Drawing Water, Drawing Breath, Drawing Thread

A synthesis of clinical and creative practice through space-time

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Abstract

This practice led research demonstrates the synthesis of clinical and creative practice through the concept of space-time, by addressing the idea of transferable skills and language across science and art. Clinical practice is focussed on the work of a highly specialist respiratory therapist. Creative practice includes a hybrid of land and textile art situated in the littoral, using the body as a transformative medium, writing and drawing.

The work is underpinned primarily through the writings of Mikhail Bakhtin, Henri Bergson and Henri Lefebvre and interrogation of the Japanese aesthetic of *ma* 間

The study explores two dualisms, time and space and mind and body, appraising research that challenges the separation of each binary. Space-time, evaluated through the Japanese aesthetic of *ma,* is considered alongside Bakhtin's concepts of unfinalisability and chronotope. Bergson's key writings on space and time (*durée*) and Lefebvre's *The Production of Space* and *Rhythmanalysis* are reviewed and linked to chronotope, unfinalisability and space-time.

'Drawing Water' references work on location where the interaction of the body with the sea and the littoral served as a metaphor for clinical practice. The chapter on mind and body addresses advances in the cognitive sciences, encompassing neuroscience, psychology and philosophy of the mind.

Connections are made between the concept of space-time and the human body through 'Drawing Breath', representing both clinical and creative activity. Links between the two areas are developed further by identifying and examining the significance of a common terminology.

A wide range of drawing methods and theories is examined and related to both clinical and creative practice. The portfolio comprises work on paper including text images, photography, videography and cloth; 'Drawing Thread'.

The key lines of enquiry for the research are space, time, space-time, rhythm, the body, embodiment, emplacement, enaction and experience. Medical terminology is used throughout.

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Preface

> "A physiotherapist has the brain of a scientist, the heart of a humanist and the hands of an artist." (s.n.s.d.)

For many years working as a respiratory therapist I questioned the premise that the profession is situated exclusively in science. It is absolutely grounded in science through anatomy, neurology, physiology and medical specialities underpinned by evidence-based practice and clinical trials. However, I believed it was also concerned with the haptic, sensory perception, interoception and individual application of skills. While artists are turning to scientific analysis and data to inform their work, (Chris Drury, Wayne McGregor, Olafur Eliasson) many clinicians are also talented artists in a variety of fields. This prompted the questions: are these skills that have developed within professional mastery and is this what is meant by the oft-quoted phrase 'transferable skills'? In a vision-dominated world, when working in the clinical setting I observed that I employed the additional senses of touch, hearing and smell to inform diagnosis and management of respiratory disease and dysfunction.

As I worked in the littoral, I operated in a similar way, informing outputs in cloth and on paper. Walking the coastal paths alone I became more aware of my internal body rhythms and changes in response to my activity, specifically my pulse rate and rate and depth of respiration. Graphic monitoring of these parameters in patients contributes to decision-making in the choice of treatment options. In order to monitor my own data objectively I purchased a body metrics suit, employed in the training of elite athletes. The data collated during activity was downloaded via computer. This was translated into work with cloth using the grid-like structure of plain weave as graph paper on which to plot my findings.

The links between my clinical and creative practice were further reinforced through a common terminology: fibre can refer both to muscle fibre and the composition of cloth. Flow, turbulence, resistance, sensitivity, tidal volume and force are all features of ventilation. They were equally pertinent to my experiential drawing practice situated in the sea and my subsequent indexical drawing practice centred on perception and interoception.

In the course of my practice, as I worked with two-dimensional images of the body and the physical three-dimensional body over time, I began to explore the concepts of space, time and space-time. This led to the formulation of the main question

driving this research: how can I demonstrate the synthesis of clinical and creative practice through space-time?

Introduction

With master's level education in both science and art, my practice led thesis demonstrates the synthesis of clinical practice as a highly specialist respiratory therapist and creative practice as a littoral-based artist, through the concept of space-time and transferable skills. In order to highlight the degree to which these practices were interwoven I chose not to separate the literature review or methodology, so that the synthesis is reflected in the structure of the thesis which comprises five chapters. In each chapter I consider the key elements of my work and relate these to both the theory underpinning the research and the craft of a range of artists focussed on the land, text and the body as well as my own practices.

The motivation for undertaking the research stemmed from my thought for many years working as mentor and clinical practitioner that clinical expertise is not only about science but also art and application of skill. One of the key elements of focus as a therapist and educator was that of reflective practice. Introspective analysis of clinical and creative practice revealed that I was using the same skills in each. That is, by working with the body and the senses in space and time. Consideration of the elements of space and time led to the notion of space-time and the formulation of the main question driving the research: how can I demonstrate the synthesis of clinical and creative practice through the concept of space-time, addressing the idea of transferable skills and language across science and art?

As John Dewey (2005:14) notes, the irrational idea that artists do not think and scientists focus only on thought is a consequence of reinforcing the art/science divide without consideration for the difference in approach. However, evidence from academic research and contemporary arts practice, including dance, suggested that the art/science divide was decreasing as a result of trans- and interdisciplinary collaboration (for example, Hodgson-Teall, 2011; Macnaughton, 2017; Harty, 2017; McGregor, 2018; Anderson, 2019). Commenting on Chris Drury's exhibition *Mushrooms* / *Clouds* in 2009, Jamie Kruse and Elizabeth Ellsworth observe that collaborative projects between artists and scientists can reveal perceptions about the environment and the human activity within it that might not occur with either group working alone (2009:66).

My research encompassed a range of themes that unite clinical practice with creative practice. The creative practice incorporated a hybrid of land and textile art situated in the littoral, through the use of the body as a transformative medium,

together with writing and drawing. Hybridisation in contemporary art began in the late twentieth century. In 1979 Rosalind Krauss wrote an essay in which she discussed the idea that in what she terms, “the expanded field of post-modernism”, the category of sculpture has grown to encompass a range of media. She cites the work of many of the early earth/land artists such as Robert Morris, Robert Smithson and Michael Heizer. However, she adds that this is not the limit of what sits within the category of sculpture. Sculpture may also include film, textiles and other media and individual artists may employ a range of media at different times in their practice (Krauss, 1979: 30-44). The key lines of enquiry for my research were space, time, space-time, rhythm, the body, embodiment, emplacement, enaction and experience.

My study included exploration of two dualisms: time and space and mind and body. In the two chapters covering these I appraise research that challenges the separation of each binary. In a separate chapter, space-time is evaluated, chiefly through the Japanese aesthetic of *ma.*

A wide range of drawing methods and theories is examined and related to both clinical and creative practice. In the final chapter, the notions of embodiment, emplacement and enactment are investigated.

The methodology encompassed sensory ethnography, video ethnography, indexical drawing, reflective practice and material experimentation, with critical analysis of outcomes. Although the research was founded on sensory autoethnographical analysis, the work provides a template for further investigations through the application of the methodology employed. The thesis demonstrates a personal approach to the use of sensory ethnography and provides the means by which this might be used to contribute to knowledge.

Underpinned primarily by the work of Mikhail Bakhtin, Henri Bergson and Henri Lefebvre, the close association of the Japanese aesthetic of *ma* with space-time is considered alongside their philosophical discourses on time, space and the body. Reference is made to Albert Einstein’s theories but these are not discussed in any detail.

Bakhtin was selected for his work on the concepts of the chronotope and unfinalisability. Although generally applied to literature, the suggestion that these could provide the opportunity for new ways of interpreting studio practice opened the research into the concepts of space, time, and space-time.

Bergson might be seen as an unusual choice given that his ideas largely fell from favour in the post-Second World War period. However, Leonard Lawlor and Valentine Moulard Leonard, writing online in *The Stanford Encyclopaedia of Philosophy* (2016), claim that since 2015 there has been a renewed interest in his thinking through the work of Gilles Deleuze. Bergson was chosen not only for his writings on time and space but also because he wrote about the body. One statement in particular resonated with my analysis of practice, when he writes of the body that it is a "*place of passage* of the movements received and thrown back, a hyphen, a connecting link between the things that act on me and the things upon which I act" (Bergson, 2014:160. Original italics).

Just two of Lefebvre's books have been fully translated into English: *The Production of Space* and *Rhythmanalysis*. Both were significant for this research. Lefebvre's early works were written during his time at the Sorbonne. He was a member of a group of philosophy students whose aim was to challenge the prevailing philosophy of Bergson, which they felt was held to be an elitist pursuit. Instead, they saw philosophy as part of everyday life.

In the second chapter I consider space-time through the Japanese aesthetic of *ma*. My interest in language and the idea that *ma* can in some instances be translated as space-time is examined alongside Bakhtin's chronotope and unfinalisability. *Ma* is a complex word, tacitly understood by the Japanese, and it impacts all aspects of daily life in Japan. Exploration of *ma* was included in response to the suggestion from Sachiyo Goda that the discussion of *ma* in her thesis was designed to promote and reinforce the use of this term by Western artists (Goda, 2010:166).

Addressing the second dualism, that of mind and body, in chapter three, I review advances being made in the cognitive sciences with respect to neuroscience, psychology and the philosophy of the mind. Since the 1990s, research in the cognitive sciences has developed collaboratively, leading to a renewed interest in phenomenology while using science to substantiate the research. This has been in response to the recognition that more than one specialism would be required to provide an adequate answer to the complex issues involved. In addition, phenomenology operates within a non-Cartesian way of considering perception; that is, by emphasising it as embodied, enactive and contextual. This view is supported by Shaun Gallagher and Dan Zahavi, who write that phenomenology "is concerned with attaining an understanding and proper description of the experiential structure of our mental/embodied life…" (2012:9). Further, Les Todres articulates the benefits

of the phenomenological approach for the autoethnographer, stating that reports of such experiences can be of interest for other researchers and can extend intersubjective understanding (2011:27).

My activity in the littoral demonstrated the notion that bodily movement is closely related to perception and other forms of cognition and reference is made to Bergson's writing on perception. Although I adopted a phenomenological methodology while working on location, I also employed the problem-oriented analytical review of reflectivity found in the clinical setting, thus moving between the domains of art and science.

Despite evidence supporting many more than five, contemporary literature referencing the use of the senses remains largely grounded in the traditional Western five sense sensorium described by Aristotle. The sense of touch is the first of our senses to develop and is our earliest means of communication. The haptic is of key importance in respiratory therapy and the sense of touch can become highly developed. Furthermore, hearing, taste, smell and sight are linked through touch and all were brought into play in my practice. I look beyond the five senses to consider how the senses develop and how they are used in other cultures. I review contemporary advances in neurophysiology, which demonstrate that humans possess up to twenty-three or more senses. These are classified as interoception, exteroception and proprioception. The functioning of all body systems is influenced by the presence or absence of touch.

Lefebvre places the body at the centre of his work on space and rhythmanalysis. He writes that not only does the body reference biological, physiological and social rhythms, it serves as a metronome and becomes a tool for analysis. Evaluation of his work revealed that it related closely to my practice and is explored in detail. This is expanded with the inclusion of Edward J. Soja's writing in *Thirdspace* (1996) in which he builds on Lefebvre's *Rhythmanalysis.*

The links between clinical and creative practice in this research were strengthened through the identification of a common terminology, in which the term 'thirdspace' plays a part. The common language is examined with particular reference to 'flow', referencing Mihaly Csikszentmihalyi's theory of flow and connecting this to the Japanese *mushin*, a zen state of mind.

The increase in the number of trans- and multidisciplinary conferences and residencies enhances the potential for the cross-pollination of ideas and approaches

between artists and scientists. Kruse and Ellsworth (2009:66) cite the way the two groups are creating new language that bridges the gap between them as a result.

The interest in the haptic and language might be explained by the anatomy of the brain. Broca's area, a region in the brain associated with the production of language, is situated next to the one that controls movements of the hand. It has been suggested that the development of spoken language was secondary to the development of communication through gesture. (Gallagher, 2005:122; Claxton, 2015:177) Juhani Pallasmaa develops this idea, arguing that gesture, converted to spoken language, led to the written word (2011:31).

Discussion of gesture and the haptic is developed in the fourth chapter in which, through investigation of drawing, I demonstrate the embodied links between my clinical and creative practice. Drawing exemplifies time, space and the interaction of the body with a variety of media, as well as incorporating Bergson's ideas regarding space and time. While the modern world is increasingly biased towards the visual, Angela Eames (2008:137) has identified that all five key senses are employed in the practice of drawing, supporting the choice of sensory ethnography as part of my methodology. Gesture, as sign and communication, is similarly linked through the written word, bringing together all aspects of my practice.

Taking each term of the thesis title, Drawing Water, Drawing Breath, Drawing Thread, I show how the theory underpinning my research operates in synthesis with the complexity of my creative and clinical practices, through drawing. The portfolio comprises work on paper including text images, photography, videography and cloth. The camera work was used as an adjunct to reflection, and so avoids the pitfall observed by Sarah Pink that using digital media could result in a mediated engagement with the senses. Rather, the data was viewed with an understanding of the interconnectedness of the senses (Pink, 2015:129).

The use of text was included to complete the circle of image, gesture, language, the written word and image. Simon Betts (2011:29) writes that drawing and writing enables us to understand how text relates to the image. The combination of text and image references the work of Richard Long, Peter Matthews, Eduardo Kac and Kurt Jackson.

Each piece in the portfolio collection originates from a combination of theoretical and practical experience during the research. As Pallasmaa (2011:106) notes, these works do not demonstrate philosophical ideas but are examples of "embodied and existential thinking in their own right". Observations and reflections on activity

carried out on location informed practice that was grounded in the sensori-motor perceptions of the emplaced body.

Work on location included experiential drawing in the sea and at the interface between land and sea, and walking. The sea was used as a metaphor for clinical practice, as highlighted by Drury's statement, "…the tide is the breath of the sea" (1998:58). The approach to my way of working was inspired by the writings of Nan Shepherd and the art of Wilhelmina Barns-Graham. Engaging directly with the landscape both mentally and physically through the use of the senses not only initiates the acquisition of further knowledge but also contributes to the development and performance of other cognitive states (Gallagher, 2005:136). Further discussion of the interaction of the body and the environment is included in the final chapter.

'Embodied, Emplaced, Enacted' expands on the use of sensory ethnography in the littoral, referencing Bakhtin and Bergson with respect to the emplaced body, responding to Robert Rauschenberg's third rule: "Use your body. See where things take you" (Tate, 2017[1]). Pallasmaa (2011:34) comments that the role of the senses and embodiment in education and thinking are generally underestimated in the West. It has been proven that all body systems, sensory, metabolic and neural, are involved in the management of and response to life experiences. The final chapter summarises the experiences and development of the researcher throughout the study, encompassing reading, writing and collation of data as part of creative practice as well as studio practice. In addition to the writings of Bakhtin, Bergson and Lefebvre, this section includes exploration of Dewey's *Art as Experience* (2005).

Through embodiment the lived body becomes a site of knowledge. This embodied knowledge is more than stored information, involving biological and physiological processes. Embodiment is a process integral to humans and their environment and is equally pertinent to the arts and to science. As Dewey argues "even scientific conceptions have to receive embodiment in sense-perception to be accepted as more than ideas" (2005:270).

Francisco Varela, Evan Thompson and Eleanor Rosch (2016:lii) propose that the notion of enaction spans the gap between science and experience, while acknowledging the bias toward the use of science to validate research. In this study I took a clinical approach to the analysis of experience through the application of Donald A. Schön's reflection-in-action and reflection-on-action (Schön, 1984).

[1] I was unable to locate the date for the original Rauschenberg statement.

Varela *et al* also concur with the idea that the use of non-Western traditions and phillosophies broadens the horizon of reflections on experience, further supporting the consideration of *ma* (2016:21).

Experiential work in the littoral was carried out in response to the writing of Christopher Eccleston (2016) and John Haugeland (1998:207-237). The five key senses are not everything. While they are of significance to embodiment, the other, rarely considered senses are also central to the experience of the body, being "physically embodied and environmentally embedded" (Eccleston, 2016:4). Steven Feld writes:

> "…experiencing and knowing place…can proceed through a complex interplay of the auditory and the visual as well as through other intersensory perceptual processes." (Feld, 2005:185)

While embodiment signifies the combination of mind and body as discussed in chapter three, David Howes proposes emplacement as the traidic body-mind-environment, experienced through the senses (Howes, 2005:7). Pink offers the term 'emplaced ethnography' as an alternative to 'embodied ethnography' that references experience in accounting for the relationships between "bodies, minds and the materiality and sensoriality of the environment" (Pink, 2012:28). The emplaced and experiencing body was thus key to the application of sensory ethnography as a methodology in this study.

The use of the word enacted refers to my role as autoethnographer in putting into practice the concepts of the lived body being embedded and emplaced. Referencing work in the cognitive sciences I situated my practice within an enactivist approach to cognition, but not as enactivism. Cognitive development through enaction supports my argument that similar skills taught during the training of a respiratory therapist may result in different outcomes, depending on the experience of the operator, although I acknowledge that a range of factors can be involved.

Experience, the act of doing, lay at the heart of this research. The ability to take a pragmatic approach to experiences was demonstrated throughout this research where I was required repeatedly to respond to the interruption of circumstance, resulting in varying degrees of impact to the study. This facilitated work with new lines of enquiry which in turn led to advances in theoretical and practical research. The final section of this chapter considers the key experiential elements of the study: rhythm, breathing, walking, reading, writing and collation of data.

The review of the thesis draws together the threads of my enquiries, interweaving the findings across art and science to respond to the questions driving the research. In taking a pragmatic stance from the outset I did not plan for preordained outcomes. The study was undertaken to consider specific concepts not generally applied in art practice and to reflect on the notion of transferable skills, in order to demonstrate the synthesis of clinical and creative practice. In addition, it is hoped that the research will contribute to further trans- and inter-disciplinary studies in the context of contemporary developments in the future.

Chapter 1 Space, Time

> "While in the West the space-time concept gave rise to absolutely fixed images of a homogenous and infinite continuum, as presented in Descartes, in Japan space and time were never fully separated but were conceived as correlative and omnipresent." (Isozaki, 1979 cited in Pilgrim, 1986:256)

Prompted by the apparent difference in approach between the West and the East (specifically, Japan), as referenced above, the focus for this chapter is the exploration of time and space. In reviewing and comparing philosophies in the West and Japan, the discussion is underpinned by the writings of Mikhail Bakhtin, Henri Bergson and Henri Lefebvre.

My research into space, time and space-time began with exploration of Bakhtin's concepts of chronotope and unfinalisability. Bakhtin's use of the word chronotope demonstrates a line of enquiry in opposition to the Western Cartesian notion of the separation of time and space, as Arata Isozaki noted (Isozaki, 1979 cited in Pilgrim, 1986:256). In *The Dialogic Imagination*, Bakhtin states that the word chronotope (literally 'timespace') is used to describe "the interconnectedness of temporal and spatial relationships that are artistically expressed in literature" (Bakhtin, 1981:84). Further exploration of the chronotope is discussed in chapter two, space-time.

Unfinalisability

Unfinalisability is a core concept in Bakhtin's writing. He believed that both art and life are ultimately open-ended. Unfinalisability might be viewed as a negative term but Bakhtin wanted to define it positively. In this way he expressed his thought that everything in the world, including humans, continues in a state of becoming and developing and that this is an essential element of everyday life. In other words, nothing conclusive has yet taken place. Unfinalisability has also been interpreted as referring to life itself; as finite human beings we possess finite knowledge, but as life continues so knowledge develops, demonstrating unfinalisability. My understanding of this concept related to clinical practice where procedures, pharmacologies and treatment options are constantly advancing, in response to research and the ability of bacteria, viruses and disease processes to mutate. The focus on a problem-based approach to the management of conditions, grounded in evidence-based practice, results in standardised interventions. This has led to the establishment of algorithms showing both treatment options and the rationale for their inclusion. These are

reviewed annually, so maintaining quality and ensuring progression where appropriate.

The concept of unfinalisability in creativity for Bakhtin is signified by an emphasis on process, evidenced through open-ended renewal. Art work might be considered to be 'complete' when the artist decides to stop work on it but it also engenders unfinalisability through ongoing viewer participation and discussion over time. Similarly, John Cage notes that when musicians are on tour "every performance is unique and unrepeatable even as it draws upon the same fixed repertoire" (Hayward Gallery, 2010:16). Cage produced scores that contained sections where his instructions as composer were less specific, allowing for the potential of new interpretations at each performance (Kass, 2011:20).

Artworks produced by land-based artists such as Robert Smithson, Richard Long, Chris Drury and Andy Goldsworthy continue to change even if the sites are unknown. Works by these and other land-focussed artists were considered within this study.

Shortly after the *Earthworks* exhibition held at the Dwan Gallery in New York in October 1968, Robert Morris wrote:

> "What art now has in its hands is mutable stuff which need not arrive at a point of being finalized with respect to time or space. The notion that work is an irreversible process ending in a static icon-object no longer has much relevance." (Morris, 1969:54 cited in Kastner, 2010:24)

Colin Robertson comments that what this exhibition also achieved was to challenge the idea of art as commodity. Rather than own a representation through painting or photography, this movement evoked a new response in the viewer by drawing attention to the temporal and spatial experience of a place or site (Robertson, 2009: 49).

Kay Syrad hints at the idea of unfinalisability in Drury's work, writing:

> "Chris Drury's art is a story of rhythms, tensions and conflicts, labour, ritual. And human intelligence. Each piece of work is a complete narrative, opening out gradually and reaching (temporary) resolution." (Syrad, 1998:15)

With respect to process, ongoing reflection on and in practice also demonstrates unfinalisability in as much as the work continues to change after the artist stops

working with it. In *Journeys on Paper*, Marina Wallace describes the symbiotic relationship between artist and work with regard to Drury's piece, *Hidden and Revealed*.

Fig. 1 *Hidden and Revealed* (1995)

In this series Drury wrapped poisonous plants in leaves, bound with bark that he then placed in frames. Over time he watched as the leaves dried and withered and the seeds fell to the bottom of the frame. In this way work can take "on a place next to that of the artist, a life which also changes seasonally" (Wallace, 2000). In my pieces created with cloth and sea water, I documented data that the work continues in its transformative process according to ambient temperature and humidity.

Long has stated that he is in favour of the fact that many of his works are impermanent, believing that the changes in the structures over time echo the reality of human life. This resonates with Bakhtin's concept of the unfinalisability of life:

> "It is never my intention that these landscape sculptures remain permanently, or become known as sites to be visited. Rather that they are out there in the world, somewhere, perhaps to be seen by chance by locals or even nobody at all." (Arnolfini Gallery, 2015:115)

In chapter two, evaluation of Bakhtin's concepts of the chronotope and unfinalisability are developed alongside the aesthetic of *ma*, a complex word that embodies the concepts of space, time and space-time.

In the following sections I examine the ideas of Bakhtin, Bergson and Lefebvre regarding space, time and space-time. These are illustrated by the work of a range of practitioners, for example Olafur Eliasson, Richard Skelton, Goldsworthy and Cage.

Space *and* Time

There are distinct differences in the approach to the idea of space between the West and Japan. I represented the Western approach in viewing space as something that possesses potential, whether this is anatomically, in the body, outside, working on location, or whether it is offered by a variety of substrates and materials. In Japan, in art and architecture for example, space is an integral part of the siting of objects. The shapes created using space are as important as the objects selected for placement. This idea of placement extends to the arrangement of words used in conversation. These concepts will be developed further in the exploration of space-time and the aesthetic of *ma*.

Each of the writers underpinning this research cites two classifications of time: Bakhtin's great time and small time, Bergson's clock, or measured time, and *durée*, and Lefebvre's linear and cyclical time. In the West, for the most part time has been considered apart from theories about space, following the Cartesian dualism of time and space. However, I believe that both Bergson and Lefebvre explored the idea of space-time in their work.

Bakhtin

Bakhtin's development of his theory of the chronotope means that many of his comments on space are linked with time. He does however note, in his essay 'Forms of Time and Chronotope in the Novel',[2] that:

> "Here and abroad, serious work on the study of space and time in art and literature has only just begun. Such work will in its further development eventually supplement and perhaps substantially correct the characteristics of novelistic chronotopes offered by us here." (Bakhtin, 1981:85)

The final sentence demonstrates an expectation that his work on the chronotope is likely to prove unfinalisable.

Writing in *Bakhtin Reframed*, Deborah J. Haynes interprets Bakhtin's theories for the arts and observes that, although not true of all art in all cultures, "the history of art is the story of human aspiration to represent the experience of place." She continues, "Even the earliest abstract paintings of the twentieth century…can be interpreted as depictions of space and place" (Haynes, 2013:71). Haynes believes representation to be at the heart of one's perception of place and that for an artist, connection to a place can stimulate the desire to represent it. Goldsworthy states:

> "The atmosphere of any place produces a specific work. When I say atmosphere I think I mean many things, but in talking about the space that a material occupies, that space is made visible by the weather, the light; and it is that space that I am trying to understand." (Fowles and Goldsworthy, 2004:167)

Operating in this way the work represents the result of dialogue in time between the artist and place: "Entering the work is also to enter the landscape. I can ask no more of a work than it allow me to enter a place" (Goldsworthy, 2017:13). The 'pull' of a place is individual. For Goldsworthy, Skelton, and Autumn Richardson both the history and absence are key: "The precedent of the building having already been there is often the reason for making the work. I am drawn to places where people have been and gone" (Goldsworthy, 2017:11). Researching place names on

[2] It is difficult to ascertain exactly when this essay was written. It was first published in Russia in 1975 as part of a collection of four essays in 'The Dialogic Imagination'. The English translation of this book edited by Michael Holquist and translated by Caryl Emerson and Michael Holquist was first published in 1981.

contemporary maps, Richardson and Skelton have found evidence of the history and absence that has occurred over time.

> "For example:
>
> *Harter Fell*, a memory; The hill bereft of deer
>
> *Birker Fell*, an echo; The hill absented by birch
>
> *Ulpha Fell*, a reproach; The hill silenced of wolves"
>
> (Richardson, A. and Skelton, R., 2018a:19. Original italics)

Skelton uses this material, along with his sensory findings from encounters in the landscape, to inform his musical and poetry compositions.

Eliasson has a similar ethos:

> "[Eliasson] does not regard space as a naturally occurring substance but as a completely cultural product, which changes as time passes and as it is used in different ways." (Ursprung, 2012:11)

Space and spatial experimentation are at the core of Eliasson's work. It has been said that his art addresses the empty space between expectations and memory (*Imagine: Olafur Eliasson - Miracles of Rare Device,* 2019). He questions how we know there is a space and how we know that space has purpose. Many of his sculptures are situated in public spaces: he believes that their use is important in order to demonstrate that these also have purpose, that they are not simply the emptiness between private spaces. In positioning people at the centre of the experience of his work he wants the interaction to help them understand how and why they navigate their way through the world. He spends time in Iceland walking and photographing the landscape, particularly the glaciers and waterfalls. He has found that understanding how waterfalls behave allows him to gauge distances and scale: "…once you see the scale you also see yourself. You can scale your physical presence and the size of the space" (*Imagine: Olafur Eliasson - Miracles of Rare Device,* 2019).

Bakhtin's Time

In addition to his development of the concept of the chronotope, in his notes regarding contexts of understanding, Bakhtin describes two classifications of time: great time and little time. Great time refers to "…the infinite and unfinalized dialogue in which no meaning dies" (Bakhtin, 1986:169). If a work is significant beyond the

boundaries of the time when it was produced then it can be said to have entered great time. Such works, described as great works, encapsulate the past and still have relevance in the future, for example, Shakespeare's plays. If a work exists only for the present then it will die in the present. Small time signifies "…the present day, the recent past and the foreseeable [desired] future" (Bakhtin, 1986:169).

Bergson

In contrast to Bakhtin's approach to space and time, Bergson, who trained as a mathematician and took a great interest in developments in science and technology, wrote extensively on the theory of space, stressing in particular that space should not be confused with time. However, it is impossible to separate his thoughts on space from those on time since they are intrinsic to his concept of *durée*[3]*. Durée* is a notion of time that is "radically independent of space" (Guerlac, 2006:63). Bergson was criticised by several people for taking, as they viewed it, a mathematical approach rather than a philosophical one. Bertrand Russell voiced his thoughts with the following statement: "Now while mathematical space and time have the property of compactness, it is not clear that we can extend this to actual space and time" (Pearson and O'Maoilearca, 2014:9).

Bergson's first work, 'Essai sur les données immédiates de la conscience' ('Time and Free Will: An Essay on the Immediate Data of Consciousness') was written with the intention of separating space and time. Bergson describes time as "a homogeneous medium in which our conscious states are ranged alongside one another, as in space, so as to form a discrete multiplicity" (Bergson, 2014:67). He is suggesting here that when we speak of time we are really speaking of space and that we count space but not time.

> "For if time...is a medium in which our conscious states form a discrete series so as to admit of being counted, it is to be presumed that time, understood in the sense of a medium in which we make distinctions and count, is nothing but space…it follows that pure duration must be something different." (Bergson, 2014:67)

Bergson proposed two categories of time: measured or clock time, and *durée*, which is lived or experienced time. Measured time is divisible but *durée*, as movement or becoming, is indivisible. It belongs only to the observer and can only be understood

[3] In her notes on translations in *Thinking in Time*, Suzanne Guerlac comments that using the usual term 'duration' as the English word for *durée* misrepresents Bergson's intention. (Guerlac, 2006: xiii) In this work I use the term *durée* rather than duration, except in quotes from the English translation of Bergson's writing.

through experience, or what Bergson called (philosophical) intuition. This intuition is not perception but memory.

To illustrate measured time and *durée,* Bergson asks us to imagine a finger tracing a line across a sheet of paper without looking at the action. The motion is perceived internally by the person undertaking the action as "a continuity of consciousness, something of my own flow, in a word, *durée*" (Bergson, 2014:255-6). The line itself, from beginning point A to end point B, can be subdivided an infinite number of times to create multiple sections that exist independently from each other. Each section, having a start and end point, can be measured. The movement creating the line cannot be sectioned since each section impacts those on either side and therefore cannot be measured.

Long's walks can be viewed in a similar way, where the whole body functions as the finger in the example cited above. The distance covered can be measured but the trace of the walk, the movement of the body through time and space, has no permanent characteristics.

> "The walk is structured in terms of the relationship created between the artist's body, his experiences, aspects of the landscapes – and time." (Long and Moorhouse, 2005:36)

In the introductory statement to *Projects*, Goldsworthy states that his projects "rarely have a beginning or an end, and in this respect cannot be measured" (Goldsworthy, 2017). He cites the example of a work entitled *Wood Line* [*Presidio of San Francisco*] stating that even though the piece will change and decay over time, the presence endures in an altered state, "even when it becomes just a gesture on the floor" (Goldsworthy, 2017: 14).

Image redacted for reasons of copyright

Fig. 2 *Wood Line, Presidio of San Francisco* (2011)

Lived time, *durée,* is a continuation of the past into the present and potentially forward to the future. Bergson also calls this real time and conceived time. It is conceived time because "we cannot conceive a time without imagining it perceived and lived. Duration therefore implies consciousness…" (Bergson, 2014: 255). In his work, in which he investigates the psychology of how we perceive time, Marc Wittman writes, "Presence, on a basic level, is temporally extended bodily awareness", adding that "…consciousness of oneself as a psychological entity is tied to one's experience of duration" (Wittman, 2016:104).

Land artists accept that changes may be registered in their work over time. Goldsworthy has noted that "In order to understand time, I must work with the past present and future" (Goldsworthy, 2000:7). Eliasson believes that the present needs to be guided by the future, saying that he "thinks of a work of art as an unthought thought sent back to you from the future" (*Imagine: Olafur Eliasson - Miracles of Rare Device,* 2019).

Bergson writes that:

> "Real duration is *experienced*. We *learn* that time unfolds and moreover we are unable to measure it without converting it into space and without assuming all we know of it to be unfolded." (Bergson, 2014:265. Original italics)

In the following example, Bergson explains the concepts of unfolding and the unfolded. If we look at the trace left in the night sky following the passage of a shooting star, the divisible line stands apart from the indivisible motion of the star. The mobility is pure *durée*, unfolding. The trace of motion left in the space it occupies is unfolded. Bergson explains that the unfolding and the unfolded are separate. Breaking the unfolding would make no difference to the unfolded. The unfolded is divisible and therefore measurable as space. If there were no unfolding, there would only be space. Space without duration does not represent time.

In developing his theories, Bergson uses several terms that related to my practice: flow, folding, unfolded, movement and interaction. I also distinguished the two categories of time he discusses. For example, in lung function testing, I used a vitallograph to record lung volumes or 'space' within the thorax, a machine which could indicate different lung pathologies. The stylus of the machine traced both the speed and volume of flow of a maximal expired breath on moving graph paper. The measurable, traced flow loop represents the unfolded. The unfolding or *durée* is that experienced by the patient and is not measurable, but can be communicated.

Drawing, which embodies time, space and the interaction of the body with a variety of media, as well as illustrating Bergson's ideas, continues to be an essential discipline in the twenty-first century, as Michelle White notes in her essay on Richard Serra (White, 2011). At the same time, this observation of Serra's work supports Bergson's theories about space and time:

> "Serra's practice…demonstrates the relevancy of drawing today because it does not indicate an end, nor does it point to theoretical or material limits… drawing is a temporal art. It is an artist's body coming into contact with a surface and making a mark. … these are the traces of touch, time-based indications of one's physical movement across space." (White, 2011:15)

I used Bergson's explanations of *durée* and measured time to inform my work on paper and with cloth and to show my interpretations of drawing water, drawing

breath and drawing thread. For example, in my breath-holding experiments I used measurable time with a stop watch to log the maximum length of time achieved, while using a diary to note the effect on my body. In drawing my breathing, blind, over a period of forty days, the continuous lines traced on the paper represented my breathing for three minutes on each day. The daily record of the experience in terms of my conscious awareness of the exercise was not measurable. Bergson refers to time as being indistinguishable from the continuity of our inner life. He describes this continuity as a self-sufficient flow. The flow is not something that passes but an evolution in which anything identified is simply a snapshot:

> "…of the transition, all that is naturally experienced is duration itself, it is memory, but not a personal memory external to what it retains distinct from a past whose preservation it assures, it is a memory within change itself a memory that prolongs the before into the after keeping them from being mere snapshots and appearing and disappearing in a present ceaselessly reborn." (Bergson, 2014:251)

The interaction of the body and movement is key to many of Eliasson's sculptures. *Your Rainbow Panorama* was designed for the roof terrace of the ARoS Kunstmuseum in Aarhus, Denmark. It is a ring-shaped walkway at the top of the museum. The semi-opaque coloured glass walls, inspired by the colours of the rainbow, allow observers to see the landscape below through changing hues as they walk around the circle. The area is wide enough to permit visitors to pass each other easily, to walk at varying speeds or to stop. The experience of each visitor is unique and the "rainbow colours used in the work bring about a multiplicity of perceptual experiences that emerge from the inextricable union of body and mind" (Beccaria, 2013:102).

Image redacted for reasons of copyright

Fig. 3 *Your Rainbow Panorama 2006-2011 ARoS Aarhus Kunstmseum, Denmark, 2011* (2011)

Image redacted for reasons of copyright

Fig. 4 *Your Rainbow Panorama 2006-2011 ARoS Aarhus Kunstmseum, Denmark, 2011* (2011)

Eliasson's aim with this piece was to intensify the view of the city. He states: "When you walk or move the colour changes – like life, if you want to do something you need to move" (*Imagine: Olafur Eliasson - Miracles of Rare Device,* 2019). Eliasson's engagement with the viewer in his works in this way relates to Bergson's idea of *élan vital* as described in the following section, in which I also link Bergson with Bakhtin's concept of unfinalisability.

