stage I was only thinking about potential story beats and compositions, so the thumbnails were heavily desaturated because I did not want my thinking distracted by colour. These thumbnails were constructed by collaging photographs and painting over them in Adobe Photoshop.

FIGURE 3:6.
Storyline visualisation.

Note. Thumbnail visualisations for the sequence
where Stella and her mother flee and their boat capsizes.
(June 2017).

Second, I conducted exploratory photo shoots in a studio (Figure 3:7), and then edited the resulting imagery and applied potential treatments. These retouched, preproduction visualisations enabled me to sense my way towards the potential 'feel' of the film before the complex and timely process of animation took place (Figure 3:8). The visuals were also useful in providing an early sense of the story's potential visual ethos and I was able to show these visualisations to actors whose performances had to navigate worlds that they couldn't see (Figure 3:9 - p. 62).

FIGURE 3:7.
Exploratory photo shoot.

Note. Exploring the concept of Stella in the White room. (January 2017).

FIGURE 3:8.
Preproduction visualisations.

Note. Image suggesting a potential treatment of painted identity (January 2017).

Note. The writer/director working with an actor in an environment that she can't visually materialise (January 2017).
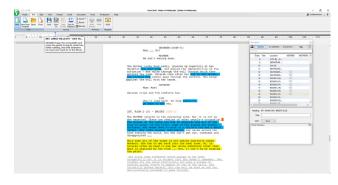
Spontaneous writing

Once the internal logic of the narrative had been made visually explicit through diagrams, I loosened the rigidity of casual relations and reasoning and let the story universe reveal itself through a process of spontaneous writing. Thus, I did not move directly from diagrams to the screenplay but instead, I opened the 'territory' of the narrative up to potential disruption and enrichment. In the process of spontaneous writing, I wrote about anything that might be in the diegesis of the film, freely and without constraint. Using this process, I explored my inner dynamism. Using this method sometimes events and interactions emerged unexpectedly, without prior consideration. What was significant about such writing was its visual richness because I was writing as if I was witnessing a scene unfolding in front of me.

Treatment and iterative script writing

In developing the screenplay for Stella, I adopted a traditional method of crafting the story as a treatment. A treatment is a relatively detailed summary of a film's narrative before dialogue is added.[44] It communicates in chronological prose, the significant scene descriptions and plot points in a manner that evokes the intended tone of the production. By this stage my research journey was passing through the Valley of Detachment and beginning to enter the Valley of Unity. By this I mean I wrote as a means of detaching what was extraneous from myself and my journey, and I began seeking coherent and unifying resonances. Because this body of writing preceded the screenplay, I was able to quickly identify where there were emotional troughs, repetitions, and structural ambiguities in the narrative. This body of writing also set the storyworld (Ryan, 2019) of the narrative. Once the basic narrative was refined, I began writing the screenplay[45] using Final Draft[46] software Metaphorically, I think of my scripts as 'hot' at the moment of writing (it is painful to touch them). In an effort to ensure that I had addressed flaws in the narrative I needed to wait for a day or two until they 'cooled' down before I revised what I had written. Because Stella drew on some personal material (primarily emotional), iterative, incremental writing with opportunities to stand back and re-read what I was crafting helped me to avoid falling into the abyss of solipsism (Barrett & Bolt, 2007). As an extension of this process, at specific points I also ran the screenplay past my supervisor who is a writer and film director (Figure 3:10). I have found in my professional practice that because such external critics are not living in the writer's internal emotional state, they can often consider a script more objectively and identify inconsistencies of areas where a lack of logic or clarity might compromise the screenplay's

FIGURE 3:10.
Feedback notes

Note. Feedback notes on an iteration of the script showing questioning and comments by a reviewer, using highlighting as an annotation tool (December 2019).

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44. An early treatment completed in November 2016 can be accessed in Appendix 1.

45. The screenplay, completed in September 2019, is provided as a discrete document.

46. This industry-standard software contains production functions that enabled me to group similar scenes and consider, in a non-linear manner, budget, property and postproductions implications of the script.

coherence or communicative clarity for actors, directors, crew and postproduction teams.

METHODS USED IN THE PRODUCTION PHASE

The second phase of the inquiry involved the production of indicative visual material for the narrative. This may be understood as the period where live data was recorded for postproduction processing. In this phase, two methods warrant discussion:

- Immersive performance capture
- Cooperation and collaboration.

Immersive performance capture

The term 'performance capture' was first introduced in 2004 by the director Robert Zemeckis, during the production of *The Polar Express*. He described the term as:

> … the total recording of a performance without cuts using a motion capture system. Performance capture sees an entire performance captured in one take, allowing traditional framing questions and dramatic devices to be employed post-performance. (Delbridge, 2014, p. 11)

In the production of Stella, I needed to take the actors into an environment beyond the conventional compositional mis-en-scene mindset they might normally experience in a 'physical' production. Specifically, I required the actors to immerse themselves in a narrative world that they either couldn't see or if they could, it was very abstract. Given the technical nature of the project I also needed them to be able to interpret events without any of the orienting conventions of playing to a proscenium arch or a situated camera. To help the actors to feel more comfortable in the unfamiliar suits and head gear they were required to wear, I spent a considerable amount of time with them rehearsing while they were wearing the equipment. This meant that they gradually became at ease with the unfamiliarity of performing inside technical suits, surrounded by abstract environments (Figure 3:11).

Note. Melanie Mirfin rehearsing in a motion capture suit and facial capture headgear in her role as Stella (February 2018).

In recording performances for the project, I employed an optical motion capture system that utilised multiple infrared cameras positioned around a recording stage. These cameras identified reflective markers on the body of the performer, and central software (in this instance, Motion Analysis Cortex) processed the volumetric position of each moving marker. This data was later used to build up the skeletal structure of each moving organism in its digital world. As optical motion capture works with light rays, there can be no solid element present on the recording stage that blocks light. Accordingly, I constructed props and furniture using metal mesh (Figure 3:12 - p. 65) so the cameras were able to see through them. Having these extraordinary props in the performance space, I realised, added to the complexity that the actors faced.

To help the actors build strong imaginary environments inside which they felt comfortable, we sometimes simulated physical conditions. For example, for the rough sea scene, I asked them to sit in a boat that was positioned on multiple cushions while two assistants rocked it. This movement simulated the narrative event of the family's escape from the war zone, and it enabled the performers to make contact with feelings of physical and

Note. Actors using furniture made from black metal mesh (February 2018).

emotional anxiety from being trapped in a boat on a turbulent ocean (Figure 3:13).

FIGURE 3:13.
The researcher directing the rocking boat simulation during a motion capture recording.

Cooperation and collaboration

The scale and complexity of the production phase of the project meant that I was often required to draw on the expertise of others. Recording data involved both cooperative and collaborative approaches. Initially, I advertised for a group of volunteers who might like to gain experience in motion capture filmmaking. With this crew, my approach was to build an environment where cooperative practices contributed to learning.

Roschelle and Teasley (1995) define cooperation as a process where a practitioner orchestrates a "division of labour among participants [...] where each person is responsible for a portion of the problem solving" (p. 70). Given that much of the work in motion capture (and later postproduction processes) is highly technical, I was able to draw upon my professional experience and current research to 'build' skills in people who chose to work with me. By this, I mean I was able to explain approaches and technologies and give volunteers experience inside the livingness of a project (Figure 3:14).

FIGURE 3:14.
Collaboration .

Note. The researcher in discussion with actors during motion capture production (February 2018).

Although I was could not afford to pay these volunteers, I took time to build a culture of

support around them that included eating and socialising together daily (often around Persian food that my wife and I had prepared).[47]

The ethos of this collaboration was based on mutual understanding and benefit. Wherever I could, I allocated specific tasks that were related to the students' own university projects. I also helped them to shape their portfolios and include their contributions to the project so their potential employability was enhanced. With actors, my approach was more collaborative. Gray (1996) defines collaboration as a process of "practical support, criticism, encouragement where ideas are open to exchange and sharing" (p. 12). In the Stella project collaboration took the form of creative exchanges that collectively led to performances that were greater than what could be crafted by an individual. Collaborative processing is built on exchange, experimentation and co-creation. When I work with actors, I do not see them as functionaries whose lines and movements illustrate what has been preordained. Instead, I understand that they have skills that enable them to embody a character in a situation and then interpret that in a unique manner. My role as a director is to facilitate this process. Accordingly, I share with them the

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47. Most of the volunteers were students of Digital Design department of Auckland University of Technology.
The period they contributed to the project was in their summer break, so their contribution was not influenced by, and did not impact on, their grades.

plot point and we discuss their motivation in the scene. We also consider the screenplay to ensure that all necessary points will be covered. Then, I work alongside them as they craft and refine an interpretation into a recordable performance. I watch and give them feedback (notes) after each take. I suggest, but never assert, a didactic solution. Using such a process enables Gray's (1996) approach where ideas are always treated as open to exchange, sharing and reconfiguration.

METHODS USED IN THE POSTPRODUCTION PHASE

I used a variety of internal and external methods through the process of postproduction. Three of these warrant discussion:

- Illuminated immersion
- Revising the process of digital texture painting
- Collaboration and benchmarking new technologies.

Illuminated immersion

This is the method that was used most pervasively across the postproduction phase of the project. I worked with production data and the nature of the narrative, alone in my studio, feeling my way forward. At this stage,

I substantiated my raw data and drew it into discourse with the imagined nature of the film. To do this, I entered into a dialogic immersion (Grau, 2003). Here, I spoke to the world that began to take form on the screen in front of me and it talked back to me. In this process, the story and I intensified the intimacy of our journey (both physically and esoterically), as we transcended into realms of greater knowing (King, 1989). Here, wisdom shaped and was shaped by the process of journeying (Afshari-Mofrad et al., 2016). Alone in my studio, I digitally drew, painted, sculpted, textured, animated and rendered an immersive universe that was a reflection of myself and my ancient Persian being. Progressively, I began to lose the sense of 'self' and I increasingly became part of the artefact. This internal melding was interfaced with external considerations, like technological potentials and limitations, new media and benchmarking methods. Understood through an illuminationist lens, I was coming to know something by elevating myself through praxis. Here, knowing constituted an active engagement with the object of inquiry (the world and narrative of the film). The knowing being (me) and the known thing (the emerging manifestation of the story) were incrementally lifted from darkness through deeply reflective journeying wherein there emerged an increasing consciousness of the subject. According to

Suhrawardi (1186), in this process the dedicated nature of my involvement with the project not only illuminated me but also excited the object of inquiry to a state of illumination. One might understand this as both the story and the designer having living forces that incrementally melded and increasingly the story came to know itself and was able to more articulately guide me towards the 'rightness' of its form. This is why, as the project progressed, the journey became clearer and less fraught with indecision. The narrative 'knew' itself and I increasingly came to know my relationship with – and within – it.

Early experiments in digital texture painting

The state of being lost and in wonderment is an inseparable part of Persian illuminationism (Mir, 2021; Mojtahedzadeh Fard, 2022). In the pursuit of painterly textures that might represent transitions in the character's trajectories through the narrative, I experimented with a wide range of analogue and digital approaches (Figure 3:15 - p. 68). Inside this journey I was able to experiment with approaches that are generally unviable in a professional context. In the industry, allocated budgets, prescribed resources and fixed deadlines often limit opportunities for creative exploration. But on a journey not proscribed by such limitations, I reconsidered strategic approaches to CGI animation by

Note. In this experiment I was considering the perception of a mother whose child is born into a world that is somehow 'wrong'.
Here, Stella's encultured self is navigating identity displacement so the spaces she inhabits were allegorically constructed as painted (rather than authentic) environments.
In experiments like this, I was also considering how an absence of detail might suggest a loss of identity definition.

revising the process of digital texture painting and I began printing the UV mapping[48] onto canvas. I then began working with volunteers to apply traditional painting techniques (Figure 3:16). As the experiments progressed, I became aware that the unique quality of paint on canvas enriched the artificial appearance of digitally generated CGI models. The new, painted textures superimposed on the digital textures produced a distinctive and somewhat enigmatic sense of both realism and hand-rendered painting.

Collaboration and benchmarking new technologies

Although I spent many hours in an interior journey, this interfaced with, and was resourced by, the cooperative input of volunteers who, prior to the Covid-19 pandemic began visualising and processing data gathered in the production phase (Figure 3:17). When working with these people, I was aware that in the field of computer graphics research, each year new solutions and technologies emerge and are introduced at events like SIGGRAPH. Unlike many other industries, it is difficult to standardise procedures and methods in CGI. Major postproduction companies like Weta Digital in New Zealand have a specific research

Note. Printing the UV mapping onto canvas and employing traditional painting to achieve visual resonance (April 2018).
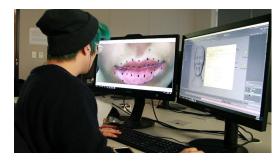
and development (R&D) department where new methods are constantly examined and developed.[49] I worked with these volunteers to constantly re-examine current technologies in relation to the project.

This was invigorating because the process demonstrated to students how new methods of production and postproduction (Figure 3:18), particularly when used by small scale teams, might be used to realise their own independent storytelling. Examples of their work on the project can be found in appendices 2, 3 and 4.

Note. Volunteer, Minsoo Lee, experimenting with different lip rigging systems in the facial setup of a character (May 2018).

48. UV mapping is the process of unwrapping the spatial topology of a 3D object in order to paint or project a 2D image on the surface. Chang (2006) likens it to applying a sticker to a bottle

49. To date, a variety of technical advances have been developed by the Weta Digital research team, including the Manuka renderer, Facets facial processing, Deep compositing and Mari texture painting..

The impact of Covid-19

Unexpectedness is a key concept in Persian literature and illuminationism (Khan, 2018). Even Rumi's Masnavi is structured around the idea of disruption (King, 1989; Williams, 2013). Narratively his poetry books imply that interruption is part of a journey and by navigating it, the traveller must find their way back to the light.

When my PhD research journey began, I pursued an ambitious story project that was heavily reliant on resourcing (both technical and human). Unfortunately, although all preproduction and most production elements of the project were realised (script writing, pre-visualisation and image capture), the pandemic disrupted the early phase of preproduction and later postproduction. This part of the project's trajectory was heavily dependent on onsite and external resources so the impact was threefold.

First, the mandatory isolation meant that the volunteers who had hitherto comprised a collaborative cohort of practitioners were no longer available. This meant that the entire project was now confined to my personal input. Second, the university facilities that were scheduled to serve the postproduction progression of the project, including sound recording studios, network rendering facilities,

and powerful computers, were suddenly inaccessible.

Third, the network of specialist facilities outside of the university dissolved. This included access to specialists in animation, 3D modelling, sound design, voice talent and musicians. Although some online collaboration was realisable, I found myself largely on my own and my collaborative team-oriented practice turned into a solitary engagement with a huge and complex volume of work that I had to move forward using only my home computer and studio.

In my hands I held a complex, completed screenplay, storyboards (see examples in Appendices 3 and 4) and production data gathered for processing. Some initial 3D assets had been generated and early experiments with texturing had been developed. I had also researched into potential deep learning and AI in style transfer.