Bergson and Unfinalisability

It was my interpretation that Bergson, like Bakhtin, also references unfinalisability in his writing. Without naming it as such, in *Creative Evolution* (Bergson, 2014:207-248) he develops a philosophy addressing the dichotomy between the continuation and discontinuation of life. Bergson explains this by stating that continuation of life exists in terms of the continuity of all living beings, while without discontinuity there would be no evolution. Evolution by definition must embody diversity or discontinuation. He uses the term *élan vital* to describe the original common impulse that drives change forward.

> "The élan vital is an image for the process of time as duration, that is, for time as force, the force that 'pushes life along the road of time' Evolution

> is not something that happens to life, Bergson proposes, it is life itself, a perpetually contingent movement of differentiation." (Guerlac, 2006:7)

These ideas resonate with Bakhtin's thoughts about the unfinalisability of life. Bergson evaluates mechanism and finalism but finds both lacking in substance in terms of applying them to life and evolution. The concept of radical mechanism suggests that any potential for change is precluded since evolution is deemed to occur as a result of previous developments. Bergson believes that radical finalism is equally unacceptable for the same reason, and that finalism, "this doctrine of teleology in its extreme form" (Bergson, 2014:231) is simply inverted mechanism. Finalism, like mechanism, implies that everything is already given and that all that is required is for beings to fulfil expectations. This means that any potential for the creativity of the new would be impossible. Bergson's conclusion, therefore, is that neither mechanism nor finalism can adequately explain the phenomenon of change that characterises life:

> "It would be futile to try to assign to life an end, in the human sense of the word. To speak of an end is to think of a pre-existing model which has only to be realized. It is to suppose, therefore, that all is given and that the future can be read in the present… life on the contrary, progresses and *endures* in time." (Bergson, 2014:235-6. Original italics)

On 6th April 1922 Bergson took part in a public debate with Albert Einstein on the subject of time. I include mention of this here to give some background to the global interest in investigations into time and space when Bakhtin, Bergson and Lefebvre were developing the theories used in this research. The debate was key to our current interpretation of time, challenging the wholly scientific approach, and was instrumental in dividing science and the humanities[4] (Canales, 2015).

Bakhtin also references Einstein's theories in his work on chronotopes, demonstrating a further link between Bergson and Bakhtin in the context of this research.

In the final section on space and time I examine the work of Henri Lefebvre.

[4] See Appendix 1 for more details.

Lefebvre

> "As for philosophical thought and thought about space and time, it is split. On the one hand we have the philosophy of time, of duration, itself broken up into partial considerations and emphases: historical time, social time, mental time, and so on. On the other hand, we have epistemological thought, which constructs an abstract space and cogitates about abstract (logico-mathematical) spaces." (Lefebvre, 1974:24)

I investigated the two volumes of Lefebvre's key writings that have been fully translated into English for this research: *The Production of Space,* published in 1974, in which he too, references the dichotomy between philosophy and science; and *Rhythmanalysis,* which was his last work, published posthumously in 1992. Despite the chronology of the publication of his works, Stuart Elden comments that the development of Lefebvre's ideas regarding temporality were established several years before he began his analysis of space (Elden, 2013:2). Both works reference space and time. Although the words chronotope and unfinalisability are not specifically mentioned, I identified references to both concepts within these volumes.

Background

Elden (2013:3) notes that Lefebvre's early works were written at a time when he was part of a group of philosophy students attending the Sorbonne in Paris. Their works aimed to challenge the prevailing philosophy of Bergson, which they felt to be politically irrelevant. Lefebvre's writing was also shaped, although not exclusively, by his strong Marxist views.[5] The group believed that while it was important to follow developments in science, for example Einstein's theory of relativity, philosophy was part of everyday life and not an exclusive pursuit.

Lefebvre's early work was focussed on his observations of daily life. It was during the two years spent working as a taxi driver in Paris that Lefebvre began to think about the nature of space. He also associated for a short time with the situationist group and Guy Debord, who first described psychogeography. He became aware of changes occurring in the city and particularly the growth of urbanisation which, through what he termed the production of space, began to draw together the city and the countryside surrounding it. This led to a change in the focus of his work and the publication of seven books between 1968 and 1974, culminating with *The*

[5] The collected works of Martin Heidegger and Karl Marx had just been translated into French for the first time.

Production of Space. In writing this work his plan was to address the reductionist approach that attempted to place knowledge in terms of either the history of science, or the history of philosophy. This, he believes, separates knowledge from ideology and non-knowledge (lived experience) and thus results in "a banal consensus" (Lefebvre, 1974:6). Despite the plethora of research available in the field of epistemologico-philosophical thinking, Lefebvre finds that this only results in producing a *science* of space, offering descriptions of space and what might exist there, and perhaps a discourse of space, but not *knowledge* of space. This approach produced a variety of spaces:

> "…each one piled upon, or perhaps contained within, the next: geographical, economic, demographic, sociological, ecological, political, commercial, national, continental, global. Not to mention nature's (physical) space, the space of (energy) flows, and so on." (Lefebvre, 1992:8)

Beyond this Lefebvre believes that the search for the science of space represents the political use of knowledge, using an ideology designed to conceal that use, and that, at best, it embodies a technological utopia. Lefebvre's objective therefore was "…(not) to produce a (or the) discourse on space but rather to expose the actual production of space by bringing the various kinds of space and the modalities of their genesis together within a single theory" (Lefebvre, 1992:16).

Space

In order to achieve this objective Lefebvre proposes three classifications of space, which could be considered within one theoretical unity but could also be explored separately. The use of three categories or classifications was deliberate; he was determined to break away from the persistent presence of binary theories in philosophy that he felt led only to "opposition, contrast or antagonism" (Lefebvre, 1974:39). He terms these three categories physical space, mental space and social space. Physical space refers to nature and the cosmos. Mental space includes "logical and formal abstractions" and social space embodies "the space of social practice" and "the space occupied by sensory phenomena" (Lefebvre, 1974:11-12). He aimed to designate social space in a way that was distinctive to mental space, "as defined by the philosophers and mathematicians", and physical space as defined by "practico-sensory activity and the perception of nature", noting that it tended to be included in both mental and physical space.

Lefebvre's writing on social space is highly significant to the principal objective of this research: to illustrate the synthesis of clinical and creative practice through space-time. Lefebvre observes that social space is produced by the interaction of the society that inhabits it and proceeds to consider what he terms "three moments" of social space. He uses these to define the relationship of the body in space to demonstrate the connection of the subject (body) to the society, and the society to the subject (body). In so doing, the relevance of his concepts to clinical and creative practice is reinforced. He names the three the perceived, the conceived and the lived. In spatial terms he relates these to social practice, representations of space and representational spaces. To expand on these concepts, social practice implies the use of the body in gesture, work and leisure, movement and sensory stimulation. This is the perceived. Representations of the body originate from accrued scientific knowledge, including anatomy, physiology, epidemiology and the body's interaction with nature and its environment. Lefebvre comments that lived experience is rendered more complex to define because of the commingling of culture, religion and other factors. The three 'spaces' are interconnected, which allows the movement of the individual between each of them.

> "Within the body itself, spatially considered, the successive levels constituted by the senses…prefigure the layers of social space and their interconnections. The passive body (the senses) and the active body (labour) converge in space." (Lefebvre, 1974:405)

My practice, and by this, I mean both clinical and creative practice, was situated within and moved between each of the three areas defined above as perceived, conceived and lived.

The human body is not separate to social space, a view echoed by Eliasson: "Looking at the world is a part of being in the world, there is no stepping back" (*Imagine: Olafur Eliasson - Miracles of Rare Device,* 2019). Mel Gooding expands on this hypothesis:

> "What is it to be human? Each of us in our individual self constitutes a chemical process, a biological system, an organism in dynamic entropic interaction with the circumambient universe. Each of us embodies a consciousness of this fundamental material actuality. The human organism is a term of the total ecosystem, a part of nature." (Gooding, 2007:2)

Land and littoral-based artists such as Goldsworthy, Drury, Eliasson, Long and Julie Brook all make reference to the importance of space and nature in their work. In *Hand to Earth Andy Goldsworthy Sculpture 1976-1990*, Andrew Causey writes of Goldsworthy's environmental sculptures:

> "Goldsworthy is concerned with continuities between art, nature and the human body, and the space created within the sculpture is body space, the projection of the viewer, and not an objective space created as if no person was involved." (Causey, 2004:136)

Rhythmanalysis

The main focus of Lefebvre's work on time is embodied in the development of his concept of rhythmanalysis, in which he demonstrates the interrelationship of space and time with the body in the understanding of everyday life. His development of ideas concerning rhythms is distinct from, yet in some ways related to, circadian rhythms. Circadian rhythms, also known as the rhythms of life, are a reflection of the way in which humans and other living things, including plants, have adapted to the patterns of the universe. The rhythms are evidenced by physical, mental and behavioural changes that follow the earth's twenty-four hour cycle as the processes involved respond primarily to light and dark. These rhythms can affect a variety of functions in the human body such as hormone release, eating habits and body temperature. The most generally understood circadian rhythm is that related to sleep. As the level of light entering the eye decreases with the coming of night-time, this reduces stimulation of the suprachiasmatic nucleus situated in the hypothalamus. As a result less melatonin is produced, rendering the body ready for sleep. Lefebvre sees that in the social sciences time was classified in the same way as space; that is, as categories of time such as historical time, social time, work time. He views concrete time as having rhythm, or rather he sees time as rhythm. Rhythm involves the relation of a time to a space as a localised time or a temporalised space. (Lefebvre, 1992:95-96). Thus, for Lefebvre rhythm is synonymous with the understanding of time, particularly repetition. Rhythm is found "in the workings of our towns and cities, in urban life and movement through space" (Lefebvre, 1992:2). The volume entitled *Rhythmanalysis*, (Lefebvre, 1992) studied for my research, comprises all his work on this topic. It contains writing taken from the third volume of his *Critique of Everyday Life*[6], published in 1981, and two essays, *The Rhythmanalysis Projects* and *Attempt at the Rhythmanalysis of*

[6] The idea of the 'everyday' (le quotidian) has a dual meaning in both French and English. It means the mundane, the everyday but also the repetitive, which happens every day.

Mediterranean Cities. His aim in developing this project was to persuade people to move away from Cartesian duality and to think time and space together: "The Cartesian tradition has long reigned in philosophy. It is exhausted, but remains present" (Lefebvre, 1992:26).

Lefebvre believed rhythmanalysis would complete the work started in *The Production of Space*. Rhythmanalysis is specifically relevant to this research because of the emphasis Lefebvre places on the body, where it becomes both subject and object. "The theory of rhythms is founded on the experience and knowledge of the body" (Lefebvre, 1992:77). He notes that too often rhythm is mistakenly considered in terms of movement, including sequences of movement and speed, leading to a mechanistic view of rhythm, disregarding the organic element of rhythmed movements. Not only does the body reference biological, physiological and social rhythms, it serves as a metronome and becomes a tool for analysis. At the same time that Lefebvre was working on these ideas, Johannes Itten was building his programme at the Bauhaus where he incorporated diet, exercise and focussed breathing as preparation for freeing the body to begin the creative day. While I did not consider myself to be performing as a rhythmanalyst, the way in which I used sensory ethnography while working on location emulated the methodology suggested by Lefebvre's concept:

> "[the rhythmanalyst] …must arrive at the **concrete** through experience…Just as he borrows and receives from his **whole** body and all his senses, so he receives *data* from all the sciences: psychology, sociology, ethnology, biology and even physics and mathematics. He must recognise **representations** by their curves, phases, periods and recurrences. In relation to the instruments with which specialists supply him, he pursues an *interdisciplinary* approach." (Lefebvre, 1992:31-32. Original italics and format)

Time

Lefebvre found that analysing everyday life revealed social time to be a social product, in the same way that he found space to be a product. He notes three factors about everyday time: "everyday time is measured in two ways…there is a bitter and dark struggle around time and the use of time… quantified time subjects itself to the very general law of this society" (Lefebvre, 1992:83). Measured time is categorised as cyclical and linear. Cyclical time is evidenced by the essential rhythms and cycles such as those found in nature: day and night, the seasons, tidal

flow and biological rhythms. Linear time is the quantified time imposed by clocks and watches, the time of everydayness, imposing monotonous repetitions and regulating activity by subordinating everything to the hours of work. The cyclical cuts through the linear, so that “In the everyday this results in the perpetual interaction of these rhythms with repetitive processes linked to homogenous time” (Lefebvre, 1992:82).

The “bitter and dark struggle” refers to the manner in which natural rhythms are altered and become secondary to the exigency imposed by a variety of technological or socio-economic reasons. Lefebvre notes that this warrants further research.

Expanding on the way in which quantified time subjects itself to the very general law of society, Lefebvre condemns it as: “both uniform and monotonous whilst also breaking apart and becoming fragmented…There is not time to do everything but every ‘doing’ has its time” (Lefebvre, 1992:83).

This view is supported by Jeanette Winterson, who writes that since 1840 time has evolved into a commodity. Until Greenwich Mean Time was adopted in 1880, time progressed at the pace of the “natural, pre-industrial world”. Now, we find time stressful because often we cannot find it:

> “We have lost, not leisure exactly, but a sense that there is enough time to do what needs doing and some left over to enjoy. We thought we could become Time Lords; instead we live in a clockocracy.” (Winterson, 2016:89)

This signifies what is often termed the work life balance, or more usually imbalance. Lefebvre refers to the way monotonous repetitive tasks (work) are gradually taking up more and more hours in the day and even the weekend. Writing from experience, the commuting work day for those travelling by train starts at the point they manage to secure a seat and ends (briefly) for the journey from station to home, where it may recommence after a few hours.

During the research project, my clinical practice demonstrated each of these factors, confirming the idea that the cyclical and the linear constantly interact. My work was necessarily ordered by the linear and yet the nature of clinical intervention could never be described as monotonous. There was never enough time to complete everything within the hours allocated and working twelve and twenty-four hour shifts certainly disrupted the circadian rhythms, specifically sleep, and sometimes the ability to respond to hunger and thirst. The shift work pattern was irregular and continually subject to change. Creative practice situated in the littoral generally

prioritised the cyclical over the linear; studio-based work changed over the course of the research. As with the understanding of time and space that I had accrued through Bergson's writings, I used the knowledge gathered from Lefebvre's concepts to inform my work on paper and with cloth. For example, in the piece entitled *Experience* the stitched spiral was marked with a bead inserted at each interruption. A written log kept track of the time spent stitching. Edda Renouf's use of the word spiral, in relation to the selection of work for an exhibition that covered a period of thirty-five years, resonated with my choice of the spiral in this work: "It is a reflection of the spiral moving energy of existence where there is no beginning and no end" (Renouf, 2013). As Lefebvre observes:

> "Time and space, the cyclical and the linear, exert a reciprocal action: they measure themselves against one another; each one makes itself and is made a measuring-measure; everything is cyclical repetition through linear repetitions." (Lefebvre, 1974:18)

Richard McVetis's work *Particles - Front Phase 1*, which combines the cyclical and the linear, relates strongly to the Lefebvre's thoughts regarding everyday time. In his statement McVetis notes that the work will continue to change over the following year. The key theme of this work is the "mapping of space and the marking of time" (McVetis, 2019). Through the process of hand embroidery, the stitches record time and represent lived time. My piece *Experience* represented the same concepts.

Fig. 5 *Particles – Front Phase 1* (2019)

Drury's *Basket for the Moment between Death and Life* references the cyclical and the linear. The basket is not related to a place but was made to designate that time in the year when winter has almost ended and spring has not quite started. The opening is constructed from two found sheep horns and Drury states that the joining of the two signifies the cyclical nature of the year. The repetitive nature of the weave is similar to the repetitive nature of stitch and records the linearity of making (Drury, 1998:22).

Fig. 6 *Basket for the Moment between Death and Life* (1985)

Having established his thoughts on the cyclical and the linear, Lefebvre questions whether there might be any other categories of time. His response is to consider "appropriated time", where conscious awareness of the time no longer exists. My interpretation of his explanation is that it suggests flow states described by Mihaly Csikszentmihalyi and referred to in Edward J. Soja's *Thirdspace* (Soja, 1996). Soja's work builds on the ideas set out in Lefebvre's *Rhythmanalysis* and this is discussed further in chapter three in the section on flow.

> "…it [appropriated time] arrives or emerges when an activity brings plenitude…This activity is in harmony with itself and with the world. It has several traits of self-creation or of a gift rather than of an obligation or an imposition come from without. It *is* in time, it *is* a time, but does not reflect on it." (Lefebvre, 1992:85. Original Italics)

Repetition

In the context of rhythmanalysis, repetition is similar to time in that Lefebvre categorises repetition in the same way: cyclical and linear. Cyclical repetition occurs with the seasons, day and night, the waves and the tides. Linear repetition originates in social practice, in human activity. There are three important factors to note. First, there is no rhythm without repetition in time and space. Second, there is no such

thing as absolute repetition, which demonstrates a relationship between repetition and difference: “Absolute repetition is only a fiction of logical and mathematical thought” (Lefebvre, 1992:17). The explanation for this is given in the following example. The equation A=A (where = indicates identical not equal) cannot be correct. The A that is second cannot be identical to the first A. Finally, repetition does not exclude differences, it can result in differences. When considered in terms of the quotidian, there is always something new that causes a change within the repetitive: difference. This leads Lefebvre to formulate the statement: “differences induced or produced by repetitions constitute the thread of time” (Lefebvre, 1992:17).

Cyclical repetition and linear repetition interact in the same way as cyclical and linear time. The opposing characters of the two in relation to each other may give rise to compromises and disturbances, but it is the relation that comprises the measure of time and rhythms. Lefebvre’s example of this is that “The circular course of the hands on (traditional [analogue]) clock faces and watches is accompanied by a linear tick-tock” (Lefebvre, 1992:18). The cyclical implies becoming, for example a new dawn, the linear tends to oppose that which becomes.

Drury’s woven map works demonstrate movement across time and space together. For example, in one piece he has woven the maps of West Cork and Bandolier New Mexico, uniting them through the spiral pattern that he found was common to both cultures (Drury, 1998:47).

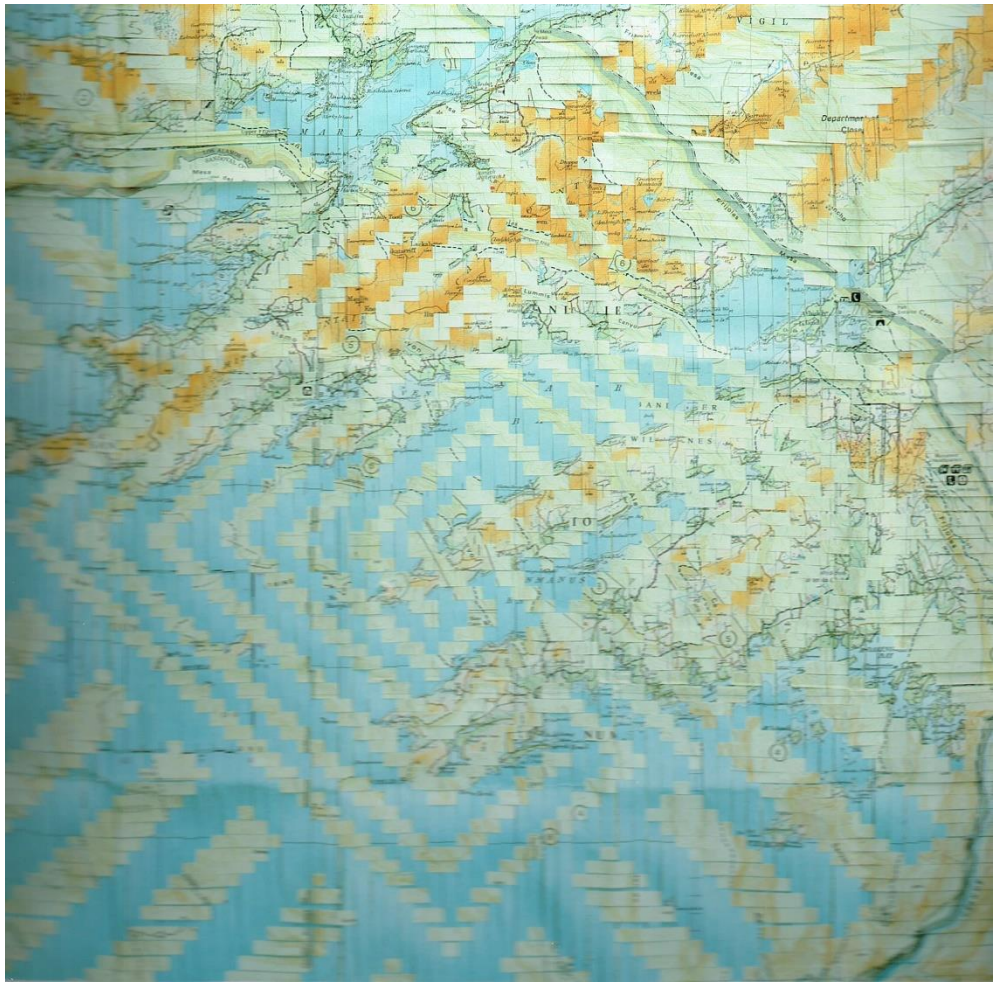

Fig. 7 *West Cork/New Mexico* (1995)

Vivian Suter's paintings are completed outside her studio on the ground of her garden in Guatemala, which used to be a coffee plantation. In 2005 a mudslide occurred as a result of a hurricane, potentially destroying much of her art work. Her response was recorded in an interview in 2020:

> "At the time I saw it as just a catastrophe…but as they started drying, the colours began to come out, and I realised that I had to start working with nature and not against it. (Armitstead, 2020)

Demonstrating cyclical repetition and difference over hours and days, she allows the weather, animals, plants and insects to interact with the canvases, which are hung unstretched.

Image redacted for reasons of copyright

Fig.8 *A large canvas dries in the 'laager'* (2020)

Rhythm

> "Everywhere there is interaction between a place, a time and an expenditure of energy, there is rhythm." (Lefebvre, 1992:25)

It might be assumed that Lefebvre would use music as the area in which to focus his hypothesis. He does address this in one chapter of *Rhythmanalysis*, but it is important to note that rhythm is not tempo. He suggests that music might presuppose "a unity of time and space, an alliance, in and through rhythm" (Lefebvre, 1992:70). He adds that the link between music and society changes over time and with the structure of the society. It can also be influenced by other factors such as the relation to nature and to physiological and psychological life.

As an alternative, Lefebvre situates the hypothesis for his study of rhythms in the body, rendering it specifically relevant for inclusion in this research. The living body presents as a mass of rhythms and demonstrates clearly the three classifications of rhythm. All of these were pertinent to my practice: eurythmia, polyrhythmia and arrhythmia. Eurhythmia is the harmonious relationship of the multiple organs in the body, which indicates equilibrium and health, polyrhythmia indicates two or more simultaneous rhythms and arrhythmia describes disruption in a regular rhythm and

is generally used to define irregular heart rhythms. Lefebvre notes that it is impossible to analyse lived rhythms except in the case of dysrhythmia, because in order grasp a rhythm one needs to externalise it. However, in order to externalise a rhythm, one also needs to have internalised it; that is, to be aware first of all that there is rhythm and then to understand and analyse it. The analysis of physiological rhythms was key to my clinical practice. In considering the synthesis of clinical and creative practice I was able to record subjective rhythms with the use of the Hexoskin Smart Garment monitoring system. The data collected was used in studio practice. Gooding makes an observation of Drury's work in Antarctica that resonates with Lefebvre's thoughts. Drury creates pieces outside but also uses body rhythms such as heartbeats united with meteorological data and echograms:

> "His art asks us to listen and to act upon our sense of wonder that the rhythms, repetitions and patterns of life exist within us and without us." (Gooding, 2007:6)

Renouf makes the following statement about rhythm in her work in which she removes thread from the canvases before painting and sanding:

> "For example, with [*Thames-Vl*] *River Sky Encounter #1,* important to me are the rhythms, built up in the repetition of the verticals. Your eye senses them and then they are juxtaposed with the aleatory, completely non-geometrical dark-light ground of the painting, which is reminiscent of sound in its complexity. So, you have this coming together of the geometry which has its rhythm, but then it is unified by the cloud-like shapes which are also rhythmic in a very different way." (Hunt, 2013)

Image redacted for reasons of copyright

Fig. 9 *Thames-VI, River-Sky Encounter #1* (2012)

In my work based on experience on Islay I also used the removal of linen threads to represent the sound and movement of wind and waves. The work was completed over many hours, days and months. Each session set up a rhythm in the cloth and in the nature of the activity. It represented a linear repetitiveness but also included difference, since the character of each linen thread could vary.

The example Lefebvre employs to illustrate eurhythmia and polyrhythmia is particularly relevant to my work in the littoral. Waves successively breaking on the shore possess a rhythm which is dependent on the time of the year, the wind and the water, but also on the sea that produces them. Different locations and seas engender different wave rhythms. Each wave changes as it progresses toward the beach, then it is impacted by a receding wave which generates tiny wavelets travelling in a variety of directions. Huge waves, such as those seen at high tide, clash producing spray; they disrupt one another. The gentle undulations seen at low

tide can absorb each other, creating less disturbance on the surface (Lefebvre, 1992:88). I recorded these differences in rhythm and repetition as data to create the piece *Takes My Breath Away*. This work also referenced the void, chronotope and unfinalisability.

Lefebvre states that everything surrounding the body is also composed of rhythm, such as a stone, a tree and social space. These rhythms are accessed through careful listening. Throughout *Rhythmanalysis* Lefebvre makes statements that define the character of rhythm:

> "It is neither a substance nor a matter, nor a thing. Nor is it a simple relation between two or more elements, for example subject and object, or the relative and the absolute." (Lefebvre, 1992:74)

In order for rhythm to be present there must be repetition in movement. The mechanical duplication of a monotonous sound does not constitute repetition for rhythm. While automated repetition simply reproduces mechanistically, rhythm retains and modifies within repetition allowing for the potential of difference. Rhythm assumes specific, emphasised temporal elements that may even be in contrast and it has an overall movement comprising all these elements. In this way "rhythm enters into a general construction of time, of movement and becoming" (Lefebvre, 1992:87).

Bringing these statements together, Lefebvre creates a framework for rhythmanalysis, which encompasses:

> "A. Repetition of movements, gestures, action, situations, differences
>
> B. Interferences of linear processes and cyclical processes
>
> C. Birth, growth, peak, then decline and end" (Lefebvre, 1992:25)

The analysis of any case, group or individual must cover all three sections to be complete. This methodology is transdisciplinary, combining practice and knowledge from a variety of specialisms: medicine, history, climatology, cosmology, sociology and psychology. Using this model, Lefebvre believes that "concepts that are indispensable for defining rhythm come together" (Lefebvre, 1992:18).

Time is quantified by measure. In music this can be melody but can also be found in action and language. Harmony is both quantitative and qualitative and can be seen in music, art, architecture, activity and diverse arts:

> "**Rhythm** reunites **quantitative** aspects and elements which mark time and distinguish moments in it – and **qualitative** aspects and elements which link them together, found the unities and result from them." (Lefebvre, 1992:18. Original format)

Lefebvre's writing on rhythm and its relationship to time is in accordance with contemporary theories that unite time and space. He directly challenges the persistent separation of the two in social practice, science and philosophy. In using rhythm, he implies the connection between time and a space through the idea of a "localised time" or "temporalized space". As he notes, rhythm is always linked to a place. In my study this included the heart, movement in the littoral, drawing and breathing. "This does not prevent it from being a time, which is to say an aspect of a movement or of a becoming" (Lefebvre, 1992:95-6).

Triadic Analysis

In the analysis of rhythm Lefebvre suggests careful consideration of the following categories, stating that only a minimal part of this list is generally used by those wishing to analyse time.

In order to unravel the complexities of rhythm he states that:

> "a panoply of methodologically utilised categories (concepts) and oppositions would appear indispensable:
>
> Repetition and difference
>
> Mechanical and organic
>
> Discovery and creation
>
> Cyclical and linear
>
> Continuous and discontinuous
>
> Quantitative and qualitative" (Lefebvre, 1992:19)

As stated earlier, for Lefebvre, two parameters are always considered in opposition. He cites the predisposition for dual analysis in religion and metaphysics, for example, good and evil, the Devil and God, immanent and transcendent, life and death, and up and down. Dual analysis studies relations and interactions. Lefebvre's criticism of this approach is that it is reductive in nature: "Binary (term-to-term) oppositions given as evidence enable us to determine the object but not to penetrate into it" (Lefebvre, 1992:70). He cites the work of Georg Wilhelm Friedrich Hegel and Karl Marx as instrumental in establishing a triadic approach through

thesis-antithesis-synthesis. The use of three terms allows for analysis through interaction, conflicts or alliances. Lefebvre's proposal therefore is that these pairs of apparently conflictual terms should come together as dialectical analysis through practice. He is clear that the proposal to approach analysis through three terms should not be seen as a move towards the use of the 'sacred number' as in The Holy Trinity. Using three terms in analysis enables examination of their relationship, which can vary according to the point of view taken. However, it is important to note that "The analysis does not isolate an object, or a subject or a relation. It seeks to grasp a moving but determinate complexity" (Lefebvre, 1992:21).

In music, the triad is melody-harmony-rhythm. In analysis of different forms of music one of the three terms dominates. For example, in a cappella pieces harmony would be prominent over melody and rhythm.

The triad for space and time is completed with energy:

> "When we evoke 'energy', we must immediately note that energy has to be deployed within a space. When we evoke 'space' we must immediately indicate what occupies that space and how it does so; the deployment of energy in relation to 'points' and within a time frame. When we evoke 'time' we must immediately say what it is that moves or changes therein. Space considered in isolation is an empty abstraction; likewise, energy and time." (Lefebvre, 1974:12)

This triad describes the work of many of the artists included in this research. Examining different pieces with the triadic approach can facilitate a new understanding of the work.

Goldsworthy makes the following comment about his work in *Projects* in which he places energy in the work as well as the energy involved in making. The sculptures in the *Projects* also relate to time and space but Goldsworthy places energy as the dominant feature here:

> "Those works do have an energy because they're in a dynamic tension with their location. And the challenge of creating a line out of materials with as much resistance as stone, wood or stalks can give a line tremendous tension and energy." (Goldsworthy, 2017:15)

Long works with water, mud and stone as well as walking. He formed *A line left by the tide* by working with the seaweed line left by the receding tide. The two patterns

remained for just one tidal cycle of six hours, illustrating interaction between the linear and the cyclical.

On one of his walks, Long travelled across country “between the mouths of two tidal rivers, measuring the walk relative to the tides, by lunar time” (Long, 2007b:51). This work embodies space-time-energy as well as the linear and the cyclical.

The energy involved in a piece can involve the viewers as well as the artist. Working in the Nevada desert Drury drew a three-hundred-foot spiral in the sand using a landscaping rake. Due to the high daytime temperatures the work was completed at night, by the light of the moon, and took fifteen hours to complete. *Winnemucca Whirlwind* was never intended as a permanent piece but the following day rain obliterated the spiral. It was redrawn for the exhibition, but there was no guarantee that it would be visible. The site selected was some distance from the gallery and visitors were required to locate the viewing point by using personal Global Positioning System devices (Wolfe, 2009:39).

Fig. 10 *Winnemucca Whirlwind 2008* (2008)

Experienced Space-Time-Energy

The choice to use the threshold between land and sea to situate my work was motivated by a combination of factors. The sea is a powerful force of nature demonstrating rhythm, breath, energy, fluidity and movement. The littoral is a place where the geography, geology and weather conditions are constantly changing and there is the constant lure of the horizon line. Working at the interface I found the potential to position myself on either side of the threshold, able to interact with the environment and to be in a space where I was able to fully engage with my senses.

The selection of outside spaces in which to work for this research was challenging at times. Although I did not live far from the coast, I spent many hours trying to find suitable locations that could be accessed on a daily basis. Not only did I need to sense that connection described by Haynes, but the location had to fulfil a specific list of requirements, the most important of which was safety. Some coastlines that seemed attractive proved to be unsafe. In selecting sites further afield for longer periods of time, the decision to work on Islay was made intuitively, while the two separate weeks in Pembrokeshire occurred as opportunities to work in a studio, as well as outside. In Pembrokeshire I also had the added security of the presence of a colleague who knew when and where I would be working alone. Although both locations were unknown to me prior to the visits, connectivity to the space was achieved through working alone over time. Working outside demonstrated Haynes's thoughts that land art and other means to represent place specifically refer to Bakhtin's writing about chronotope and also afforded an opportunity to relate his ideas about literary genres to the visual arts (Haynes, 2013:71).

Operating in the littoral, which embodied space, time and energy, was directly linked to Lefebvre's concepts. Using the space-time-energy triad, the dominance of one term over another changed according to a variety of factors such as fatigue, the time of the tide, the weather, the temperature and the season, etc. No two experiences were identical, demonstrating difference in repetition.

Lefebvre and Unfinalisability

As with Bergson, Lefebvre's writings also contain an indirect reference to Bakhtin's concept of the unfinalisability of life. Lefebvre believes that in all areas of life from the personal to the global, space will play an increasingly important role in society and that because of this, he advocates that knowledge of space should necessarily develop in an inter- and trans-disciplinary manner. Knowledge of space will continue to progress because there will be constant growth through the continued production

of space. Towards the end of *The Production of Space* Lefebvre indicates an awareness that although he has established his plan to develop a knowledge of space, further development, using this work as a foundation, will be required in the future: “A number of theoretical conclusions still need to be drawn, however, from these observations” (Lefebvre, 1974:412). His expectation was that someone else would take the work forward.

The same idea applies to *Rhythmanalysis.* In the final paragraph of the work Lefebvre states:

> “In proposing here several hypotheses in the hope that they would be taken up and carried further than before by others, we wanted to verify them as far as possible. The path marked out by these concepts thus opens itself into finer analyses. To be undertaken.” (Lefebvre,1992:106)

As referenced in chapter three, Soja used this work to develop his own theories in *Thirdspace.*

Space-time

> “This term [space-time] is employed in mathematics, and was introduced as part of Einstein’s Theory of Relativity. The special meaning it has in relativity theory is not important for our purposes, we are borrowing it for literary criticism almost as a metaphor (almost but not entirely). What counts for us is the fact that it expresses the inseparability of space and time (time as the fourth dimension of space). We understand the chronotope as a formally constitutive category of literature, we will not deal with the chronotope in other areas of culture.” (Bakhtin, 1981:84)

Bakhtin’s concept of the chronotope was developed in relation to literary genres. I took it in translation as space-time, with reference to practice. Both Bergson and Lefebvre indirectly reference chronotope as space-time in their writings.

Bergson demonstrates a progression towards the idea of space-time when writing about *durée* in his final published work *The Creative Mind*:

> “All through the history of philosophy time and space have been placed on the same level and treated as things of a kind; the procedure has been to study space, to determine its nature and function and then to apply to time the conclusions thus reached. The theories of space and time thus become counterparts of one another. To pass from one to the other one had only to change a single word; ‘juxtaposition’ was replaced

> by ‘succession’ Real duration was systematically avoided.” (Bergson,1934:4)

In *The Production of Space*, Lefebvre states that each society is responsible for producing its own space. Societal spaces of the past “cannot be understood as a collection of people and things in space; nor can it be visualised solely on the basis of a number of texts and treatises on the subject of space” (Lefebvre, 1974:31). In order to interpret these spaces, it is necessary to examine all aspects of the space in question. This includes its origins, the rhythm of daily life at that time, the flow of society through the space and the manner in which the architecture developed. This would be synonymous with the chronotope of the society.

Lefebvre uses the term ‘space-time’ in both *Rhythmanalysis* and *The Production of Space*. In the following statement about rhythm in his development of the space-time-energy triad in *Rhythmanalysis*, he writes:

> “[Rhythm] … is neither a substance nor a matter, nor a thing. Nor is it a simple relation between two or more elements… Doesn’t its concept go beyond these relations: *substantial-relational*? It has these two aspects but does not reduce itself to them. The concept implies something more. What? Perhaps **energy**, a highly general concept. An energy is employed, unfolds in a time and a space (a space-time).” (Lefebvre, 1992:74. Original italics and format)

In *the Production of Space,* he considers whether the East, specifically China, has thought about the difference between the representations of space and representational spaces. While admitting that he has insufficient knowledge to develop this idea and that his writing will focus on the West, the following sentence has particular relevance for this research:

> “It is indeed quite possible that the Chinese characters combine two functions in an inextricable way, that on the one hand they convey the order of the world (space-time), while on the other hand they lay hold of that concrete (practical and social) space-time wherein symbolisms hold sway, where works of art are created, and where buildings, palaces and temples are built.” (Lefebvre, 1974:42)

In this chapter I have shown that the writings of Bakhtin, Bergson and Lefebvre are linked through the term space-time. My research also revealed that space-time is one translation for the Japanese aesthetic of *ma*. *Ma* is a complex term, tacitly

understood by the Japanese and one that impacts all aspects of daily life in Japan. For this reason, I chose to explore *ma* in detail in a separate chapter. I would add that, as a Western artist, I was not claiming that my work embodied *ma*, but my interrogation of this aesthetic revealed that the characteristics of *ma* resonated with my practice and these are discussed in the following chapter.

Chapter 2 Space-time

Ma

間

"Length of time depends on our ideas

Size of space hangs upon our sentiments

For one whose mind is free from care

A day will outlast the millennium

For one whose heart is large

A tiny room is as the space between heaven and earth."

(Yuhodo, 1926 cited in Nitschke, 2018)

The character **間** represents *ma*.[7] *Ma* originated in China where it was used to describe space, before moving to Japan where it incorporated the notion of time as well as space. The translation into English is subject to various interpretations. In this chapter I present some of these in relation to everyday life, architecture and the arts in Japan. My research into *ma* was a continual process throughout the study as I discovered more literature. As a quintessentially Japanese notion, much of the documentation is in Japanese. Despite this, I was encouraged to interrogate *ma* in response to comments by Haynes and Sachiyo Goda in their writing. In *Bakhtin Reframed* Haynes suggests that social and aesthetic theories could help artists assess and develop their own work (Haynes, 2013:22). In the conclusion to her PhD thesis*, An investigation into the Japanese notion of ma: practicing sculpture within space-time dialogues* Goda hopes that *ma*, "particularly in relation to the conceptualization of space/time" would be used to "enhance the vocabulary of Western artists" (Goda, 2010:166).

Gunter Nitschke, Director of the Institute for East Asian Architecture and Urbanism in Kyoto, spent three years in Japan in the 1960s, researching the design of architecture and planning in relation to *ma*. His writings on *ma* were instrumental in gaining an understanding of this term (1966, 1993, 2012, 2018). In 1976 Isozaki had an exhibition in New York entitled *MA – Space-Time in Japan* which opened out the

[7] I have used italicised *ma* in my discourse but retained the original font in any direct quotes throughout.

concept beyond Japan. Introspective consideration of *ma* in relation to my study led to the formulation of the following three questions:

Could *ma* as space-time could be related to Bakhtin's chronotope?

How would *ma* as space-time correlate with the work on space and time of both Bergson and Lefebvre?

Could *ma* help to demonstrate the synthesis of clinical and creative practice through space-time?

Interpreting *Ma*

I found several different interpretations of the term *ma* in English encompassing space-time, gap, interval, emptiness, absence, void, bridge and others. For the Japanese, understanding of the term is implicit, but translation is problematic as the definition can vary according to context.

Nitschke states that he uses *ma* to mean place, although dictionaries define it as space. He elected to do this partly because the idea of place predates the current use of space to describe a measurable area, but he also wanted to separate it from Itoh Teiji's use of *ma* as 'imaginary space.' Nitschke writes: "…this deals only with the subjective aspect, without doing full justice to the full spectrum of use and meaning which this venerable character represents" (Nitschke, 2018:1). This approach is echoed by the Nō actor, Komparu Kunio, who stresses that *ma* is "a unique conceptual term, one without parallel in other languages" (Pilgrim, 1986:257).

In comparison with the West where space implies emptiness, in Japan the word space is not interpreted as empty. As Kevin Nute states:

> "The crucial point here is the distinction between the primitive notion of 'a space'- as essentially an absence – and the abstract concept of a space as a positive entity in itself… Ma then can legitimately be interpreted as 'a space' in the sense of an unfilled void, but should not be confused with the concept of 'space' itself…" (Nute, 2018:2)

The idea of *ma* as void means that it cannot be seen, but it can be symbolised by the ideogram **間.** The following page shows the ideogram written in a variety of fonts.

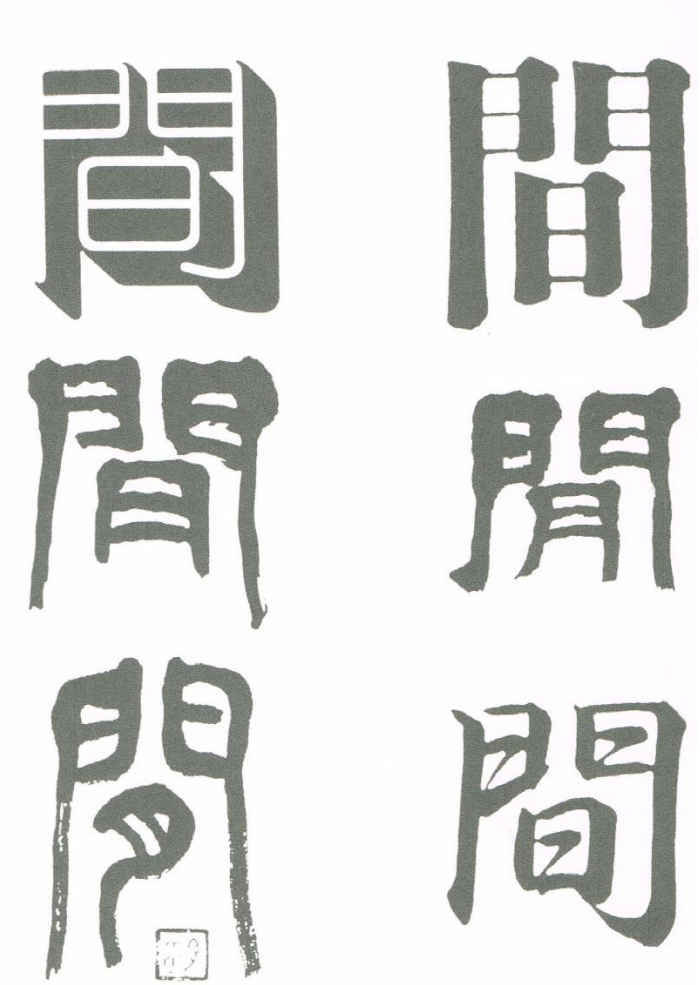

Fig. 11 *Calligraphy of the character for ma, written with the brush in various degrees of cursiveness, or in modern print* (1993)

Nitschke explains the ideogram in the following way. The two outer characters are said to denote a gateway or door; the central character, the moon shining through the gap. More recently there has been some debate about whether the central character stands for the sun, but Nitschke is clear that it is the symbol for moon. The gate is a fixed image, the moon a moving image, so demonstrating the three elements of *ma*, space, time and space-time, and the features that offer a sense of place, the objective and subjective components (Nitschke, 2012). The ideogram

thus shows connection to Lefebvre's rhythmanalysis by referencing the linear and the cyclical and to Bergson's clock time and durée.

The ideogram understood in this way signified links to both creative and clinical practice. The fixed and moving elements and the image of the moon related to my work in the littoral and the rhythm of the tides. I identified that the ideogram also related to the diagram used in medical assessment to document the main features of the thoracic cavity, the heart and lungs.

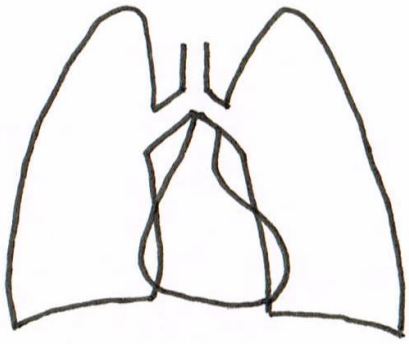

Fig. 12 *Medical Assessment Diagram* (2020)

Long and Drury have both completed work in the landscape that illustrate the ideogram for *ma*.

Long creates gallery pieces that specifically complement works made in the landscape. One example of this is an early work, *Untitled*, exhibited in the gallery at St. Martin's School of Art, London, in 1967. The landscape work consisted of a circle crossed by a single diagonal line composed of sticks, sited in a field in Westmoreland. The sculpture was created at 3 p.m. on 13th April and the diagonal pointed to the direction of the sun at the time of making. The entire sculpture was relocated to the gallery in London, again with the diagonal fixed on the sun's position at 3 p.m. In the gallery, visitors were given a handwritten card with a photograph of the original siting of the work. The card read:

> "The two sculptures are records of two historical positions of a third relatively moving object and are separated by the time of 168 hours and 225 miles. They are the same size and of similar components. Thus, two

objects become related to each other via a third in a context of time and distance, memory and travel." (Wallis, 2009:48-49)

Syrad notes that Drury's work embodies permanence and impermanence. "In Zen an understanding of the eternal movement of nature is essential to a respect for nature. Here impermanence might be called movement, permanence, stillness" (Syrad,1998: 10). This is evident in his cloud chamber series where the structure of the building is fixed and the projected image is constantly changing.

Fig. 13 *Eden Cloud Chamber* (2002)

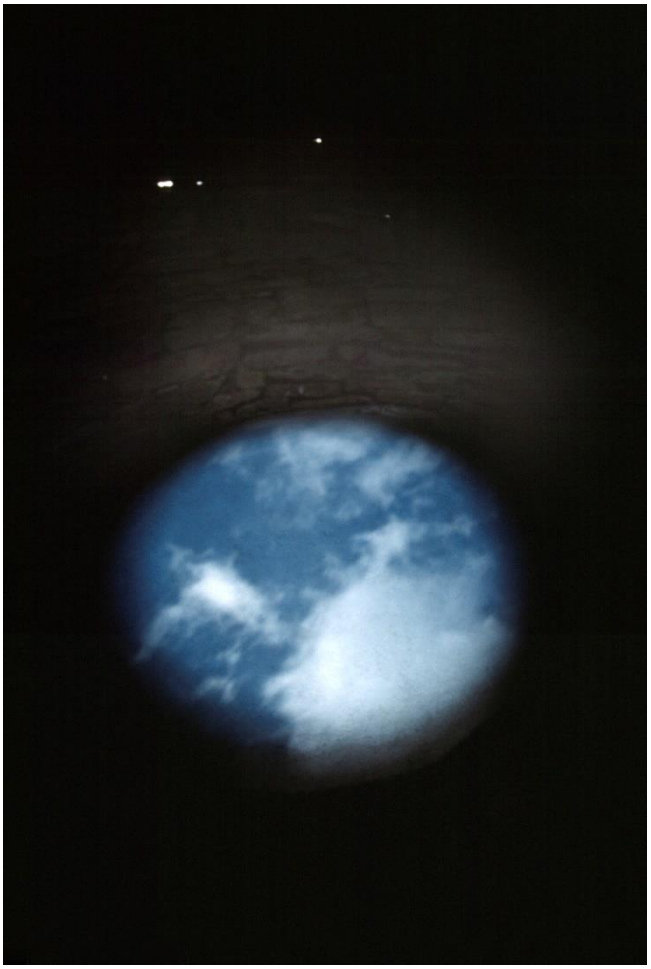

Fig. 14 *Eden Cloud Chamber Projection Inside* (2002)

Fred Thompson offers the idea that “ma describes a continuum over space and time, or assuggests, the emptiness contained by the walls rather than the space as a repository.” Thompson also proposes the notion that spacing might be a more accurate term to apply to *ma* rather than space (Thompson, 1998:120).

Just as the definition of *ma* seems shrouded in ambiguity, so too is its classification. My research showed that it can be termed a Japanese aesthetic, a Zen philosophy, a Japanese concept, a spatio-temporal phenomenon, an aesthetic of space-time, a religio-aesthetic paradigm and an aesthetic way of seeing, among others. It has also been linked to the indigenous religion of Japan, Shinto, as well as Buddhism and Taoism (Pilgrim, 1986:261-2). Thompson observes that the Japanese sensitivity to *ma* is joined to their way of life through Shinto:

> “Shinto attributes personal welfare to the recognition of harmony in and with nature. The interval of Shinto is therefore closely bound to the

intervals of nature which cause fields to yield the harvest and then to lie in fallow." (Thompson, 1998:120-121)

'Interval' is one of the definitions offered for *ma*.

Unravelling *Ma*

Isozaki (Isozaki, 1979) identified nine characteristics of *ma* that he printed for his exhibition *Ma: Japanese Time-Space:*

"Ma is a place in which life is lived

Ma organises the process of movement from one place to another

Ma is a structural unit for a space for living

Ma is maintained by absolute darkness

Ma is a way to indicate the place to which the *kami*[8] descend

Ma divides the world (*hashi*)

Ma is the way to sense the moment of movement

Ma is a sign of the ephemeral

Ma is an alignment of signs" (Isozaki, 1979:69)

***Ma* in Language and Conversation**

Richard B. Pilgrim (1986:260) cites Kemmochi Takehiko who proposed that the very structure of the Japanese language is an example of *ma*. In contrast to Western languages which follow a logical and linear construct, Japanese contains gaps and pauses. These gaps are not considered to be empty, but filled with *ki* (*ke* or *ch'i*) or emotional energy. The significance of *ma* in common usage is also shown by the number of compound words including *ma*. Compound terms including *ma* are often used in haiku and other poetry to set the atmosphere. For example, *nami-ma* (*name-ma*) means 'on waves' (place, time, mood of waves) and *kon-no-ma* means 'among trees' (place, time, mood of trees) (Nitschke,1993:55). It is possible to experience both good and bad ma. *Ma ga warui* literally means the *ma*/placing is bad and when stated in conversation or felt, it means that the situation is causing discomfort. An

[8] The kami are the gods of Shinto. They are not situated in a separate place such as heaven, but co-exist with humans. There are three groups of kami: the ancestors, the spirits of nature and the souls of great people.

example of this might be in a conversation where a participant is made to feel uncomfortable or where responses are made too quickly. This is particularly the case where there is awareness of the disruption to the flow of the conversation or a lack of appreciation for natural pauses and silences (Goda, 2010:61-78).

Ma and Architecture

Architects working in Japan, including Isozaki, cite the influence of *ma* in their design work. Talking of his own work, the architect Kengo Kuma states simply, “Ma is a very necessary thing” (Brownell, 2011:39). Nitschke believes that as the Japanese sense of space, *ma* is best described as “a consciousness of *place*”, where place is used to “imply the simultaneous awareness of the intellectual concepts *form* + *non-form*, *object* + *space* coupled with a subjective experience” (Nitschke, 2012:117. Original italics). Therefore, *ma* is not simply:

> “Something created by compositional elements, but the thing that takes place in the imagination of the human who experiences these elements. Therefore, one could define ma as an *experiential place*, being nearer to *mysterious atmosphere* caused by the external distribution of symbols.” (Nitschke, 2012:117. Original italics)

Nitschke identifies three phases in what he terms the renaissance of the use of *ma* in Japanese architecture, influenced by the Bauhaus movement and the work of Le Corbusier. Phase one is ‘object making’ where the buildings constructed are unsympathetic to their surroundings. The buildings are impressive but dominant with no thought given for contemplation, rendering them oppressive. Phase two (space-making) results in the production of a range of buildings that consider not only the enclosed space of the building but also the space between the buildings. In phase three (place-making) consideration is given to the construction of place as a dynamic entity and is therefore much closer to the application of the concept of *ma* (Nitschke 1966:155-156).

With respect to the division of space within buildings, Nute notes that typically Japanese rooms were given the prefix *ma* suggesting that they were seen as potential areas or intervals between the posts and screens that formed the surrounding walls (Nute, 2018:5). In the West we tend to use solid walls to enclose our rooms and the function of each space also tends to be fixed. Thompson proposes: “We might consider *ma* as a kind of spatial current in which the tension between things sets up a pattern for interpretation” (Thompson, 1998:120). In Japan the designation of an internal space can be changed by the addition of a

recognisable symbol. For example, the addition of a kettle and a flower arrangement would change a study to a room for the tea ceremony. “Like the form of a stream, the form of spaces in a house is the result of process patterns” (Thompson, 1998:121). Space can also be subdivided by the use of textiles, as demonstrated in Keiko Kawashima’s lecture on the subject of *noren* (Kawashima, 2016). *Noren* can be two, three or four lengths of cloth, each separated by a small gap. The cloths may be woven, dyed, printed, or knitted and as well as having a functional use can offer opportunities for artistic expression. Kawashima’s presentation on the placement of *noren*, either outside a building or within a room, also reminded me of the ideogram for *ma* and the medical assessment diagram, particularly as the examples she highlighted often consisted of two lengths of cloth separated by a small gap.

Fig. 15 *Michiko Kawarabashi Noren 1* (2015)

Fig. 16 *Michiko Kawarabashi Noren 2* (2015)

Greta Eacott writes that the application of *ma*, involving the careful placement of objects within room spaces with consideration given to light and shadow, can impact the way those objects are perceived. Instead of focusing solely on the object one is able to appreciate the object, its placement and the space around it (Eacott, 2015). This would support Thompson's proposal that *ma* can be thought of as spacing. This principle of placing/spacing also relates to the formation of the Japanese garden.

Ma and the Japanese Garden

Image redacted for reasons of copyright

Fig. 17 *Ryoanji Temple's Rock Garden and Foliage* (2016)

"**MA**

The garden is a medium for meditation

Perceive the blankness

Listen to the voice of silence

Imagine the void filled"

(Isozaki, 2002)

The image of a Japanese dry-stone garden is well known, but the fact that the ethos underlying the design can be linked to *ma* may be less widely understood. The poem cited above is included in the text written by Isozaki and spoken over a film directed by Takahiko Iimura. The film, entitled *MA: Space/Time in the Garden of Ryoan-Ji* is designed to demonstrate *ma* using the five-hundred-year-old garden of the Zen

Buddhist temple. Iimura has declared a specific interest in the concept of *ma* in film and in this film his intention was not only to demonstrate *ma* but also to allow the viewer to experience *ma*. In his notes written for the *Millennium Film Journal* he states:

> "…through very slow tracking shots I tried to realise the state of MA where time and space are indivisible. The slow tracking shots across immovable objects create a continuous space while making the viewer conscious of his or her own time-process." (Iimura, 2002)

He is also interested in using film to realise Bergson's notion of *durée* in filmic time. Iimura notes that he believes *durée* is "closer to the concept of time in the East, which regards time as duration rather than as divisible" (Iimura, 2002). There are four fixed shots in the film. This would seem to suggest fixed time alongside the lived time or *durée*. While the fixed frames are on screen the voice over reads each of the poems in turn. The poems have a strong resonance with *ma* in terms of the phrasing, the words used and the delivery. The number four is also significant. Later in this section I examine the four dimensions of *ma* before moving on to discuss ma as time-space.

Nitschke considers that the structure used to create the garden was designed to help with meditation, particularly those using staring as a technique (Nitschke, 2018).

"Perceive not the objects

but the distance

between them

not the sounds

but the pauses

they leave unfilled"

(Isozaki, 2002)

The relationship of the placement of the stones and the human body may not at first be apparent. The distance between the stones at Ryoan-Ji is noteworthy for it is directly related to the natural rhythm of breathing, demonstrating a link between clinical practice and *ma*. It is not possible to view all fifteen stones from a single

vantage point. This careful placement allows for manipulation of the body through changes in gait speed and direction of movement.

> “Breathe
> swallow this garden
> let it swallow you
> become one with it”
>
> (Isozaki, 2002)

Reflecting on the placement of the stones and the intention to provide focus I drew parallels with the work of Antony Gormley, where placement and the body are key to his work. In the work entitled *Inside Australia* fifty-one body sculptures were placed across the surface of a dry chemical lake, Lake Ballard in Western Australia, forming what Gormley terms “a horizontal field” (Gormley, 2015:22-29). Gormley noticed that the sculpture became coated with red ochre mud that lay beneath the surface of the white salt crust from the lake, indicating an energy field surrounding the body. The bodies were placed two hundred metres apart and the journey across the dry lake to view them was challenging. He writes:

> “Because of its absolute flatness and whiteness this place allows you to be proprioceptive, to be aware of your own place in space and time …At the same time you contribute to the work by leaving this trace: an emergent drawing that makes a matrix of connections across the site.” (Gormley, 2015:26)

Fig. 18 *Inside Australia, 2003* (2003)

Gormley wanted the work to be reflexive rather than representational, as with the garden at Ryoan-Ji. He explains, “I am talking about the connectivity principle that allows your own trajectory to make connections with these inert masses” (Gormley, 2015:26). This work also illustrates Lefebvre’s notion of time-space-energy and Bergson’s measured time and *durée*.

Long’s statement *Five, six, pick up sticks, Seven eight, lay them straight (1980)* about his work includes this section relating to the notion of placement:

> “I like to use the symmetry of patterns between time,
> places and time, between distance and time,
> between stones and distance, between time and stones…
> My art has the themes of materials, ideas, movement, time
> The beauty of objects, thoughts, places and actions.”
>
> (Long, 2007a:15-16. Original formatting)

_Ma_ and the Arts

> “…the deeper meanings of ma can be found most explicitly in the arts and …the religions of Japan have influenced those meanings in significant ways.” (Pilgrim, 1986:257)

Eacott writes that consideration of the traditional artforms of Japan will reveal a specific approach to the treatment of space “so as to present ambiguity of meaning and an absence of narrative.” She terms the art forms embodying these characteristics, for example, haiku poetry and calligraphy, the arts of *ma* (Eacott, 2015).

Ma and Music

Jonathan Lee Chenette wrote a paper on the use of *ma* by Toru Takemitsu, one of Japan’s leading composers in the Western style. (Chenette, 2006) In his discussion of the concept of *ma* at the beginning of the paper, Chenette uses the phrase “an interval of motion” to define *ma*. He explains that, with reference to space and time, *ma* is only meaningful when it is filled with motion or some other form of human activity such as contemplation. He continues by explaining that in Japanese art *ma* is a means by which the viewer or audience is invited to interact with the work, thereby fulfilling the criteria of action.

Early in my research I considered the concept of *ma* as 'interval', in relation to the statement 'music is the space between the notes.' This phrase has been attributed to a number of composers including Debussy and Cage. Cage is known to have spent time in the East and to have cited an interest in Zen Buddhism. The use of silence in his music operates as *hashi*, allowing interaction between the audience and the performance in the same way that the stones at Ryoan-Ji invite contemplation as interactive areas. As Chenette observes: "The listener must become involved in discovering what sounds themselves can reveal, or the ma – the empty space among the sounds – will remain meaningless voids" (Chenette, 2006:7). Thompson describes this experience with reference to the work of Takehiko Kenmochi. Thompson observes that for Kenmochi: "music has a sense of ma and that ma may lie in those tensive characteristics which have no sound, what the literary Westerners might call "reading between the lines"" (Thompson, 1998:120).

Ma and the Theatre

For the West, perhaps the easiest interpretation of the way in which ma is applied in the theatre is the 'pregnant pause'. However, this is a very simplistic analogy. The most celebrated form of theatre in Japan is Nō, a medium which uses *ma* for dramatic effect. Pilgrim (1986:258-9) notes that the founder of Nō, Zeami Motokiyo (1363 – 1443), described how the moments of no-action (*hima*) are key to the performance. Although there is no action, tension must be maintained within that 'space' in order to preserve the engagement of the audience with the play. This is not the same as the device used in the Western theatre known as 'breaking through the fourth wall' where there is direct contact with the audience. The ability to achieve *ma* is the responsibility of the actor and provides the opportunity for the accomplished performer to heighten the interaction between the audience and the drama, thus enhancing the experience. In this context the pause is both an interval and a bridge referencing two definitions of *ma*. However, for the *ma* to be 'good', Zeami cautioned that this requires great skill, for if the space-time is obvious then it becomes an act, not a period of no-action:

> "The actions before and after an interval (*hima*) of 'no-action' must be linked by entering the state of mindlessness (*mushin*) in which one conceals even from oneself one's intent." (Motokiyo,s.d. cited in Pilgrim, 1986: 258. Original italics)

If either the actor or the audience is aware of the interval then *ma ga warui* (literally, the placing is bad) is the result.

Ma and Dance

Dance represents the movement of a body through space and time. For a dancer the sense of space is not only experienced visually but also through movement, touch and sound. There are two main traditional Japanese dance forms: Butoh and Kabuki.

Butoh was founded in the 1960s by Tatsumi Hijikata and Kazuo Ohno (zenbutoh, s.d., contemporary-dance, s.d.). They wanted to create a form that was essentially Japanese, in contrast with the trend for copying Western styles of dance and in reaction to the control exercised in Nō theatre. Hijikata sought to instill the art with the integrity of what he saw around him. In Butoh, every body shape is the perfect body shape. Hijikata looked to reproduce what he termed a more organic, natural beauty with improvised movement in response to a given image. This might refer, for example, to the forms of the labourers in the rice fields, their backs bent and twisted by the heavy work. Colleen Lanki, a Canadian dancer who spent seven years in Japan training with masters of dance, writes that "the core principle of Butoh is to give value to stillness and silence" (Lanki, 2013).

The film-maker Andrew Kötting illustrates the difference that the application of Butoh can bring in the commissioned remake of his film *Klipperty Klöpp.* The significant distinction between the two versions is the use of a Butoh-trained dancer to replace the actor in the original. The transformation is even more apparent when the two films are viewed side by side (*Klipperty Klöpp Split Screen*, 2017). The intensity and tension in the remade presentation is magnified by the careful placing and movement of the dancer. The sense of suspense prior to some of the changes in direction or movement is palpable and certainly demonstrates *ma*. As Kötting comments,

> "I instructed her to be mindful of her own discipline, ie Butoh…and found that the end result surpassed all of my expectations – I think that there are moments of great Ma that happen BUT more importantly pathos/angst/melancholia/stillness and silence - all at odds with the original work. The way in which she held posture through stillness …was all about timing." (Kötting, 2019)

I found that in watching *Klipperty Klöpp Split Screen* (2017) my eyes were constantly drawn to the new work. My attention was held throughout in the same way that the dancer held her posture.

Ma is integral to Kabuki dance drama in the same way as it is to the Nō plays. Lanki comments that none of her teachers ever discussed *ma* but that she learned to introduce the concept into her own work by emulating the masters. It is about learning how to hold a posture and maintain the stillness before continuing to the next movement. Timing is developed using the internal senses.

The dancer Masako Matsushito makes a similar observation of her performance piece, UN/DRESS.

> "I have to exercise a rigorous self-control over my body in order to achieve the movements and, most importantly, to hold the attention of the audience, which comes from concentration and self-control of me as being in performance mood. To perform in this way, to display movement you have to be totally aware of yourself - your body and mind." (Millar, 2019a)

Utako Shindo states that *ma* results from our engagement with the world through the use of the haptic aesthetic as a means to experience the world, utilising not only touch but also vision and hearing. In his article 'Feet Through: Artistic Practice Between Space and Place', Shindo cites the following observation by Merce Cunningham about his body making contact with the world through dance: "…it has such fluidity like water which goes through your fingers, you know it's there, it has substance, but at the same time, it disappears, and it's so full of what to me are possibilities" (Cunningham,1991 cited in Shindo, 2010).

The contemporary dance company, The Cloud Gate Dance Theatre of Taiwan, combines meditation, *qi-gong* (an ancient breathing exercise) and martial arts to produce extraordinary performances with movements that can be strong and powerful or soft and flowing. Their seminal work is *Songs of the Wanderers* (2016), a story of spiritual pilgrimage that creates a compelling atmosphere in the theatre. The final scene depicts a lone performer silently and slowly raking three tons of golden rice into the familiar concentric circles seen in zen gardens. The tension builds throughout the performance and is sustained by the absence of an interval. Lin Hwai-Min, the choreographer and a practicing Buddhist, has also produced three ballets inspired by the aesthetics of Chinese calligraphy: *Cursive I, Cursive II* and Cursive *III. Cursive II*, set to the music of Cage, is described by Reiner Moritz in the introduction to the video of the ballet as addressing "the lyrical grey tones of calligraphy in which the gesture of the brush strokes is transferred to the movement of the bodies" (*Cursive II*, 2005). The work is about energy: the energy of the traces

left by the brushes on the rice paper. The energy is felt, absorbed and transferred to the movements of the dancers, combined with an emphasis on breathing, demonstrating embodied knowledge. Nitschke comments that full comprehension of calligraphy also incorporates the dimension of time since "it is not only the placing of form into space but also the marking of rhythm in time" (Nitschke, 2018). In this way dance also relates to Lefebvre's triad, time-space-energy.

Ma and Painting

In Japanese painting and calligraphy, the use of negative spaces or blank canvas tends to be far more prominent than in the West. It is the balance of positive and negative spaces that is important. If the balance is poor then the *ma* is bad. In the final analysis the unity of form and non-form is key.

In drawing, one of the techniques used to demonstrate movement is *emaki-mono*. Here, a picture scroll shows how the scenes depicted took place over a period of time as a series of successive events. Each image stands alone and the whole is discontinuous, yet embodies a single event. Another way of viewing this would be through Bakhtin's concept of the chronotope. Each image possesses its own time, space and viewpoint, yet is linked through the scroll to depict a single experience.

A second technique is *un-en* or clouds and smoke. Here complete landscapes and townscapes are shown in the image but different key parts may be separated by sections of clouds and smoke, so that it is the relationship of the various elements that is important.

Thirdly, there is the method known as *iukin-uke-yatei* or 'blown away house'. The image of a building may be shown with the walls and ceiling missing so the view given is directly into the rooms. The full appreciation of the image is completed in the viewer's imagination (Nitschke,1966:153-154).

Ma has become the focus of work for the artist Toshihiro Hamano, who believes that "…the only way to develop new artistic expression is by fulfilling the canvas with ma, which can naturally be attained by mastering the two-dimensionality of painting" (Hamano, 2016). The paintings, monochromatic acrylics on Japanese paper, are floating, abstract geometric forms, with some areas painted so subtly that it is not always clear whether paint has been applied or whether the brain automatically completes the image. The placement and use of space around the images, designed to engage the viewer, does indeed fulfill the criteria for *ma* and assisted me in my appreciation of the concept.

Image redacted for reasons of copyright

Fig. 19 *Meditation 3* (2016)

Ma and Dimensionality

In exploring the topic of *ma* and dimensionality I will show links with the writings of Bakhtin, Bergson and Lefebvre. Three of Nitschke's papers (Nitschke, 1966:152, 1993:50-54 and 2018) include information on the four dimensions of *ma*. **間**[9] can have different pronunciations according to the context, as will be shown in the examples listed below.

The One-Dimensional Realm

This is named in the compound term *hari-ma* and relates to a line in space, length, or distance between two points. It derives from the ancient measure used to build wooden houses where the beam and posts used were designated a standard length, similar to the old use of the term cubit in the West. Because this was a carpentry measure *ma* would be pronounced *ken* in this situation, so lengths in construction would be stated in multiples of *ken*.

As a single character and pronounced *aida*, **間** signifies not only the distance between two points but also takes account of the two end points, demonstrating a relationship to Bergson's drawn line representing measured time.

[9] To avoid confusion between the varying pronunciations, in this section I have used the ideogram for *ma*.

The Two-Dimensional Realm

Two-dimensional 間 is the measure for area and is based on the tatami mat, so a number combined with 間 indicates the size of a room. For example, the phrase *roku jo no ma* designates a six-tatami area. For the Japanese the number of tatami mats also gives an indication as to the style of the room. Outside there are two ways to indicate area: tsubo, which is equivalent to one square *ken*, and *jo*, which is one tatami area. Nitschke adds that in modern construction the square meter is now used.

The Three-Dimensional Realm

Here 間 is tied to *ku* and the compound term is pronounced *ku-kan* meaning space, or, more specifically, the static three-dimensional space of the West. Originally *ku* stood for a hole in the ground but later came to mean sky or heaven. Now it can signify empty in the physical sense and void when used in Buddhist metaphysics.

The Four-Dimensional Realm

Ji plus 間 produces *ji-kan*, literally time-place, immediately linking it to Bakhtin's chronotope which also has the literal interpretation time-place. This is not measured clock time but abstract time. The ideogram for *ji* includes the radical for sun and implies forward movement of the sun: "Thus "time" is expressed in Japanese as "space in flow," making time a dimension of space. Indeed, time is essential to human experience of place" (Nitschke, 2018).

Sculptures placed in the landscape, such as Gormley's work *Inside Australia* cited in relation to the garden at Ryoan-Ji, also resonate with Nitschke's four-dimensional realm of *ma*:

> "…outdoor sculpture must take its chances with the rough and ready of everyday life, and with the elements and the weather. It becomes a local object, not folded into the landscape, but unfolding the landscape because it catches our eyes, in the way that movement does - even though it is in itself unmoving." (Winterson, 2016:40)

Bergson also writes about four dimensions of space and time.

> "Whether a universe has three two or a single dimension, or even none at all and reduces to a point, we can always convert the indefinite succession of all its events into instantaneous or external juxtaposition

> by the sole act of granting it an additional dimension." (Bergson, 2014:263)

He continues by arguing that if a universe exists as a series of points without dimension and a second dimension is added that juxtaposes all the points, this forms a line or one dimension. Adding another dimension produces area or surface. If a series of two-dimensional surfaces are layered on top of each other, then volume is formed. In order to progress beyond this three-dimensional universe, it would be necessary to consider the speed of time, passing from the unfolding to the unfolded, in order to add a fourth dimension. In similar terms to those used by Nitschke, he writes "It is true that exactly at the moment of our passing from the unfolding to the unfolded it would have been necessary to endow space with extra dimension… spatialised time is really a fourth dimension of space" (Bergson, 2014:263).

Place, *Ma* and Cyberspace

In 1999 Nute wrote a conference paper in which he revisited the Japanese sense of space, place and *ma* using the analogy of cyberspace.[10] He comments that although there might be a general awareness of the difference between the Japanese and Western understanding of space, explaining that difference could be problematic. He believes this is complicated by the idea that the Japanese notion of place and *ma* are the same. I make reference to Nute's work here as it offers a contemporary approach to understanding *ma*.