I now found myself in a landscape that bore no relationship to what I had anticipated. The projected road through the valleys had dissolved and I had to rethink how I might overcome the disruption and positively embrace the unexpected. Technically and logistically, it was now impossible to realise a full animated film. From my small studio in a back bedroom of my house, I began to reimagine ways that the

project might address the research question I was pursuing. I had asked:

> What is the potential of a narrative animated film as a device for unpacking and reflecting upon identity-change in individuals who transition through states of displacement and integration?

As it stood, the question in this form was no longer answerable because the device to do this was to be a completed, festival-ready, 40-minute, animated film. I thought about where my research journey had taken me. I had, through multiple iterations, created a complex but coherent storyline. This was shaped by my research into identity change and my experiences of moving from one culture to another. Realising now that my facilities were limited to a personal computer, I rethought the research question and asked instead:

> How might an allegorical narrative for an animated film be employed as a device for unpacking and reflecting upon identity-change in individuals who transition through states of displacement and integration?

This question was similar to my initial intention but the emphasis had shifted from an animated

film as an artefact, to the thinking that underpinned it. In other words the storyline and its imagined manifestation became the vehicle for addressing the question of how one might communicate in a fictional allegory, the nature of identity loss, transition, displacement and restoration. Accordingly, I developed a series of strategies that would enable me to progress.

First, I refocused attention onto refining and improving internal coherence in the screenplay.[50] Second, I embarked on the design of a graphic template that demonstrated selected, chronologically arranged scenes from the film. (This is provided as part of the practice as the post-visualisation document).[51] Finally, I created an 'indicative trailer' that suggested the essence of the story and illustrated the potential of certain treatments.[52] By creating these new emphases within the practice it was possible to successfully address the research question in a manner commensurate with a doctoral research study.

METHODS EMPLOYED TO ELICIT EXTERNAL FEEDBACK

Although the pandemic impacted on postproduction potentials for the film, my thinking prior to and during the enforced isolation was resourced by feedback loops. By a feedback loop I refer to critically discursive environments or processes that employed peer review or external critique to heighten my thinking or cause me to more articulately express my ideas.

Prior to Covid-19, feedback took the form of discussions with peers, conference presentations, exhibitions and discussions.

Discussion with peers

Throughout the early development of the project, I discussed work in progress with peers who were experts in their respective fields. While I was composing the storyline and screenplay I shared the narrative with Dr Chen Chen, a script advisor and film poet, Dr Donna Rose Addis, an expert in memory and identity and also my second supervisor, and Dr Nicola Gavey, an expert in the psychology of sexual violence.

Given that the central protagonists in Stella are women, they were able to question character motivations and behaviours so I could rethink approaches that might have, if unquestioned, reinforced an unhelpful male perspective on the narrative.

In addition I sought critical reflection from Dr Tatiana Tavares, who is an award-winning Brazilian designer and specialist in visual narrative. Her feedback was especially helpful in terms of iconography and composition because she was able to reinforce the importance of balance and rhythm in visual aspects of the project.

Presenting iterative thinking at conferences

In addition to targeted critique, prior to the Covid-19 lockdowns I also attended a number of local and international conferences that became useful as sites for networking and feedback.

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50. In the past I have experienced the impact of postproduction on the finer details of storylines, but when writing for animation this is much less than one might experience with filmed dramas so the screenplay is closely related to the proposed final narrative. The screenplay submitted as part of the practice for this thesis is the narrative in its full form and it indicates what was proposed as a final iteration. Although many of its scenes are not evidenced in the post-visualisation document and indicative trailer, it is my intention, with support, to eventually include all of these in the final text.

51. I was able to create these using the Unreal Engine program available on my desktop computer at home.

52. These artefacts are discussed in Chapter 4.

In May 2019, I presented early iterations of my practice at the Experimental Animation Symposium in Auckland. This event afforded me an opportunity to share exploratory features of the animated project with a society of scholars and to receive feedback. In November 2019, my research was accepted for the Doctoral Consortium subsection of SIGGRAPH ASIA 2019 in Brisbane (Figure 3:19). This opportunity afforded my work the broadest international exposure to emerging thinking available in the field. Each of the selected PhD projects was reviewed and judged by an international committee of scholars and the papers that were selected were presented to delegates. At the conference, I also received useful feedback from other international doctoral researchers as well as animation lecturers. Given the technical nature of the symposium, I became aware of new methods for applying deep learning to simulate artistic styles of image creation and new insights helped me to consider acquiring Universal Scene Description (USD) in the development of my project.[53] However, presenting work at conferences also caused me to clarify my thinking and contextualise it within current discourses. In addition,

conferences brought to my attention related research activities being developed elsewhere internationally. These were especially useful in demonstrating how other researchers were challenging technology in ways that expanded the nature of creative outcomes.

FIGURE 3:19.
SIGGRAPH ASIA presentation in Brisbane (November 2019).

Eliciting feedback in the time of Covid-19

The isolation and quarantine experience of Covid-19 caused me to reflect on my research practice and, in an effort to maintain some form of external feedback, I began writing and

publishing journal articles as well as presenting research in online webinars and conferences. This afforded me access to independent peer review. In 2021, I published the article "Displacement of self-continuity: An heuristic inquiry into identity transition in a 3D motion capture-based animated narrative short film" in the journal of *Animation Practice, Process and Production.*

In the same year I exhibited artworks from the project as Chromatic Sketches in the international LINK Symposium, and presented a paper "Displacement of self-continuity: practice-related research in Design at PhD Level" in the *Surviving a PhD: Tech and Arts Experiences* conference for Doctoral Programme academics in Digital Media programmes at the University of Porto and the New University of Lisbon. In the following year my article "Persian Illuminationism as a heuristic methodology in creative practice-led research" was published in the peer reviewed journal of *Revista GEMInIS.*

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53. Universal Scene Description (USD) was a new 3D format developed by Pixar. Since 2019, different 3D applications have begun adopting USD procedures in their core programs. Pixar's website describes USD as "the first publicly available software that addresses the need to robustly and scalably interchange and augment arbitrary 3D scenes that may be composed from many elemental assets" (2019, para. 1). USD enables one to assemble and organise a range of assets into virtual sets, scenes and shots, then transmit them easily between applications. One can also "non-destructively edit them (as overrides), with a single, consistent API, in a single scenegraph" (2019). Retrieved from https://graphics.pixar.com/usd/docs/index.html

Critique of the research design

Before closing this chapter, given that the methodological approach is relatively unique, it is helpful to review strengths and weaknesses in my approach and to consider how these were navigated.

Adopting an illuminative heuristic methodology was both rewarding and challenging. In artistic practice-led research, we cannot avoid the self, because the artistic scholar is central to the creation, evaluation and development of their practice (Griffiths, 2010). However, there is always a tension between the self within the arena of practice, and the self as an objective reviewer of context (Hamilton, 2011). The researcher must negotiate this balance without tipping too far towards the solipsistic (or confessional), or too far towards the objectified (Sela-Smith, 2002). This is because, to function authentically as an illuminative heuristic researcher, the artistic scholar must be positioned as a subjective, critical insider (Duncan, 2004).

The illuminative heuristic framework has offered a number of distinct advantages:

ENHANCED PERSPECTIVES

First, I was able to broaden my perspectives, combining ways of knowing appropriate to my Persian culture and existing methodological approaches that have been articulated inside the Western academy. Thus, I experienced different forms of knowledge by presence (Ziai, 1990) which is a core epistemological concept in Persian illuminationist philosophy. Moreover, I was able to validate and articulate an authentic experience of research journeying through deep states of indwelling in both the self and the inquiry (Douglass & Moustakas, 1985; Ziai, 1990). Thus, I was able to frame the research as a journey where wisdom is movement and shaped by 'going' (Afshari-Mofrad et al., 2016). This journey departed from the Valley of the Quest where I internalised my inquiry, then progressed through the introspective and contemplative Valley of Love, and passed through the Valley of Knowledge where tacit (or intuitive) knowing merged with a realisation of my unique, personal qualities. From here, the Persian paradigm diverged from conventional Western thinking because, through the Valleys of Detachment, Unity and Wonderment, I pursued a state of

selflessness or Fana (فنا) so, as the allegorical narrative came into the light, I became subsumed within it. Such thinking is natural for a Persian person; it is an aspiration but also a recognition of high-order artistic inquiry.

FLEXIBILITY

Second, an illuminative heuristic framework afforded me very high levels of flexibility and reflexivity. Thus, I was able to navigate bidirectional relationships between cause and effect in a dynamic manner. This was important because the inquiry often shifted emphasis and direction. It was this flexibility that enabled a significant reorientation 18 months into the study when I stopped being anxious about drawing on Persian ways of knowing into the inquiry. It also enabled me in 2020, when the impact of Covid-19 necessitated a reconsideration of what could be realised, to rethink how the original research question might be reframed and progressed, given the dramatic change in resourcing available to the project.

VALIDATING SUBJECTIVITY

Third, an illuminative heuristic framework appreciates the subjective nature of the researcher. Given the significance of the relationship between the artist inquirer journeying through Valleys in an Illuminationist

paradigm, this was important. The methodology enabled me as a Persian thinker to own and exercise my subjectivity through the internalisation of the Valley of the Quest, the self-dialogue of the Valley of Love, and the coming to terms with direction in the Valley of Knowledge. Validated subjectivity then enabled me to maintain the 'self' as my journey moved into the Valley of Detachment, where clarification and dislocation of what was extraneous led me to a sharper focus that progressed to an elevation of the self and the inquiry in the Valley of Unity. Significantly the blending of the self and the project was integral to managing the fractured sense of totality in the Valley of Wonderment and explaining the distinctive Persian concept of the subsumed self in the Valley of Selflessness.

However, the illuminative heuristic framework also raised a number of challenges.

SOLIPSISM AND CONFUSION OF PURPOSE

Being essentially subjective, my methodology is open to accusations of narcissism, solipsism and confusion of purpose. Given the potential to sink into non-critical, 'unwise' progression, I needed to balance an internal journey with a rigorous critiquing of emerging outcomes. Without some

form of external feedback, purely self-referenced processes could have resulted in outcomes that failed to explore a wealth of available options or fell short of their communicative potential. This is why I decided to implement feedback loops throughout the inquiry.

SELF-EXPOSURE

An illuminative heuristic framework is very exposing. It requires one to accept that the self is on a journey with the question, and on this journey both the self and the work will encounter disruption on physical and esoteric levels. Because this will lead to transformation, one cannot maintain the safe position of making work as an objective application of craft. In drawing work into the light, one reveals and implicates the self, sometimes in ways that are neither easy to rationalise nor account for in logical terms. Yet, writers like Behar (1996), Eriksson (2010) and Ryang (2000) all suggest that it is this vulnerability that can draw subjective inquiries close to authenticity.

Although this was a challenge, I drew on the core of my Persian being; the exposure to literature and thinking that had permeated my years of development as an artist. I drew meaning and resonance from my culture and my journeys through the cultures of others. I

knew from the outset that this study would be accompanied by disruption and exposure on deep levels and I accepted it would lead to both unpredicted resolution and transformation.

In this chapter, I have tried to be honest about how I research. My creative processes are driven by Persian ways of understanding and these interface with the development of the allegorical narrative. In truth, the approach has at times been taxing because I have had to declare what might normally be kept private. I have drawn upon experiences of identity transition that I encounter as part of an ongoing process of coming to terms with living in worlds other than those of my birth. I am as exposed in this chapter as Rumi's reed. However, because in an illuminative way of thinking the project becomes greater than the self, these things are interwoven with it and they become part of its existence. The self is not an isolated phenomenon, possessed by a singular vulnerability; instead, it is something subsumed inside the artwork that becomes part of the outcome of the research. In this sense the exposed self is integrated and able to be appreciated.

Having now considered the research design employed in explicating the Stella project, it is useful to turn to a critical commentary of the work itself.

CHAPTER 4 | **CRITICAL COMMENTARY**

This chapter relates to the three documents that constitute the thesis' research practice; the screenplay for the 40-minute animation Stella, the illustrated post-visualisation document for the narrative and an indicative trailer . In considering these artefacts I will discuss creative, theoretical and technical decisions that were integral to their development. These discussions span narrative, temporal, psychological, aesthetic and technological considerations. They include:

• Persian principles influencing the narrative structure of the work
• Allegory
• Symbols and meaning
• Colour palettes
• Lighting
• Composition
• Sound.

PERSIAN PRINCIPLES INFLUENCING NARRATIVE STRUCTURE

There are four distinctive features of Persian storytelling that have shaped the screenplay for the narrative. They are cyclicity, returning, the 'Heart's Eye' and the journey as a metaphor for self-enlightenment in pursuit of illuminative wisdom.

Cyclicity

Stella is both a linear and cyclic narrative. The story progresses in a chronological manner, but it contains integrated circular structures where characters return to where they started in a more illuminated state (Figure 4:1 - p. 77).

The narrative devices of 'cyclicality' and 'return' are distinctive features in many traditional Persian literary works. Cyclicality, as a structure, was evident in poetry, mystical writing and philosophy even before the invasion of Arabs and the adoption of Islamic ideas (Corbin, 1964). For example, in Attar's *Conference of the Birds* although the narrative appears chronological, in the end the birds find themselves where they began their journey, but in a more illuminated state. In Stella's story, both she and her mother return to where they began. Here they are illuminated by the light of wisdom that they received during their journeys.

The return

Inherent in the concept of cyclicity is the principle of returning. For Stella, the return is catalysed by the birth of her blind baby. However, the 'damage' she encounters in her child suggests something deeper than physical disability. The young woman gradually realises that her melancholy and the injury to her baby are innately linked to having become lost and alienated. Stranded in a painted world that promised much but delivered only an illusion, she decides to return home. The decision to return home has deep resonance in traditional Persian thinking. Home is a profound state that transcends physical location. This idea is discussed by the Iranian literary scholar and poet Shafiei Kadkani who, in 2011, observed that although the love of home or a motherland is very strong among traditional Persian poets and storytellers, for Persian mystics home is not a geographical or tribal concept, but rather something attributable to a celestial-terrestrial dichotomy. For example, Suhrawardi believes that it is asceticism and virtuousness that assist a person to return to their celestial motherland. By extension, Rumi claimed that we have been natives of the sky and the land, so our longing to return transcends the visible (Shafiei Kadkani, 2011). Rumi states:

هر نفس آواز عشق می‌رسد از چپ و راست
ما به فلک می‌رویم عزم تماشا که راست
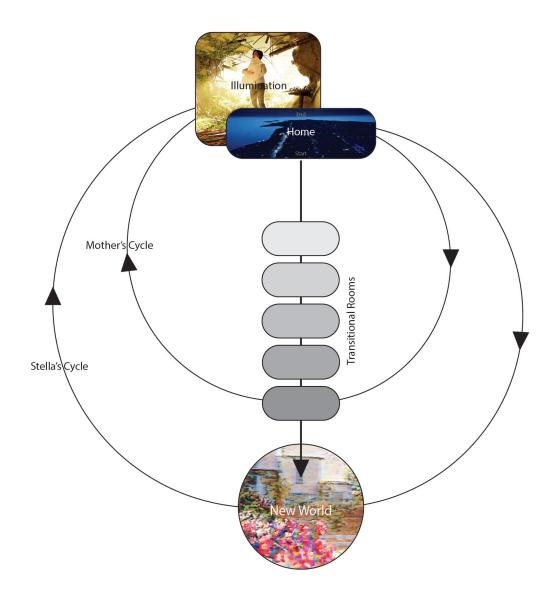
ما به فلک بوده‌ایم یار ملک بوده‌ایم
باز همان جا رویم جمله که آن شهر ماست

خود ز فلک برتریم وز ملک افزونتریم
زین دو چرا نگذریم منزل ما کبریاست

Diagram showing the film's characters' narrative cycles that return them transformed to their place of origin.