The early Japanese believed that specific objects in the landscape such as rocks were sites for the descent of the *kami*. Occupation by the *kami* might be permanent or temporary. These objects were therefore considered to be sacred and Nute states that because of this they formed the "basis of the earliest sense of place" for the Japanese. He adds that because the *kami* might only be present intermittently the "initial Japanese sense of place was thus based on both spatial and temporal events" (Nute, 1999). The interval between these events later became known as *ma*. The significant difference is that *ma* is an interval of non-event and three-dimensional geometric space is a positive notion. Therefore:

> "The event-based Japanese sense of place and the notion of ma then are directly related but quite distinct concepts. Far from being the same they are actually complementary opposites; in essence positive events and the non-eventful intervals between them." (Nute,1999)

[10] Nute refers to other writers who use this this analogy, specifically Chris Abel in his article in *Architectural Press*, 'Architecture and Identity' (1997).

Nute draws parallels between this and cyberspace, represented by the internet, stating that websites are places that exist only when visited, accessed over time and separated by intervals of non-place (cyberspace). This is an interesting analogy in that it addresses the concepts of interval and temporality and offers a contemporary image that might help to interpret *ma*. However, I did not consider that it completely fulfilled the criteria for *ma* in terms of Isozaki's definition of a way to sense the moment of movement.

Ma and Space-time

Nitschke writes that "The dual relation of ma to space and time is not simply semantic. It reflects the fact that all experience of space is a time-structured process and all experience of time is a space-structured process" (Nitschke, 2018). Throughout the detailed exploration of *ma* I was able to identify parallels with concepts developed in the West by Bakhtin, Bergson and Lefebvre with respect to space-time. Of interest in this context is a second paper written by Nute, in which he also questions the absolute uniqueness of *ma* as time-space (Nute, 2018). He points out that while there are substantial differences between Japan and the West, the enthusiasm to maintain this separation specifically with regard to the understanding of space has resulted in some similarities being neglected.

He notes that the early Japanese sense of place, centred on the inhabitation of objects in the landscape by the *kami* or spirits, is also evident in other cultures. Equally, in both Japan and the West space is not viewed as a positive thing but as an emptiness between objects. In Japan this emptiness or void was named *ma*, which means that *ma* "can legitimately be interpreted as 'a space' in the sense of an unfilled void, but should not be confused with the concept of 'space' itself" (Nute, 2018). Nute states that, in effect, when the original sense of *ma* as interval is used in relation to both space and time, there is really very little difference between the West and Japan. However, Nute comments that both the West and the Japanese have sought to exploit the differences.

In tracing the motivation for promoting the difference in Japan, Nute cites Isozaki who focussed on the use of *ma* as space-time as opposed to interval. Nute identifies that Isozaki was a prominent member of the Japanese Metabolist movement in the early 1960s. The group, centred on a number of young architects studying under Kenzo Tange in Tokyo, was renowned for "drawing analogies between radical Japanese ideas and modern scientific concepts" (Nute, 2018). Nute believes that Isozaki, whose exhibition in New York in 1976 was instrumental in

promoting *ma* as a Japanese space-time concept, proposed that “ma does not describe the West’s recognition of time and space as different, but rather coincides with present day theories that equate space and time” (Nute, 2018).

Nute concludes that the Metabolists’ incentive for furthering the *ma*/space-time analogy over conventional Western spatial concepts was more to do with promotion of the emergent Japanese architectural ethos than objective analysis.

From my studies of the writings of Bakhtin, Bergson and Lefebvre I would add that such an idea is not supported by any specific evidence and that there are similarities as well as differences between Japan and the West.

I also felt that Thompson’s (1998:120) use of the gerund, rather than the static ‘space’ or ‘place’ proposed by Nitschke, more accurately represents the idea of movement or interaction essential to *ma*.

The Void

> “Thirty spokes are made one by the holes in a hub
> By vacancies joining them for a wheel’s use
> The use of clay in molding pitchers
> Comes from the hollow of its absence:
> Doors, windows, or in a house,
> Are used for their emptiness:
> Thus we are helped by what is not
> To use what is.”
>
> (Lao Tzu, 1992: 30)

I include a section on the void in this thesis for several reasons. Not only is it linked to *ma* through ‘interval’, but it also connects to breathing through Zen and Tao meditation, painting and drawing, the experience of consciousness, creativity and movement (action) in the practice of martial arts, among others. Each of these elements related to my clinical and creative practice in a similar way to that in which diverse threads are woven together to create cloth. Lao Tzu’s verse, as quoted above, describes the void through the idea that form requires the absence of form for its existence (Levy, 2006:35).

The difference between the East and the West when considering the void is that in the East, it is represented as full and in the West, as empty. The idea of the void in art is explained by Mark Levy:

> "The Void is empty in the West because the role of the Void as the ultimate ground of being is usurped by a god or demiurge who usually assumes a human form. If God is reduced to a form, albeit a form that is superior to other forms, the Void is empty and lacks presence. If God is a formless field that permeates everything, the Void is full and has presence." (Levy, 2006:1)

Kazuaki Tanahashi, who is important for keeping the tradition of crafting *enso* topical through the use of innovative creative practice, studied martial arts under O-Sensei, Morei Ushiba, who founded aikido. He learnt about the movement of *ki* (*ch'i*) as internal and external energies that could be influenced with the use of specific breathing techniques during meditation, again referencing Lefebvre's time-space-energy triad. *Enso* is a circle which is a symbol of the void. Referring to the infinite space of the void, it is a continuous form with no beginning or end and should be created with a single brush stroke, almost as if in a single breath. In my work in the littoral, the *One Wave* series of drawings recorded the movement of a single wave across the inked paper as a symbol of one breath of the sea. I also noticed that during this activity my own breathing was stilled.

Drury implies encountering the void when reflecting on his experiences working in Antarctica: "I have tried to find ways of talking about the absolute nothingness of various experiences deep in Antarctica. In a sense the nothingness contains everything" (Drury, 2007:5).

Tanahashi states, "We can be most creative… when we have nothing in hand, nothing in mind" (Tanahashi, 1987:76 cited in Levy, 2006:41). Levy writes that for followers of Tao, the process of painting combined with breathing can result in an increase in the flow of *ki* that leads directly into the void (Levy, 2006:5). Experience of the void is further explained by Levy as something that occurs "in the gap between thoughts" (Levy, 2006:2). The gap can be created by a number of activities such as "art-making, being in nature and physical exercise and does not necessarily involve meditation techniques, although in the East this is more likely to be the case" (Levy, 2006:2). Levy describes the use of meditation in this situation as a positive activity to expand the gap between thoughts. I believe that the notion of

experiencing the void described in this way has resonance with Csikszentmihalyi's concept of flow, which is discussed in chapter three.

Studying the work of a number of land and other artists during this research I found evidence of the application of the principles of *ma* as interval and space-time in the West and in Japan. For example, 'expanding the gap' in a different context also applies to the work of the artist Willard Wigan. It has been suggested that his work takes place in the void. He states that "nothing doesn't exist, because there is always something" (*Willard Wigan: Hold Your Breath for Micro-sculpture,* 2009). He creates his microsculptures by holding his breath, actively focusing to slow his heart rate to work between his heartbeats.

Fig. 20 *Thinker on a Pin Head* (2014)

The work of Cage both as a painter and as a composer is relevant in consideration of *ma* as void. Cage did not see Zen as a "rigid, tangible state of mind", but comments that Zen and Dada "share certain qualities, notably a conceptual fluidity that could dramatize "the strange and delightful interconnectedness of things"" (Kass and Pike, 2011:14). In 1983 he started to experiment with watercolour, painting round river stones, inspired by his previous etchings based on the garden at Ryoan-Ji. Kass also comments that Cage worked with his own adaptation of the *enso* in his series of branded smoke prints (Kass, 2011:29).

Image redacted for reasons of copyright

Fig. 21 *Eninka, No. 17* (1986)

Levy notes that Cage was “profoundly influenced by the phrase “form is emptiness”” (Levy, 2006:146). As well as including silent passages in his music, Cage thought and wrote extensively about silence. At the end of the composition *45’ for a Speaker* Cage writes the following, echoing Wigan and Levy cited above:

> “There is no
> such thing as silence. Something is al-
> ways happening that makes a sound.
> No-one can have an idea
> once he really starts listening.
> It is very simple but extra-urgent…”
>
> (Cage, 1968:191. Original formatting)

In the chapter ‘Composition as Process’ (Cage,1968:18-57) Cage explains how the lecture *Changes* demonstrates a direct correlation with his composition *Music of Changes*. Cage sought to make the lecture last for the same length of time as the musical piece. Each spoken line would take one second after which the corresponding part of music would be played. The music would thus be heard in the interval between the spoken words. This demonstrates similarities with my stitched piece, *Experience*, in which the beads were placed between the stitches to signify an interruption.

The following page shows ninety-nine seconds of the lecture in its original formatting (Cage, 1968:22-23). In this work Cage not only expresses *ma* as interval or spacing in spoken language and music but also in the written language of the script for the lecture.

What hap-
pens for instance,
to silence? That
is how does the
mind's perception
of it change? For-
merly, silence
was the time lapse
between sounds, use-
ful towards a va-
riety of
ends, among them
that of tasteful
arrangement, where
by separat-
ing two sounds or
two groups of sounds
their differen-
ces or rela-
tionships might re-
ceive emphasis;
or that of ex-
pressivity,
where silences
in a musi-
cal discourse might
provide pause or
punctuation;
or again, that
of architect-
ture, where the in-
troduction or
interruption
of silence might
give define-
tion either to
a predeter-
mined structure or
to an organ-
ically de-
veloping one.
Where none of these
or other goals
is present, si-
lence becomes some-
thing else – not si-
lence at all, but
sounds, the ambi-
ent sounds. The na-
ture of these is
unpredicta-
ble and changing.
These sounds (which are
called silence on-
ly because they
do not form part
of a musi-
cal intention)
may be depen-
ded upon to
exist. The world
teems with
them, and
is, in fact, at
no point free of
them. He who
entered an-
echoic cham-
ber, a room made
as silent as
technologi-
cally possible,
has heard there two
sounds, one high, one
low – the listeners ner-
vous system in
operation,
the low his blood
in circula-
tion. There are, dem-
onstrably, sounds
to be heard and
forever, giv-
en ears to hear.
Where these ears are
in connection
with a mind that
has nothing to
do, that mind is
free to enter
into the act
of listening,
hearing each sound
just as it is,
not as a phe-
nomenon more
or less approx-
imating a
preconception.

In *Walking the Line* Long's statement about his practice of walking as art directly links to the concept of space-time: "A walk is an event in space-time." (Long, 2002:69) He describes his walks as metaphors for occurrences in particle physics. As he walks he might move, carry, or create piles of stones. He views these stones as representing "sub-atomic particles in the space of the world" (Long, 2002:69). My own practice of walking as methodology in this study operated in two ways: to echo Long's notion of an event in space-time, and to serve as a means of sensory data collection.

Drury references the void and the concept of *ma* as between or interval in his work:

> "Making art for me is never the means of finding insight. It is rather the reflection of a growing consciousness…I go to "outer nature", which is thought-less, void, in order to see the whole. From the void comes insight, which makes art… It is in the space *between* the two that insight becomes possible." (Syrad, 1998:7. Original italics)

In conclusion, to answer the questions posed at the beginning of this exploration of *ma*, I have been able to demonstrate that *ma* is related to Bakhtin's chronotope and that *ma* as space-time does correlate with the writings on space and time by Bergson and Lefebvre. As a result, *ma* provides further support in evaluating the synthesis of clinical and creative practice through space-time.

Having established the significance of space-time to my study I proceed to examine developments in the cognitive sciences in the third chapter to address a second binary, that of mind and body. I elected to follow this line of enquiry so that I could investigate the connections between anatomical and physiological knowledge of the way in which the body functions and the application of this in research methodology through embodied enquiry.

Chapter 3 Mind, Body, Mind-body

> "The phenomenologist studies perception, not as a purely subjective phenomenon, but as it is lived through by a perceiver who is *in the world*, and who is also an embodied agent with motivations and purposes." (Gallagher and Zahavi, 2012:9. Original italics)

The relevance of sensory knowing in clinical expertise is summarised by Roger Kneebone, who writes, "You experience your work with your senses and your mind as well as with your hands and your body" (2020:17). In this chapter I investigate contemporary advances in the cognitive sciences, encompassing neuroscience, psychology and philosophy of the mind. The collaborative nature of research currently in development in these specialties since the 1990s has led to a renewed interest in phenomenology and is due, in part, to the realisation that no one discipline could provide a satisfactory answer to the complex issues involved. In *The Embodied Mind*, Francisco Varela, Evan Thompson and Eleanor Rosch (2016) note the ongoing strong bias towards the use of science to validate research and the potential problems for research in cognitive science, while proposing the application of the concept of embodiment as a bridge between science and experience:

> "The tension comes to the surface especially in cognitive science because cognitive science stands at the crossroads where the natural sciences and the human sciences meet. Cognitive science is therefore Janus-faced, for it looks down both roads at once: one of its faces is turned toward nature and sees cognitive processes as behaviour. The other is turned towards the human world (or what phenomenologists call the life-world) and sees cognition as experience." (Varela *et al*, 2016:12)

These developments helped to inform the selection of methodology for my research investigating the synthesis of clinical and creative practice through space-time. In this study I examined the concept of transferable skills and made the decision to deploy the scientific approach to analysis normally used in clinical work within my creative practice, as a means of constructing a bridge across the art/science divide.

The use of terminology in the cognitive sciences can be confusing or ambiguous as each specialty may interpret new words as they find relevant to their research. In *The Phenomenological Mind*, Shaun Gallagher and Dan Zahavi (2012:32) address this by defining two possible uses of 'phenomenology'. As a technical term it refers to the philosophical tradition and methodology. As a non-technical word, it is used as another term for experience.

Commencing with Aristotle's five sense sensorium I show that research has identified up to twenty-three internal and external senses in the human body. Interoception (the internal senses) relates to the notion of embodied cognition, a concept developed by the collaboration of neuroscientists, neurophysiologists and psychologists about how the body functions. My clinical and creative practices developed symbiotically. The theory underpinning this research operated in the same way with my practices. Building on Bergson's work on perception, I demonstrate how current studies are questioning traditional empiricist theories of perception, while retaining an emphasis on the importance of experience.

Further, just as Aristotle's concept of only five key senses has been superseded, so too has the idea, founded in research and development in artificial intelligence, that the brain acts as a central processing unit for the body. This challenges the Cartesian dualism of mind and body, where the mind is the active intelligence and the body is the passive storehouse of long-term memory, considering instead the interdependence of mind-body as the embodied mind. This is supported with reference to Lefebvre's work on rhythmanalysis, Soja's ideas on thirdspace and Csikszentmihalyi's work on flow. Flow figured strongly in both my clinical and creative work and I show how the two are linked through the application of the concept of flow.

Senses

Despite the evidence of research, Aristotle's five sense sensorium is most often quoted as describing the main senses of the body. This is a Western concept and therefore only one among others. Eccleston (2016:4) suggests that while the 'big five' are intrinsic to embodiment, they are not everything. Perhaps our focus on them has led to a lack of exploration of the other senses that contribute to the experiences of the embodied, embedded physical body. We may not be aware of these other senses operating within the body until there is imbalance or loss of function within the neural network. They are classified as interoception, exteroception and proprioception. Interoception is the means by which the body experiences, for example, hunger, pain and thirst. Exteroception is the means by which we experience the external world.

As with other terms encountered in this research, proprioception can be defined in different ways according to the context in which it is used. For physiotherapists and other clinicians, proprioception is a key sense, sometimes described as the sixth sense. Mediated by proprioceptors in muscles, tendons and joint capsules it informs

the body both of the placement of body parts and the movement of those parts. This is a non-conscious function. I do not have to look at my hand to know where it is in relation to the rest of my body or the space in which I am situated. Philosophers and psychologists interpret this sense as an awareness of the body and therefore believe it is a form of consciousness. Therefore, proprioception can mean non-conscious information or a form of conscious awareness. As Gallagher comments, “On the embodied experiential level, however, the two aspects of proprioception are fully integrated” (Gallagher 2005:6), so limiting the potential for ambiguity in this work.

When humans changed to bipedal ambulation the use of the five key senses changed. Generally, vision became the primary sense and the sense of smell diminished as there was no longer a need to follow scented tracks. In addition, as they were no longer needed to weight bear, the upper limbs were freed for use and dexterity increased. In my clinical and creative work, I noted that I employed the following senses: vision, touch, smell, hearing, proprioception, stretch receptors, equilibrium and pressure and particularly when working on location, thermoception. As a respiratory therapist, I utilised the senses of hearing, touch and vision to diagnose and manage changes in respiratory function. Learning to ‘read’ a patient was an acquired skill in which touch, hearing and smell were as important as vision. It is part of a medical practitioner’s development to learn to assess situations before even speaking to the patient: beyond reading notes and receiving a verbal handover from other staff, I could assess the level of pain and rate and work of breathing, as well as noticing other indicators such as nicotine stained fingers or the smell of cigarette smoke. While we were taught to use these skills as part of our assessment process, I was not aware of how far this had become an instinctive activity until I began to teach junior staff, demonstrating the development of automaticity over time. This relates to Pink’s writing on sensory ethnography in which she discusses the notion that the transmission of knowledge is a dynamic process that requires intentionality and creativity, not simply the application of a template for repetition (Pink, 2015:43).

As a creative practitioner I used these same exteroceptor senses when working in the littoral, to inform my work on paper and with cloth. Reflecting on this activity both in action and on action, I identified the use of the following additional senses: proprioception, stretch receptors, equilibrium, pressure and thermoception. The sense of thermoception can be overridden at times, as Goldsworthy notes in his video, *Leaning into the Wind* (2018). He states that the ability to sense cold, in

particular, can be related to how well a project is progressing. I experienced similar events when working on Islay and the south coast during the winter.

Working with the senses is the method through which the Cashinahua people learn of their world, as described by Kenneth Kensinger in *How Real People Ought to Live: The Cashinahua of Eastern Peru* (Kensinger, 1995). For the Cashinahua, knowledge gained through experience is associated with the organs of the body: the eyes, the ears, the skin and the hands, since they believe this is the means by which knowledge enters the body. Studies in phenomenology (Gallagher, 2005; Gallagher and Zahavi, 2012; Gallagher, 2017; Radman, 2013; Claxton, 2015) endorse this activity. This concept was also under consideration in contemporary anthropological research. Pink cites Mark Harries who considers that discussions of 'knowledge' have neglected the idea that "knowing is always situated," adding that "even very abstract forms of knowing can occur within specific environments and in movement. A body does not need to stop in order to know" (Pink, 2015:47).

The skin is the largest organ of the body and has a variety of specific functions. Sensitivity of the hand, in particular, was central to both my clinical and creative work and operated with all the other senses.

Sensory knowing, then, is an ongoing process that continues throughout life, connected to the body's active encounter with the environment and movement; it formed a key element to my research in the littoral. This is the method used by artists such as Goldsworthy and Drury, who gain knowledge through use of the haptic.

Breathing

Of relevance to this study was the idea proposed by Eccleston that breathing is a neglected sense that warrants examination (Eccleston, 2016:6). He identifies it as being similar to movement and balance, in that all three involve muscles and nerves that supply feedback with respect to position and capacity and receptors related to the pressure of gases involved in respiration. In this way it is a specific pressure sense dependent on the partial pressure of oxygen. Eccleston notes two key characteristics of breathing: agency and rhythm (Eccleston, 2016:80). Disruption of either of these two, whether voluntary or involuntary, may cause us to be more aware of our respiratory pattern. Voluntary control occurs during speech, singing, playing a wind instrument or during yoga exercise. Involuntary control may be the result of trauma or disease processes.

Deliberate apnoea, or breath holding, is practised by those who free dive. Eccleston cites the free diver Emma Farrel, who describes the practice as “not a quest for depth or endurance, but rather an experience of communication with our bodies, our breath and our world” (Eccleston, 2016:85). Prompted by Eccleston’s observation that although deliberate apnoea has attracted physiological and psychological research there has been little interest in the phenomenology of the practice, I undertook an experiment to explore this aspect. I used deliberate apnoea as a means to experience changes to the body in a variety of positions. The piece of work created in organza from this experience, *Stitching the Void*, brought together drawing water, drawing breath and drawing thread. The diary kept throughout the experiment documented the experience.

Perception

> “Theory of perception is needed to understand our sensory encounter with the environment.” (Pink, 2015:28)

Although lacking access to contemporary developments in neurophysiological understanding, Bergson’s writing on perception underpins recent neurophysiological studies. Bergson states that perception is pure knowledge, in contrast to scientific knowledge. The separation of scientific knowledge was instrumental in the lack of interest in phenomenology when he wrote this, but a revival has occurred as a result of collaborative interdisciplinary research. Bergson describes the nature of conscious perception in living beings and how this might result in interaction with the environment.

Overall, for Bergson, perception embodies action. He states that it is not a form of contemplation, but the result of sensori-motor stimulation. While perception is wholly dependent on the sensory system, the process extends beyond the brain resulting in action. Perception, then, measures the potential for our action upon things and for the action of them on our body. The more highly developed the nervous system of that body, the greater the possible field of perception. A shorter distance between the two bodies will increase the likelihood of real action over possible action. His understanding is that perception takes place outside the body and that affection, via the ascending and descending sensory pathways of the central nervous system, occurs within the body. He summarises this in the following statement about the body, that it is:

> "A *place of passage* of the movements received and thrown back, a hyphen, a connecting link between the things that act on me and the things upon which I act." (Bergson, 2014:160. Original italics)

This statement was key to the way that I carried out both my clinical and creative work and is echoed in Gallagher's writing in *How the Body Shapes the Mind*, in which he observes that "Perception is less the result of an internal processing of sense information and more the result of an interaction between the body and its environment" (Gallagher, 2005:172).

This interaction is central to the work of artists such as Peter Matthews and Goldsworthy, who make use of the body in the environment to produce work. Matthews works in the sea, directly recording the interaction of his body and the waves. Goldsworthy 'walks' through the length of a hedge to understand how the hedge impacts his progress (*Leaning into the Wind*, 2018).

Further, Bergson writes that individual perception is automatically influenced by memory, so that what one experiences is not pure perception, but is filtered and coloured by our past. All the past sensory information one has collated can override pure perception, so that one retains only part of the perception and this can influence the choice of action in response to the stimulus.

Bergson believes that our senses require education in order to ensure that they act in harmony with one another, and also that any disruption of the sensory neural pathways will impact our perception. These ideas have been substantiated in contemporary studies. The traditional view was that the development of consistent sense perception was dependent on what Gallagher terms 'Lockean experience', i.e. perception requires education from the environment. In addition, it was thought that sense modalities do not naturally communicate and that Lockean experience in one sense modality does not educate other sense modalities. However, discoveries in developmental psychology counter this view, finding that relatively organised perception is possible from birth, that sense modalities do communicate and that experience in one sense modality can educate other sense modalities (Gallagher, 2005:161).

> "The Siamese twin of observing is learning by doing; perception is of no use if it does not become a guide for skilled action. Sensibility and expertise have to be welded together." (Claxton, 2015:236)

This was particularly relevant in my clinical field. One definition for physiotherapy was 'the treatment of illness by physical means.' Undergraduates are taught a range of skills by observation and then learn to use and individualise these skills over time. Although evidence-based guidelines can offer direction as to best practice, when working autonomously, the questions of how and when skills are applied are matters of individual choice. Observation alone does not give the information required to be able to perform some manoeuvres. In my own field it was important to be able to feel resistance in muscle, tendon and bone and to then know how much or how little pressure to apply. The resistance encountered in the thorax of a neonate is very different to that in an octogenarian. Discernment of these differences must be experienced and refined through touch for effective intervention to take place. When teaching junior staff, I worked with one of their hands underneath mine so they could feel the pressure exerted. The sensitivity of the hands and the way they are used within the profession also varies according to specialty. Manipulative therapists can exert pressure from that required to 'flex the knees of an ant' up to sharp brisk manoeuvres to free tissues, while those working in neurology have a very particular way of using a light touch with their hands to facilitate movement from the patient, rather than taking the patient's movement over.

When drawing in the sea it was important that I did not exert any pressure through my hand onto the substrate so that I allowed the upward, constantly variable pressure from the waves to create the lines. At the same time, I needed to be ready to jump through any large waves and maintain balance throughout. There was also a point where I was suspended within the wave for the period it takes to pass through the space where I was positioned. The amount of work my muscles, joints and tendons needed to do continually changed. Throughout this activity I was not consciously aware of how much effort was required from each muscle group from second to second; rather, I was focussed on the drawing and on the size and frequency of the waves, demonstrating the following statement by Pallasmaa:

> "Intention, perception and the work of the hand do not exist as separate entities." (Pallasmaa, 2009:84)

I return to the importance of the haptic in my work in chapter four, 'Drawing'.

Goldsworthy comments on the use of perception to demonstrate the difference between going for a walk and walking as a creative act. Walking as a creative act

signifies deliberate engagement of all the senses, seeking to find new ways to interact with, understand and interpret nature.

> "It's very important that I have a direction: that's the difference between just going out for a walk and actually making something. For me it means I have to look and work a lot harder: as I'm using all my senses, my perception has to be that much more acute." (Fowles and Goldsworthy, 2004:164)

Walking became part of my methodology during the research. Sometimes I walked with intention and sometimes I wandered, dependent on the motivation for the walk. Walking as research is discussed further in chapter five, 'Embodied, Emplaced, Enacted'.

In *Doing Sensory Ethnography* Pink comments that although most academics who are involved in researching or writing about sensory representation are aware of the intermodality of the senses, the tendency is to focus on just one of the senses and to use that to indicate multisensory experience (Pink, 2015:186). In my clinical practice I used a multisensory approach to my assessment and treatment of patients. In taking a phenomenological approach to my research I worked in the littoral in the same way without favouring vision over the other senses. Pink writes that while vision is not inappropriate, using this in conjunction with the other senses may facilitate original ideas (Pink, 2015:96).

The Embodied Mind

> "Enaction[11] as such has fared well…. It has not lost its integrity amid other forms of embodied cognition and has maintained its close association with phenomenological thought……Whereas most embodiment research focusses on the interaction between body and mind, body and environment, or environment and mind, enaction sees the lived body as a single system that encompasses all three." (Varela *et al*, 2016:xlviii)

The predominant understanding, even within the neurosciences, remains centred on the idea that the brain operates to process information, known as the computational theory of mind (CTM). Contemporary studies are exploring a phenomenologically based theory of mind as an alternative that corresponds to developments in psychology and neuroscience.

[11] Enaction has been offered by Varela *et al*, (2016) as a new approach to embodied cognitive science and as an alternative to the classic computational theory of mind (CTM).

In order to consider why the brain needs a body and how they interact through the activation of the sensorimotor system I refer to the theoretical experiment entitled 'the brain-in-the-vat'. If the brain were suspended in a vat in a special chemical solution that supplied nutrition and attached to electrodes to provide information, so that it was kept alive but detached from a body, where then would be the need for a body? Of course, this is hypothetical, since we are embodied, but it does relate to cybernetic experiments that start with a top-down approach, designing the machine's central processing unit and constructing a body around it. However, the brain-in-the-vat still requires access to everything it would have if it were in a body.

> "This performative awareness that I have of my body is tied to my embodied capabilities for movement and action…And my knowledge of what I can do with my hands is *in my body*, not in a reflective or intellectual attitude that I may take toward my hand." (Gallagher, 2005:74. Original italics)

For the brain-in-the-vat to operate in the same way as a human body/brain exists in the world, it would require duplication of all the bodily functions. Thus, embodiment is reflected in all aspects of experience. My understanding of anatomy and physiology led me to believe that this concept is how the body comes into being in the world. However, in writing this I must acknowledge that there are some contemporary philosophers who still question the link between embodiment and cognition.

For Varela *et al* (2016) embodiment means the bringing together of mind and body in reflection, where reflection is not only on or in experience but that reflection is experience. This theory underpinned both my clinical and creative practice. One of my key interests as a clinical practitioner was that of continuing professional development and the value of reflective practice, referencing Donald Schön's definitions of reflection-in-action and reflection-on-action (Schön, 1984). I adapted the templates used in clinical practice to record my thoughts in all aspects of my creative practice. Reflection-in-action is a contemporaneous analysis of practice with in-action adjustments in response to the evaluation. Reflection-on-action is a retrospective review of practice for which I included the use of video recording. Using video to record my movements in and by the sea allowed me insight into the activity. Pink notes that video recording can show the ways in which the body is experienced (Pink, 2015:137). However, this was not my motivation for using video. The nature of my practice, working alone, in which I used a body-mounted camera,

ensured that there was no performative element to the work: the camera recorded the raw action with no subjective influence. The video footage showed that which I was unable to see, particularly in the underwater sequences, and so offered an additional perspective of the experience. The internal sensations of being tumbled by the waves were demonstrated externally in the footage captured by the camera. Using the video in this way illustrates Pink's statement that video can offer ethnographers non-verbalised ways of experiencing and knowing (Pink, 2015:147).

Working in the littoral I was continually aware of rhythms in nature: the ebb and flow of the tide, the sound of wind and rain, the shaping of rocks and trees by the elements. Goldsworthy writes of his own work in the littoral, "The beach was and still is a great teacher. This is where many of my working rhythms were established" (Goldsworthy, 2000:7).

Rhythmanalysis

In his writing on rhythmanalysis Lefebvre promotes a unique approach to understanding time and space through the analysis of rhythms, encompassing psychological and social rhythms as well as biological rhythms. He writes that:

> "The rhythmanalyst calls on all his senses. He draws on his breathing, the circulation of his blood, the beatings of his heart and the delivery of his speech as landmarks. Without privileging any one of these sensations raised by him in the perception of his rhythms, to the detriment of any other. He thinks with his body, not in the abstract, but in lived temporality." (Lefebvre, 2013:31)

Lefebvre intended that rhythmanalysis could become a science, a new field of knowledge.

My work involved a combination of space, time and energy. Lefebvre states that whenever there is interaction between a place, time and expenditure of energy, there is rhythm.

The analysis of rhythm immediately brought to my mind those rhythms essential for human life – the cardiac beat and respiration. As a respiratory therapist working with surgical and medical in-patients, I was not only able to read electrocardiograms, I also recognised and taught analysis of cardiac arrhythmias. Normal respiration at rest should be a passive activity: it requires time and space with little exertion of energy.

Rhythm is also intrinsically linked to music and dance. Music features in Lefebvre's writing on rhythmanalysis, with direct reference to tempo, change, repetition and continuity, but he also cites music as metaphor. Lefebvre suggests that time and space are united in music through rhythm.

The choreographer Wayne McGregor has identified the unique way in which the brain and body of a dancer are connected. The dancer must know instinctively where they are in space and contemporary dancers use this embodied knowledge to produce personally creative, responsive work. McGregor has used technology to challenge how the work is viewed, and has collaborated with heart imaging specialists and experimental psychologists. In bridging the art/science divide, he questions how dance is taught and understood. As a research fellow at the University of Cambridge he collaborated with the experimental psychology department to study brain-body interaction. His work, *Autobiography*, is a ballet based on his own DNA, in which data becomes dance (*Autobiography*, 2018). McGregor has identified 24,000 possible permutations of the performance, which means that no two performances are the same and that since the work has a limited run, the full range will never be completed.

Lefebvre writes that in order to understand rhythm, the rhythmanalyst must first listen to his own body, using it as a metronome, a means to measure. In this way he proposes that using the body can be a means of analysis, a tool for subsequent investigation. He describes the body as a 'bundle of rhythms', each different, but in tune. Physiologically, I understood this analogy: each organ has its own rhythm but is subject to a spatio-temporal whole and works to maintain equilibrium despite frequent fluctuations. A person is unaware of these rhythms being at work until balance is not recovered, as in the case of disease or illness. Further, Lefebvre states that the world beyond the body is also composed of rhythms: for example, social, physical and historical.

I used walking as a means to give myself time to absorb and organise ideas and to experience place. I had two different rhythms of walking: one was eight thousand steps per hour; and at the other, faster speed I achieved nine thousand steps in an hour. As I relaxed into the rhythm, I found that my brain automatically organised random images and ideas for further investigation and development. Using reflection-in-action while walking the coastal path in Pembrokeshire, I realised I could translate objective measurements of my cardiac and respiratory rate into work in cloth and on paper. In addition, although I used a pedometer, I instinctively knew

to within a hundred paces how many steps I had taken.

Lefebvre writes of the ability to perceive rhythm in all things, enabling us to use our body as a measuring device and understand the healthy body's predisposition to eurhythmia. Everything and everyone possesses their own rhythm and nothing is static, although some rhythms may be exceedingly slow in relation to our innate rhythm. A forest possesses movement in a variety of ways: some that we are able to see or hear and others that are imperceptible, but present nonetheless. Goldsworthy's work is centered on his growing relationship with nature and his understanding of natural rhythms. In the littoral I noted that the tidal wave rate varied from beach to beach and tide to tide. The geography of the shoreline may be natural or manmade, changing how the tide or human intervention is able to shape the coastline.

The artist Julie Brook has stated that she has no predetermined ideas when she approaches work in a new landscape. She takes time to explore the surroundings: to "grow into the rhythm" (*Julie Brook*, 2016a). Goldsworthy makes a similar statement in *Hand to Earth Andy Goldsworthy Sculpture 1976-1990*: "All places have the potential to take on meaning and a relationship develops" (Friedman, 2004:143). Operating in this way on location means that one's understanding of a place is founded on one's perception at that time.

I took time to be aware of the surroundings, to work in a way that Lefebvre might describe as that of a rhythmanalyst: I listened to the sounds around me, felt the movement of the water, took note of the weather and the light and worked to maintain my balance. In addition to photography and video recordings, I took sound recordings and wrote a reflective report each day – part diary, part ideas for work and part reflective practice. Each of these elements informed my work in the littoral and my later studio work with cloth.

> "Within the body itself, spatially considered, the successive levels constituted by the senses (from the sense of smell to sight, treated as different within a differentiated field) prefigure the layers of social space and their interconnections The passive body (the senses) and the active body (labour) converge in space. The analysis of rhythms must serve the necessary and inevitable restoration of the body. This is what makes "rhythm analysis" so important." (Lefebvre, 1991:405)

Lefebvre's concept of rhythmanalysis has been further discussed by Soja in his work *Thirdspace* (Soja, 1996).

Thirdspace

I identified the concept of thirdspace as a link between the body and philosophy that was applicable in clinical and creative practice. Soja (1996) writes that his *Thirdspace* essays are written in response to changes in the way that space and spatiality were being considered in academic writing. He examines how these changes occurred and suggests how thinking beyond what has been termed the two traditional approaches of material forms and mental constructs, how considering both together, can result in new ways of considering space and related ideas such as place, landscape and location.

Soja builds on the rhythmanalysis work of Lefebvre, in which Lefebvre describes a transdisciplinary approach to link historicality, sociality and spatiality to analyse our modern world (Soja, 1996:3).

Soja terms this a triple dialectic, drawing out similarities with Lefebvre's '*dialectique de triplicité'* and using this in reference to Lefebvre's intertwining of three different kinds of spaces:

> "…the *perceived* space of materialized Spatial Practice: the *conceived* space he defined as Representations of Space; and the *lived* Spaces of Representation (translated into English as "Representational Spaces")" (Soja, 1996:10 Original italics)

Soja comments that in focussing on the rhythms of the body, Lefebvre restores the body to a primary consideration in his metaphilosophy. He notes that, for Lefebvre, spatial knowledge acts as a stimulus for creativity. In addition, Lefebvre's method of working, to examine ideas and continue with those he feels have further potential for development, relates to Bakhtin's concepts of chronotope and unfinalisability: there are no endings, only new beginnings. For myself, each littoral location resulted in new ideas for creative development. Retaining an openness to possible inspirations focussed on the use of the senses was key to my methodology.

What Soja proposes is that thirdspace offers another element to consider spatial imagination beyond perceived and conceived space: lived space. Where perceived and conceived space may be mutually exclusive, lived space encompasses the possibility of perceived, conceived and more. If we consider this as real space and imagined space, then Soja's thirdspace gives us realandimagined space. That is, something beyond real space and beyond imagined space and beyond both taken together. This correlates with Lefebvre's statement that two terms are never enough,

'*Il y a toujours l'Autre*' and supports Soja's belief that Lefebvre was in fact developing the idea of thirdspace in his own writings (Soja, 1996:11).

> "If Firstspace is explored primarily through its readable texts and contexts, and Secondspace through its prevailing representational discourses, then the exploration of Thirdspace must be additionally guided by some form of potentially emancipatory praxis, the translation of knowledge into action in a conscious – and consciously spatial – effort to improve the world in some significant way." (Soja, 1996:22)

Pathologically, thirdspace is related to fluid balance and is key to the management of critically unwell patients, particularly those suffering from sepsis. The patient appears grossly oedematous, but may still be intravascularly hypovolaemic. Medically one may refer to the fluid being 'in the wrong place' since this space is inaccessible and correction of the imbalance must be achieved by careful management (off-loading), with medical intervention operating in tune with the patient's body. While medical thirdspacing refers to something negative, I propose that it can be a positive phenomenon in creative practice in its encouragement to consider 'and/or and more'.

An example of the notion of thirdspace in practice can be seen in the work of Drury. Drury's work is transdisciplinary, grounded in the practice of land artists such as Smithson and Long: he works with scientists, technologists, ecologists and communities of people. In *Mushrooms/Clouds,* Drury (Drury, 2009:2) describes leaving the 'real world' of mobile phones, cars, internet access and all the trappings of twenty-first century living to travel to remote parts of the landscape, walking alone in the true realm of other species. In this situation he is neither in the real world nor truly in the wild world, since he has heating, tent, water and food supplies; he is rather at the interface of the two. Operating at this interface he can experience the potential of and/or and more. The following quote from *Mushroom/Clouds* echoes my own practice of working in the littoral.

> "My art has evolved through direct experiences, by looking at the world and by recognizing that I am part of it, not separate from it, and then by making meaningful connections. I act at the interface." (Drury, 2009:5)

The notion of '*Il y a toujours l'Autre*' and the concept of acting at the interface also relate to the aesthetic of *ma*, specifically in the translation of this word as 'in between'.

Flow

In common practice ‘flow’ can be used as a verb, meaning to move along steadily or continuously in a current or stream, and as a noun, defined as a steady continuous stream of something. In positive psychology, flow, also known as the zone, is the mental state of operation in which a person performing an activity is fully immersed in a feeling of energised focus, full involvement and enjoyment in the process of the activity. All three interpretations were relevant to my practice.

In the human body there are several physical flow systems that work together to maintain physiological equilibrium and which are also able to compensate for defects in the short term. This is achieved by the flow of three types of information throughout the body: electrical, chemical and physical. Electrical impulses travel via the autonomic and central nervous system to and from the brain. Chemical information is transported constantly through the blood and lymphatic systems and can affect change in the nervous system. Physical transmission, ranging from whole body movement to fine vibrations, helps to co-ordinate activities in different parts of the body. Knowledge of how physical movement operates is key to a physiotherapist’s ability to restore full function in patients, but it is also relevant to embodied cognition.

> “The tide is the breath of the sea” (Drury, 1998:58)

Significant to my clinical field is the flow of gases in and out of the lungs that sustain life. My work in the littoral began as a metaphor for medical intervention, as an interaction between humans and nature. Narrowing this to my own profession I found that a common terminology strengthened the links between the two. This relationship instigated my research into the interpretation of clinical data as a means to work with cloth and other materials.

In respiratory therapy, analysis of inspiratory/expiratory flow volume loops can aid diagnosis and management and studying ventilatory flow during mechanical ventilation can aid in the assessment of the efficacy of any intervention. There are many examples of flow related to water, but as Goldsworthy has noted, resonating with Lefebvre’s thoughts on rhythm, flow can be found in many sites in nature such as trees, stone and wood.

I studied littoral patterns of flow in the meeting of rivers with the sea, the meeting of sea and shoreline, the flow lines carved through soft sand and those enforced by rocks. I examined tidal flow lines in the sea, both on the surface and under the

waves and those left on the sand by the ebb tide. As in the body I identified laminar flow and turbulent flow related to resistance.

The identification of a common vocabulary reinforced the links between clinical and creative practice. Of significance were the terms fissure, pressure, tidal volume, resistance, turbulence and force.

I had time to study the structure of each of the different beaches I worked with over the five year period of the study. I came to realise that our attempts to prevent further shrinkage of this island by the sea by means of tidal control devices and the addition of tons of rock and pebbles had resulted in there being far fewer areas of natural coastline. However, on parts of Islay and the small area of the Pembrokeshire coastal path that I visited, I found the normal progression of cliff to rock to pebble to sand, initiated by the movement of fissures in the rock face and caused by the repeated action of the waves, weather and people over time.

Fissures also exist within the human body. These may occur naturally or develop secondary to surgical intervention. Anatomically, the lungs are divided into five lobes, two on the left and three on the right, by two fissures: the oblique fissure in both lungs and the horizontal fissure on the right. These have specific placement within the thorax and the movement of the fissures, seen only with radiological procedures, is used as a diagnostic indicator.

Pressure is a continuous physical force exerted on or against an object by something in contact with it. Inspiratory pressure is the level of pressure applied to the lungs during inspiration in supported mechanical ventilation.

Throughout experimental drawing in the sea I was constantly aware of the variations in pressure exerted by the water on my body with each wave that passed. Although the water was in continuous contact with my body, the pressure was multidirectional with the merging of inflow and outflow.

In the healthy, spontaneously breathing human, inspiration is active while expiration is passive. Muscular contraction occurs only on inspiration, expiration being accomplished passively by elastic recoil. Contemporary mechanical ventilation systems involve the use of positive pressure to push gas into the airways. In addition, positive end expiratory pressure (PEEP) is generally applied to improve oxygenation by maintaining patency of the smaller airways resulting in bidirectional positive pressure flow.

Walking the exposed coast roads, particularly on Islay, I was acutely aware of the power of the wind which could help or hinder progress dependent on direction and speed. This phenomenon is also used to help promote oxygenation in the lungs and reduce the work of breathing in spontaneous breathing with the application of continuous positive airway pressure (CPAP) in which the patient has assistance on inspiration and breathes out against a resistance which helps to splint the airways open.

Pressure also relates to the sense of hearing since sound is produced by a pressure wave impacting the human ear or a mechanical instrument such as the stethoscope I used in my clinical practice.

Tidal volume can be defined as the volume of water associated with a rising tide and in the human body: it is the volume of air that enters and leaves the lungs during normal breathing at rest. The tidal volume in any given location is dependent on the constantly changing geography of the area and the volume of water adjacent to the coast. Similarly, although the average tidal volume for an adult human is five hundred millilitres, this is also dependent on the surrounding anatomy and disease processes. Although named differently, there is another volume relevant to respiratory function that can be identified in the littoral: vital capacity is the maximum amount of air expelled following a maximum inhalation measured vertically on the graphical display of a spirometer, while tidal range is the vertical difference between high tide and the next low tide. Again, both measurements are dependent on the surrounding anatomy.

Both resistance and turbulence are related to force and flow, where the flow can be laminar or turbulent. Resistance is the opposition offered to the passage or flow of a substance and turbulence is the violent or unsteady movement of air, water, or some other substance. A substance in flow will always take the line of least resistance. Working in the sea my body tended to resist the flow of the water, creating turbulent flow around me. Constantly focussed on the incoming waves, for the most part I could withstand the inbound body of water and my body absorbed some of the force applied, reducing the flow beyond me. Occasionally, however, my muscle resistance was insufficient to withstand the pressure and I might be tumbled beneath the surface for some distance.

In the lungs any obstruction, whether within the airways, such as an inhaled foreign body, a partial collapse or an increased secretion load, or external, such as musculoskeletal malformation or trauma, will result in a change in flow and,

potentially, the ability of the lungs to oxygenate the blood adequately. This may be seen directly, on x-ray or computerised tomography scan (CT scan) or may be palpated over the thoracic cage.

The features of resistance and turbulence were used to inform my creative practice, particularly when working on location.

Force can be expressed as strength or energy as an attribute of physical action or movement, or an influence tending to change the motion of a body or produce motion or stress in a stationary body. In addition to the examples of force cited above, force also impacted my work on location, as force is responsible for the movement of the tides through the gravitational forces of the sun and moon.

An understanding of the tides was essential when working alone in the sea, particularly on deserted beaches in the winter. I worked at different points in the tide in order to experience different pressures and flow.

Csikszentmihalyi's Theory of Flow

The psychologist Csikszentmihalyi developed a theory of optimal experience based on the concept of flow (Csikszentmihalyi, 2002). Optimal experience is the state that occurs when a person's mind or body is so completely focussed on an activity that they may be oblivious to anything else, yet retain total control. He uses his theory to explore the creative process, but Mike Oppland reports that it is also being used in other settings such Occupational Therapy and the design of museum exhibits (Oppland, s.d.). The ability to experience flow can vary and is more likely to occur in those people with autotelic personalities. Oppland summarises eight characteristics of flow:

> "Complete concentration on the task
>
> Clarity of goals and reward in mind and immediate feedback
>
> Transformation of time (speeding up / slowing down)
>
> The experience is intrinsically rewarding, has an end in itself
>
> Effortlessness and ease
>
> There is balance between challenge and skills
>
> Actions and awareness are merged losing self-conscious rumination
>
> There is feeling of control over the task" (Oppland, s.d.)

At the time of writing, there has been little formal neuropsychological research into flow states, but it has been noted that it is associated with a decrease in activity in the prefrontal cortex of the brain. This is the area responsible for our personality, goals and values and is essential to the sense of self and decision making. Suppression of the prefrontal cortex may be responsible for the sense of distortion of time and loss of self-consciousness. Further the implicit mind may increase in activity, freeing brain areas to communicate more easily during creative endeavour.

Pallasmaa writes of the flow state in sports, craft and art in *The Thinking Hand*. He describes how, as performance is perfected with practice, the effort involved by individual parts of the body and brain becomes seamless and coordinated so that there is mental and material flow between the maker and the work.

> "This is actually the essence of the ecstatic experience of creative outburst artists repeatedly report that they feel that they are merely recording what is revealed to them and what emerges involuntarily beyond their conscious intellectual control." (Pallasmaa, 2009:82)

Pallasmaa also comments that the artist whose work focusses on lived experiences will use this to define his/her approach and method (Pallasmaa, 2009:119). Drury, Goldsworthy and Brook describe their method of working on location as working in rhythm with the site, with the materials available.

In her essay in Drury's *Journeys on Paper* (Wallace, 2000), Wallace describes Drury's repetitive methods of making, such as weaving and writing, that can sometimes be seen as monotonous processes. Working in this way can, like rhythmical walking, lead to the formation of new ideas and concepts which seems to allude to the achievement of a flow state.

In *Leaning into the Wind* (2018), Goldsworthy persists in his 'walk' through the length of the hedge despite the difficulty. He also works in extreme temperatures and writes of being completely drained of energy yet continues to work to finish a piece even after repeated failures; focussing on the expression of an idea and ignoring the physical impact on the body.

Another example of this type of flow can be seen in the practice of Zen. Here teachers stress a state of mind called *mushin*, which can be likened to a state of total absorption in a task. Achieving this level of concentration helps subdue the ego so that the mind and body can work in a free, natural and uninhibited way. "This

erasing of the importance of self is seen as key in producing art that is not tarnished with the hues of self-indulgence or self-promotion" (Juniper, 2003:91).

When working in the sea it was difficult for me to achieve a flow state because I needed to be aware of the continual changes in wave swell, but I did experience it when walking and drawing. Early in the research, while walking locally, I was able to organise the notion to link thoracic anatomy and the Japanese character for *ma*. On Islay I was wholly engrossed in my work despite appalling hailstorms and strong cold winds and this led to the idea of experimenting with new drawing practices. In Pembrokeshire the terrain and safety concerns impacted my plans for working in the sea, but walking along the coast and the use of introspection and reflection-in-action of the process resulted in new ideas for using body metrics monitoring to interpret and share the experience of being in the littoral. Walking became part of the methodology as well as the practice.

Embodiment

> "Art articulates our existential essential experiences, but…. it also represents particular modes of thinking. Reactions to the world and processing of information take place directly as an embodied and sensory activity without being turned into concepts or even entering the sphere of consciousness." (Pallasmaa, 2009:118)

Throughout this research I encountered several terms related to action, cognition and activity that were also linked with embodiment and the use of each was similar depending on the research involved.

Bakhtin also considers the notion of embodied action. His ideas about human perception are concerned with how we progress from perceiving to give form to our experience and he believes that creativity should be grounded in action. His early texts are concerned with the importance of embodiment, which he felt to be an essential factor in the completion of an act or deed. My activity on location supported these ideas. As Pink (2015:136) states, ethnography using sensory experiences cannot be measured directly. However, I believe that my use of body metrics analysis and video recording in action could offer new ways of thinking about how the body and the environment interact. Pink's thoughts also resonate with Bakhtin's, as can be seen in her statement: "experience and consciousness are ongoing fluid properties generated through action" (Pink, 2015:133).

Activity and understanding of the experiencing body in practice shaped the development of this study through sustained reflective analysis. The following chapter begins with a focus on the senses and their importance to drawing. Taking each section of the thesis title, Drawing Water, Drawing Breath, Drawing Thread, I show how the theory underpinning my research operates in synthesis with the complexity of my clinical and creative practices through drawing as gerund.

Chapter 4 Drawing

> "All the senses, including vision, are extensions of the tactile sense; …and all sensory experiences are modes of touching and therefore related to tactility… This fundamental hapticity of the human life world heightens the significance of the hand." (Pallasmaa, 2009:100)

Pallasmaa's work *The Thinking Hand*, cited above, was written primarily for architects but I found it highly applicable to my own work. He writes: "The hand registers and measures the pulse of lived reality" (2009:117).

In the modern world the emphasis may be on vision but as Derek Horton writes in the introduction to *Drawing Ambiguity*, the domination of digital technologies to record, store and communicate information largely still requires the presence of a human being to act on data (Horton, 2015:4).

In *Writing on Drawing*, Angela Eames identifies that all five core senses are utilised in the practice of drawing, but notes that touch is key for thinkers, makers and artists (Eames, 2008:137).

> "As drawers we sense material, whether that be the material we are using or the material we are observing. We are empathetic to distance, space and place, near and far, compression and stretch. We are aware of condition, transparency and opacity, ethereal and solid, clarity and blur, light and dark – and all the in-between states of being." (Eames, 2008:137)

Working with the physical body, my clinical work had a strong influence on my creative practice. As a respiratory therapist, the use of both hands to sense what was happening within the thorax of the patient on each breath heightened tactile sensitivity over time. As Guy Claxton writes, "All your intelligence isn't in your brain. You learn it through your hands" (Claxton, 2015:284). Pink also comments on the importance of the hand in sensory ethnography for understanding touch and tactile ways of learning (Pink, 2015:168).

My focus on touch and the multi-functional use of the hands seemed in contrast with comments on the contemporary world that refer to the fact that we are in danger of 'losing touch'. Nan Shepherd (1893-1981) was a lecturer in English who travelled widely but was constantly drawn to the Cairngorms in north-east Scotland. A poet and novelist, her book *The Living Mountain* encapsulates both literary forms and crystallises her interaction with the everchanging landscape of the area over many

years. In her writing she identifies that humans are increasingly in danger of losing contact with nature. Advocating that we should live with all the senses, to “walk out of the body and in to the mountain” (Shepherd, 2011:106) she writes that touch is the most intimate sense of all.

Touch was equally important to the weaver Anni Albers, who wrote the following in her treatise *On Weaving,* first published in 1965:

> “Our tactile experiences are elemental. If we reduce their range, as we do when we reduce the necessity to form things ourselves, we grow lopsided.” (Albers, 2017:44)

In the same work she comments that we are becoming “increasingly insensitive in our perception by touch” due to the fact that many of the things we live with, for example, food, are sealed in plastic and cleanly presented, homogenized. So many people use prepared meals or take-aways that we have no need to handle food in the same way we did previously.

Forty years later Warren Seelig made a similar observation, that all too often our experiences are mediated, in his example, by the omnipresent plasma screen.

> “Our bodies are hermetically sealed off from the outside world in climate-controlled homes, schools, office buildings and automobiles……more and more we experience physical reality through the lens and filter of a high-resolution plasma television screen.” (Seelig, 2005:43)

However, Pallasmaa (2009:94) comments that while our modern world may largely be concerned with vision and inhibiting the use of touch, many visual artists are focussing on tactility. Ernst van Alphen (2008:60) notes that the twentieth century has seen the appearance of several artists whose work is in opposition to the standard hypothesis that drawing is focussed on visual perception. In *Writing on Drawing*, Eames (2008:137) observes that touch operates with sight to reveal the qualities of the materials to the artist. The continual practice of the act of drawing allows an artist to be able to accumulate a mental store of materials, methods and tools.

In the hospital setting, infection control procedures dictated that I used gloves so there was always a barrier between myself and the patient, physically reinforcing the professional wall of contact. In creative practice I always maintained direct contact with the materials. I worked in the littoral in all weathers. When in the sea in the winter my hands were often numb with cold, yet I found it impossible to work

with gloves, preferring instead to work for a shorter time rather than compromise the experience. Pain and stiffness in the hands altered the way the drawing implements were manipulated, showing changes in practice over time. Touch awakened form and substance and the tool became what the hand made it.

The sense of touch is the first of our senses to develop and hearing, taste, smell and sight are all related to the sense of touch. Touch is essential to the way each system in the body functions in the world through the neuro-sensory network (Tufnell and Crickmay, 2004:123).

What I felt with my hands depended on how I used them. As therapists we were taught how to exercise the hands to improve dexterity. I understood how to exert different pressures through the arm, wrist and hand. I could gently facilitate movement with the fingertips or use my whole-body weight if necessary, as in the case of resuscitation techniques. I could re-educate patients far heavier than myself to improve their mobility through sensing where and how support was required. The number of nerve endings in the finger tips and the area of the cortex allotted to them are greater than any other part of the body. The sensitivity of my hands could inform me of what lay beneath the skin. I often sensed fractured ribs even when these were not visible on x-ray.

In my practice my hands were essential tools, not only for the sense of touch. As a clinician I learned to communicate in several different ways; I had to use technical medical terms for professional conversations and notes but I also needed to be able to translate these into words that non-medical people (patients and relatives) could understand. Modified gestures were employed where there was no common language and if a professional translator was not available. Informed consent was a legal requirement in any interaction with patients so it was important to find a way to convey information in a satisfactory manner. In *How the Body Shapes the Mind*, Gallagher expands on the way in which gesture is automatically employed in conversation to emphasise or explain the spoken word: “It contributes to the accomplishment of thought; it enables communication” (Gallagher, 2005:122). He goes on to describe how research has demonstrated that it can be more difficult to explain an idea if the subject is asked to sit on their hands, which suggests gesture and language are embodied in some way. This is supported by anatomical analysis: Broca’s area is a region of the brain associated with language production. It lies next to the part of the brain that controls hand movements. It has been suggested

therefore that spoken language developed from the earlier system of communication through gesture (Claxton, 2015:177).

Gesture as sign and communication is similarly linked through the written word. If I made my signature then I was also drawing: I drafted the way the letters were formed to designate myself in writing. Hans Vogels comments that for Goldsworthy, "work made in the landscape, no matter how modest or fleeting, is a token of man's presence in nature, the equivalent to a signature" (Vogels, 2004:53).

In his statement about his work shown in the exhibition to accompany the *Thinking Through Drawing Symposium* Michael Moore writes:

> "Drawn lines show time. Even intervals, or spaces, between lines show time. I want my lines to reveal the rhythms, gestures, pressures, speed, and life of the hand that made them." (Moore, 2011:37)

If I had hand-written my thesis then it would have been part of my portfolio as well as evidence of my research. It would have demonstrated the key elements of my practice: space, time, body, rhythm, energy.

However, there was a general understanding that the writing of medical personnel often becomes illegible over time, partly due to the volume produced and the pressure of time to complete contemporaneous notes. In addition, both professionally acceptable and colloquial abbreviations may be used, rendering interpretation and understanding challenging to the non-medical population. In my case, although my day-to-day hand may not always have been legible, I had spent some time learning and practicing calligraphy as I was interested in the possibility of using handwritten text in my work. I found it to be in complete opposition to my daily writing practice, where words and symbols flowed as quickly as possible from the tip of my pen while thinking about the next procedure and dealing with constant interruptions from people and bleeps. There was something deeply satisfying in taking the time to create perfectly shaped letters in a variety of fonts and I even managed to create my own font. The level of concentration required for a beginner is high and the workroom had some of the characteristics of a monastic scriptorium: the rhythmic scratching of the nib and the flow of the ink contributed to the flow state achieved by the scribe when work was moving smoothly.

Simon Betts, Dean of Performance at the University of the Arts London (UAL), believes that the combination of writing and drawing, including within historical scripts and texts, can facilitate understanding of the relationship between words,

characters and images on the two-dimensional surface (Betts, 2011:29). The association of words, image and *ma* is well illustrated in the Japanese literary form of haiku, specifically those written by the master, Bashõ Matsuo. This poetic form creates images using specific rules of structure and must contain *ma*. *Ma* must be present both in the content and in the reading of the poem. Another element that creates *ma* in haiku is the use of juxtaposition. "Juxtaposition is a technique where two different things are combined to describe a single world of harmony…between the two, *ma* is born" (Wilson, 2008). The two things juxtaposed must be different; *ma* cannot develop between two similar things. Those written in the English language often contain a juxtaposition of images and are unlikely to encompass *ma*, but of interest is the fact that they are described as one-breath poems, rendering them pertinent to this research in a different way. Below is an example from Bashõ Matsuo, known as Bashõ, translated from the Japanese.

"Delight, then sorrow,
aboard the cormorant
fishing boat."
(Bashõ, 1995:9)

The story behind this verse refers to the practice of using cormorant to catch fish. The fishermen tie rope around the neck of the cormorant so they are unable to swallow the fish they catch, their joy turning to sorrow as the fish are retrieved by the men in the boat. So much depicted in just a few words.

Although he does not refer to the use of *ma* in his poems Long uses text to illustrate the rhythm, form and content of experience, by creating pattern with the perceptive use of word. This can be seen in the following example, *Out of the Blue Ocean*. The spacing and use of colour, sequencing and font size all contribute to the visual image created by the words and the way they are positioned on the page.

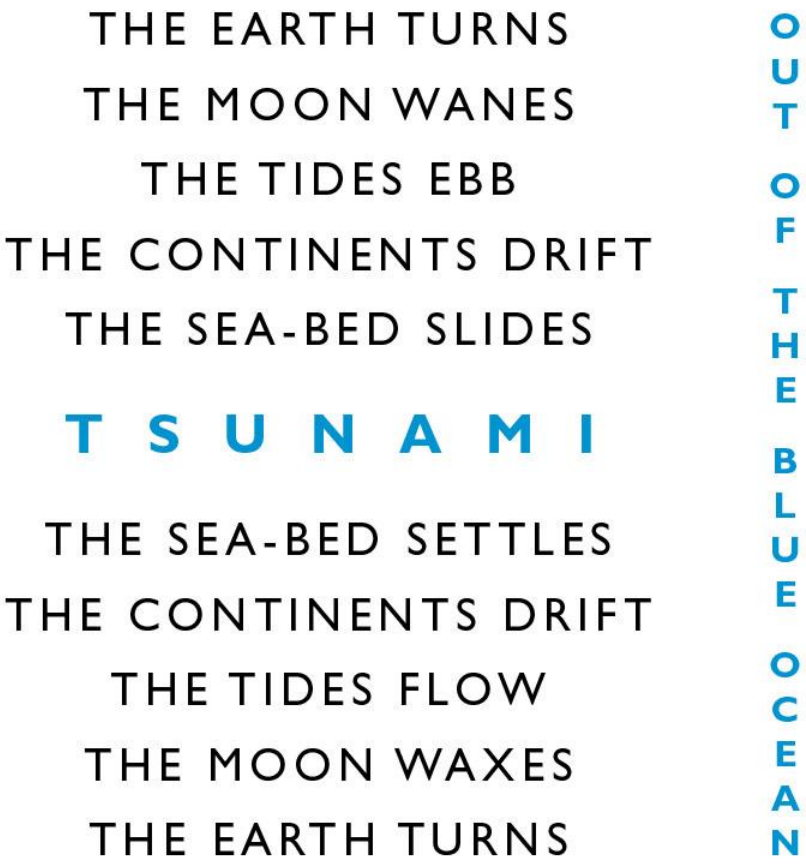

Fig. 22 *Out of the Blue Ocean* (2014)

In verses written by Long a walk of several miles can be portrayed in short lines of text, leaving the reader to complete the image. Each reading by different viewers can produce a variation in the image received, since each viewer will bring their own perceptions, memories and history to complete their interpretation of the work. In this way, such a work demonstrates Bakhtin's concepts of unfinalisability and chronotope. When re-experiencing my work on Islay through writing and reviewing the images, I wrote the following two verses using Scottish dialect (see glossary for definitions of the terms used).

Jura

Blirtie day.

Waff figure

Nooping, Slonking

The rain daggling

Hale water

Liddisdale drow

C Day 12.07.2019

Islay

Couched in bracken springs
Contemplating empyreal heaven

The brym sea o’erswaks far below.

C Day 24.07.2019

The use of terminology to define my creative practice was a key aspect of my approach to understanding how and why I work. Defining for myself what a sketch could be changed my way of collating information and generating knowledge about materials. Discovering the use of the word chronotope in an exhibition at Tate Modern led to my research into Bakhtin's work and an appreciation of the increasingly logocentric focus of his later writings.

Stephen Farthing comments that often the motivation behind looking towards a definition can be because the meaning of the word may be ambiguous. He believes that drawing may be one of these words, an understanding that is often applied to *ma* (Farthing, 2011:21). *Drawing Ambiguity* (Sawdon and Marshall, 2015) is the third in a series of books produced by TRACEY. Situated within the School of the Arts at Loughborough University, TRACEY is an online platform described as "a 'space' that encourages, supports, hosts and disseminates research in the area of drawing and visualisation" (Sawdon and Marshall, 2015:vii). In *Drawing Ambiguity*, a collection of essays by seven contributors, it is suggested that working from a position of ambiguity and lacking definition is not only desirable within fine art drawing but also necessary, offering the opportunity to facilitate and support drawing practices. In the introduction, Horton notes that "ambiguity requires us to actively use our own perceptions, ideas and judgement to find meaning" (Horton, 2015:3). Ambiguity exists both in our interpretation of things or ideas and in our expression of them. It allows for multiple responses, all of which may be valid, creating layers of interpretation and supporting Bakhtin's concepts of chronotope and unfinalisability. Each drawing is created at a specific time and place, but also has the potential to lead to a new interpretation or re-presentation, so the idea in that sense may be unfinalisable. Further interpretations may be made by viewers bringing their own perceptions to the work.

In my work I used sea water that continued to react with the substrates over time. The changes that occurred were dependent on ambient temperature and humidity so were dependent on place, as can be seen in the images on the following two pages. The creation of these specific pieces predated practice undertaken during the PhD. However, I included them here because the knowledge gained from the changes that occurred in them during the initial stages of the PhD was instrumental in directing practical and theoretical research in this study.

Fig. 23 *Intervention 1 10.06 19.08.2014* (2014)

Fig. 24 *Intervention 1 11.09 19.08.2014* (2014)

The two images of this piece of work were taken on the same day. The top photograph was taken first when the work was wet from ambient humidity. The second picture shows changes in the work that occurred as a result of drying by sunlight, just over one hour later. The piece continued to change over time.

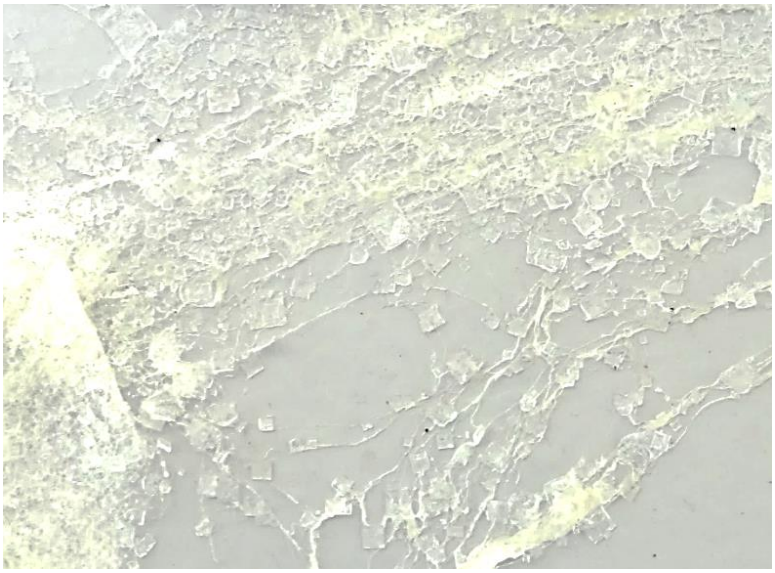

Fig. 25 *Transition 11.15 01.09.2015* (2015)

Fig. 26 *Transition 17.00 03.09.2015* (2015)

The top picture shows detail of a larger piece of hand felted silk and wool. The work was made using sea water and the crystal formation took place over a period of several months.

The lower image is a very small detail of large hanging piece of hand felted silk and wool, again made using sea water. The tiny crystals formed over a period of two weeks while the work was on display. The difference in the size and shape of the crystals in the two pieces was due to the fact that the top piece was left to soak in sea water after completion, while the wall hanging was not rinsed after felting but left to dry naturally, so still contained soap.

Ambiguity also existed in my approach to making. I might not always have had an outcome in mind. My intention was to work with the littoral in the same way that Goldsworthy works with stone, wood, water and leaf, the way Shepherd entered into the mountain and the way Wilhelmina Barns-Graham studied the land and sea. That is, to understand, whilst acknowledging that this too was unlikely to be a finalisable activity. This approach is referenced by Steve Garner in *Writing on Drawing* (2008:19) who advocates that an artist should come to understanding through exploration rather than starting out with a fixed idea of how the drawing will progress, in order to discover for themselves their own potential and that of the artwork.

With a basis in unpredicted outcomes, ambiguity may result in feelings of discomfort or uncertainty, but I enjoyed the potential of working with materials in perhaps untried ways, with the constant question of 'what if?' as a means to challenge and extend, while accepting that this approach could correspondingly have resulted in an increased risk of failure.

The investigation into drawing in this research was inspired by the work of Barns-Graham (1912 – 2004). Barns-Graham was an artist who sought to produce drawings that went beyond a visual representation to establish a record of her interaction with a specific time and place:

> "Barns-Graham was committed to the idea of art as a mode of experimental and investigative research. All her drawing is driven by this inner demand to interrogate the nature of the world, and make visible its elemental energies and forms." (Gooding, 2009:19)

It was the idea of an experimental approach to drawing that instigated my work in the sea and with sea water.

In *A Discipline of the Mind*, focussing on the drawings of Barns-Graham, Gooding discusses the departure of modern artists from the idea that art 'represents' the world towards the concept of "reporting and recording from within and as part of it" (Gooding, 2009:6). Instead, in a world that has become increasingly scientifically informed, he suggests,

> "Art would function, rather as a means to revealing the underlying rhythms and energies of a living nature, and as a means of presenting our experience, emotional, intellectual, phenomenological, of the world of space…" (Gooding, 2009:6)

Gooding uses the drawings of Barns-Graham to illustrate this when he writes that they "…register a passionate response to the interactions of the weather, time and place with the permanencies of nature" (Gooding, 2009:27).

In this way her work links to Lefebvre's writings on rhythmanalysis and with the practice of land artists such as Goldsworthy and Matthews.

Fig. 27 *Seventeen Lines* (1982)

Thinking Through Drawing - Practice Into Knowledge was a symposium held in 2011 to explore the power and value of drawing and included a wide range of presenters from various professions. The papers, published online following the conference, identify these common themes: movement, timing, perception, creativity and analogy in the drawing process, all relevant to this research. In the editorial for the symposium, it is noted that findings from scientific enquiries can inform the practice and teaching of drawing. Betts writes that "Knowing drawing and experiencing drawing can enhance learning" (Betts, 2011:27).

One of the presentations at the symposium was given by Jenny Wright, a drawing practitioner who worked alongside surgeon Neil Shah at St Bartholomew's Hospital in London (Wright, 2011). She identifies the different ways drawing might be used in the hospital setting. Our modern world is increasingly vision focussed and when the clinical notes made following any patient interaction are recorded digitally, this

negates the possibility of enhancement by diagram or illustration. However, reflecting on my own clinical specialty, I used drawing to clarify a procedure to patients, to understand a new procedure or anatomical anomaly, to explain a technique, pathology or physiological change when teaching students and junior staff or to demonstrate cardiac rhythm changes, to identify but a few. These were transferable skills that crossed into my creative practice where drawing became a tool for experimentation, investigation and analysis.

Wright creates an interesting definition of the haptic when linked to drawing and surgery, stating that it relates to the sense of touch in all its forms including proprioception, kinaesthesia, cutaneous sense including pressure, temperature and pain and tactile perception (Wright, 2011:113). I extended this definition to my own practice. Each of the senses identified were relevant both to the practitioner and the patient in the clinical setting but also to my creative work in the littoral.

I attended several different drawing workshops during the research, encompassing drawing with touch, drawing blind, drawing dancers and drawing in response to words. Most of these were using monochrome and my motivation for this was to develop skills further but additionally to consider extending the range of materials used. Each workshop allowed time to discuss the variety of work produced in response to a common theme or idea, making it possible to learn both from my own work and that of others. I participated in two conferences, *Drawing Matters* in York and *Drawing Phenomenology* at Loughborough University, gaining an understanding about what drawing could be and freeing myself to undertake further experimentation in my own work both in terms of process and materials. I found the practical workshops at *Drawing Phenomenology* particularly helpful in directing my work in the littoral.

The most significant point that I learned regarding drawing was about my hands. In the growing embryo the hands develop before the feet and the right hand before the left. I was right hand dominant but used both hands together in my clinical work. Having lived with a left hander for more than forty years, I often used my left hand as much as my right. I automatically used my right hand to draw, but by changing to the left hand I found the resulting use of marks far more interesting. I think that this was due to the fact that in using my right hand to write and draw for so long it had learned to work independently from the eyes and subsequently the motor control was more highly developed. I discovered that the reduction of fine motor skills on the left and the sometimes-hesitant marks produced were more sympathetic to working

with the senses. Barbara Hepworth observed that when sculpting her left hand was her thinking hand while the right (dominant) was used for strength. Cy Twombly is another artist who is known to have experimented with drawing in the dark and for working with his left hand.

Angela Hodgson-Teall's presentation at *Thinking Through Drawing* focussed on her PhD research into her drawing practice as an artist, investigating empathy in the hospital where she worked as a doctor. She, too, notes the difference in using her non-dominant hand for drawing:

> "I drew with my left, non-dominant hand for the first time… [and] found new exploratory potential in my drawing and a strong sense of being attuned to life." (Hodgson-Teall, 2011:144).