Illumination

End

Home

Start

Mother's Cycle

Transitional Rooms

Stella's Cycle

New World

Note. In the first part of the narrative, Stella and her mother move forward together. Then, part way through the story, the mother cycles back to her point of departure. Stella progresses further, before a realisation causes her to similarly cycle back. Although both Stella and her mother return to where they began their journey, their experience of the narrative's world is different.

Every moment the voice of love is
coming from left and right
We are bound for heaven: who has a
mind to sight-seeing?
We have been in heaven, we have been
friends of the angels;
Thither, sire, let us return, for that is our
country.
We are even higher than heaven and
more than angels;
Why pass we not beyond these twain?
Our goal is majesty supreme!
  Translated by R.A. Nicholson (1952, p. 33)

In the film's narrative, after Tim leaves Stella and
their child, she experiences a form of depression
(Figure 4:2) that resembles homesickness.

FIGURE 4:2.
*Frame grab from Scene 26 showing Stella experiencing
depression in her painted, 'perfect' world.*

As a consequence, objects that she encounters
in her extravagant, painted house suggest to her
that she must return home. This is not simply
a physical choice, her 'return' is a decision to
address a displaced identity.

The 'Heart's Eye' (چشم دل) *and the ability to see true light*

In the story, the birth of Stella's blind child is an
allegorical reference to damage resulting from
a disconnection from one's cultural homeland.
The child's blindness is a physical manifestation
of the obscuring of the 'Heart's Eye' (Figure
4:3). In Persian thinking, expressions and
verbs referring to cheshm (the eye) are often
encountered. The 'Heart's Eye' describes one's
ability to feel and understand the truth. In
Stella's story, the baby is blind because he has
no connection to his previous geography and
culture. (He is 'blind' to an original, cultural
home). In addition, he has no 'deeper seeing'
of his identity because he is born into a 'false'
painted world where the autobiographical
memory of his parents has been replaced by an
illusion emanating from their uncritical pursuit
of new continuities of identity.

FIGURE 4:3.
*Frame grab from Scene 23 showing
Stella realising that her child has been born blind.*

The 'Heart's Eye' is referred to in the writing of
10th century illuminationist mystics like Rumi
and Attar. Thus, Rumi says:

چشم دل بگشا و در جان‌ها نگر
چون بیامد چون شد و چون می‌رود

Open your heart's eye and
 see through the souls,
How they come, how they
 become and how they go[58]
(Translated by the researcher).

And Attar observes:

ز نور چشم سر چیزی نیاید
دلت را نور چشمی می‌باید

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58. Sonnet 830 from Rumi's *Divan Shams Tabrizi*, edited by Nicholson (1952). https://ganjoor.net/moulavi/shams/ghazalsh/sh830

The physical eyes cast no light
your heart needs an illuminated eye[59]
(Translated by the researcher).

When Stella eventually washes herself and her child in the ocean that separates them from her homeland, the layers of painted illusion dissolve and she sees that her child has acquired sight. Thus, the paint washes away like a veneer or false promise. Here, the dissolution of the pigment becomes the allegorical manifestation of the 'Heart's Eye' being cleared, and Stella and her child encounter truth, and thus illumination.[60]

The journey as self-enlightenment in pursuit of illuminative wisdom

At the beginning of the story, both Stella and her mother move incrementally away from their homeland, forced by the circumstance of war, but they both experience self-enlightenment and this causes them to return. The mother's enlightenment occurs in the fifth luxurious room, where she perceives the intensity of her proposed identity loss and, although her homeland may still be impacted by war,

she decides that returning is better than the level of identity replacement she is being expected to adopt. Stella's turning point is more incremental. It is signalled at the birth of her baby, catalysed by the departure of her husband, and reinforced by the allegorical opening of her Mind's Eye when she immerses herself and her child in the water on her return journey. The pursuit of illuminative wisdom is rewarded when she encounters the living nature of her homeland (although scarred by the consequences of war) and reunification with her mother.

Like Attar's birds, Stella and her mother's journeys are concurrently physical and spiritual (Rafi, 2016). Both experience spatial and psychological disconnectedness through their displacement (Van Knippenberg et al., 2002), then achieve elevated and illuminated reunification with their physical and spiritual home.

THE NATURE OF ALLEGORY IN THE STORY

Broadly the story of Stella may be framed as an allegory. Within such a narrative, symbols are employed to signify qualities and ideas.

Allegory has been heavily used in animation.[61] Whybray suggests that, as a vehicle, it can enable artists to continue creating work, even in oppressive environments. This is because allegory "says other than what it appears to say" (2020, p. 32). The dynamic of allegory is that it can appear to attribute meaning to the interpretative understanding of the viewer, rather than in the explicit intention of the animator.

The story of Stella contributes to a long history of allegorical narratives about war refugees, genocide and forced emigration. By framing the story in allegorical terms, I attempted to heighten the human experience of displacement and draw attention to the complex identity issues that transcend the specific experiences that fade from public attention long after the news media has moved on to other issues.

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59. Chapter 12 from Attar's *Asrar-nama*, edited by Seyed Sadegh Gohareen (2005). https://ganjoor.net/attar/asrarname/abkhsh11/sh12

60. This said, the opening of the Heart's Eye is not confined to this scene. It may be traced to the insight preceding this event where Stella understands her alienation and decides to return home.

61. Significantly in the golden era of Czech animation between 1950 and 1980 (Joschko, 2009). Whybray (2020) notes that during this period animators like Jiří Trnka, Karel Zeman, Břetislav Pojar and Jiří Barta all used political animated allegories as ways of drawing attention to Nazi and Soviet oppression.

It has been my experience that the consequences of displacement are deep and diverse. Unlike the physical injuries of societal conflicts, its wounds can be almost invisible. Broader ideas like identity transition and modification lend themselves to allegory because it can illustrate their nature and impact without narrowing the issues down to specific and therefore historically demarcated experiences.

SYMBOLS AND MEANING

Brown (2019) notes that symbols are literal devices used to signify an abstracted thought. Early cultural critics like Benjamin and Osborne (1977) and De Man and Warminski (1997) described symbols as immediate and present.

Within Stella's allegorical story there are distinctive symbols. Specific examples of these include Stella's mother's scarf (Figure 4:4) which symbolises the woman's tenacious cultural connection to the beliefs and traditions of her homeland. In addition, Stella's vintage cassette player represents the introduction of Western pop culture into a traditional family.

The story has many such symbols, including the false shelter of a religious building that is revealed to be a vehicle for manipulative identity replacement and the turbulent and destroying

ocean and wrecked boats that symbolise the severing of bonds of return for travellers who have preceded Stella. However, there are two more complex symbol systems that permeate the allegory. The first is the labyrinth and the second is paint.

FIGURE 4:4.
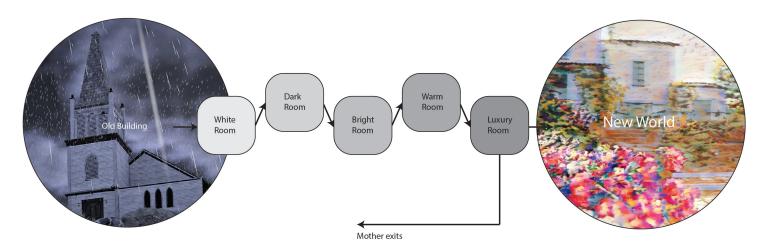*Frame grab from Scene 15 where we see the mother's affront at a man suggesting that she remove her scarf.*

Note. In Islamic culture, the body is considered God's sanctuary. For women, this sanctuary is protected by the hijab (Winter, 2004). This is why for religious women, a scarf is an essential and integrated expression of their faith. It is as a consequence of Tim's lack of respect (in suggesting that the mother remove her scarf) that the woman is affronted. When Stella fails to support her, her mother perceives this as a lack of cultural integrity and, forsaking the progression of rooms, she resolves to return to the world that she has left. In doing so, she refuses any further investment in the process of acculturation.

The labyrinth

The labyrinth was a formative concept in the project and it remained in place until I began refining and conceptually simplifying the narrative late in 2019. The symbol system was born out of my years of dislocation and relocation as a man who travelled with his family between, and into, new worlds. In these journeys I witnessed a plethora of people's lives and identities being shaped and reshaped by diverse circumstances. I conceived that these multiple pathways to acculturalisation and identity replacement might be symbolically housed within a living structure that manipulated, seduced and terrorised immigrants, using uneven blends of fear and hope. Thus, the labyrinth might be a living agency that could cause people to become lost or stranded (thus the hanged woman in the second room that Stella and her mother encounter). It could also lead to people entering rooms through different walls at different times; meeting, sharing and departing through different routes that might bring them eventually to the same exit room (if they were prepared to adopt high enough levels of identity replacement). The labyrinth was inspired by refugee camps, by boats that ferried frightened, desperate people to unfamiliar shores, by not knowing, and by promises that often turned out to be flawed or thwarted. Inside this system of rooms, people

would have few choices and only those who did what the structure wanted, would be rewarded. In the story, Stella and her mother navigate the permeable rooms of this structure in an effort to survive immediate crises and reach suggested safety. The labyrinth is intelligent and in combination with paint, it seeks to influence people's behaviour. Symbolically, it represents a manipulative limbo that Noel et al. (1995) describe as a liminal space where previous identities are forgotten, and new identities are in the process of being adopted. However, as the project developed, I realised that conceptually the labyrinth was so intricate that it was detracting from the central narrative. As a consequence I pared back its complexity so the structure became a sequential progression of rooms that one could move forward or backwards through or become isolated within.[62] These sequential rooms incrementally appear to provide more comfort, and may be understood as stages of acceptance (Iyer et al., 2010; Van Knippenberg et al., 2002), as well as forced merging with a new world culture. The rooms were eventually presented as five permeable, chronological spaces (Figure 4:5):

- The first white room
- The second dark room
- The third bright room of false promises
- The fourth warm room, offering comfort
- The fifth room that proposes a luxurious gateway to the new world culture.

62. Had I been writing a novel or a 90-minute feature film, I believe that the concept of the multi-roomed, protean labyrinth may have been effective because I would have had the narrative and temporal space to explore the complexity of concept. I am also aware that the acculturating labyrinth has potential to lend itself to Ryan's (2019) narratological 'storyworld' or Hiskes et al.'s (2022) narrative multiversionality. Both concepts suggest rich areas for further creative research.

In the rooms we see depicted the agencies of seduction and reward that often accompany the dynamic of identity modification (Figure 4:6). We follow Stella and her mother as they discover ways forward, and we watch their anticipation and distress when the rooms offer rewards or remind them of what will be lost and how they might be punished if they turn back. While each room suggests greater levels of safety and luxury, the cost of each transition is a commensurate loss of original identity.

Thus, in the first white room, Stella and her mother encounter temporary shelter but also isolation and the realisation that without progress, they will be trapped and will starve. In the second dark room, they find a torn blanket with which to temporarily warm themselves, but also an enigmatic refugee who has hanged herself because she either attempted to return or refused to progress. In the third room of false promises, they encounter suggestions of luxury and sustenance, but these are not physically consumable, so immigrants must progress further. The fourth warm room offers physical comfort. Here they meet Tim and they continue their journey with him. In this room of music and celebration and indulgence, Tim and Stella's relationship begins to build because they are prepared to embrace change. The fifth gateway room is luxurious, but it is here that Stella's mother perceives what is happening and cannot tolerate the increasingly manipulative requirements of identity reconstruction. Accordingly, she risks her life by returning to the conflict-ridden world she was forced to leave. Conversely, Stella moves forward into the 'free' world where she integrates into the new world culture.

Paint

The second complex and interfacing symbol system relates to paint. Paint is an intelligent, responsive agent, and it constitutes the method by which immigrants progress through the sequential rooms. It is a viscous liquid that flows slowly and creates a thin layer on top of surfaces, but it can also solidify after exposure to air. Paint can enable a person to move through what appears to be architecturally sealed rooms. The substance can be applied to the body but it is not easily removed and, when disturbed, it tends to smudge. Significantly, paint's intelligent, animated nature suggests that it is conscious, and capable of understanding, reason and of exercising seduction. Paint is the vehicle by which physical transition is attained by immigrants and as such, it works in tandem with the architecture of the sequential rooms.

An example of this can be seen in the second room where Stella and her mother encounter the corpse of a suicide. Here they are guided by the behaviour of the paint in combination with the room. They realise that they cannot save themselves by simply applying colour as they please. They must incrementally adopt increasingly intense colours or they will be returned to the room they just left.

FIGURE 4:6.
Unpopulated visualisations of the five rooms showing the incremental seduction of comfort and the increase in 'foreign complexity'.

White Room   Dark Room   Bright Room   Warm Room   Luxurious Room

Painterly effects inside the rooms

In addition to paint being an animated agent, it is also envisaged as a stylistic treatment in the film that demonstrates levels of identity transition.[63] Thus, in Stella and her mother's homeland at the beginning and the end of story, there is no sense of applied, painterly surface. However, when the women pass through the sequential rooms in a process of identity transition, their progress is marked by discernible shifts in texture.

The iterative changes in painterly treatment will subtly allude to Western painting styles that differ markedly from conventions of Persian art.[64] Although it was not my intention in the story to illustrate a contrasting analysis of Persian and Western painting, I have drawn on observations I made as I moved away from my Persian culture and encountered increasingly Western approaches to art, particularly those associated with painting in the last 200 years.

In the sequential rooms and the new world, these painterly treatments are used to reference growing levels of acculturation and identity transition. In the first room we encounter a space largely devoid of Western painterly references. The space is white and paint, when it appears, will eventually be an organic substance that proposes itself as a vehicle for transitioning to the suggested safety.[65] However, upon entering the second room, pigment will adopt a more discernibly Western painting convention. Here we will encounter subtle references to 19th century French Post Impressionism, specifically certain works by Van Gogh, that present what Dombrowski describes as "immediacy, pictorial instant, painterly urgency and unpolished touch" (2020, p. 91). The immediacy and reconstruction of figurative form and detail found in Van Gogh's painterly treatment will be used to heighten emotional intensity and 'foreignness' of the situation that Stella and her mother experience (Figure 4:7).[66]

FIGURE 4:7.
Scene 12. Initial concept for the second room, influenced by Van Gogh's painterly aesthetic.

Note. Comparison between the 'dark' room and Van Gogh's *The Bedroom* (October 1888).[67]

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63. The effect is obtained using deep learning algorithms.

64. Although historically Persian painting drew on Median, Assyrian and Asiatic Greek influences, it developed significantly during the reign of the Timurids (during what became known as the Golden Age of Persian painting). During this period and especially in the 13th century, paint application was luminous and colourful and applied to stylistic depictions of the human figure that were composed into figurative scenes in miniatures and borders. In the Qajar dynasty however, painting was influenced by certain European traditions, but the aesthetic remained discernibly different.

65. Although in the indicative trailer this sense of the organic appears as a largely digital construction, this is only because I was unable to access the facilities to advance it and its behaviour to the organic state described in the screenplay.

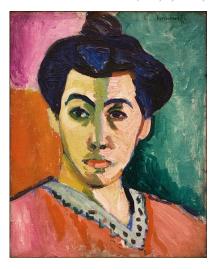66. While the indicative rendering of the scenes in the second room do not currently have Van Gogh's distinctive distortion and linear treatment, it is an approach that I am considering because it may help to emphasise the dramatic shift in 'reality' and the increasing 'foreignness' of the rooms.

67. Van Gogh's painting is used here under the Fair Use of Art, Common Creative Licence applying to work published before 1923.

In the third room the 'painterly urgency' of the preceding space increases but may allude to the distinctive, bright, dissonant and expressive colours, simplification and abstraction that Elderfield et al. (1976) attribute to early 20th century Fauvism. The painterly quality envisaged for this room will feature higher-keyed, vibrant, non-naturalistic colours that may reference approaches demonstrated by Henri Matisse and André Derain in paintings they produced in the summer of 1905, when they were working together in Collioure (Figure 4:8). Here a sense of paint being wilder, bolder and more unnatural may correspond with the women's escalating anxiety and increasing sense of cultural 'foreignness'. The paint treatment would then contrast even more markedly with the naturalistic palette of their home.

As the two women proceed through transitions, paint will increasingly change its nature, becoming especially marked after Stella meets Tim and separates from her mother in the fifth room. Upon entering the new world, paint will draw references from what Stoupe (2016, p. 98), describes as "Abstract Wonderment" art.

Exemplified in the paintings of artists like Amanda Perdomo, Abstract Wonderment moves even further away from naturalism and figurative structure and is concerned more with the depiction of "utopian places" (Saatchi, 2016, para. 1).[68] Artists like Perdomo often seek to "express the emotion of a single moment", using colourful, mixed media to "depict detachment, in the way that humans have evolved to interact with nature and in the emotions that derive from synesthetic visual experiences intensified by migrations" (ibid.)

Although Abstract Wonderment will impact on my use of painterly texture and will influence the reduction of detail in the treatment of the new world, I intend to preserve basic figurative representation so viewers can still connect to the emotional changes that will impact on Stella's sense of self as a consequence of displacement of her self-continuity. Accordingly, the environment will move away from the comparatively analogue painterly surfaces of the rooms, into discernibly artificial textures that reference the digital filters we place over photographic images of our experienced worlds (Figure 4:9 - p. 85). This digital treatment will

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68. Exponents of this contemporary style include painters like Anna Brigitta Kovacs, Sally Trace and Joan Fullerton.
Unlike Van Gogh's Post-impressionism and Matisse's Fauve painting, Abstract Wonderment, as a movement, does not have the august placement in the pantheon of Western fine art history. The paintings are often sold online and are largely available for consideration as domestic decoration.

A comparison of Amanda Perdomo's Wonderment (2016),[70] and a rendering of the garden estate that Stella and Tim encounter when entering the new world culture.

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70. Saatchi Art. (2016). Amanda Perdomo. Accessed 11 September 2021.

be used to express a blend of fear and novelty, where meaning is secondary to sensation. In my narrative, this is the questionable triumph of acculturation, displacement and identity transition. Here, the naturalistic world will be replaced and the traditionally 'familiar' will be veneered, such that what was once commonplace and concrete will now be simplified, digitised and distorted. Visually, the painterly 'voice' of the new world culture will speak to the world of an anxious consumer society, where digitally filtered images are associated with cultural reformatting, identity is aligned with what is displayed, and origin has been lost somewhere in the pursuit of the novel, detached, and synthetic visual experience.[69] Accordingly, my 'painterly' approach will be to elevate the connection between digital refashioning and distorted conceptions of the self and the environment. I am reminded in this regard of Gramlich's (2021) observation that currently, in social media depictions of identity, adolescents daily consume a plethora of digitally-manipulated images. His research indicates that in 2021 more than 69% of U.S. adolescents were using Snapchat, the multi-

media instant photo messaging app associated with image filters. Currently Instagram, Twitter and Facebook also offer diverse forms of digital photo enhancement. Such platforms are resourced by increasing numbers of photo editing apps, like Facetune and Picsart, that extend one's ability to digitally reshape both one's public identity and the environment that surrounds it.[71] The new world that Stella, Tim and their baby inhabit will be an extension of this; a painted environment where the self and the context of the self play out in a digitally reshaped rendition of identity and context. Thus, the Stella narrative will move from 'untextured' depictions of the homeland to increasingly 'painted' surfaces that 'speak'

to increasing acculturalisation as characters progress through transitional rooms. In her new world, the sense of digitally surfaced identity will reach a heightened sense of distortion that will only be resolved when Stella returns home, seeking a sense of remembered cultural authenticity.

COLOUR PALETTES

In the eventual rendition of the animation Stella, colour will be used in distinctive ways. In the indicative trailer we see some of my thinking suggested, but much of this is still unrefined because of limited access to grading facilities. I perceive colour as potentially emotive and culturally indicative.[72]

FIGURE 4:10.
Reduced colour palette used in colouring the war.

The colour of war

In the opening scene, where we encounter a war, I have employed a reduced colour palette (Figure 4:10). This is used to emphasise the chill of such conflict through the stripping away of chromatic diversity.

The Iran-Iraq war ended when I was nine. However, I still remember its shadow over the capital city, Tehran. Military presentation has always looked desaturated and monochromatic to me. The pale, earthly colours of the uniforms, weaponry and vehicles were dull and soulless. My childhood experience showed me how whole nations can be reduced to demarcated ethnicities and the individuals who, when called to fight, become 'troops' without individual identity; their uniforms reducing the complexity of humanity to an abstract representation of a political or religious ideology. The world of war has always felt socially monochromatic to me. In such a colour scheme, complexity, nuance and the diverse spectrum of human difference is reduced.

Order in chaos,
the logic of colourfulness

Colour within the transitional rooms will be treated very differently to what is encountered at the opening of the narrative. Although the paint that appears on the walls, and eventually ends up on the bodies of Stella and her mother, may appear as a random mixture of diverse colours, the system will increasingly engage with two entangled triadic harmonies (Figure 4:11). A triadic scheme comprises three colours that are evenly spaced on a colour wheel. The two most common are the primary pigments of yellow, blue and red and the secondary hues; green, orange and violet.

FIGURE 4:11.
Screengrab of Scene 14 showing two entangled triadic harmonies.

Note. The terminal, luxurious space in the trajectory of rooms places emphasis on the secondary triad: green, orange and violet. In this room, green and orange hold dominant proportions with violet injected into shadows and details.

A colour scheme constructed from a triadic palette can produce a visually rich, intense effect that is almost overwhelming in its vibrancy. In the rooms I will increasingly emphasise triadic schemes to reinforce an undercurrent of unease where intensity is employed to produce a sense of unsettling vibrancy.

The colour of the return

In contrast to the triadic schemes used in the rooms and the new world they precede, I will employ a more subtle, analogous scheme for grading the scenes related to Stella's return (Figure 4:12 - p. 88). This approach will be structured using tints and tones of closely related hues (to suggest a sense of unity). By using an analogous scheme, I will design for this part of the narrative a calm palette that will depict tranquillity and ambiguity.[73] After the intensity of the triadic scheme and the vibrantly coloured new world, this progression into something calmer and more resolved will provide a transitional bridge to the homeland, that will be treated using a more natural palette.

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73. The tranquillity of an analogous scheme reflects both Stella's more settled internal landscape and that of her child.

LIGHT, SHADOW AND ILLUMINATIVE MEANING MAKING

Andre Bazin suggests that a cinematic image is shaped by light, becoming the "luminous impression" of a "death mask" (1971, p. 97), and Sternberg has argued that "Shadow is mystery and light is clarity. Shadow conceals, light reveals. To know what to reveal and what to conceal, and in what degree, and how to do this, is all there is to art" (1973, p. 3).

Because illuminationist philosophy permeates this work, both narratively and aesthetically, light has become a fundamental design element in the work. It reveals, obscures and changes its nature throughout the story. Thus, light may be seen as both physical and allegorical; luminance and shadow are not only used to emphasise form, they have life and carry meaning.

Contrasting treatment of light in the opening and closing scenes

An example of this (evidenced in the indicative trailer) can be seen in the contrast between the shadowless and dispersed lighting of the homeland in the opening sequences and the sharp, naturalistic interplay between light and shadow in the same location when Stella returns (Figure 4:13). Here, I have made an allegorical

Note. Scenes 2, 6 and 7 are created using diffuse, artificial, often conflicting light sources. However in Scene 36, when Stella returns, her homeland is illuminated with a naturalistic treatment of light and shadows.

reference to the principle of Persian illumination such that, when the women encounter each other after having come to terms with their identities and earlier conflicted states, the illuminated world is more faithfully rendered; shadow and light co-create space and, within this, the women will become integrated and harmonious elements. In the depicted world of the return, we will see hope in the sharp, clear light of spring, where a damaged world is illustrated in a state of rejuvenation. In

constructing this environment in the trailer, I have employed the aesthetics of a vintage, uncoated lens to suggest a feeling that light wraps around and halos objects. Here, light not only makes objects visible, it also elevates their existential essence, suggesting that they might personify a state of illumination.

Light and the transition rooms

Light will function differently in the transitional rooms. The introductory room will be white and

intensely bright. The ceiling will have a diffuse luminosity and light through it will create soft shadows on the women. In this relatively blank space, almost clinical shadows will be cast and the floor will be similarly luminous. Light here will not be serene. There will be no gentleness or elegance. Light will be impersonal and artificial, neither illuminative nor enlightening (Figure 4:14). The other rooms will be lit with the diffuse discordance of the conflicted, unilluminated homeland. This discordance will be evidenced in characters casting illogical or insubstantial shadows (or sometimes no shadow at all).[74]

The lighting of the white room.

Light after the transition rooms

In the new world, shadows will remain barely discernible but they will begin to appear at the point that Stella's husband decides to leave her and her baby.
It is at this point that she confronts her doubts about the authenticity of her new identity. Although shadows at this point will become more discernible, they will be depicted as unstable and inconsistent because they are disturbed by the painterly textures and the discord that permeates her world (Figure 4:15).

FIGURE 4:15.
Unstable, discordant light and shadow in Scene 26.

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74. I have only begun to suggest this technique in the trailer. It will require greater definition once the project acquires the funding that will facilitate advanced resourcing.

As Stella journeys back through the painted landscape to the ruins of the old church, light will continue to behave in this ambivalent manner. However, after she immerses herself and her baby in the water, light and definition will change dramatically, with reflections becoming defined and light sources and their relationships establishing greater internal logic (Figure 4:16). As Stella journeys to her homeland in a more enlightened state, the world will become increasingly coherent and illuminated (Figure 4:17).[75]

FIGURE 4:16.
Light transitioning into a more illuminated state at the clearing of the 'Heart's Eye'.

FIGURE 4:17.
The subsequent coherence of light as Stella approaches and enters her homeland.

75. By illuminated I am not referring to brightness; I am referring to internal harmony between elements that co-exist in the same environment.

Composition

In cinema, composition describes the arrangement of visual elements within a frame. In the proposed animation I will employ diverse compositional devices. While it would be exegetically ungainly to analyse each shot individually, the issue of power within the frame is worthy of note. For example, in the post-visualisation document there are indications of how the power dynamic between Stella and her mother will shift. Initially the mother will be shown compositionally as the dominant figure in their relationship, but across the sequential rooms Stella will accumulate greater agency and defiance that narratively results in an ideological split, that causes her to progress to the new world and her mother to return home. This shift in power will be expressed compositionally in the work. For example, if we consider shots from Stella's room, in Scene 4 (at the beginning of the film where she is in conflict with her mother) the older woman generally occupies a larger space or dominant movement within the frame. However, by the luxurious fifth room, where Stella defies her mother and aligns herself with Tim, it is the girl who now occupies greater space in the frame (Figure 4:18).

Note. The images in the top panel (from Scenes 4, 6, 9 and 10) show the mother either compositionally dominant in the frame's space or enacting the greater level of movement within the composition. The frame grabs in the bottom panel (from Scenes 11, 12, 14 and 15) occur in the transitional rooms. Here we see the relationship shifting (in terms of power dynamics and composition) so Stella gains equal and eventually greater dominance in the frame.

Environments

Although the composition of actors within the frame will enable me to allude to shifts in power dynamics within the film, the post-visualisation document indicates how environments might 'feel' and communicate as contexts and active agents.[76] These shots tend to be more fully rendered than compositions populated by characters, because I was able to develop them to a more realised level using the limited facilities available to me. The environments are generally detailed and complex, and they are constructed to reference either my formative Persian environment or the foreignness of new worlds I have encountered (Figure 4:19 - p. 93).

Despite the detail and marks of war, these home environments are comparatively coherent in contrast to the worlds traversed by Stella and her mother on their journey. These other spaces are constructed as contradictions. They

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76. By this I mean spaces like the transition rooms and the new world are active in the process of identity loss, transition, displacement and restoration.

FIGURE 4:19.
Frame grabs of indicative homeland and journey environments 'sketched' in the post-visualisation document.

are dislocations; seemingly complete but also somehow disturbed by strange plays of light, texture and perspective, or almost 'assembled' disunities of land, sea and architecture.

SOUND DESIGN

Winters (2010) notes that when we watch a film, we normally experience two kinds of sound; diegetic and non-diegetic. Diegetic sounds are those for which a viewer can identify sources from within the cinematic frame. These may include dialogue and environmental sounds. Non-diegetic sounds are those that are external to the cinematic frame and are superficially applied, like a score or voice-over narration. In Stella, sound design will include both diegetic and non-diegetic material. Because it will become an animated film, the entire sound scape will need to be created from scratch (Waterman, 2000); because there is no sound recorded on the set (synced) or from wider physical environments (non-synced). Instead, sound will be created as foley or integrated from prerecorded material. However, in the film at times I may blur the lines between diegetic and non-diegetic sound.[77]

In the proposed work, sound palettes will map concordantly onto shifts in the treatment of colour and light in the narrative. The indicative

77. This said, Stella has no non-diegetic narration (voice-overs).

trailer has some sound assembled as a cursory suggestion, because recording and mixing facilities available were extremely limited, but the film will feature a much more sophisticated and nuanced treatment. Initially, we will encounter a sonic homeland that references the Persian world of my childhood. Thus, the story will open with a dark, foreboding, atmospheric sound mix that will be permeated by an initial score that arrives through a cassette player, then bleeds out into the world of the house. The war will brood … then crash into the women's lives as a discordant cacophony, underscored by subtle music that will, as they leave, suggest melodic loss.