Experimentation lay at the core of my drawing practice not only in terms of materials, but also how changes in posture and how the body is used and positioned in space could impact drawing outcomes. This is something which was rigorously investigated throughout the period of this study. In his paper 'Philosophical Dimensions of Instruction', presented at *Thinking Through Drawing - Practice Into Knowledge*, Seymour Simmons attributes pragmatism to this methodology, comparing it to the empirical approach where knowledge is acquired primarily through observation and induction (Simmons, 2011:42). Simmons goes on to cite Kimon Nicolaides who considered this the "natural way to draw". For Nicolaides, drawing in this way involves more than just seeing but requires rather the engagement of all the senses, particularly tactile and kinaesthetic senses, demonstrating the pragmatist notion that perception and learning occur through action and reflection (Simmons, 2011:42). This technique is grounded in scientific methodology and closely follows research in the clinical setting where collation and analysis of data can lead to the design of a theory that may be tested through experimentation. This can be followed by further analysis and /or trialling.

Fig. 28 *Drawing by Touch 1 April 2017* (2017)

Fig. 29 *Drawing by Touch 2 April 2017* (2017)

When drawing by touch I used the right hand to draw while examining the item with the left hand. I found that I spent more time manoeuvring the charcoal and changing the quality of the marks made than would normally be the case when using the right hand alone, something I carried forward to the next workshop in Loughborough.

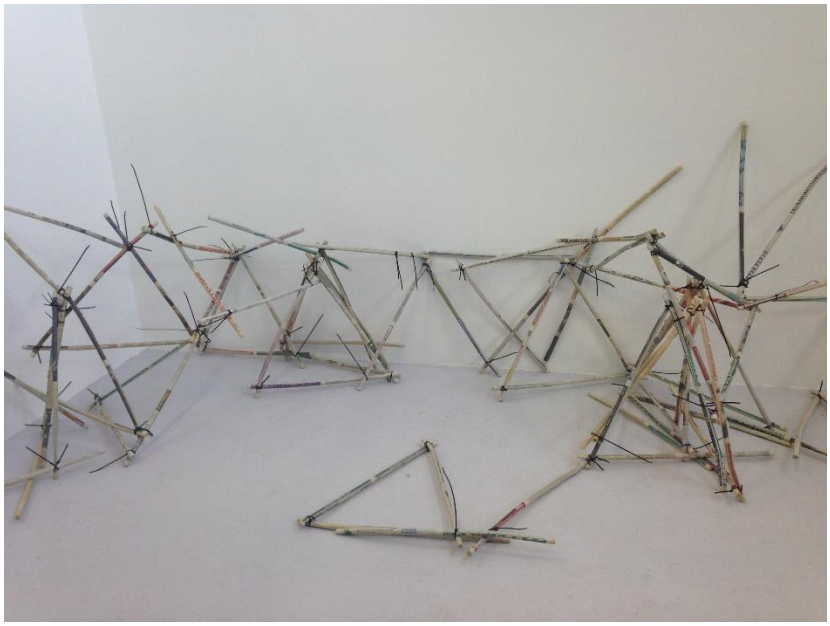

Fig. 30 *Drawing Workshop 1 Group Work 13.07.2017* (2017)

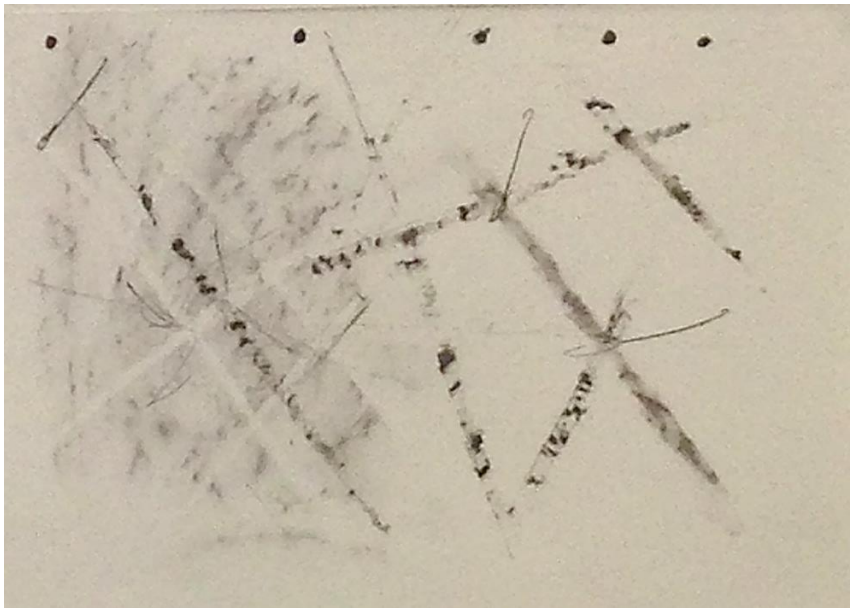

Fig. 31 *Drawing Workshop 1 Individual Work 13.07.2017* (2017)

Van Alphen (2008:62) refers to a paradigm shift in drawing, writing that the act of drawing is more than a re-presentation but exists as activity, a factor noted by Richard Serra. White writes that for Serra drawing is "a fundamental, *a priori* activity in which new ways of seeing can still be developed" (White, 2011:17), while Deborah Harty, a member of the TRACEY group, has conducted research into drawing as phenomenology (Harty,2017). Philip Rawson, author of the seminal book *Drawing*, makes the following statement relating drawing to experience:

> "…a drawing's basic ingredients are strokes or marks which have a symbolic relationship with experience, not a direct overall similarity with anything real." (Rawson, 1987:1)

Drawing as activity was very much my own approach to drawing, although my attention was directed towards a multisensory experience, not just sight.

Questions

Through my own reading, attendance at conferences and consideration of the question 'What is drawing?', I came to realise that although there were common themes to the answer to this question, the ambiguity of drawing means that it remains open to personal interpretation. In addition, the interpretation may change over time and according to context, allying it closely with the concept of *ma*.

With respect to the question 'what is a drawing?' I worked with the idea that a drawing can be a two- or three-dimensional response to a multi-sensorial activity in a variety of media through which I tried to communicate that experience.

The focus on drawing in the littoral references the changes that took place in the 1960s when artists left the studio to examine the potential of working outside, beginning the earth/land art movement. At this point, as White observes, "the physicality and the materiality of the real space of everyday life dramatically collided with the sacred art object" (White, 2011:15). This allowed artists to re-examine the potential of drawing.

The key elements of this study, space, time, body, rhythm and energy, were embodied in the act of drawing:

> "Sketching and drawing are spatial and haptic exercises that fuse the external reality of space and matter, and the internal reality of perception, thought and mental imagery into singular and dialectic entities." (Pallasmaa, 2009:89)

Pallasmaa observes that each act of sketching results in the creation of three groups of images: that which appears on the substrate, the visual image recorded in the memory and the memory of the activity retained in the muscles used to produce the drawing. He describes how these images are not simple isolated glimpses but “recordings of a temporal process of successive perception, measuring, evaluation, correction and re-evaluation” (Pallasmaa, 2009:89).

An interesting question that I identified through my research is, ‘at what point in the making process does drawing take place?’ It might be assumed that drawings or sketches are part of the preliminary planning process, particularly for artists working in three dimensions. However, both Goldsworthy (Goldsworthy, 2017:7) and Serra (White, 2011:13) have commented that drawing is a fluid process that takes place throughout making and which is additionally used after completion of a piece to learn and understand the work and the methods used to create it.

I used drawing as a means to record and communicate my experiences and to expand my knowledge about the materials and tools I used. I found that reflecting on drawings created in one medium could lead to experimentation with other media. For example, when I started working on paper in sea water, I rinsed the images in fresh water before drying flat. Working on larger pieces of paper at depth in the sea created three dimensional drawings that better represented the experience so I did not rinse these. After several weeks I noticed salt crystals appearing within the fibres of the paper that changed the surface and texture in the same way as in the linen work.

Fig. 32 *Salt Crystals in Paper 05.04.2017* (2017)

In addition, these changes responded to fluctuations in ambient temperature and humidity. If the work were left unframed this would be an ongoing process of transformation, further demonstrating Bakhtin's theories of unfinalisability and chronotope and Lefebvre's notion of rhythm in nature.[12]

[12] This piece was still changing four years after this photograph was taken

Drawing Water

"**Movement**

A wave does not in itself exist

It is a movement of water made by wind

Wind does not itself exist

It is a movement of air

Mind itself does not exist

It is a movement of thought"

(Drury, 1998:96)

I had always been drawn to the sounds and movements of water, from chuckling burns racing down the hillside after a rainstorm to crashing, thunderous waves at high tide as seen in Maggi Hambling's work, *Wave breaking, October 2005*.

Image redacted for reasons of copyright

Fig. 33 *Wave Breaking, October, 2005* (2005)

Shepherd comments on the varying tones to be heard on the mountain: “The sound of all this moving water is as integral to the mountain as pollen to the flower” (Shepherd, 2011:26). She writes that if one listens carefully a full orchestra of sounds can be distinguished, but that often the focus for the climber can be on reaching the summit and the notes pass unheeded.

As a clinician I was based on the South Bank of the Thames. I could be there at any hour of the day or night, so I witnessed the everchanging moods of the river throughout the year. Yet it was the littoral, the shifting interface between the land and the sea, that held the greatest interest for me:

> “Moving water is a potent symbol of life. When a wave breaks, the skin of the surface meets the flesh of the depths.” (Hambling and Lambirth, 2006:231)

Shepherd refers to the ‘appalling strength’ of water, which she believes she fears in the same way that our ancestors were awed by the forces of nature. Humans cannot live without it, yet its power can be terrifying. She felt drawn to the mountain in the same way that I was pulled to the water, yet acknowledges that the experience could be daunting as well as exhilarating.

> “We might…see the properties of the sea water itself as the capabilities of the body to behave; the currents and groundswells as the values and concerns in play at that location in time and space; and the winds as the influences from the external world.” (Claxton, 2015:91)

My work with the sea began as a metaphor for medical intervention in illness and disease. In the same way that the majority of these interventions are not without side-effects, when humans try to interfere with nature, nature fights back. However, the link with clinical practice was highlighted by Drury’s statement, “…the tide is the breath of the sea” (Drury, 1998:58).

The first series of drawings I made was a record of a single interaction between myself and the sea.[13] I made a trip to the same beach every month for a year. After I had created a series of marks on paper, I held the paper flat and waited for a single wave to wash across the surface. I experimented with a variety of papers and worked at diverse times of the day to encompass different phases of the tide. Looking at this work I noticed that the quality of the marks I had created differed

[13] This series also predates practice undertaken during the PhD. Reflection-on-action facilitated development of practice within the PhD.

according to the weather and the strength of the waves, so that on a wild windy day at high tide the marks were more dynamic than on a calm summer's day at low tide.

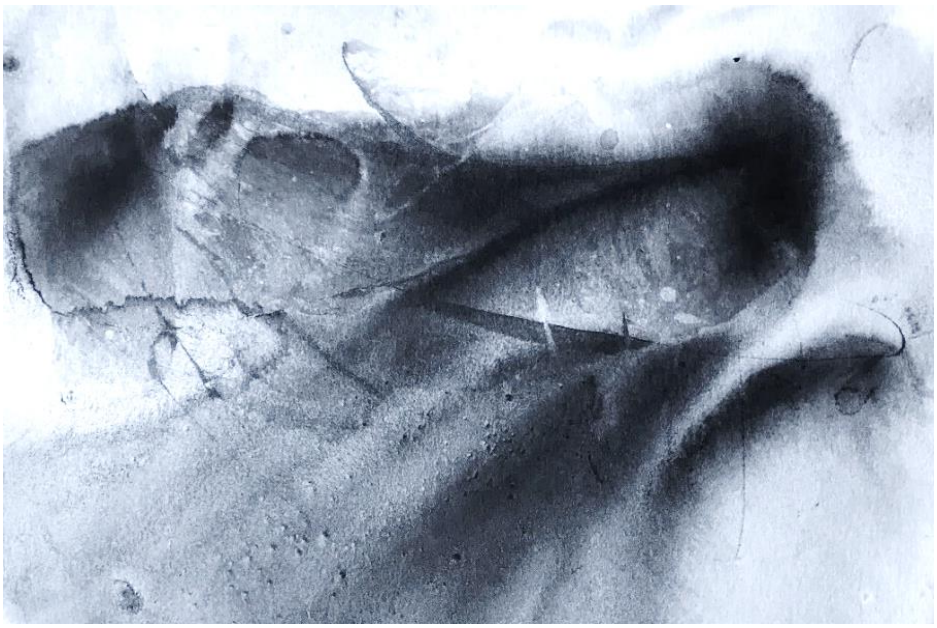

Fig. 34 *One Wave Drawing 1 21.06.2012* (2012)

Fig. 35 *One Wave Drawing 2 21.06.2012* (2012)

It was after reading about the work of Barns-Graham and Bergson's statement on the body that I was able to see how I could progress this work. I decided to move into the sea to work, to experience the sea and draw that experience as it happened. Shepherd makes a similar observation about the mountain when she writes:

> "What more there is lies within the mountain. Something moves between me and it. Place and a mind may interpenetrate till the nature of both is altered." (Shepherd, 2011:8)

In *Touching the Beach*, Pau Obrador's thinking validates my decision to move forward into the sea as part of my research into the use of sensory ethnography:

> "…the haptic experience of the sea is somatic and interceptive primarily because of the specific materiality of the aquatic medium, which destabilises the human sensorium." (Obrador, 2016:64)

He goes on to explain that the body may find it uncomfortable to be in such an environment because our bodies have adapted to being grounded. We do not notice the automatic use of balance, proprioception and kinaesthesia until moving in another medium, such as water or an anti-gravity chamber. Standing in the sea at depth one is acutely aware of these senses at work. The irregular frequency and volume of the waves means that the body is constantly striving to find equilibrium. I never found the experience uncomfortable, even when the sudden surge of a wave unbalanced me and dragged me under the water.

Tania Kovats' book, *Drawing Water*, (Kovats, 2014) brings together a collection of work from artists, writers, scientists and explorers all seeking to understand the nature of water and offers a range of possibilities as to how this information can be represented. This enabled me to consider how I could record my experience in the water.

I gathered an unusual collection of equipment for drawing in the water: surfing shoes, wet suit, body board, paper and a range of mark making tools. Prior to drawing in the sea, I trialled my mark making in water to test for water fastness over time. Unlike the *One Wave* drawings, the paper would be immersed in the sea for a period of time. I did not know for how long this would be until I tested the technique. There were other variables to consider after the first trial and I used reflective practice to plan further tests. An example of the reflective practice form that I used can be found in Appendix 2.

Drawing Technique – Sea Drawing

Using the body board to support the paper, I held the marker in my right hand and allowed the motion of the waves to create the recording without adding any pressure through my hand. I watched each wave approach so that I would know when to jump through the swell, which meant I had less chance of influencing the movement of the marker.

The time spent on one drawing was governed by the action of the waves. There was a point of disintegration of the paper that rendered it impossible to continue. The rougher the sea, the more quickly this occurred.

Using a body-mounted camera allowed me to record the activity and this enhanced reflective practice. Digital video has been used to focus on movement as a sensory ethnography methodology, particularly with reference to walking. At a time when much of our experience is digitally mediated it was my intention that the use of video to record my practice would be part of the process rather than the outcome. The nature of my practice ensured that there was no performative element to the work, so the camera recorded raw data with no subjective influence and thus avoided the potential for bias in data collection. Pink notes that using audio-visual media in autoethnography can also enable one "…to explore the relationship between vision, touch and sound in sensory ethnography" (Pink, 2015:122). The camera work was used as an adjunct to reflection and so avoided Pink's concern that using digital media can result in a mediated engagement with the senses. Rather, the data was viewed with an understanding of the interconnectedness of the senses.

Fig. 36 *7 Hours In and With the Pacific Ocean (Japan)* (2019)

Matthews works in the sea with a variety of media. Working alone along the coasts of the Atlantic and Pacific oceans, he spends many hours at a time drawing in the water and this may include the production of text. He also uses video and has found, as I did, that "video may be more susceptible to capturing something that drawing, even after hours and hours drifting in the ocean, may elude" (Matthews, s.d.). While my techniques were comparable, they were not the same, having developed from a different origin, informed by my practice as a respiratory therapist and the application of sensory autoethnography. Working alone in the sea, at some distance from the often-deserted shore, I was occasionally able to experience moments of flow where the mind and body function together. This demonstrates the 'moments of fusion' referred to in this extract by Harty from *Drawing Ambiguity*:

> "Moments of fusion, moments of attentive awareness to the environment, spiritual and/or physical self are perceptible through the changing rhythm of traces upon the surface." (Harty, 2015:62)

There were occasions where I was overpowered by the sea and my focus was first on regaining balance, followed by relocation of the board and paper. The paper was often fragmented by the force of the waves but this served to reflect the experience more keenly, supported by still shots taken from the video, which continued recording automatically. Studying the recorded visual images alongside the drawings

can enhance the experience for the author, as Anna Ursyn observes: “By adding visual story-telling to traditional drawing makers become immersed in a fourth dimension, wandering across time and space” (Ursyn, 2008:171).

In drawing, the body serves as a transformative medium, operating between self and the world. When drawing in the sea my upper body was kept as still as possible, allowing for jumps through the waves. The tools in my hand became an extension of my body to mark the paper, recording traces of the movement of the waves not, as is usual in drawing, traces of bodily movement. Terry Rosenberg’s explanation of ideational drawing summarises the activity and the outcome.

> “…in an ideational drawing one tries to release from grasp what one knows, re-view what is to be known and how it can be known and develop the otherly arrangements…in order to produce an ap-prehension of not-knowable work at each other. They operate on one another in much the same way that the sea and the land operate on each other - the sea (un-knowing) constantly redrafts the shape of the shore.” (Rosenberg, 2008:112)

Although the work on paper produced some dynamic results, I also tried drawing on organza so that I could build layers of drawing from the same location over time that could be viewed together. Unlike Matthews, I did not fix the substrate to the board so this was a little more difficult to manage. In addition, did not rinse the drawings, so the salt water stiffened the fabric, creating additional distortions.

Fig. 37 *Sea Drawing 1 27.07.2015* (2015)[14]

Fig. 38 *Sea Drawing 2 27.07.2015* (2015)

[14] Although my practice of sea drawing continued throughout the PhD, the images on this page were taken from work on location just prior to commencement of the PhD. They were used to inform new work with wool, silk, seaweed fibres and cloth at the beginning of my research.

I became very comfortable working in the sea on the south coast of England, but planned to try a new location. This was in order to assess my perceptive responses to a place about which I had little knowledge and, moreover, to put into practice knowledge gained from my theoretical research. I travelled to the island of Islay in mid-March, deliberately choosing a relatively isolated area. The small island afforded me several miles of coastline that I could experience alone safely.

The following statement, found on the wall of one of the distilleries on the island, resonated with the themes of my research and endorsed my choice of location:

> "The rhythm of life on Islay is dictated by the seasons and by the sea. The sea ebbs and flows, sometimes slow and leisurely, sometimes harsh and frightening as the waves crash into the rocks at the water's edge." (s.n.s.d.)

The temperature, weather and location meant that I was unable to work in the sea, so each day for a week I walked different sections of the coastline. Previously I had used walking as a way to exercise. During the research, the rhythm of walking became a means to achieve flow and allow my thoughts to organise ideas, which were subsequently identified through introspection. It was while walking and studying the Islay coastline that I was able to identify the list of words common to both my clinical and creative practice. Later, walking became part of the process in which I used my body in the same way that I had in the sea: to engage directly with the landscape, both mentally and physically, through the use of the senses.

Lefebvre's notion of rhythm in all things was evident in the cadence of my walking, the tidal ebb and flow, the irregular pattern of the wind and the flapping of my protective clothing. Torrential rain and hail meant there was plenty of fresh water streaming from the Oa as well as tidal flow. I was able to study flow as well as experience flow. I took short video recordings of the patterns of flow in water and sound recordings of flowing water and wind.

The constant wind, rain and hail precluded any outdoor sketching, but I was able to use my senses to make notes of sights, sounds and smells, reflecting Obrador's statement that:

> "Haptic sensations do not appear in isolation but they are always entangled together forming a dynamic and contingent assemblage of sensations, objects and feelings." (Obrador, 2016:66)

Attuning my senses to the rhythm of the island I noticed the distinctive fragrance of peat smoke emanating from the distilleries on alternate days, which was stronger when mixed with gentle rain mist. Viewed from a distance the rain appeared as smoke on the hills. Using smoke and sea water I created a series of drawings entitled *Smir*.

As with the *One Wave* drawings I had little control over the 'finished' drawing. The carbon and water continued to move as it slowly dried naturally. I have used scare quotes for the word 'finished' because although the drawings have been fixed, the sea water in this context may react with the paper as with those completed in the sea.

Fig. 39 *Islay Coast 19.03.2017* (2017)

Fig. 40 *Smir I 09.05.2017* (2017)

Fig. 41 *Islay Beach 19.03.2017* (2017)

Fig. 42 *Smir 2 09.05.2017* (2017)

Audio recordings of the sea and river water were used to draw sound images during reflective practice and to re-experience time spent on location.

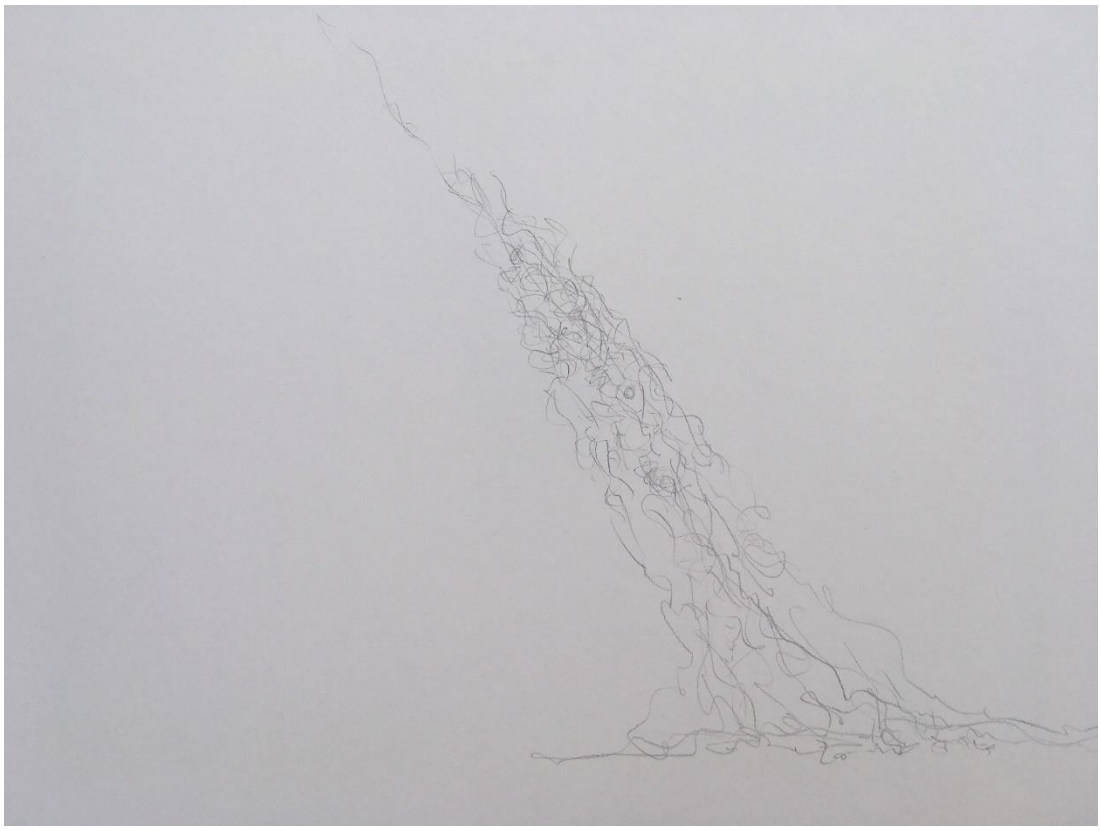

Fig. 43 *Audio Drawing, Sighted, Right Hand, 2019* (2019)

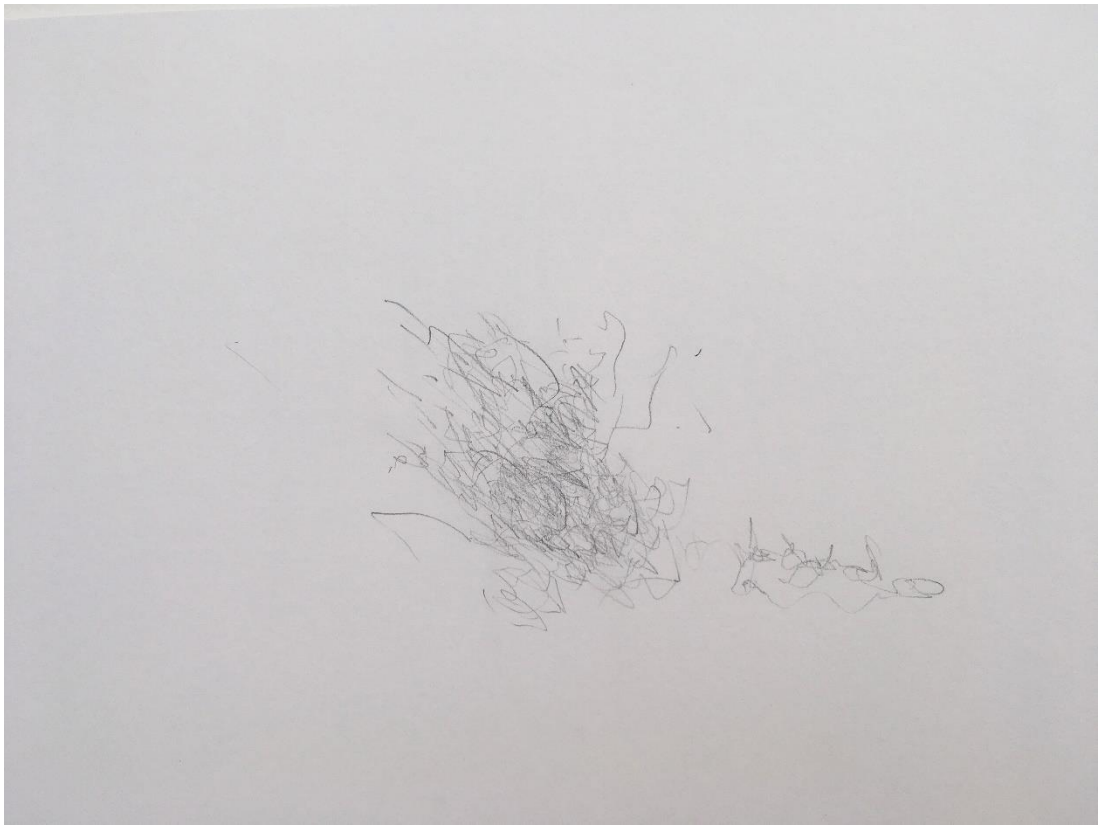

Fig. 44 *Audio Drawing, Blind, Left Hand, 2019* (2019)

Drawing Breath

> "Silent friend of many distances, feel
>
> how your breath enlarges all of space.
>
> …Move through transformation, out and in.
>
> … In this immeasurable darkness, be the power
>
> that rounds your senses in their magic ring,
>
> the sense of the mysterious encounter.
>
> And if the earthly no longer knows your name,
>
> whisper to the silent earth: I'm flowing.
>
> To the flashing water say: I am."
>
> Rainer Maria Rilke (Rilke, 1922:191)

Drawing Maps

'Drawing Breath' arose from two periods of time spent on location in Pembrokeshire following the trip to Islay. It started with drawing maps, using ideas developed from a workshop at the 2017 *Drawing Phenomenology* conference. Building on the Islay experience, the main focus of my study was walking and the use of sensory perception and interception as I explored a very small section of the Pembrokeshire coastal path. As walking became more significant as part of the process, I considered how drawing could represent these journeys.

I investigated the ways in which Long (2015) and Drury (2008) chronicle their journeys in order to determine my methodology. Both Long and Drury make use of printed maps but in different ways. Long uses the map to plan the journey while Drury weaves printed maps to produce images relating to the locations. Long also documents journeys by textual image, where the words, font, placement and colour are all elements of the representation. In addition, I read about story maps in Robert Macfarlane's *The Wild Places* (Macfarlane, 2008:140-145). Story maps predate the classic ordnance survey maps or road atlases and "represent a place as it is perceived by an individual or a culture moving through it" (Macfarlane, 2008:141). They may be considered inaccurate alongside today's Google map technology but they contain a wealth of knowledge about locations that could not be captured with modern survey techniques. They are recordings of journeys made rather than maps

showing how space could be traversed. As Macfarlane writes, “in such maps, human memory and natural form rebound endlessly upon one another” (Macfarlane, 2008:144). These maps may contain layers of history passed down the generations, narrating changes in the land or, indeed, the seascape, for fishermen would log maps of the seabed.

The maps could be passed on verbally or constructed from a variety of materials. Macfarlane relates the story of the Inuit who carved three-dimensional maps of the coastline from wood so that if they were dropped into the water, they would float. Furthermore, the Inuit have collated a series of images of the sky and cloud formations that allow them to predict weather conditions, knowledge essential for their way of life (Macfarlane, 2008:144).

I chose not to use a map or to travel along any of the timed circular routes available to walkers. I intended to explore in the same way as I had on Islay and perhaps to create my own maps. The first walk was very short, not the fourteen miles a day I had been used to on Islay. I found the towering black cliffs a little intimidating and the weather was overcast and windy. I looked for a personal way to record the last few minutes of my walk. As I made my way down from a cliff top, I collected an open daisy flower every three minutes. By the time I reached the beach I had eight daisies, ranging from fully open to completely closed flower heads.

Looking at the photograph of these, I could remember the location, the weather and the sounds, everything about that small journey, although it might mean nothing or something totally different to anyone else:

> “A walk expresses space and freedom and the knowledge of it can live in the imagination of anyone, and that is another space too.” (Wallis, 2009:143)

These eight daisies expressed not only the walk but also time, space, energy and my engagement with the landscape.

Fig. 45 *Pembrokeshire Cliff Walk 24 minutes 17.14 13.06.2017* (2017)

Working with the ebb tide on the beach, I used lines of stones to outline the shape of five receding waves. As often happens on the ebb tide, the next wave was larger and rearranged the fifth line. The photograph recorded the interaction between myself, the sea and the stones and was a visual representation of the fact that no two waves are the same.

Fig. 46 *Five Lines in the Sand 14.44 14.06.2017* (2017)

I found a rock and set off on another walk, in the opposite direction, from Aber Mawr to Pwll Crochan with the rock in my backpack. It was hot and sunny and the climb up the cliff was far steeper than on Islay. It was my intention to take the rock home but I decided to leave it at the top of the cliff, above a part of the beach that was inaccessible except by sea, so that if it should fall no-one would be injured. On the return journey, every five minutes I collected an item from the ground at my feet. I had a collection of nine items that represented both the walk and also the land and flora in that part of the coastal path. When I returned three months later the rock had gone.

I relate the story of the rock because it was instrumental in directing the next phase of my indexical drawing practice, pulling together the clinical approach to data management and sensory autoethnography in drawing breath.

Fig. 47 *Placing the Rock 16.20 14.06.2017* (2017)

Aber Mawr to Pwll Crochan 14.06.2017

One stone

Two waterfalls

Three swifts chasing through the hedgerows

Four crows

‘Five lines in the sand’

Six dogs

Seven miles

Eight seagulls

Nine items

C Day, 2017

Fig. 48 *Aber Mawr to Pwll Crochan A Walk 45 minutes 14.06.2017* (2017)

Drawing Breath

> "But perhaps it is 'air' and 'drawing breath' – our atmosphere-defining and life-sustaining material processes– that confront making with its most intractably elusive challenge." (Phillipson, 2015:16)

Drawing *with* breath was the method used to create the hand images on the walls of caves. The artists would take a mouthful of local soil and puff it out with force to create the outline of hand prints on the rock face (*How Art Began*, 2019). My link between breathing and making occurred as a result of my climb up the cliff and my reflection on my body's response to the experience. As I ascended, I was aware that my pulse rate had increased and my breathing was harder, faster and deeper than usual. My progress was far slower than I expected. I was surprised at this as I walk many miles each day, but I had forgotten about the additional weight of the rock in the backpack. After I left the rock at the top of a cliff my speed increased and my breathing and heart rate steadied.

When working clinically I monitored respiratory rates, the work of breathing, heart rates and rhythms on an hourly basis. These were some of the parameters that informed my actions in the management of the disease process and they could demonstrate the effectiveness of my treatment. It therefore seemed logical to monitor the same data in myself in a variety of locations and during a range of activities to inform my studio work. I considered how I could embody this data in drawing.

Back in the studio I started to draw my breathing, experimenting with timings, different media and papers. I decided to use three-minute cycles, linking the clinical use of three with three lines of haiku, flow and thirdspace. Breathing was also relevant to *ma* in terms of the timing and delivery of pauses in conversation and the theatre.

I used large pieces of paper to allow space around the drawings, and I selected charcoal to make the marks, due to its ability to produce a range of mark density from a whisper to heavy, laboured dark score. Finally, I elected to use a 'double-blind' technique[15] to draw. By this I mean that I kept my eyes closed for the three minutes of drawing and used both my left and right hand together. 'Double-blind'

[15] I subsequently read Angela Hodgson-Teall's description of this in her presentation 'Locating Empathy with Double-Blind Drawing and Bimanual Palpation' at the Thinking Through Drawing symposium (Hodgson-Teall, 2011)

also refers to the most reliable form of clinical research trials, considered to be the gold standard. [16]

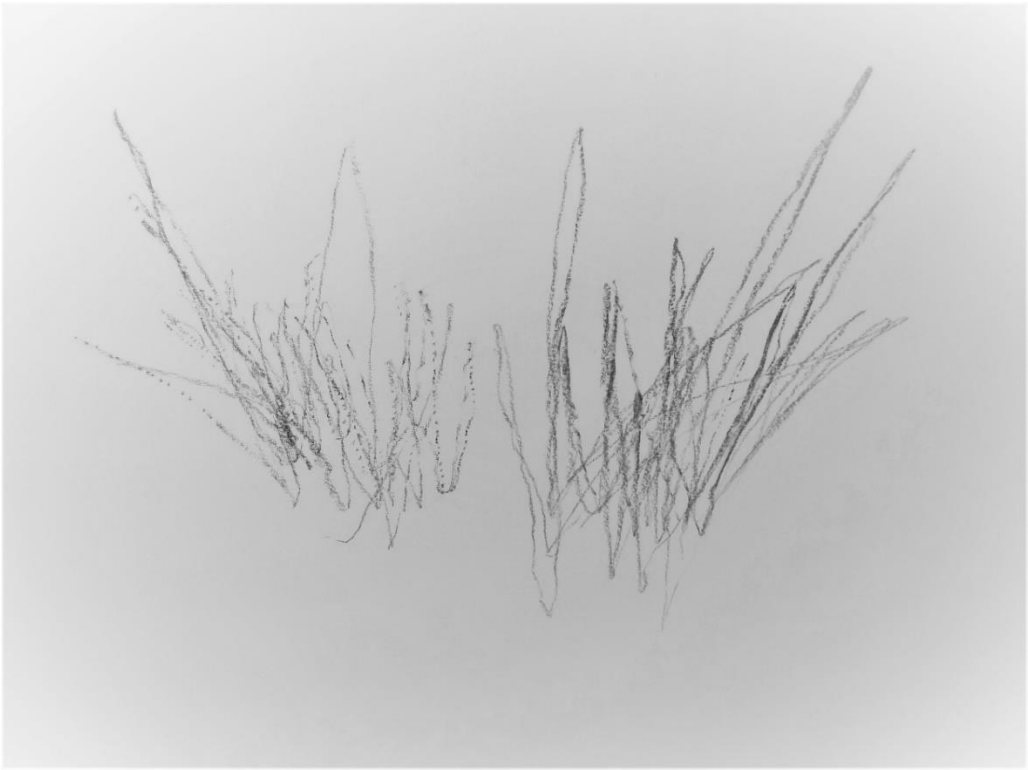

Fig. 49 *Double Blind 3 Minutes Breathing 29.09.2017* (2017)

"Breathing Space

Be still…breathe

Let go…the need to do anything

Sense the stillness…emptiness…at the bottom of the breath

Pause in the turning moment…between …one breath and another

Wait"

(Tufnell and Crickmay, 2004:31)

[16] Randomised Double Blind Placebo Controlled (RDBPC) Trials are those in which the aim is to reduce bias to as low as possible. Patients are randomised into two or more groups by computer. One group will be given the placebo treatment, the other group the treatment to be tested. Double-blind means that neither the medical team members nor the patients know which treatment group they are in.