Each of the transition rooms will have a subtly different acoustic atmosphere. In the first we will discern a perplexing hum underscored by faint permeations of war. The hum will establish the 'livingness' of the space and the intermittent sounds of war (that will increase each time the women move away from suggestions that they paint themselves). This device will indicate how the room is both conscious and manipulative. The second room will have a darker sound palette. Given that the women have now embarked on the proposed process of acculturation, the hum and sounds of war will disappear and we will encounter a stillness that

is punctuated by the creak of the wooden floor and the aged hinges of the wardrobe. The sense in this room will be one of threatening inertia. In the third room sound will be more muted but ambiguous as it maintains a sense of unease. In the fourth room the sonic environment will become increasingly familiar and homely. The sound of the tungsten light and the wooden table and chairs will feel familiar and logical. The clank of cutlery and the movement of food and drink will suggest increased levels of normalcy. In the final luxurious room we will discern western classical music for the first time and other sounds will be safe and welcoming. Thus, we will encounter the warm sound of the fire burning in the grate, the clink of glass and ceramic dishes and the soft sound of a library carpeted with rugs and the comforts of an idealised home.

When Stella transitions into the new world and begins her life with Tim, the sound palette will become more synthetic and artificially 'clean', but it will lack depth and detail. However when the young woman decides to return to her homeland, the sound palette will shift once again. From this point, until the end of the film, we will encounter incrementally natural and detailed sound. Specifically, after the opening of her Mind's Eye, we will hear the clear movement of water around

an oar, and the sound of cicadas, wind and plants moving gently in the morning air. Thus, as she enters the restoring homeland, the palette will become calm, serene and suggestive of greater sense of space and natural dimension.

Voice

Most bodily and facial movements in Stella were recorded using motion capture technology. The special suits and the technical limitations of motion capture filming generally preclude on-set recording of dialogue (Figure 4:20). However, when directing this film, 'on-set', low quality, reference dialogue was recorded so I had material onto which I could map re-recorded dialogue. Recreating this later as Automated Dialogue Replacement (ADR) became impossible because of the Covid-19 lockdowns and the resulting unavailability of actors and professional recording studios. What is placed in the trailer is indicative dialogue using the talents of a colleague, his wife and daughter.

Because Stella's story deals with trauma experienced by a displaced family, dialogue will be constrained. The story will predominantly be depicted through actions and as such, it will

Actors wearing motion capture suits that compromise the quality of on-set dialogue recording.

not be considered vococentric.[78] Thus, with the exception of dialogue-driven Scene 14, where Stella and her mother will argue the merits of proceeding further through the sequential rooms, the film's meaning will be shaped predominantly by action and reaction.

Sound Effects

I will employ sound effects throughout the film in order to expand the visual experience, and support or contextualise dialogue.[79] These effects will largely be used to enhance or contextualise a character's emotional state. For example, in Scene 11 (in the white room),

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78. Chion & Gorbman (2019) coined the term "vococentic" to describe a "process through which the voice spontaneously attracts and centers our attention in a mixture of sounds, in the same way that the human face directs our eyes in a movie shot." (2019, pp. 5–6)

79. Sound effects can be specific (foley, like water splashing) or atmospheric (a background environment created to suggest the season of spring).

Stella and her mother's voices will be desperate and fearful and their emotional state will be contextualised by the sound of an encroaching war that permeates the room's walls.

In the film we will also encounter examples where sound accompanies a transformation. For example, in Scene 30, prior to Stella submerging herself and her baby in the ocean, atmospheric sound will feel slightly artificial. However after she resurfaces, washed clean of her identity loss, the sonic environment will change to an atmospheric variation that is more serene, dimensional and natural. Thus, sound will tend to speak in a conversant manner with both texture and light. Where the world of identity displacement increases, sound will subtly distort, but as the characters approach a state of illumination, sound will become clearer, demarcated and more natural.

SUMMARY

This chapter has offered a critical commentary on specific features and decisions made in the design of the allegory Stella. Narrative features are evident in the screenplay, but proposed visual and sonic treatments are only provided as indications in the post-visualisation document or indicative

trailer. Where I have been able to offer clearer indications of colour, this has been provided in images embedded in the exegetical text.[80]

Being a subjective reflection, the chapter has not presented my thinking as an analysis of findings. Instead I have sought to unpack features of the screenplay and proposed postproduction in relation to conceptual, theoretical and technical considerations that were integral to its design.

The chapter opened with a consideration of Persian influences on the film's narrative structure. Thus, its screenplay has been discussed in terms of traditional narratological features like cyclicity, returning, the 'Heart's Eye' and the journey. I then discussed allegory (the emigrant's journey to enlightenment) and symbols. These symbols included cultural references like the mother's scarf, allusions to false shelter, the concept of the transitional manipulative labyrinth (that progressed into a sequence of transformative rooms) and the agency and nature of paint. With specific reference to the indicative trailer and post-visualisation document, I have discussed proposed features of the project, including the

manner in which transitioning colour palettes and light might relate to shifts in the narrative.

Neither of these documents reflects the full narrative that is evidenced in the screenplay. For the project, 'grabs' from chronologically arranged scenes have been arranged, simply to suggest story sense and potential tone.

I have concluded the chapter with a brief discussion of ways in which composition and sound will be employed to underscore atmosphere, power and ideological transitions in the story.

I have concluded with a brief discussion of ways in which composition and sound will be employed to underscore atmosphere, power and ideological transitions in the story.

The journey through my thinking has now reached a point where my practice and knowledge contextualising and shaping the work, have been discussed and interrelated. From this position we might now consider the study in an exegetical conclusion.

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80. This is because Photoshop has enabled me to adjust saturation levels and colour spectrums that will be more conversant with what can be achieved using animation technologies currently rendered inaccessible by the pandemic.

CONCLUSION

This thesis study was a long, illuminative journey for me. I contemplated the unknown, delicately and deeply. The state of unknowing became a disrupted trajectory, a shifting research question and a discovery of the abyss of the self. As a creative heuristic inquiry the project excited my essence, surfaced my understandings and ignited my curiosity. The research was experienced as a profound expansion. Rumi describes such an encompassing experience this way:

آن وقت که بحر کل شود ذات مرا
روشن گردد جمال ذرات مرا

زان می‌سوزم چو شمع تا در ره عشق
یک وقت شود جمله اوقات مرا

When the all-pervading sea of existence
becomes my essence
The sublime beauty of all atoms shines
before my eyes

I blaze like a candle, on the path of love
That one moment, may enfold all the
moments of my life.[81]

This study occurred at a time of unprecedented personal and international disruption. At the outset of the journey, I moved to New Zealand with my family, our farthest and most decisive displacement. I wanted to begin my PhD studies and make a better life for my family. My shift to a land near the bottom of the world occurred at a time of profound climate change that has also resulted in significant ideological, economic, environmental and political upheaval. Accompanying these changes, while creating Stella, I watched the resurfacing of fundamentalism in Afghanistan, Iran and Syria, which resulted in new chapters in an ongoing, international narrative of forced emigration and identity displacement. In the last three years of the study the world has also been impacted by Covid-19 with its resulting anxieties, conflicts between information and disinformation, and social isolation. While this pandemic saw the physical closing of geographical and regional borders, paradoxically it occurred at a time of media transition where the film industry migrated from large-venue screenings to home television streaming services.

When I stand back and consider these changes, I appreciate that this research, although propositional, is positioned in a nexus of cultural transitions, technological advancements and social change.

THE NATURE OF THE RESEARCH QUESTION

I am fluent in Persian (my mother tongue), Turkish and English. I also read Arabic. Language is a way that I frame and communicate knowing the world, but language also extends beyond the written and spoken word. While I framed and reframed the research question driving this thesis many times, I also did this visually. I reached into diverse languages and, through these, into ways of knowing. I was trying to find connections. The final question documented in this exegesis was found in practice and it was shaped by a journey of the self and the circumstances of a pandemic-impacted world. Only in retrospect can I articulate the eventual question. The thesis has asked:

How might an allegorical narrative for an animated film be employed as a device for unpacking and reflecting upon identity change in individuals who transition through states of displacement and integration?

81. The Rubaiyat of Jalal Al-Din Rumi, Verse number 4, translated by the researcher, retrieved from: https://ganjoor.net/moulavi/shams/robaeesh/sh5

In addressing this question I have explored personal, creative, conceptual, philosophical, and technological knowledge. These have constituted realms of the "currently unknown" (Ings, 2015, p. 740). The final written and crafted outcomes are accordingly the result of diverse, iterative practices that have been evolutionary in nature. In undertaking the study, I have tried to cast light into some of the shadows that surround journeys from emigration to immigration. While such journeys are often narrated with accounts of escaped horrors, dangerous crossings and redemption environments, less discussed are the complex transitions emigrants are forced to navigate. While writers like Iyer et al. (2010) and Ladge et al.(2012) study this as a psychological or sociological phenomenon, this study has asked what an artistic voice might contribute. Thus the research question has taken form and been shaped by the project and the environments surrounding it.

CONTRIBUTIONS

As a Persian thinker who has been intellectually and geographically displaced multiple times, I suggest that this artistic inquiry[82] may offer a distinctive, subjectively-shaped insight into the phenomenon of self-continuity displacement and identity-transition. In my work, an attempt has been made to connect the reader/viewer, emotionally and cognitively, to a phenomenon about which they may have little first-hand experience. Thus, even in its propositional state, the work raises issues related to refugees and their navigation of liminal states. The study also offers a rethinking of methodology applied to artistic practice because it constructs a new framework from a consideration of the tenets of Persian illuminationism. This is of significance because a number of writers on minority-generated research (Connell, 2007; Jones, 2017; Engels-Schwarzpaul & Peters, 2013; McNeill & Pouwhare et al., 2016; Smith, 2012) emphasise that research emanating from culturally distinctive ways of knowing and behaving often requires epistemological frameworks that reach beyond those that have shaped the Western academy. The study also contributes to ways in which emerging developments in animation and visual effects technology may be applied to artistic expression in narrative form. I have shown that AI driven style transfer algorithms combined with guided video stylisation algorithms could be employed as a narrative tool to construct visual metaphors. Moreover, I have shown that realtime platforms like Unreal Engine, may be utilised as a storytelling device that leads to distinctive forms of production. Finally, the thesis contributes to a form of post-disciplinary bridging where the poetics of one culture are brought into creative discourse with the logistics of another (Ings, 2019), a study like this may be seen as employing knowledge from within and outside of the academy. This is because the thesis accepts the principles of plural knowability and intellectual openness (Hollinshead, 2016; Pernecky, 2019). Thus, the study drew on the tenets of ancient Persian philosophy, psychology, cognitive neuroscience and emerging technological research, to artistically consider the contemporary socio-cultural phenomena of refugee experience. Logistically this involved immersion in diverse practices that spanned technological inquiry and research into scholarly discourses surrounding identity transition. In facilitating this, in addition to this study, I became an artistic collaborator in the Memory Lab research group[83], led by Professor Donna Rose Addis.[84]

82. I refer here to both the exegetical writing and the allegory Stella.

83. I am noted in the list of collaborators here: https://www.memorylab.org/page/people/

84. This Lab consists of psychology and neuroscience researchers who study memory, identity, and creativity.

FURTHER RESEARCH

I think of this study as an evolving, organic being that will expand and regenerate. Currently it is a completed screenplay and indicative visualisations. The post-visualisation document and indicative trailer are only intention maps. In the post-visualisation, scenes are longer than they would be in a final edit,[85] and there is limited refinement of features, movement and integration that will, with advanced postproduction lift the final animation out of Mori's (1970) 'uncanny valley'. Thus, the next phase of the study will focus on visually refining relationships between characters and environments, then designing sound and applying the colour and lighting transitions discussed in this exegesis. In its current form, the practical work constitutes an advanced director's vision ready for submission to potential funding agencies.

Although eventually I see the animation targeted at international festivals like Tribecca[86] and the Annecy International Animation Film Festival[87], it is also my intention to submit research from the project to animation conferences like SIGGRAPH 2023[88]. Once the animation is complete, I am also considering transferring all of the film's assets and contents into the Unreal Engine realtime platform. Although the primary purpose of this technical transition has been to facilitate faster rendering and digital asset management, the platform will also enable me to regenerate the narrative as a virtual reality (VR) production. Reconstructing Stella as a VR experience may provide a deeper, immersive engagement for the viewer. However, I realise that the work will require a redesigned narrative structure, purpose-built for a VR environment.

Given that Stella is deeply informed by psychology and cognitive neuroscience, there will also be opportunities to share the work within these disciplines. A significant conference in this regard is the Film and Analytical Psychology Festival in Belgrade.[89] This is scheduled for November and I will submit a paper accompanied by the film's indicative trailer and screenplay. In the process of developing this research, I was able to publish and present the work-in-progress in a number of international fora. However, once lodged with the university, I will also be submitting reformatted developments of sections from this exegesis to the International Journal of Art and Design Education (iJADE),[90] Design Studies,[91] and New Ideas in Psychology.

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85. A fine edit would involve 'heading and tailing' these shots as tension and pace are crafted for the final version of the work.

86. This festival is in New York. It profiles a diverse selection of film, talks, music, art and games. It also features an important short film subcategory, that focuses on socio-cultural issues. Tribecca has also recently added an immersive subcategory for VR projects. Considering the planned progression of Stella, as a restructured VR movie, this festival may provide a rich opportunity for exposure. Submissions for the festival open in October 2022. www.tribecafilm.com

87. This is one of the most respected international festivals that focuses on animated films. I have had work selected for this festival twice in the past, so I understand how an animated allegory like Stella may be strategically positioned when submissions open in November 2022. www.anney.org

88. https://sa2021.siggraph.org/en/about-us/siggraph-asia-2023

89. http://www.fapconference.com/

90. This journal publishes independently refereed articles about art and design education. It is my intention to use Stella as a case study that considers ways in which Persian thought might shape design practices in an artistic inquiry https://onlinelibrary.wiley.com/journal/14768070

91. This is an interdisciplinary journal that examines the cognition, methodology and philosophy of design in diverse contexts. The research design chapter of this exegesis may offer useful content for a discussion of the relationship between heuristic inquiry and Persian illuminationism. This is a journal that embraces novel ideas, methods, and discussions in psychological theory. The use of artistic inquiry as a means of broadening considerations of self-continuity displacement and identity-transition in this thesis, has been informed by cognitive psychology. By publishing work in this journal, I may contribute from the field of art and design, a discussion that may contribute to a growing body of research into arts-based methods in the Social Sciences (Barone & Eisner, 2011; Leavy, 2020; Savin-Baden & Wimpenny, 2014).

FINAL REFLECTIONS

Towards the end of this study,
my son said to me,

"Dad, your research is
very much like you."

Although Stella's story concerns a teenage girl
who experiences stages of identity transition,
a challenging relationship with her past, and
a journey towards enlightenment, I think
my son is right. This heuristic inquiry has
been an illuminative quest, and perhaps the
narrative presented with this exegesis is a
kind of personal allegory. During the inquiry,
previously unknown parts of my identity and
experiences have surfaced and I have been able
to observe, reconsider and integrate them into
continuous, persisting sense of self. I have
been surprised by unexpected discoveries and
parallel bodies of knowledge. The practice-led
inquiry has not just been a project, it has been
a process of sense-making and an illuminative
journey of self-discovery.

Such a journey does not stop.
I am not home.
I am not the reed returned,
I am a scholar and an artist, who has
turned and faced the right direction

… and I can feel the light on a distant
horizon.

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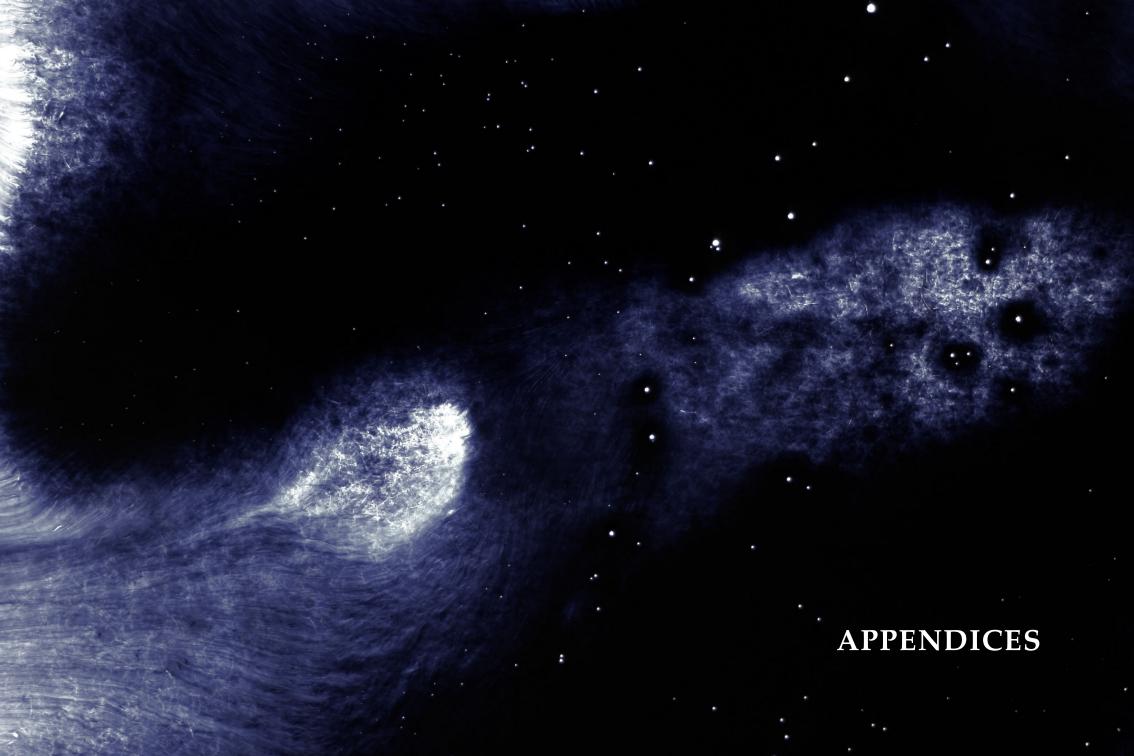
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APPENDICES

Early Treatment

(Version 10.1. November 10th 2016)

Home-Night (REAL)
Stella (an 18-year-old girl) is in her room, listening to pop music. The song is about an independent girl with a blue sparkling dress and red nail polish. She has somehow put on the same dress and is painting her nails and dancing. Her (45-year-old) mother is in the kitchen cooking. She shouts at Stella to stop playing the 'improper' music but the girl doesn't listen. Her mother leaves the cooking and Stella, hearing her approach tries to lock the door to her room, but it is too late. There is a confrontation and

the mother scolds the girl, condemning her sinful dress, dance, makeup and nail polish. Angrily, she turns off the cassette player and takes out the cassette. Although Stella tries to stop her, the woman throws the cassette player against the wall.

Suddenly the power cuts and all of the lights go out. Through the window we can see explosions and hear traces of bombing and gunfire. There are people's voices outside shouting and urging evacuation. Stella anxiously hurries her mother into leaving the house, but the woman frantically searches for her scarf. The explosion and sounds of panic get louder as her mother dons a long, conservative grey dress and locates a scarf for her daughter. She tells Stella to cover up before leaving.

City-Night (REAL)
People are running in dark streets. We see and hear explosions in the distance that are getting closer. Stella and her mother are jostled in an evacuating crowd.

Departure Beach-Night (REAL)
A scatter of boats has left the beach and appear as retreating dots in the horizon. Stella and her mother are late and only one small motorboat is left. People with life vests are cramming into it. Stella and mother are among the last. They jostle to secure places. Suddenly the mother's scarf pulls

back and drops into the water. She jumps out to grab it and the motorboat starts to depart. Stella calls to her but the craft is leaving so she jumps out to grab her mother. In the scramble, the small boat departs without them.

The sounds of explosions and gunfire get closer. They look around. There are two small fishing boats left on the shore, but they are dilapidated. Frantically Stella pushes the better of the two out into the water and helps her mother on board. The women paddle frantically in an effort to escape.

Sea-Night (REAL)
In three brief cuts we see the two women alone on the ocean. The war zone that was their home fades into the distance. Well out to sea they are now exhausted and the wind is cutting up. The sea has become very rough. The small boat is clearly not seaworthy and it overturns in the churning water. Stella clearly can't swim and is drowning. Her mother in a panic ties the girl to her with her scarf and clinging to the residue of the overturned boat, sets out for a distant shore where we see the faint glow of a light.

Destination Beach-Night (REAL)
Stella and her mother reach the beach. They are exhausted. The weather is stormy. High up on the sand dunes the mother sees a radiant white church.

Church night (REAL)

Seeking shelter, the women approach the building but find it locked. The mother knocks frantically but there is no response. Eventually Stella breaks a window and they scramble inside.

Church-Night (REAL)

Everything is dilapidated and covered with dust. The roof is broken and leaks. The mother prepares a corner to sleep in and Stella also lies down. She complains of thirst and her mother finds a pitcher and basin. Wiping them with her dress she places them under a leak in the ceiling and sits to watch as they slowly fill with water. Eventually she falls asleep waiting. In the corner we see Stella is also sleeping.

White Room-Bright (REAL)

Stella opens her eyes and sees that everywhere has sealed up and become white. Her mother is still sleeping in the sitting position with her hand on the pitcher and basin. She wakes her up and the woman is also puzzled. They look around, and touch the walls, trying each corner to find a way out.

But they soon realise that they are trapped inside a white cubic room with a pitcher and basin. After persistent attempts to escape, they become exhausted and sit in a corner. They notice that faint, colourful stains sometimes appear on the walls, floor and ceiling and then disappear. The room seems to be living.

In spite of her mother's hesitation, Stella curiously approaches the wall and touches a coloured moving stain. When she looks at her hand she sees that some of the colour has transferred onto her skin. She discovers that when she puts her hand on the wall and pushes, her hand passes through the surface. Her mother wants her to wash her hand and wait to see what happens and if someone might save them. A long time passes and they get very hungry. Stella cannot wait anymore, so she paints her hand up to the forearm and cautiously pushes it into the wall. On the other side, placed hard against the wall, we see a table with some fruit on it. Stella's hand is searching around. Although she can touch the fruit she is hesitant to pick it up. As she withdraws back into the original room we see her thinking. Then against her mother's wishes she paints her face and is able to push all the painted parts of her body into the next room. The room she sees is dark and very little is discernible. What is evident though is that everything is painted. Seizing a painted apple from the table she withdraws into the original room. Hungrily she eats the apple, but when her unpainted mother tries to eat the fruit it tastes revolting and in disgust she washes it and the colour bleeds onto the floor. She is left holding a rotten inedible wrinkled fruit so she throws it to a corner. Stella argues with her mother about painting themselves so they can leave the room but the woman initially resists. Eventually however, hunger forces her to apply paint to herself. Significantly the mother's colours are much less bright than those of her daughter and she has more trouble transitioning the wall into the new room. However, eventually they both make it through, leaving the original room empty apart from the pitcher of water standing in the middle of the floor.

Dark Room-Dark (PAINTING)

The second room is entirely painted and so are Stella and her mother. When they enter it is dark and forbidding. Through the gloom they see a woman in the corner. She has hanged herself. There are desaturated colours dripping from her onto the floor that have left the top part of her body colourless (such that is resembles the first room and the washed apple). However, dripping down through the dull, lifeless colours we can see a bright thread of pigment. It is a beautiful green that branches into an array of colours as if flows across the floor. Beneath the woman's body are two wineglasses that are filled with coloured pigment. Initially, Stella and her mother are horrified and they try desperately to return to the room they just left. However, although they can pass through the wall, it appears to be a kind of Ouroboros and they

simply find themselves re-entering the previous room. After numerous attempts at leaving, the colour on their bodies begins to dry and flake off. In desperation the mother paints herself with the modest colours of the dead body but they are ineffective. It is only when Stella uses the bright colours on the floor and those in the wine glasses that she is able to catch a glimpse of another room. Stella beseeches her mother to paint her body with the vivid colours too, but the woman feels they are ostentatious. Ultimately, it is not until her mother uses the brighter colours that she is able to see through the wall into a far better room. Taking the two glasses of colour they pass through the wall.

Medium Room-Bright (PAINTING)
The third room they enter is old but brighter. It has beautiful furniture, drawers and wardrobes and a table in the middle with covered dishes laid out on it. However, when Stella lifts the platter covers there is no food underneath and when her mother opens the wardrobes and drawers, they are empty. Despondent, the mother scolds Stella and the girl breaks down in tears. The world here is hopeless. Through her tears Stella explains that she thinks that if they paint themselves more brightly and with more care, they can increase their chances of a better world. In support of this she shows that the more intricately painted objects in the

world are more substantial than those that are poorly coloured. On the table there are a row of bottles. The dully painted ones contain nothing, but the one bottle that is beautifully patterned and coloured contains a fruit juice, that when the women drink it, offers them their first piece of sustenance. However, the bottle is soon empty. Stella notices that as it drains of colour it also loses its intricate patterns. She convinces her mother to take care with repainting their bodies so they can progress into another room. This time Stella paints herself, using the colours they collected in the two wine glasses. Her new designs are brighter and more intricate. We see in the glasses only grey colours left. Brightly and more intricately painted, Stella and her mother move onto the next room.

Nice Room-Bright (PAINTING)
They enter a large beautiful room laid out with good food and drink. A group of people is chatting and laughing with each other. When they enter they all pause and look at them. The reception is warm and they begin to admire their beautiful colours and how intricately they have painted themselves. Stella and her mother feel very welcome. People share their stories and they say that all of them have a limited stock of colours but since the time they started to collaborate and share colours and paint each other they have found it easier to move between

rooms and increase the quality of their lives. Stella regrets that now they only have grey colours to share, but the people kindly offer to help them. They notice that Stella can paint beautiful patterns and in return for this they are happy to share their materials. Collectively they help each other to paint. However, the designs are increasingly gaudy and Stella's mother objects. She likes the subtlety and restraint of traditional designs. She says that modesty and culture are virtues. People should not forget their values. When her mother tries to paint Stella in quiet, traditional tones they argue. Tim, a 23-year-old boy, tries to help by politely talking to the mother about what wonders can be accessed in other rooms if she adjusts, but she is rude to him and Stella defends him. She says Tim is only trying to help. Finally, the mother allows other women to paint her but not men. She objects to Tim painting Stella. However, freshly painted Stella, Tim, the mother and a few other people, hand in hand, pass through the wall.

Room of Plenty-Bright (PAINTING)
They enter a magnificent room. Everything is abundant and available. The food is more decorative, and the furniture is opulent. The immigrants are happy enjoying everything the room provides for them. There is foreign music playing. The mother is clearly uneasy; she looks

lost and alienated. Some of the immigrants are dying their hair or polishing their nails. Although the mother whispers her worries to Stella, the girl's concerns have shifted to Tim. After enjoying the room's offerings, they decide to move on. They share colours and paint each other. Everyone suggests that the mother removes her scarf so they can paint her hair but she is adamant in her refusal. When a man attempts to paint her hair she is outraged. No seems to understand. To alleviate the situation Stella also tries to paint her mother but the woman objects to the exotic colours and patterns. In protest she even tries to wash the paint off with the water she finds in that world but as the water is essentially a coloured painting again, she ends up adding paint to paint. At this point the mother has a quarrel with Stella and tells her that she wants to return back to the first room. She wants to wash herself clean; to return to the world that she knew. She wants to go home. Then she starts to paint herself with dark colours. Everyone is puzzled at her action. They try to dissuade her. Stella tries to reason with her mother, but the woman is unflinching. Embarrassed in front of Tim she eventually loses her temper and tells the woman that she hates her, her old black dress, black scarf, her ring with turquoise stone, all the wrinkles on her face and her fawn dyed hair. The mother is heartbroken, but also resolute. Methodically she

paints herself grey and brown and deliberately smudges any sign of pattern on her body. Stella becomes resentful and tries to stop her but eventually she leaves. Stella cries and Tim tries to soothe her. He assures her that her mother will return soon because no one likes to go back to the war zones. The other people in the room try to comfort Stella by painting her, and themselves, in brave and adventurous ways. They are excited by the new opportunities to explore amazing worlds.

Music Video Room 1- (PAINTING)
In a series of intercuts, we see a juxtaposition of the mother and Stella on different stages of their journey. First, the mother is in a beautiful room everyone laughs at her dark colours.

Music Video Room 2- (PAINTING)
Stella and Tim are playing and laughing in a room with vivid colours like Monet paintings.

Music Video Room 3- (PAINTING)
The mother is talking to a group of people who are getting ready to pass through the wall and tries to convince them not to go further. They cannot understand her and eventually ignore her.

Music Video Room 4- (PAINTING)
Stella is sad, remembering her mother. In a room like a Grant Wood's painting Tim

comforts her and tries to make her happy. They join others who are now dressed in bizarre, colourful costumes, who are dining.

Music Video Room 5- (PAINTING)
The mother sits beside a strange, ten-year-old boy. He is upset but he helps her to paint herself.

Music Video Room 6- (PAINTING)
Stella is in a room like Frida' Kahlo's paintings and is trying to paint herself with dark gloomy colours that reflect her distress, but Tim stops her and hugs her.

Music Video Room 7- (PAINTING)
Some scared people are in a room; suddenly a colour stain on the wall enlarges and the mother comes out of the wall. They are afraid but the mother tries to explain what is happening.

Music Video Room 8- (PAINTING)
Stella and Tim are so excited to be in a very distorted, stylized room like Picasso's paintings. They run after each other and laugh.

Music Video Room 9- (PAINTING)
The mother has now returned to the second (dark) room, but the hanged woman is no longer there. She is so happy because she knows that the white room is behind these walls. She tries

to remember her primary colours. She paints her black scarf first the same way it was but she cannot remember the original colour of her hair, or her eye colour, or the pigment of her turquoise ring. She thrusts her head through the wall and sees the original white room, but she cannot force the rest of her body through the membrane.