For the first series of drawings, I stood to draw. I found that it took some time to relax into the drawing; initially there was a lot of tension in my shoulders and upper back. Again, I found the drawings executed with the left hand contained a greater sensitivity of marks.

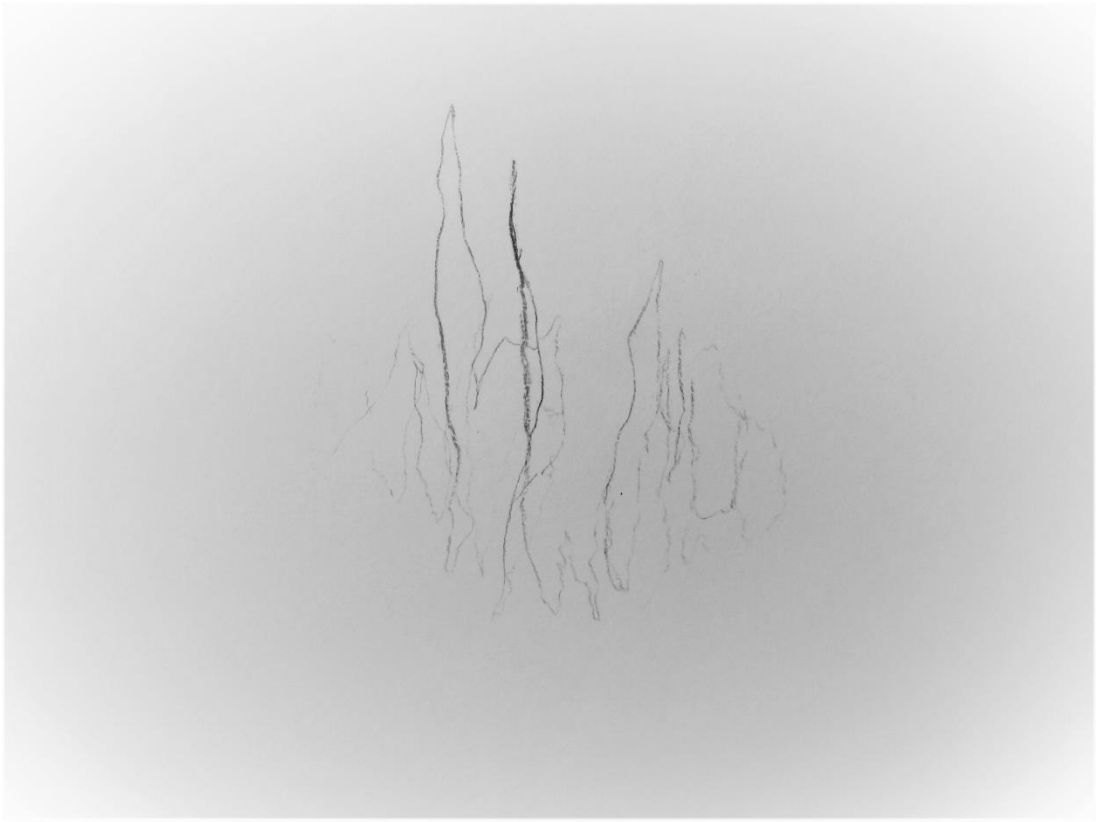

Fig. 50 *Left Hand Blind 3 minutes Breathing 29.09.2017* (2017)

"Travelling in the Breath
Listen…be still…feel the movement of air…on your skin

Open…nose…mouth…skin…breathe in
watch how the breath fills…turns…empties in the body
as a wave rising…and turning over within the body…falling away
Let in the movement of the breath…throughout the body
Let the breath…go everywhere"

(Tufnell and Crickmay, 2004:23)

I built on this practice by experimenting with breath holding and drawing in a variety of positions. This referenced my clinical knowledge that changes in position can significantly impact the work of breathing

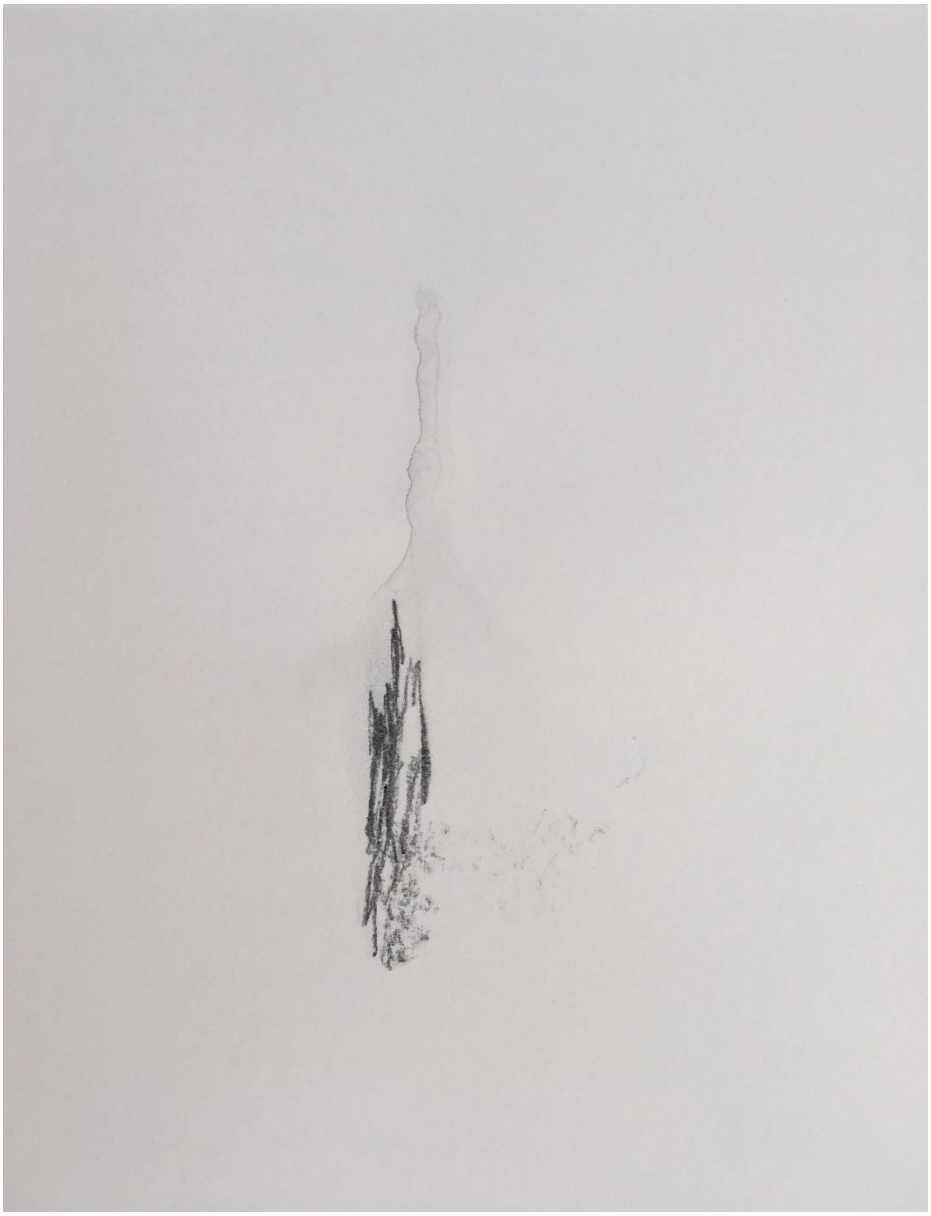

Fig. 51 *Prone Lying 3 minutes Breathing Right Hand July 2019* (2019)

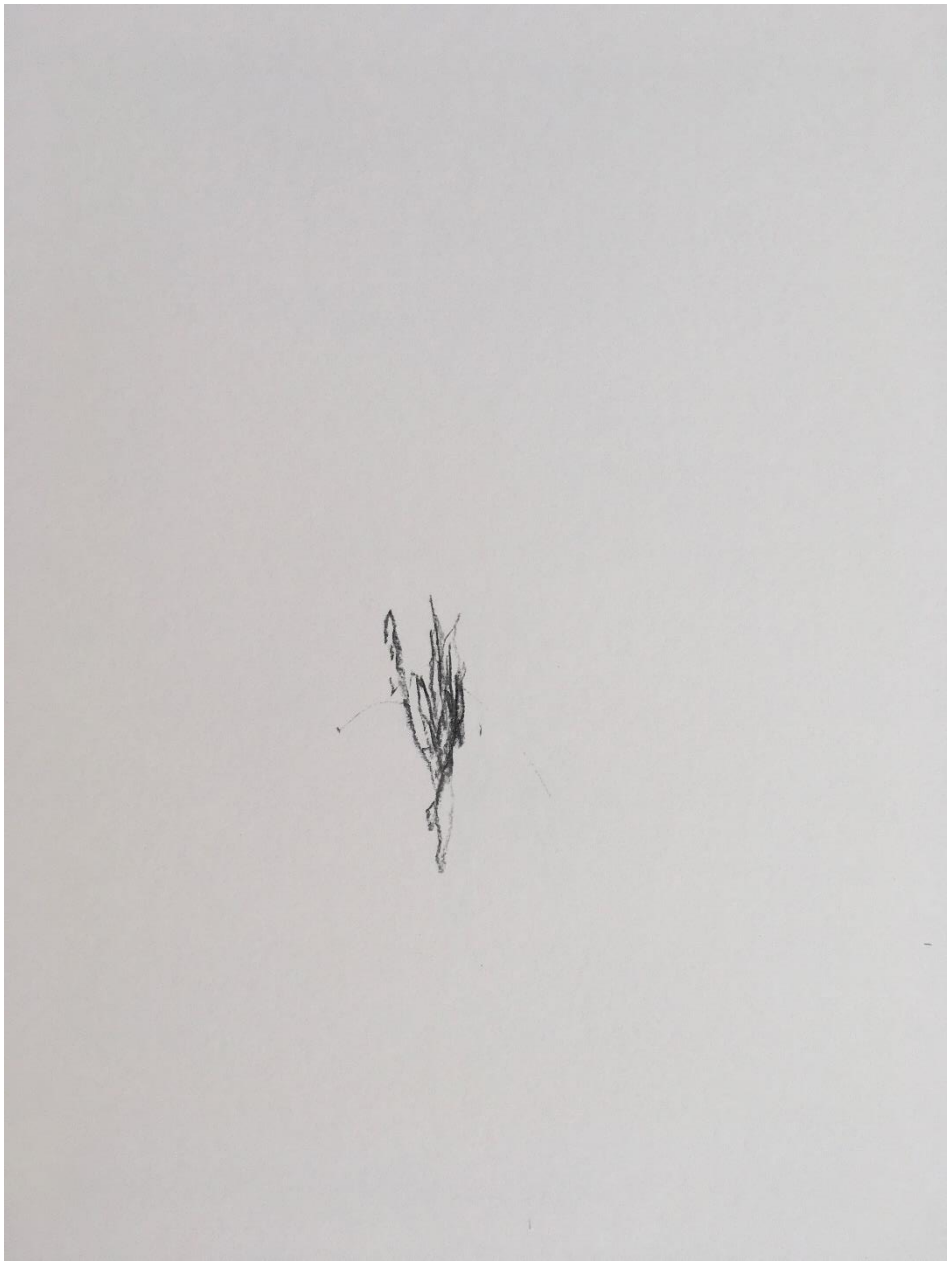

Fig. 52 *Prone Lying 3 Minutes Breathing Left Hand July 2019* (2019)

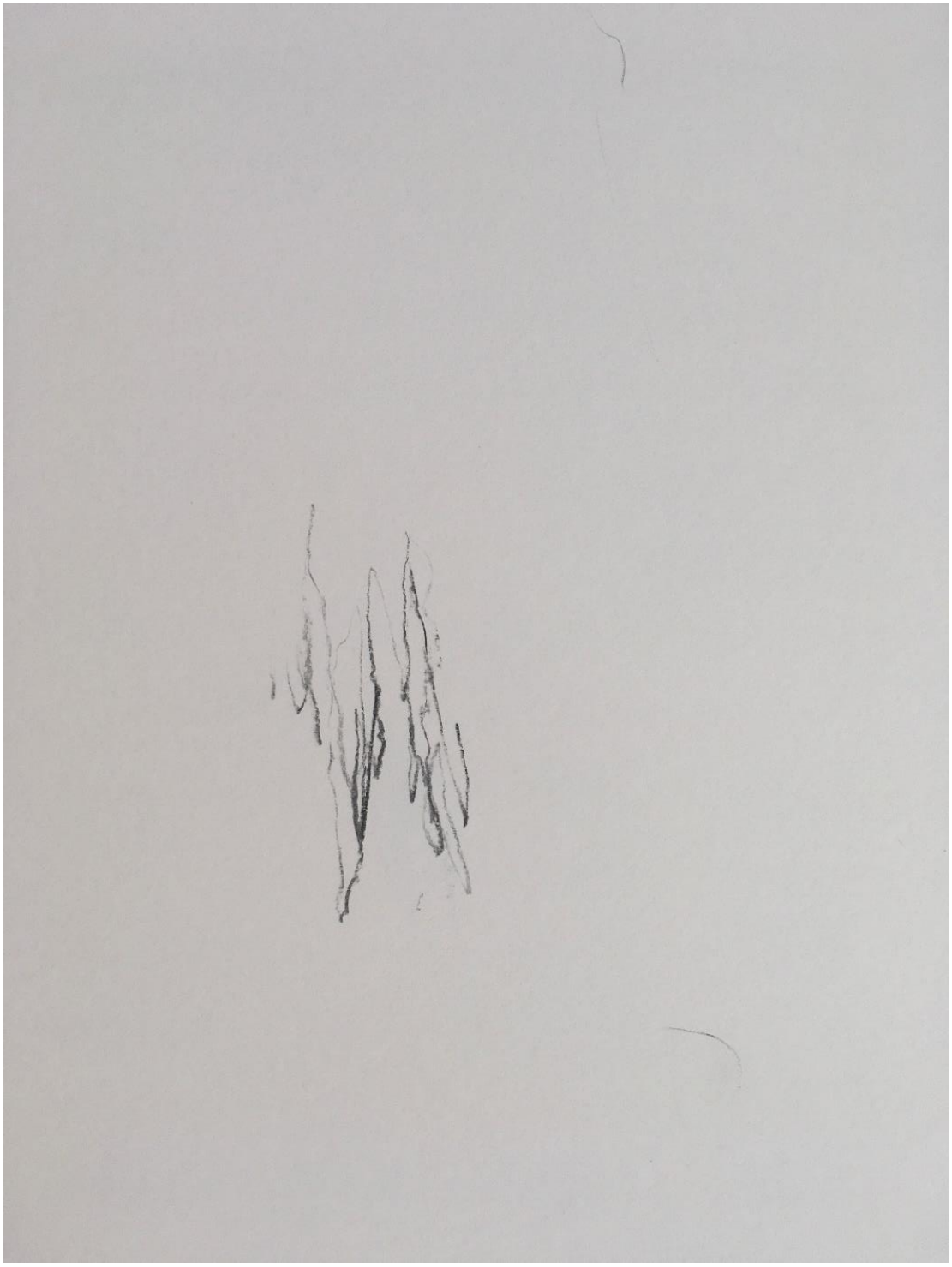

Fig. 53 *Supine 3 Minutes Breathing Right Hand July 2019* (2019)

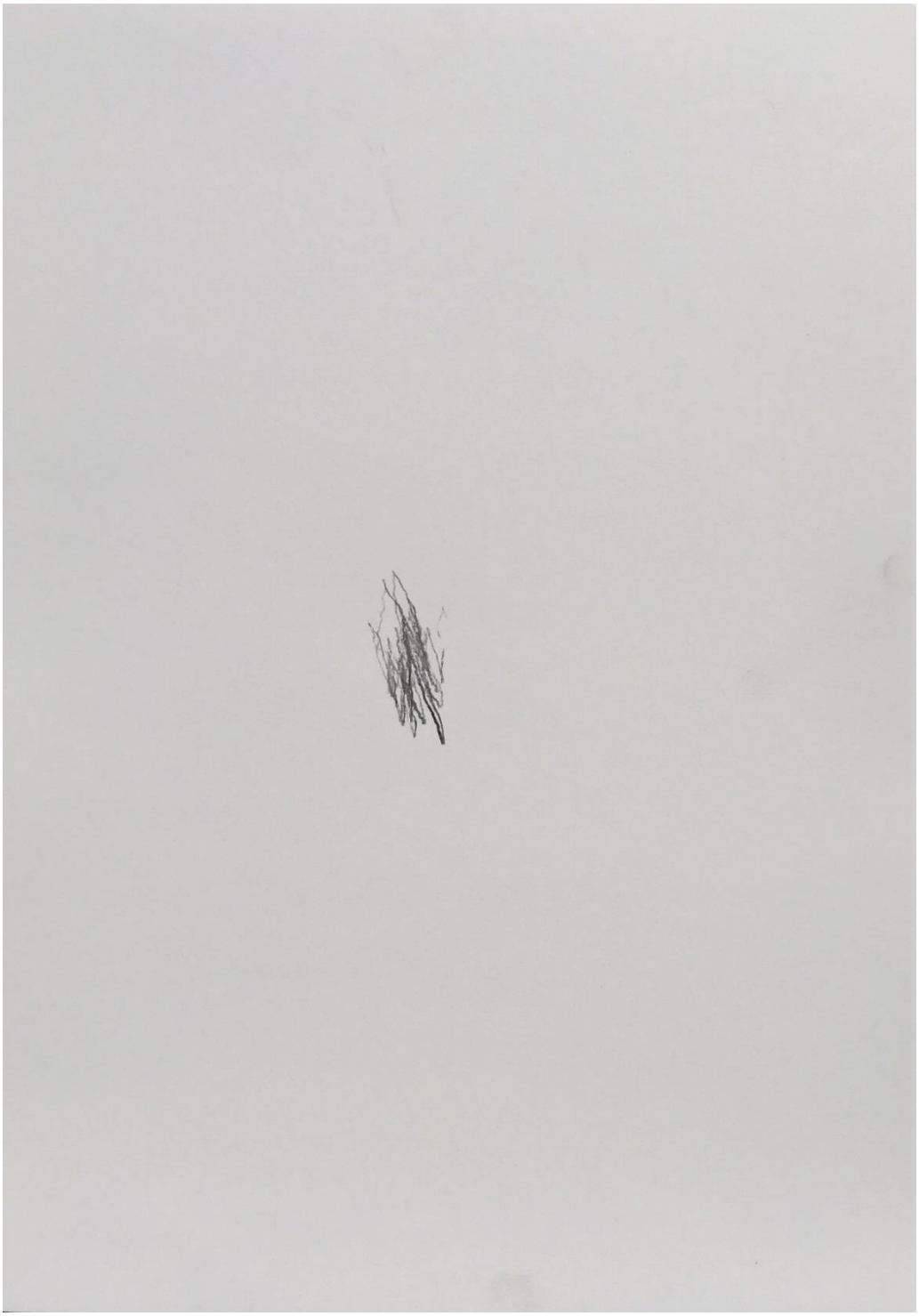

Fig. 54 *Supine 3 Minutes Breathing Left Hand July 2019* (2019)

Reflecting on the drawings and my interoceptive findings, I elected to bring the two together with a new drawing technique to produce personal story maps.[17] This would entail walking the same section of path twice on the same day and the final drawing would be composed of three layers of paper, which would unroll like the scroll maps of Japan. Passing the scroll through the hands shows the passage of time and space during the energy of the walk. The first layer was to be frottage images of the path travelled. Guiseppe Penone uses frottage to take rubbings of tree bark and rock and to explore the interaction of the body with different surfaces (Gagosian, s.d.). Effleurage, a gentle stroking technique, is one of the massage techniques I was taught during my training. The method is to apply gentle pressure with the flat of the hands. Effleurage encourages relaxation, stimulates circulation of the blood by directing movement of the strokes towards the heart and also improves lymphatic flow. Throughout the stroke the hand can sense changes in tension within the soft tissues. This reminded me of frottage, the French word for rubbing where the artist can take an impression of textures by placing a piece of paper over the area and rubbing gently with a soft medium such as pencil or charcoal.

At the point on my journey where I stopped to take rubbings of the path, I planned to draw my breathing on a roll of tracing paper that would be laid on top of the path drawing. Michael Phillipson refers to Penone's work in his essay 'To Draw: Drawing, Draws, Draward' (Phillipson, 2015:17).

Breath, breathing and air are themes in Penone's work where he looks to show the different traits of breathing through bubbles of water or leaves from a forest. In 1978 Penone produced a series of work entitled *Soffi* where he expelled a lungful of air into wet clay, creating a cast of his breath (Gagosian, s.d.; Phillipson, 2015:17).

[17] These were not completed as planned during the research due to restrictions to working on location but will be undertaken as part of on-going research into drawing.

Fig.55 *Soffo* (1978)

Each cast shows the body as drawer and drawing, each act of drawing breath is followed by the act of drawing in clay. The scrolls would act in the same way, representing the body as drawer and drawing.

The third layer, also on tracing paper, was to be an interpretation of objective data recorded during the walk. It is impossible to monitor objectively one's own breathing; as soon as one tries to count respiratory rate, the depth and rhythm of respiration changes. In the management of respiratory disorders such as obstructive sleep apnoea, respiratory rate and rhythm can be monitored objectively at home or in hospital, but I needed to find equipment that would allow me to be active on location. Researching online I found a body metrics suit, Hexoskin, produced by the Canadian company, Carre Technologies Inc., used in the training of elite athletes. Hexoskin can record:

- ECG (Electrocardiogram) and Heartbeat monitor, HRV (Heart Rate Variability, allowing stress monitoring, effort, load and fatigue assessments), QRS events and Heart Rate Recovery
- Breathing Rate (RPM), Minute Ventilation (L/min)
- Activity intensity, peak acceleration, steps, cadence, positions and sleep tracker

The suit contains body sensors to record the data, which is then downloaded into the computer for analysis. The equipment records more data than I required but this would allow for future development of the work. I planned to plot the data onto the third scroll to overlay the other two. The resulting map would show objective and subjective data of the walk:

"Listen…to the space between one moment…and another
Let the body breathe… make room…inside… and out
Sense the body…sense the horizon
let the present spread out… into the past…into future."
(Tufnell and Crickmay, 2004:31)

Keeping a log of other information such as weather, time of day and perceptive responses would complete the personal story map. The rationale behind producing the maps was to demonstrate materialisation of the theory underpinning my research through the following:

- Three layers linked Japanese and English haiku: the three metrical phases of Japanese haiku and the traditional three lines of English haiku.
- *Ma* was referenced through breathing, space and time.
- The rhythm of pacing and breathing related to Lefebvre's Rhythmanalysis and Csikszentmihalyi's flow.
- Bergson's analysis of the body as a conduit was evidenced through the use of changes in the objective data recorded in response to the activity.
- Each walk, each day, even if performed over exactly the same piece of ground, illustrated Bakhtin's concepts of unfinalisability and chronotope.

Some of the objective data collected during the first trials of working with the body metrics suit was used in my textile work, as discussed in the final section of this chapter, 'Drawing Thread'.

Drawing Thread

> "Fabric is like water. It constantly responds to different forces – it's never static. Fabric isn't a rigid thing." (Brownell, 2011:190)

The decision to utilise cloth as a key component in my creative practice was endorsed by this statement by Reiko Sudo, in conversation with Blaine Brownell. Sudo's observation links drawing water and drawing thread. Her studio practice at Nuno is grounded in experimental and innovative techniques to produce a comprehensive range of textiles.

In my additional training as a weaver and felt-maker I explored the construction and deconstruction of cloth. I saw similarities between this activity and the rehabilitation of patients following prolonged illness, reconstructing the patterns of movement in the mind and body through repetition and progression. Cloth and muscles are both composed of fibre and some of the processes employed to create felted cloth are similar to those used in physiotherapy manipulation techniques. In this research I utilised the gridlike structure of cloth to plot data findings in the same way that outcomes of lung function assessment are plotted as graphs. Moreover, I used the innate qualities of cloth to reflect my findings when working on location. I used high quality silk organza for its strength when drawing thread and for its transparency, which was appropriate for illustrating the ephemeral qualities of my work on location. Linen was selected for its traditional association with sailing and movement on the water, but also because I needed a cloth that would retain its integrity if a number of threads were removed.

The choice of cloth colour in my work, grey and white, was determined by my research findings. By 'grey' I mean not black and not white, the colour of in-between, which connected it to the aesthetic of *ma* through the notion of space between and time between. Van Gogh noted that there is an infinite range of greys ranging from cool to warm, violet to orange, which as David Batchelor writes, renders it "potentially as rich and complex as other colours" (Batchelor, 2014:74). Many of the days spent on location were shaded with such a range of greys, often with a piercing silver white light on the horizon, shades that I found as stimulating as Shepherd's 'sultry blues' on the mountain (Shepherd, 2011:41).

The link between grey and the concept of *ma* is strengthened in the chapter 'Rikyu Grey and the Art of Ambiguity' by the Japanese architect, Kisho Kurokawa, in which he writes about Rikyu grey not as a colour, but as a sensation.

> "The sensation of Rikyu grey represents an aesthetic of an ambivalent or multiple meaning." (Kurokawa, 1984)

Kurokawa writes that term Rikyu grey was first used in a book of tea written in 1640 by Kubo Gondaifu Toshinari. Toshinari describes how the tea master, Sen No Rikyu redesigned the tea ceremony which had become increasingly ornate and decorative and returned it to the simple practice grounded in *wabi* and *sabi*. Sen No Rikyu advised that simple garments should be worn, with a sash of charcoal grey cotton. This dark charcoal grey became known as Rikyu grey. Prior to this, grey had been considered a loathsome colour, evoking images of ashes but with the new term it became more acceptable as part of the aesthetic of *iki*. *Iki*, yet another complex concept, is defined as 'richness in sobriety'. Gradually more and more shades of grey were given names encompassing the full range of greys as described by van Gogh. Kurokawa applies the term to architecture and design stating that he is using it as a "symbolic term to express the multiple meanings or ambiguity of Japan's open spaces" (Kurokawa, 1984).

Working in series, I produced three groups of work with cloth: partially drawn thread, drawn thread replaced and drawn threads removed. Text was not included in the work with cloth but local dialects and terms formed titles for the work.

Partially Drawn Thread

In this series thread was drawn from the cloth but not completely removed. Nothing was added. The drawn threads created space and showed movement, both in and out of the cloth.

> "However static they may seem, things are invariably changing or are part of some larger moving pattern of life…Within appearances we can sense these present movements, past movements or inclinations to move, in which everything participates. And beyond these proclivities to move that we know but cannot always see, there are movements that we may sense or feel only by looking and empathising…" (Tufnell and Crickmay 2004:96)

The first sample of this type of work was *Breathing*. Just as every wave that breaks on the shore is different, every breath we take can be different in volume, depth and timing, dependent on internal and external factors. In *Breathing*, threads of different lengths were removed from the cloth but left attached to show inspiration and expiration. A series of these pieces used data recorded from the body metrics suit and from the use of a peak flow meter and incentive spirometer. The lengths of thread removed related directly to the measurements obtained during breathing from varying positions of the body, locations and times of day.

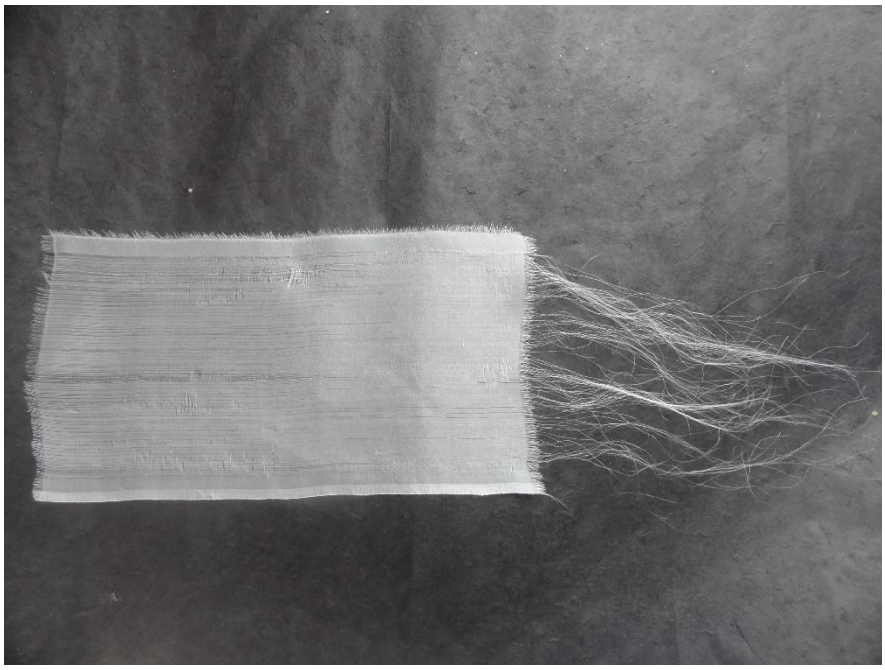

Fig. 56 *Breathing 05.04.2017* (2017)

Drawn Thread Replaced

I used the term stitching to define my work with thread. The act of stitching builds its own rhythm in the same way as walking and thus embodies Lefebvre's rhythmanalysis and sometimes Csikszentmihalyi's flow, although less easily than walking.

The week on Islay was instrumental in bringing together my theoretical and experiential research and in directing new explorations in drawing and with cloth. *Solvitur Ambulado* was made on my return from Islay. Seven grey double threads anchored close together in the cloth with no fixed end point represented the seven days of walking around the island with no specific destination in mind.

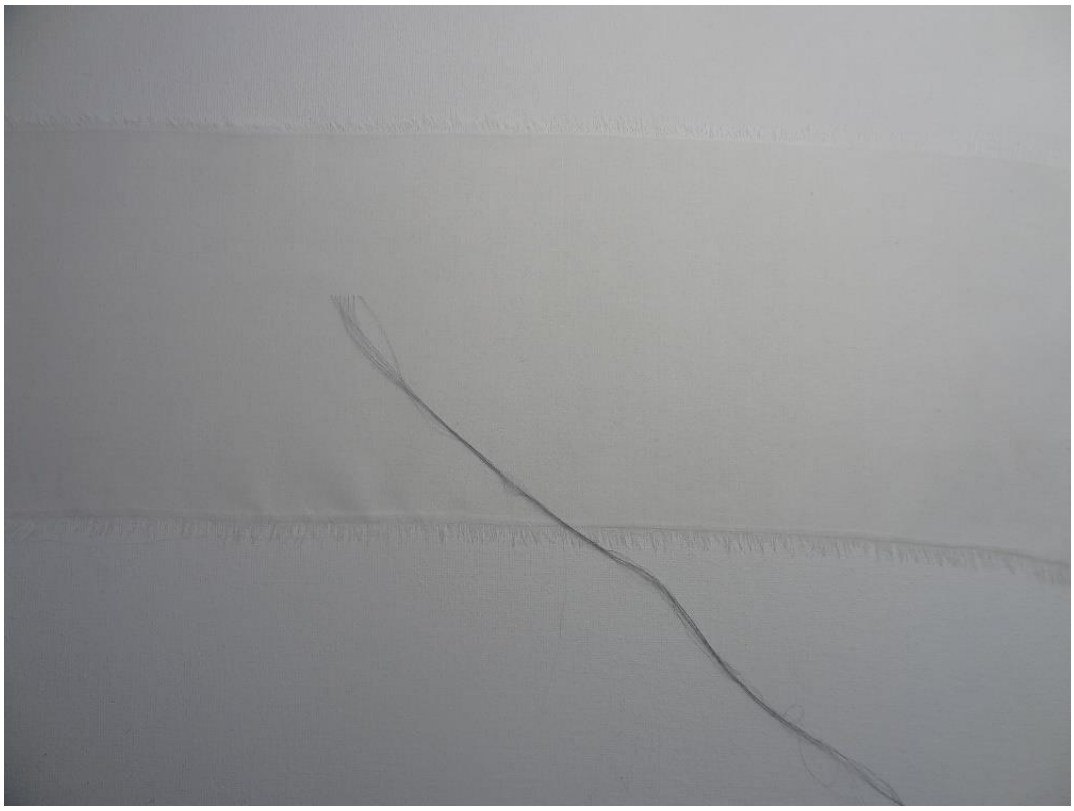

Fig. 57 *Solvitur Ambulado 2017* (2017)

Stitching *Seven*, a series of cloths showing the routes taken each day on Islay, informed my decision to produce the story maps as a less literal but more complex interpretation of my walks demonstrating the concept of mind/body.