Music Video Room 10- (PAINTING)
Stella and the others meet a new person, the 10-year-old boy. Stella asks him about her mother then cries and hugs the boy.

Music Video Room 11- (PAINTING)
The mother is totally lost in different rooms. One of them can be a very large, empty, yellow painted room. Everywhere is yellow. She is crying on a corner.

Music Video Room 12- (PAINTING)
Stella, Tim and the others are playing with buckets of colours and splashing different pigments on each other. They look like Jackson Pollock paintings.

Music Video Room 13- (PAINTING)
The mother is in a room full of colour buckets. She has become desperate and foolish. She is kicking and breaking all the colours. It is a very messy situation. She is angry at all colours. She

becomes tired and looks at the wall and wants to try her chance again. She goes toward the wall.

Music Video Room 12-
End of Music Video- (PAINTING)
The mother suddenly finds herself in the same Jackson Pollock room. Stella screams and hugs her and both cry. Everyone else is happy and they think that the mother will now come with them. But Stella's mother asks her daughter to repeat all of the hateful remarks she made about her appearance, because, in her disorientation, the woman has forgotten important details about who she is. Stella repeats the descriptions of her mother but more lovingly. She tries to help the woman 'remember' herself again. Her mother begins to repaint herself based on what her daughter and others tell her. At this point, Stella considers leaving the others and rejoining her mother so she asks her to recall how she once was; her sparkling blue dress, her red nail polish, curly hair and clumsy makeup. Stella wants to recapture her original identity, but the mother worries that such a decision will have dangerous and uncertain consequences. So the woman paints her daughter with even more vivid colours than she had previously applied. Then resolved and compassionate, she turns away and pushes through the wall. Suddenly the mother finds herself in the white room.

Stella calls her mother and runs after her mother and passes through the wall but suddenly finds herself in a garden. This is the first open space she has experienced since coming into this strange world. She is so confused and returns back and tells everyone that there is freedom on the other side. They all help each other to paint themselves like Stella then hand in hand the happy group pass through a white wall and suddenly see themselves in an amazing, beautiful Victorian garden.

Garden-Day (PAINTING)
They are amazed by the beauty of the garden and the feeling of the freedom of the outside world. Everyone is running happily. They see some classic cars (or carriage and horse) and, when they go toward them, they see some men in black and white suits welcoming them and inviting them to climb on.

White Room-Bright (PAINTING/REAL)
The painted mother holds the real pitcher in her hands and pours real water on her fingers . The colours wash off and flow onto the floor. Perturbed but resolved, she splashes water on her face. We see her blurry point of view which identifies the sea and beach. We return our gaze to the room and the mother has disappeared. All that remains are the washed colours on the floor.

Life-Day/Night (PAINTING)

Stella and Tim enjoy a wonderful life. There is love and joy, beautiful houses and pleasant and intimate moments. We see that Stella is pregnant.

Hospital-Night (PAINTING)

Stella and Tim are looking at their newborn baby with sad eyes. The child is in a glass incubator. He is blind. Stella cries and Tim hugs her and soothes her.

Large House- Day then Night (PAINTING)

Stella's life has become sad, depressed and gloomy. Tim tries to make her happy but nothing seems to work. Tim is hopeless. The house colours have become too bright, washed out, garish and bleak. Tim finally leaves Stella and the baby. Stella is all alone with her child.

Large House- Day (PAINTING)

Stella hugs the crying baby and rocks him gently, trying to sooth him. At the same time, she looks at the paintings on the walls. Suddenly she sees a familiar church, the same white church she faintly recalls from a distant memory. She reads the painting signature and turning it over, she reads the back of the canvas.   Stella packs her belongings and leaves the house with her baby.

Destination Beach-Day (PAINTING)

Stella arrives at the beach. The sea level has risen and the edge of the water touches the church. One side of the building has collapsed and the sea is slowly devouring the wooden structure which is now collapsing. Stella tries to get into the church but the door is locked. She eventually enters the building through the window she broke many months ago.

Church-Day (PAINTING then REAL)

Inside, the church is much more dilapidated than when Stella last experienced it. Water now submerges parts of the structure. She steps into the water and watches as her colours begin to dissolve into the liquid. She then breathes deeply, closes her eyes and holds her baby to her chest firmly before submerging them in the water. When she stands up, everything looks real. Stella looks around, she is now on the foreshore. Her baby makes a sound and when she looks at him she sees that he is no longer blind. She is overjoyed and kisses the infant. When she looks up, she sees in the distance the old rowing boat that brought her and her mother to this place when she was a younger woman.

Sea-Day (REAL)

When Stella reaches the beach she holds her baby and pulls the boat ashore.

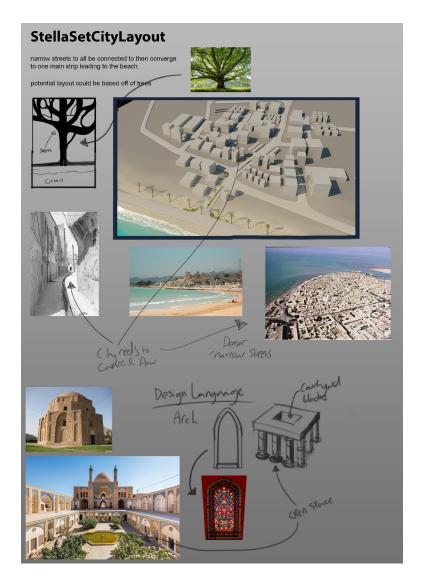### Departure Beach-Day (REAL)

She reaches the beach; it is foggy and calm. She embraces her child and steps onto the land.
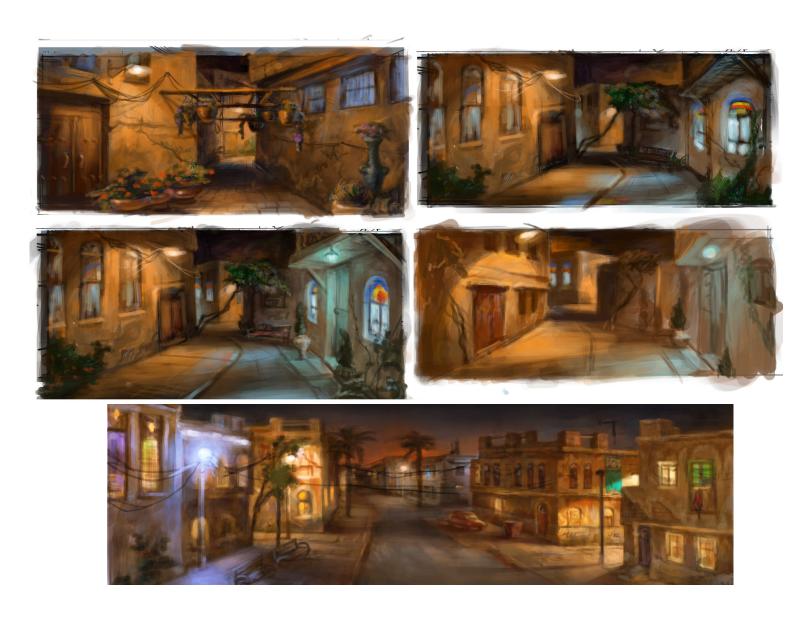
City-Day (REAL)

Stella walks with her baby through the ruins of the city. It seems a long time ago that she was here. The child is distracted by things that he can see and unfamiliar sounds that he can hear. Stella pauses to listen to children playing in the distance. Green plants and flowers have grown through the ruins. Eventually Stella finds her old house. It is derelict now, and when she enters with her child, she sees that the interior is covered with debris and dust. Then she hears familiar music, the same music her mother used to hate. She leaves the building and follows the sound until she comes upon some tents. Here, children are playing, singing and dancing. When she looks up, she sees their teacher. It is her mother, wearing a colourful dress and a vivid, beautiful scarf. Her mother sees Stella and her baby, and she is full of joy. As she walks towards her daughter, filled with wonder, the story closes.

APPENDIX 2:
Concept Art

Concept art describes formative sketches that explore potential visual styles and foundations of animation projects like *Stella*. The work presented here features the work of collaborators who responded to the film's initial screenplay. These visualisations were digitally rendered and considered potential structures and moods of the storyworld. In some instances, concept art was influential in my eventual, propositional rendering of the animation. In other cases, these exploratory visualisations changed substantially as my subsequent designs evolved.

StellaSetCityLayout

narrow streets to all be connected to then converge to one main strip leading to the beach.

potential layout could be based off of trees

Early concept art considering Stella's city homeland, inspired by southern Iranian architecture. Created by Claire Park, 2018. ©. Property of Stella project.

Midnight alleyway concept art for Stella, inspired by historical streets in Bushehr (Southern Iran). Painted by Katya Rasskazova, 2018. ©. Property of Stella project.
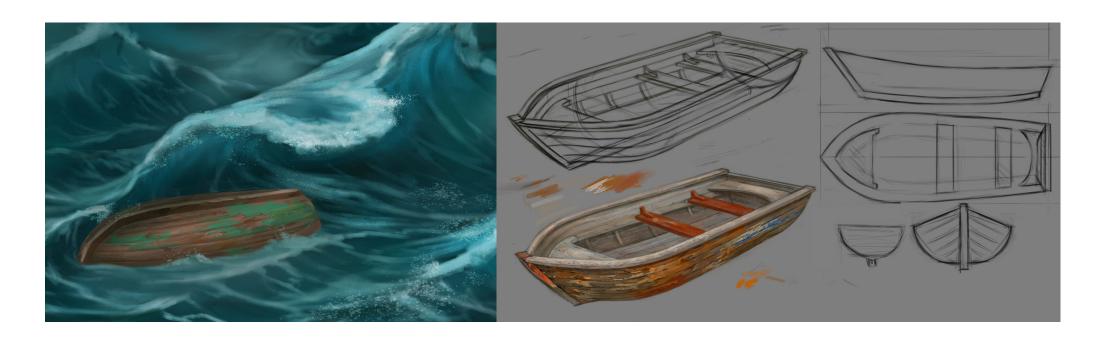
Concept art for Stella's room, created by Claire Park, 2018. ©. Property of Stella project.

Concept art for the boat in which Stella and her mother escape the war. (In the final animation the same boat is used to return to the homeland). Painted by Katya Rasskazova, 2018. ©. Property of Stella project.
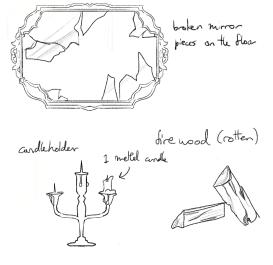
Visualisations of the abandoned building before and after being washed into the sea. Painted by Katya Rasskazova, 2018. ©. Property of Stella project.
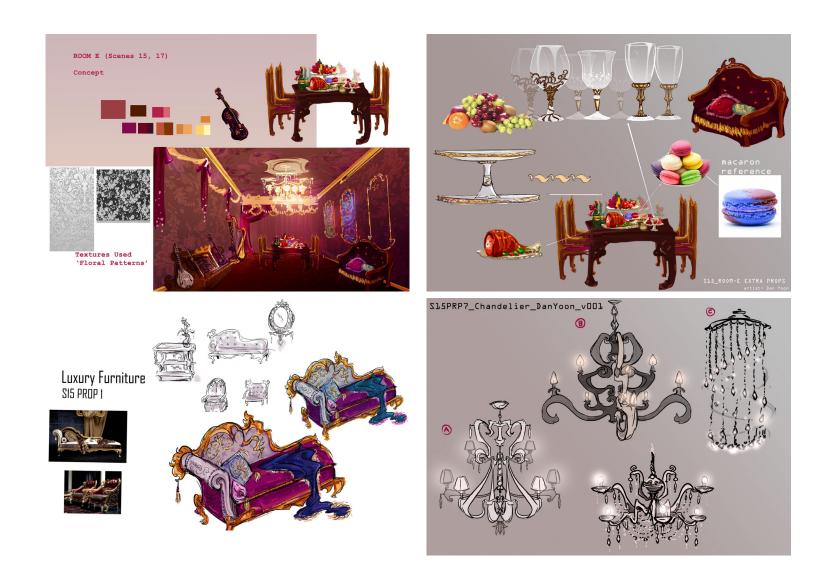
Concepts for the mood and props in the dark room. Painted by
Do-Yeon Kim. 2018. ©. Property of Stella project.

mirror

broken mirror
pieces on the floor

candleholder

1 melted candle

fire wood (rotten)

ROOM E (Scenes 15, 17)

Concept

Textures Used
'Floral Patterns'

macaron
reference

S15_ROOM-E EXTRA PROPS
artist: Dan Yoon

Luxury Furniture
S15 PROP 1

S15PRP7_Chandelier_DanYoon_v001
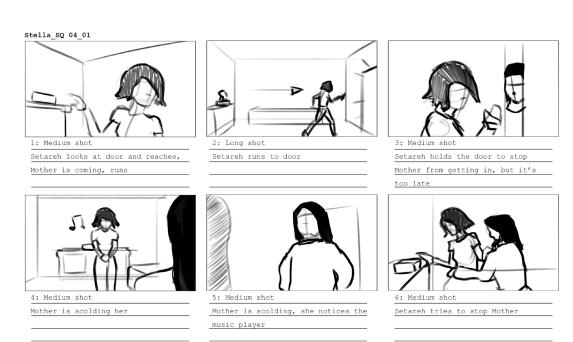
Detailed concept art exploring potential treatments of style and furniture in the luxurious room, painted by Do-Yeon Kim, 2018. ©. Property of Stella project.

Storyboards
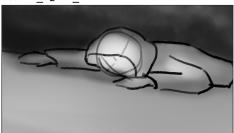
Storyboards are a series of panels that visually present the progression of a story, shot by shot. In the production of Stella, they constituted a form of roadmap, either recording motion captures or generating environments and layout in Unreal Engine software or as animations in Maya.

The following images are selected storyboard panels for the project, created by William Tan in 2018 (in response to directing notes I provided). ©. Property of Stella project.

Stella_SQ 04_01

1: Medium shot
Setareh looks at door and reaches, Mother is coming, runs

2: Long shot
Setareh runs to door

3: Medium shot
Setareh holds the door to stop Mother from getting in, but it's too late

4: Medium shot
Mother is scolding her

5: Medium shot
Mother is scolding, she notices the music player

6: Medium shot
Setareh tries to stop Mother

Storyboard panels for Scene 2, where Stella argues with her mother. ©. Property of Stella project.

Stella_SQ 09_01

1: Medium Shot

Mother wakes up on beach, she looks out

2: POV Long shot

Looks at the church and hill

3: Medium Shot
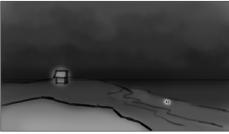
They regain their senses

3-2: Long Shot

They help each other up

4: Long Shot

Shows them on the beach walking
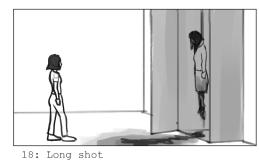
5: Extreme Long Shot

Continued but in a longer shot

Storyboard panels for scene 9, where Stella and her mother find themselves on an alien beach and try to take refuge in an abandoned building. ©. Property of Stella project.
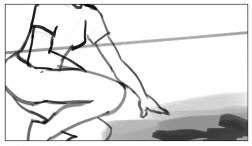
Stella_SQ 12_5

17: Close Up shot

Shows a close up of the corpse's face

18: Long shot
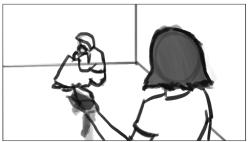
Setareh looks at the body
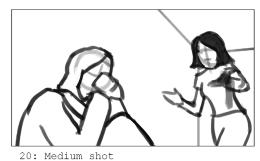
19-1: Close Up

Setareh goes on the floor and grabs some green colour

19-2: Medium shot

Setareh stands up and looks at Mother

20: Medium shot
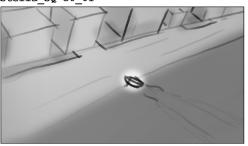
Setareh goes to mother and tries to convince her to paint

21: Close up shot

Setareh convinces her mother to go

Storyboard panels for scene 12, where it depicts Stella and her mother encountering a hanged woman in a wardrobe. ©. Property of Stella project.
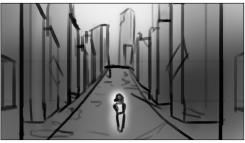
1: Long Shot

Stella reaches beach and steps onto dry land

2: Medium Shot

Stella looks out at city then looks to her baby and hugs her, she then moves towards town

3: Long Shot

Stella moves throughout town

4: Medium Shot

Looking around

5: Long Shot

Moving deeper into town

6: Medium Shot

Stella moves into frame from left as they arrive at Stella's home

Storyboard panels for scene 30, where Stella returns to her homeland.
©. Property of Stella project.

CG Breakdowns
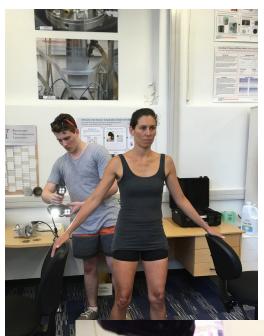
Provided here are snapshots of CG and VFX production and postproduction procedures in the project.

Dylen Velasquez (the production supervisor) capturing facial motions of Melanie Firmin (Stella's performance actor). This first phase of the facial capturing was realised using Kinnect sensors before the facial data was sent into Maya for cleaning and adjustment. Later, TrueDepth sensors were acquired for the final facial capturing of the actors, as evidenced in the trailer.
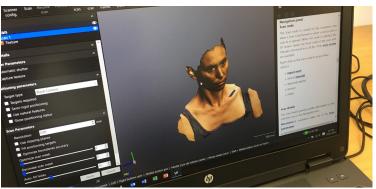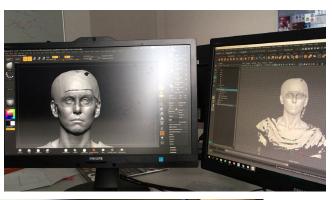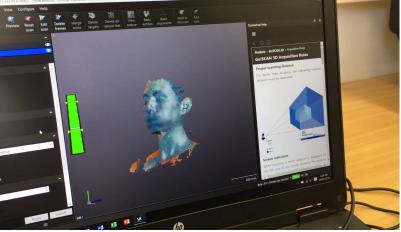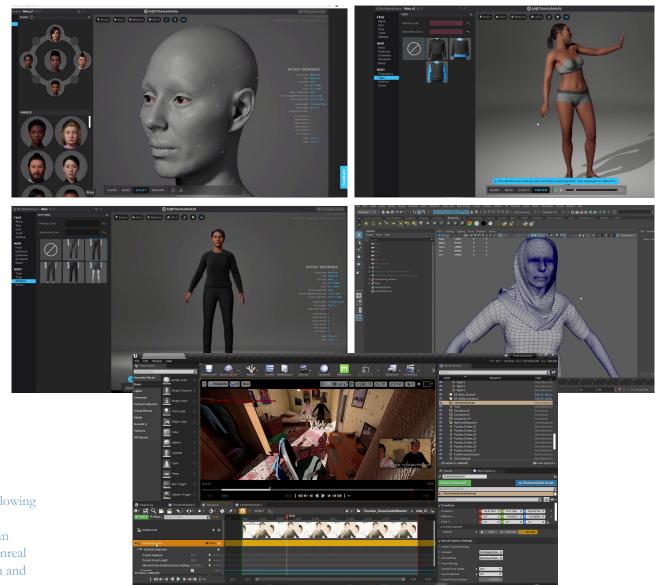
Student volunteer, Jordan May, helping to laser scan the body and face of Sarah D'almeida (the mother's performance actor). The scanned data was then transferred into Maya and ZBrush for clean-up. Following this process, a topologically advanced prepared mesh was wrapped around scanned data (using Wrap3D) to generate the refined geometry. This material was then used to regenerate a Metahuman version of the Mother character.
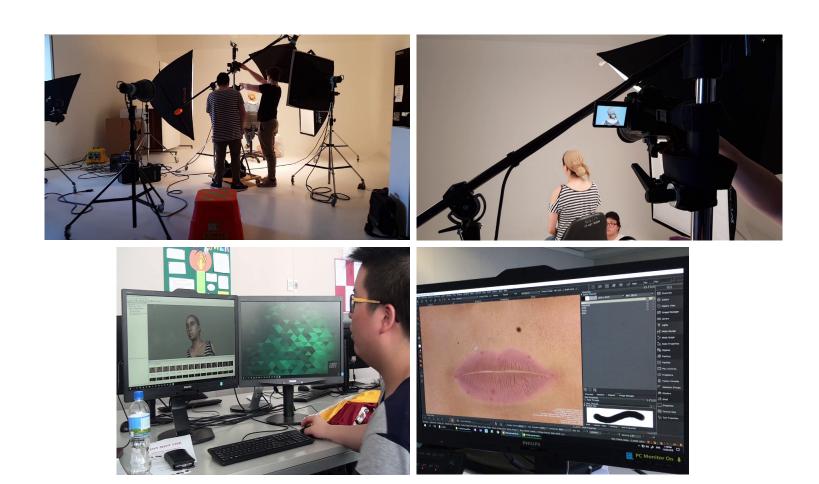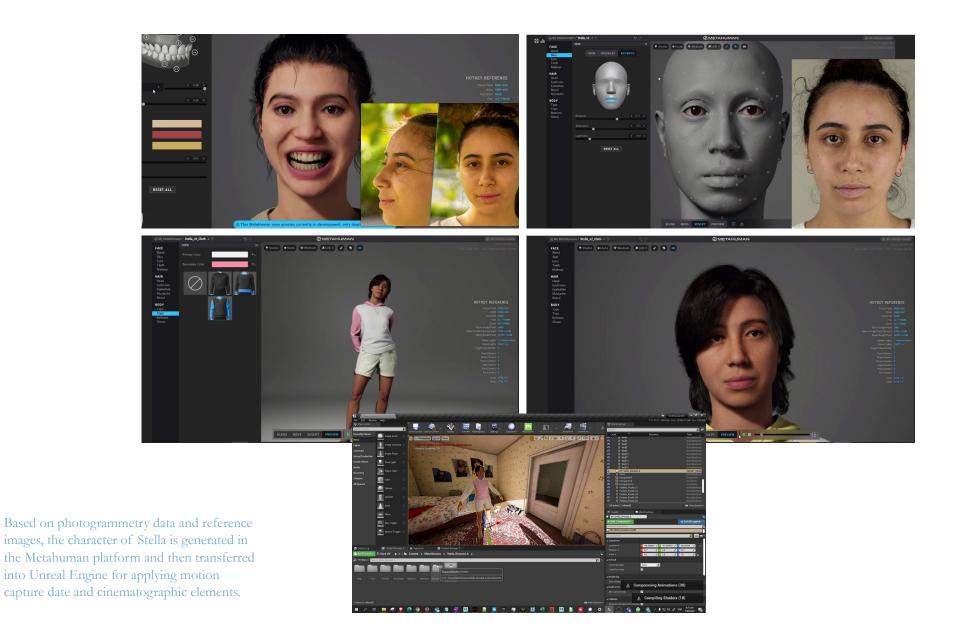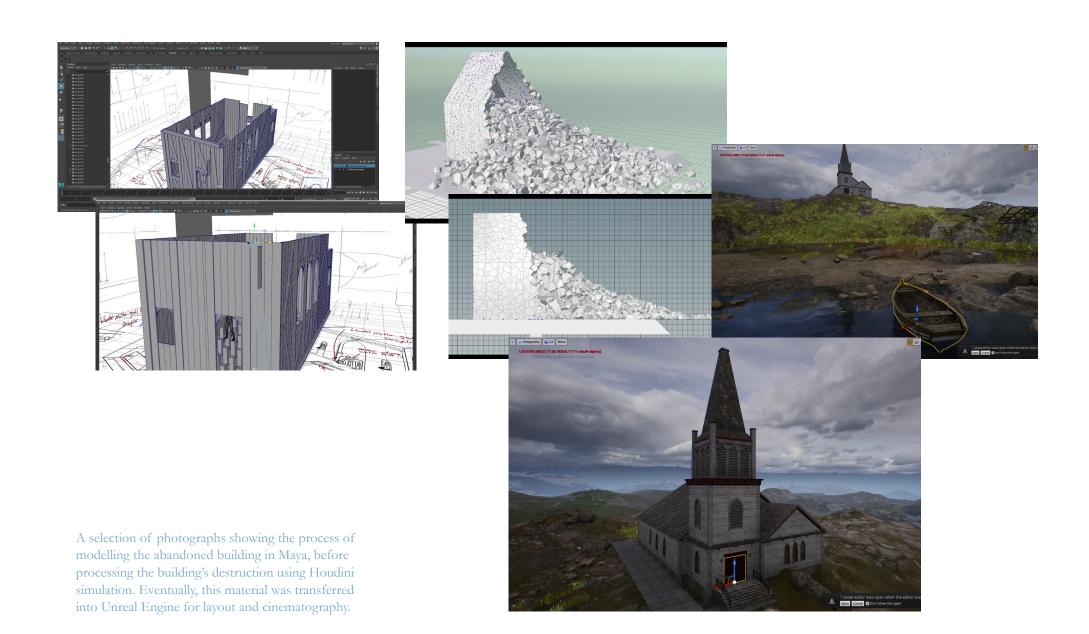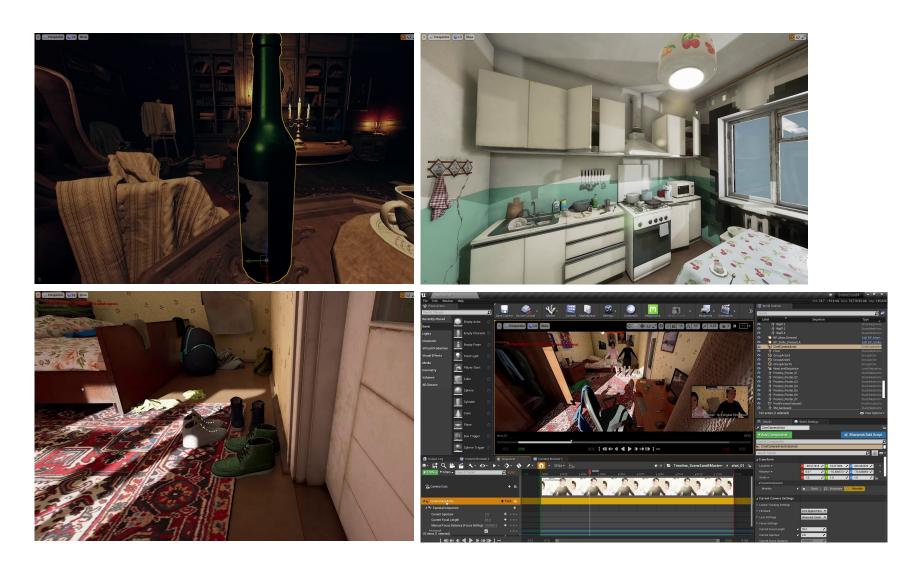
The Mother character being regenerated in the Metahuman platform, based on scanned data. Following this, Maya was employed to custom clothing like the scarf that was then added onto the Metahuman rigged character. The final output was sent into Unreal Engine for the application of motion capture data and cinematographic elements.
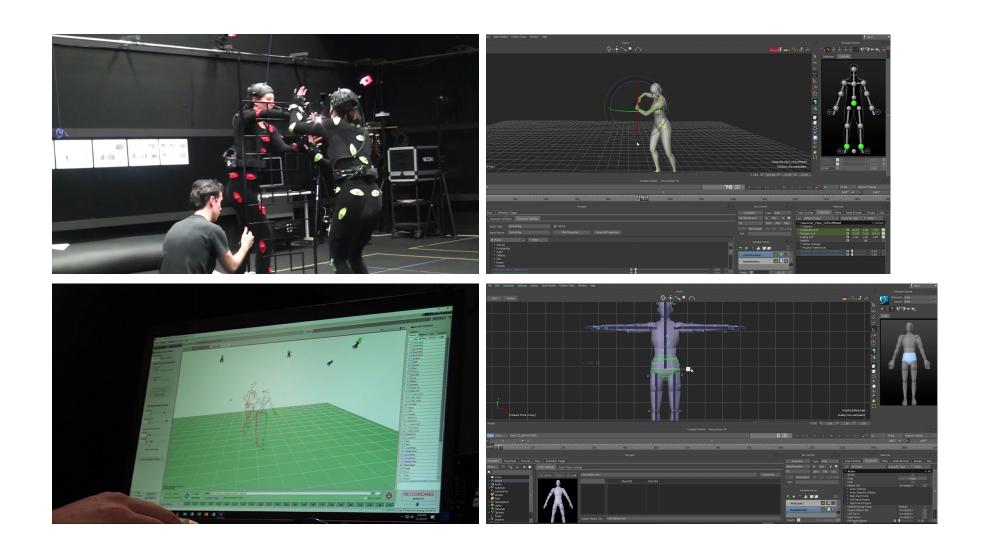
Student volunteers, Jun Lee, Jordan Maya and Natalia Write, helping with the photogrammetry of Melanie Mirfin (Stella's performance actor). In this process (which is different to laser scanning), a large number of photographs are taken from different angles. Then using Agisoft Metashape software, the captured material is processed to generate an approximate mesh. The final mesh is wrapped onto base mesh using Wrap 3D before the facial textures are processed in Mari.

Based on photogrammetry data and reference
images, the character of Stella is generated in
the Metahuman platform and then transferred
into Unreal Engine for applying motion
capture date and cinematographic elements.

A selection of photographs showing the process of modelling the abandoned building in Maya, before processing the building's destruction using Houdini simulation. Eventually, this material was transferred into Unreal Engine for layout and cinematography.

Snapshots of different environments created and assembled in Unreal Engine.

Motion capture for the project was recorded using Cortex software before the data was transferred into Autodesk MotionBuilder for processing, adjustment and application onto Stella's prepared rig. The rig carries motion capture data and transfered it into Unreal Engine so it could be be applied onto final Metahuman rigs. This optimised process circumvented the retargeting stage in Unreal Engine.