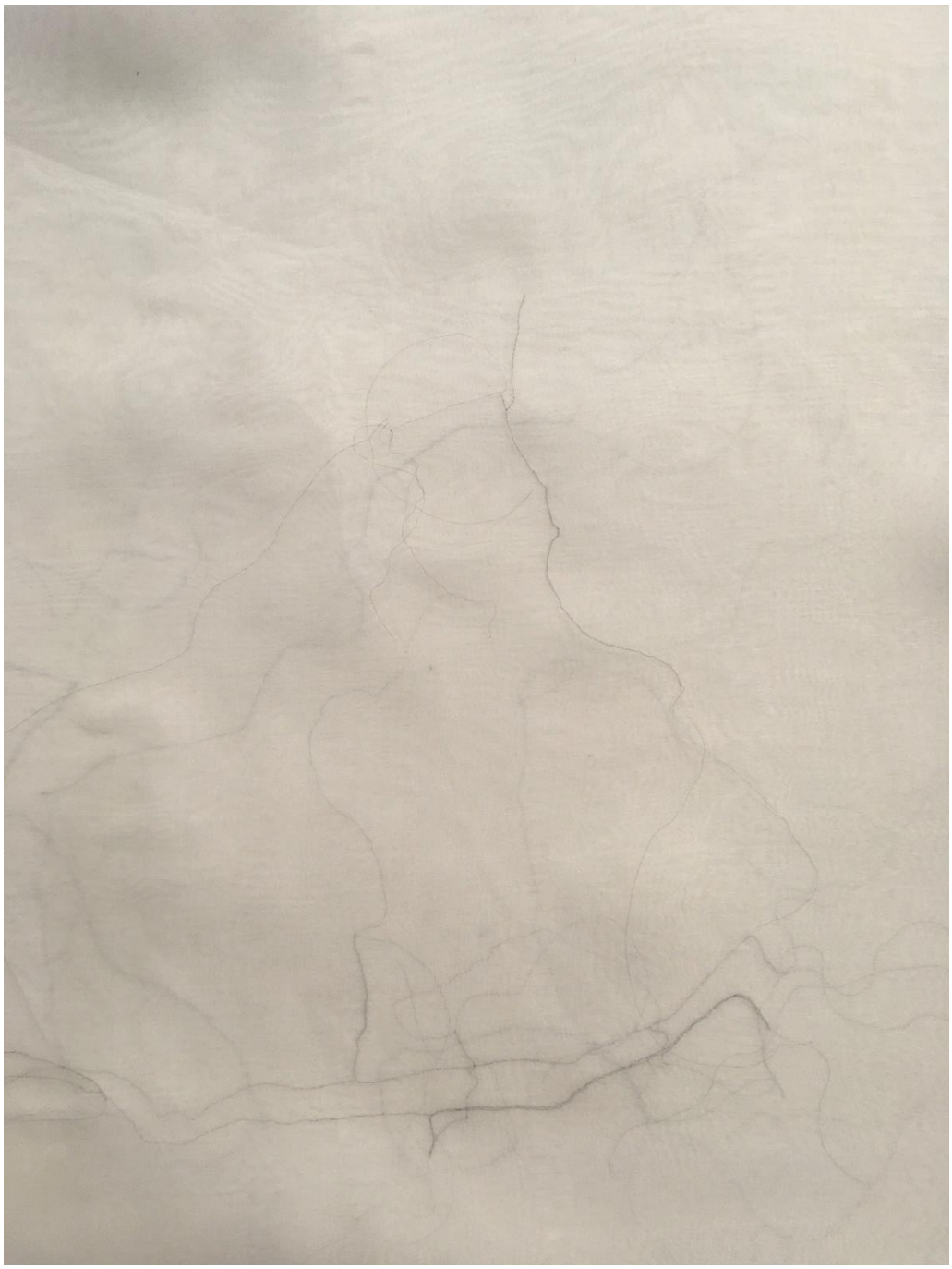

Fig. 58 *Seven 1-7 16.03.2017 -23.03.2017* (2017)

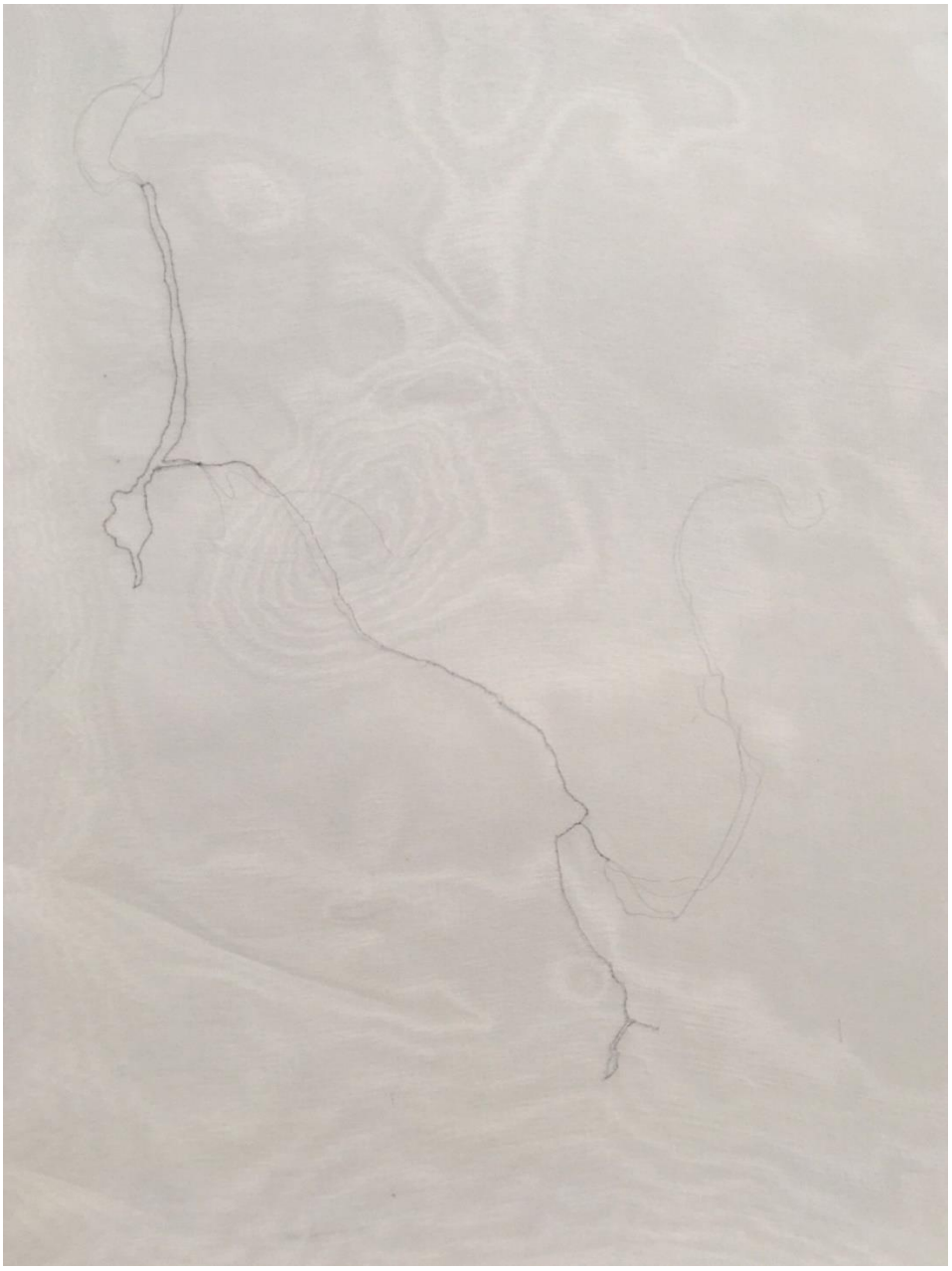

Fig. 59 *Seven – 7 23.03.2017* (2017)

I spent a lot of time in the water but not so much time looking at the water. The periods of time I spent on Islay and in Pembrokeshire were the first opportunities where I had been able to see the surface of the sea from any height. I found that the more I looked and watched the movement of the water the more I realised that I noticed something different each time, reflecting the thoughts of Shepherd on the mountain when she writes about the senses:

> "There must be many exciting properties of matter that we cannot know because we have no way to know them…I add to it each time I go to the mountain – the eye sees what it did not see before, or sees in a new way what it had already seen." (Shepherd, 2011:105)

In stitching drawn threads back into the cloth based on my experiences in the sea I used techniques that would suggest the tension sensed under the surface of the water, such as choosing a large needle that would distort the cloth or stitching from the back of the cloth to create irregular lines.

Transferring threads from one cloth to another signified movement through the sensori-motor system in the experiencing body, the transmission of ideas between theory and practice and the notion of transferable skills across clinical and creative practice. These pieces contained elements of ambiguity and space, referencing *ma*, but were also representative of rhythm and chronotope.

Fig. 60 *Pirl* (detail) (2019)

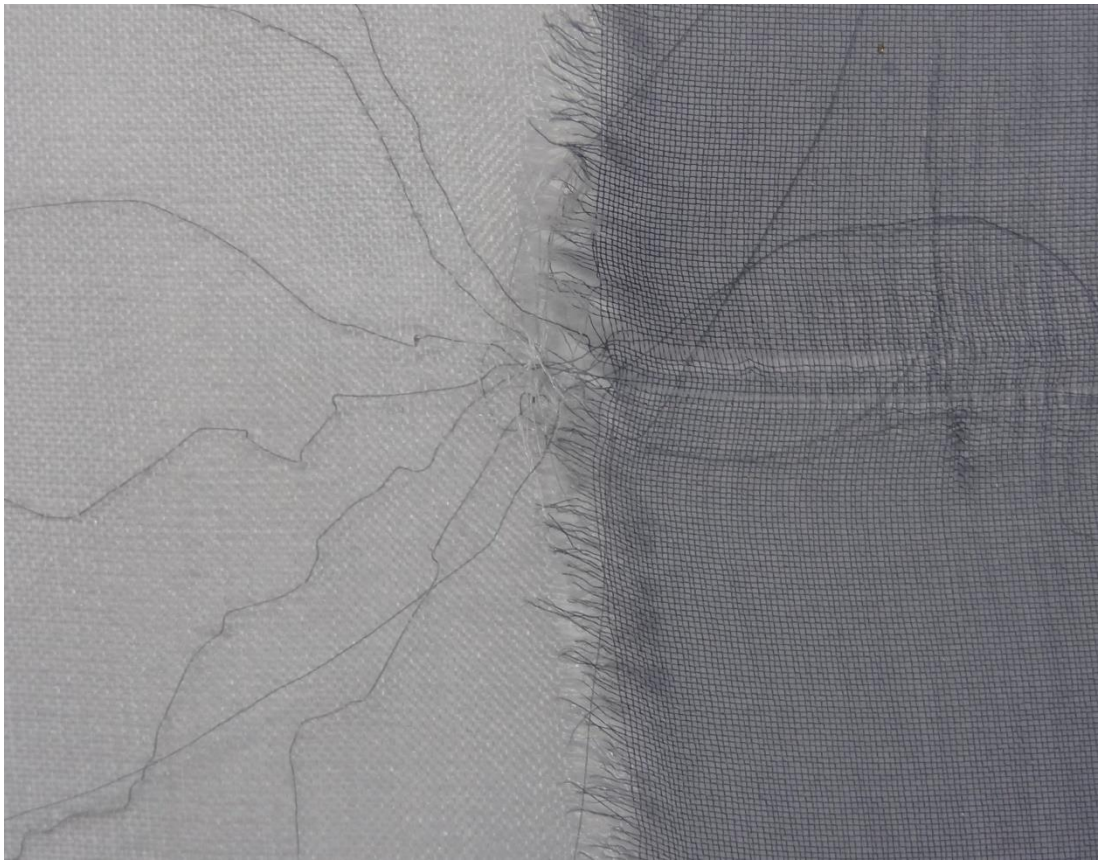

Fig. 61 *Passage 10.52 11.10.2014* (close detail) (2014)[18]

[18] This piece was created prior to the PhD research. The technique used directed both theoretical research into the brain and body and practical research with organza cloth and thread.

Drawn Thread

Removing thread changes the structure and hand of the cloth and creates voids. When I stood in the sea, I created a void that broke the progress of the waves and forced the water around my body. For the Japanese a void implies nothing exists there, not that nothing is there. Isozaki writes of the holy void spaces in his discussion of the Japanese concept of space-time. When setting up sanctified places (*yorishiro*) the traditional approach in Japan is to erect four posts, one in each corner, or to rope off an area. It is believed that the divinities (*kami*) descend to fill the void with spiritual force (*chi*). Isozaki writes that "The very acts of preparing such a space and waiting for kami to descend into it had immense influence on later modes of space-time recognition" (Isozaki, 1979:71).

Takes My Breath Away was a piece inspired by Drury's observation about the tide being the breath of the sea. With each visit to the beach I recorded the average wave count over one minute for three minutes. This was set against the average respiratory rate per minute for an adult. Using linen, the appropriate number of warp threads were removed for the tidal rate and the required number of weft threads representing my respiratory rate were removed from the same section of cloth, creating a void. The cloth will become more unstable as more threads are removed over time, to the point at which there will be more voids than cloth.[19]

Fig. 62 *Takes My Breath Away* (close detail) (2018)

[19] This piece was still in progress due to restrictions to working on location

In another series of closely woven linen cloths I removed every other warp thread to create the image of sound recordings of wind and water.

Fig. 63 *Rave* (close detail) (2019)

It was my experience that breath holding and drawing thread were symbiotic and that while stitching my respiratory rate tended to decrease.

Using the data collected from my breath holding experiment I created *Stitching the Void* referencing *ma*, interrupted flow, Drury and the work of Wigan, who creates his micro-sculptures by working between the heartbeat (*Willard Wigan: Hold Your Breath for Micro-sculpture,* 2009). It also related to Cage's watercolour pieces inspired by the garden at Ryoan-Ji. In these paintings he used a single brush stroke to draw around stones collected locally to the studio where he was working (Kass, 2011). Using silk organza, I pulled a single thread from the edge of the cloth. This was wrapped around three finger tips to form a circle, referencing Japanese *enso* drawings; one brush mark, one thread, one wave, one breath. Twenty-five circles represent the twenty-five individual breath holds. These were stitched in place on the cloth, again using organza thread. Using a stop watch I then stitched inside each circle for the maximum length of time I was able to hold my breath in each of the positions over the five-day period.

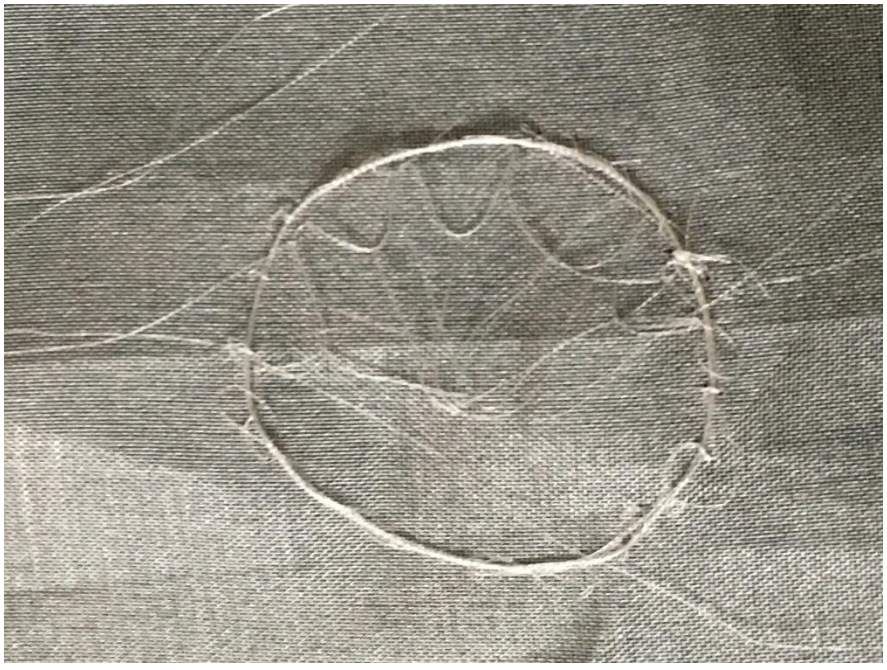

Fig. 64 *Stitching the Void* (close detail) (2019)

In *Experience*, drawn thread pulled from linen cloth was used to stitch a spiral to show growth through experience throughout the period of the PhD. Although the PhD was completed my experience was not, so the spiral was incomplete, demonstrating Bakhtin's concepts of unfinalisability and chronotope. On each occasion that I was interrupted during the sewing I inserted a small bead to show that experience is not a continuum but a series of new discoveries. The interruptions ranged from a few minutes up to an hour but just a single bead was used each time.

Fig. 65 *Experience 12 hours 20 minutes 28.05.2019* (2019)

Fig. 66 *Experience 47 hours 20 minutes 02.08.2019* (2019)

Each piece in the portfolio originated from experience on location together with theoretical research and was grounded in the sensori-motor perceptions of the emplaced body.

In the final chapter I consider the terms embodiment, emplacement and enation to summarise the context for my practice. Responding to the repeated impact of circumstance throughout the study I look to the work of John Dewey in *Art As Experience* (2005) to position my experiences during the research, examining rhythm, breathing, walking, reading and writing and collation of data as experience.

Chapter 5 Embodied, Emplaced, Enacted

> "We exist as bodies operating in context; we are embodied and embedded. It is this tension – of a body that is both experiencing and experienced – that makes physical life so interesting." (Eccleston, 2016:251)

Exploring the notion of mind-body rather than mind and body and investigating space-time through the Japanese concept of *ma,* this study centred on my experiences as the researcher. These experiences encompassed work on location and in the studio as well as in the clinical setting, drawing together the key themes of the study and integrating theoretical research with clinical and creative practice. However, the study as a whole included reading, writing and collation of data as part of creative practice.

The following relationship, identified by Dewey, validates the use of the selected philosophical works to support the findings in this investigation:

> "…philosophy like art moves in the medium of an imaginative mind, and, since art is the most direct and complete manifestation there is of experience, it provides a unique control for the imaginative ventures of philosophy." (Dewey, 2005:309)

Embodied

> "Embodied enquiry is a practice that attends to the relationship between language and the experiencing body." (Todres, 2011:175)

Since the 1990s when the idea of mind/body as opposed to mind and body was accepted, we have been able to understand the body "not simply as a source of experience and activity that would be rationalised and/or controlled by the mind but itself as a source of knowledge and subsequently of agency" (Pink, 2012:26).

Embodiment is a process integral to humans and their environment. Dewey acknowledges that embodiment is not unique to the arts: "Even scientific conceptions have to receive embodiment in sense-perception to be accepted as more than ideas" (Dewey 2005:270). Through embodiment the lived body becomes a site of knowledge. This embodied knowledge is more than stored information, involving biological and physiological processes. Subsequently, the idea that through embodiment the researcher learns and knows through the whole

experiencing body, has been recognised across what Pink terms the ethnographic disciplines.

> "Engaging in such practice [embodied enquiry] then relies not just on sense-making logic but on the sense-making experience of a person whose body holds a history of many experiences and projects. And this leads us to a consideration of how feeling is a form of understanding." (Todres, 2011:176)

It is because we are embodied that we are able to experience the world and it is because we are embodied that we have the potential to be constantly challenged, stretched and defined. The way in which we respond is dependent on our sensori-motor capabilities and the opportunities afforded to us. As Christopher Eccleston writes, "Being embodied is how we experience, what we experience and whom we experience" (Eccleston, 2016:260).

Emplaced

In his introduction to *Empire of the Senses*, David Howes offers this definition of emplacement.

> "While the paradigm of embodiment implies an integration of mind and body, the emergent paradigm of emplacement suggests the sensuous interrelationship of body-mind-environment." (Howes, 2005:7)

Pink uses 'emplacement' to focus on the idea of the emplaced ethnographer in relation to theories of place and suggests the term 'emplaced ethnography' as opposed to 'embodied ethnography'. Emplaced ethnography references experience in accounting for the relationships between "bodies, minds and the materiality and sensoriality of the environment." She adds that, "The experiencing, knowing and emplaced body is therefore central to the idea of a sensory ethnography" (Pink, 2012:28). She cites Edward Casey's statement that time and space stem from the experience of a place and that emplacement is the starting point for understanding the relationship between place and space. As living bodies, in the same way that we are always embedded we are constantly emplaced. Casey maintains that "*lived bodies belong to places* and help to constitute them" (Casey, 1996:21 cited in Pink, 2015:34. Original italics) and "*places belong to lived bodies* and depend on them" (Casey, 1996:24 cited in Pink, 2015:34. Original italics), which also relates to Bergson's statement about the body. Pink has the following to say about place:

> "…place and our relationship to it cannot be understood without attention to precisely how we learn through, know and move in material and sensory environments." (Pink, 2015:38)

Working as an autoethnographer I developed a growing understanding of my relationship to place through sensori-motor stimulation. In this study, while working on location I used reflective practice and sensory skills, honed over time in the clinical setting, to produce data and information in order to communicate key aspects of my experiences through the progression of my creative practice.

Enacted

Enacted refers to my role as an autoethnographer in putting into practice the concepts of the lived body as embedded and emplaced. In considering cognition as embodied action, 'embodied' implies that cognition is the result of experiences undertaken by a body with interconnected sensori-motor systems. Action emphasises the inseparable link between perception and action in the lived body, as outlined in *The Embodied Mind* (Varela *et al*, 2016). Varela *et al* go on to consider the term enaction in relation to embodied cognition, stating that the enactive approach comprises the following two points:

> "Perception consists in perceptually guided action
>
> Cognitive structures emerge from the recurrent sensori-motor patterns that enable action to be perceptually guided." (Varela *et al*, 2016:173)

The first point is in contrast to the representationist approach, where the starting point for understanding perception is focussed on managing information collated from pregiven properties of the world. The enactive approach starts with the examination of how the perceiver is able to direct his or her actions in any location. The presence of the perceiver can impact and be influenced by the location. Therefore, environment can be said to be in a state of continual flux. This means that the locus for understanding perception can no longer be in the pre-given world but in the organisation of sensori-motor systems in the perceiver. This organisation of the sensori-motor systems, that is, the manner in which the perceiver is embodied, governs both the way in which the perceiver can act and be tempered by circumstances in the environment. In this approach,

> "…perception is not simply embedded within and constrained by the surrounding world, it also contributes to the enactment of this surrounding world." (Varela *et al*, 2016:174)

This echoes Lefebvre's concepts outlined in *The Production of Space*.

Research studies have found that that cognitive structures arise from repeated sensori-motor patterns that facilitate perception-guided action. Varela *et al* cite the work of Jean Piaget in particular, who has written several books on cognitive development in children. Piaget studied the development of humans, who as babies initially only have sensori-motor systems to acquire an understanding of the world. They mature to become enactive agents through the development of cognitive structures as a result of repeated sensori-motor system activation (Varela *et al*, 2016:176).

Varela *et al* state that, "One of the most fundamental cognitive activities that all organisms perform is categorisation" (2016:176). Categorisation is the means by which the individuality of an experience is classified. One of the factors that allows this to occur is recognition of the way we interact with an object, that is by the use of similar actions. "The basic level of categorization…appears to be the point at which cognition and environment become simultaneously enacted" (Varela *et al*, 2016:177).

Gallagher also refers to this categorisation in *How the Body Shapes the Mind,* adding that the incentive to translate this to a conscious level is specific to the interest of the individual. He describes how the reaction of a body to an environment, even if it appears to be automatic, is not solely due to process or reflex. In touching an object, the body's response to it is dependent on the intention of the action.

> "The physiological processes are not passively produced by incoming stimuli. Rather my body meets stimulation and organises it within the framework of my own pragmatic schema." (Gallagher, 2005:142)

The enactive approach to cognition explained and developed in these studies underpinned my approach to the use of experience and sensori-motor activity when working in the littoral.

Enactivism

Within this study I have not referred directly to the body of research into enactivism, but acknowledge there are close ties between my work and the enactivist approach to cognition as discussed in *Enactivist Interventions – Rethinking the Mind* (Gallagher, 2017). Enactivism is:

> "…one version of recently developed embodied approaches to cognition. It offers an approach that is more informed by phenomenology and pragmatism than other versions of embodied cognition…" (Gallagher and Bower, 2014:232)

A number of different approaches to the concept of embodied cognition have been developed, based on the way we think the mind and the brain work. The enactivist approach to cognition, first defined by Varela *et al* in 1991, is grounded in phenomenological philosophy, drawing on the works of Edmund Husserl, Maurice Merleau-Ponty and Heidegger regarding perception, the potential for action and embodied practice. Gallagher adds that the writings of some of the pragmatist group in America, such as Dewey, may be seen as the precursors to the development of enactivism. Gallagher states:

> "Enactivist versions of embodied cognition emphasise the idea that perception is for action and that action-orientation shapes most cognitive processes." (Gallagher, 2017:5)

It is clear from this and other publications (Gallagher, 2005; Todres, 2011; Gallagher and Zahavi, 2012; Gallagher and Bower, 2014; Eccleston, 2016; Varela *et al*, 2016) that the notion of embedded cognition remains in a state of flux, at times being developed under a range of classifications and elsewhere being criticised as a movement.

To summarise the context for this study, ethnographic practice entailed my multisensorial embodied engagements with social, material and sensory environments. In this way I was responding to Pink's suggestion that such practice requires us to reflect on these engagements to "conceptualise their meanings theoretically and to seek ways to communicate the relatedness of experiential and intellectual meanings to others" (Pink, 2015:28).

Experience

> "The real work of an artist is to build up an experience that is coherent in perception while moving with constant change in its development." (Dewey, 2005:53)

The phrase 'constant change' is indicative of the way in which this study evolved. Experience, the act of doing, lay at the heart of this research, not only in terms of the use of perception when working on location but also in the entire PhD, incorporating the experiences of reading, writing and making. Each line of inquiry led to new developments so that there was continual growth, reflecting Bakhtin's theories of chronotope and unfinalisability.

The significance of experience is described by Dewey in *Art as Experience*. He writes, regarding the enjoyment of flowers, that it is not necessary to know anything about species, cultivation, or growing conditions in order to find pleasure in a bouquet of flowers. However, to acquire knowledge of flowers, these elements need to be taken into account (Dewey, 2005:2). This philosophy is reflected in the thoughts of Shepherd, Goldsworthy, Matthews, Drury and Brook among others. This level of understanding was fundamental to both clinical and creative practice and my approach to theoretical research was applied equally in both areas. Clinically, the annual production of evidence of continued professional development was a prerequisite for maintaining registration, becoming an automatic process. In my creative practice, understanding the sea, the littoral and the materials with which I worked was similarly important. Reading about the nature of water and the experiences of other writers and artists working with the sea was an innate line of enquiry to pursue. Extending this to encompass artists and musicians working with nature and writers including poets expanded my knowledge base, but also inspired ideas for experimentation with text and image.

In his work *Art as Experience*, based on his series of lectures on aesthetics, the following quote by Dewey not only summarises his thoughts on the living body and experience, it relates precisely both to the theory and practice of this research. I was able to identify indirect connections to the work of Lefebvre, Soja and Csikszentmihalyi, in citing rhythm, and to Bergson, in alluding to the interaction between the body and the environment. His use of terms that suggest blood pressure, cardiac rhythm and tidal flow further strengthen the links between clinical and creative practice:

> "Direct experience comes from nature and man interacting with each other… There are rhythmic beats of want and fulfilment, pulses of doing and being withheld from doing. All interactions that affect stability and order in the whirling flux of change are rhythms. There is ebb and flow. Systole and diastole: ordered change. The latter moves within bounds. To overpass the limits that are set is destruction and death, out of which however new rhythms are built up. The proportionate interception of changes establishes an order that is spatially, not merely temporally patterned: like the waves of the sea, the ripples of sand where waves have flowed back and forth…" (Dewey, 2005:15)

He continues by stating that experience results when full interaction between the lived body and the environment leads to participation and communication. Any impairment in the sensori-motor pathways will result in less rewarding experiences; working to improve the interaction of the pathways leads to an increase in knowledge and understanding. Beyond the fact that knowledge-making results from the interaction between brain-body and the environment, Pink states that embodied learning encompasses physiological, cognitive and affective changes, adding that analysis not only takes place within the brain but involves the whole body (Pink, 2015:142). Her thoughts are endorsed by Gallagher who writes:

> "…brains evolve to function the way that they do because they evolve with the body they are part of, and in environments that are coupled in specific ways to those bodies." (Gallagher, 2017:20)

Pink has identified two reasons for the need for researchers to be able to identify how knowledge is transmitted or learned. One is that it allows for ethnographers to identify how we learn through embodied and emplaced practice and secondly, it can raise research questions about how participants in research learn and know (Pink, 2015:39). In this study where I used autoethnography, I was able to discover some of the answers to the first point. This informed decision making as the research progressed.

Writing in *Embodied Enquiry,* Les Todres has identified the benefits of this way of working beyond those for the autoethnographer:

> "The phenomenologically oriented researcher engages with accounts of experiences in a way that can articulate important understandings from these experiences and that may be relevant to others and take intersubjective understanding further." (Todres, 2011:27)

Todres notes that sharing information about the methods used to acquire knowledge, which may impact both theoretical and creative practice, can result in a form of analysis or 'sense-making' about the experiences. This is an ongoing, though not necessarily a linear progression. I found that contact with other researchers and academics, for example, at conferences, and the act of verbalising findings or sharing knowledge, could be most effective at directing lines of enquiry, particularly when combined with reflective practice.

The integration of sensori-motor pathways, of responding to an experience, can be seen in the aesthetically creative act. Dewey writes, "As we manipulate, we touch and feel, as we look, we see; as we listen, we hear" (Dewey, 2005:51). The relation between hand and eye working together becomes so closely allied that making and perception in making flow as one. This way of working is cumulative and relates to the concept of flow as illustrated by Csikszentmihalyi. I would add that this is not only the case for hand and eye. I found that drawing blind or drawing sound demonstrated other sensori-motor alliances. "What is done and what is undergone are thus reciprocally, cumulatively and continuously instrumental to each other" (Dewey, 2005:52). For example, when I undertook the work *40-2-42*, I kept a reflective diary in which I noted sensations occurring within my body of which I had not been aware when drawing with my eyes open. This included tensions within a range of muscle groups and the fact that the position of my head influenced both my breathing and my ability to remain focussed on my breathing for the full three minutes. Gallagher and Zahavi summarise this in defining perception as an "embodied coping with the environment" (Gallagher and Zahavi, 2012:110). They add that there may also be passive forms of perception, but that perception is always associated with possible action on my part, so that "to understand perception is to understand the intentionality of our own body" (Gallagher and Zahavi, 2012:110).

The environment is not simply the place in which we act: the relationship of the environment and our body can influence the way we experience. Being embodied and embedded, I had a tacit sense of the space around me. I knew what position my body was in and the environment may dictate that position. The environment can directly and indirectly impact the body so the way my body reacted reflected the environment. Being cold and wet did not stop me working on location but when the hands were numb this altered the way they functioned and the length of time it was possible to continue working. On warm days I might have spent several hours on the beaches; in December this was often less than one hour, but this was also

dependent on internal flow. Strong winds and high waves interacted with the materials as well as challenging my ability to balance. Early in the research I was able to acccept all of these events as part of the experience. I was not seeking to produce pristine artwork but to use the processes to demonstrate the materialisation of experience in the same way that manual labour can be evidenced in callouses and arthritic changes in the hands of builders and foundry workers.

Gallagher and Zahavi also make reference to the fact that our moods can have an effect on our experiences (2012:133). In the series of drawings entitled *40-2-42* how I 'felt' dictated where on the page I placed my first mark. The rest of the drawing was completed blind so I had no idea where the drawing would end and sometimes this was a complete surprise.

Fig. 67 *40-2-42 1 Seated 05.03.2019* (2019)

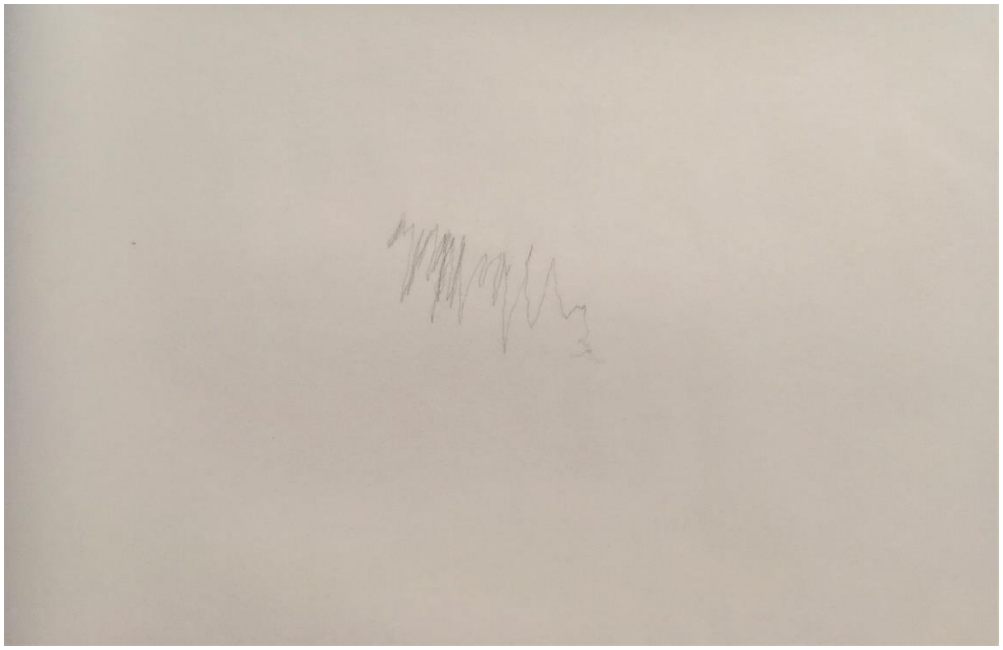

Fig. 68 *40-2-42 40 Standing 14.04.2019* (2019)

Rhythm and Experience

> "Experiencing like breathing is a rhythm of intakings and outgivings. Their succession is punctuated and made a rhythm by the existence of intervals, periods in which one phase is ceasing and the other is inchoate and preparing." (Dewey 2005:58)

The reference to the pattern and rhythm of activity and inactivity is reiterated throughout Dewey's series of lectures. A living body, being in the world, has the potential to experience continuously. Experience therefore, is a cumulative process. It would be impossible for a body to be continuously undergoing an experience and so we may select those that are relevant or interest us, or our focus may wander. Experiences may come and go but only those experiences that are acknowledged due to their meaning and value are retained and may inform future experiences. Dewey states that it can only be termed an experience if there is awareness and a reciprocal response within the body, if action and outcome are linked in perception. Through perception, via the sensory system, the motor system can be activated. Recruitment of the sensory system is not incidental but necessary to growth through experience. Seeing, in isolation, even where there is recognition of the object, is insufficient to term the event as an experience. Stimuli may be registered as irritants when there is disunity of the body-brain systems and insufficient attention is given to the potential of the experience. In order to perceive there must be an ongoing interaction between viewer and object. Without the involvement of the body-brain, seeing is no more than staring and does not register as experience. Nor is it about the quality of the experience: even a crude experience can become an experience if these parameters are met (Dewey, 2005:36-59).

Dewey's ideas are confirmed by Claxton in *Intelligence in the Flesh*:

> "…we see the motor cortex getting in on the act of perception. We make sense of the world, even when it is rather abstract, by getting ready to act on it or interact with it. The sensori-motor part of the brain provided the original platform for the development of more abstract cognition and comprehension and continues to do so throughout life." (Claxton, 2015:155)

Dewey writes how the cumulative effect of experience results in modifications both within the perceiving body and the world in which they occur. The live body is altered and developed through the interaction with phenomena external to it and objects and events occurring in the world are transformed by contact with human

presence, echoing Bergson's concept of the body (Bergson, 2014:160). The same thought is discussed by Gallagher and Zahavi (2012) where they describe how the various forces at work within the experiencing body can be altered by different environments. They write that since the nervous system is fully integrated in the composite brain-body, the complexities that then combine brain-body and environment are manifested at the level of experience. This demonstrates that what is perceived in the environment can change the forces controlling bodily movement, the brain dynamics and any further protentional processes. As Dewey states:

> "Experience in the degree in which it is experience is heightened vitality…it signifies active and alert commerce with the world; …Instead of signifying surrender to caprice and disorder, it affords our sole demonstration of a stability that is not stagnation but is rhythmic and developing." (Dewey, 2005:19)

Here again is the reference to rhythm, highlighting the fact that an experience cannot be a continuum. Experience has pattern and structure working in relationship and the relationship is that which gives meaning to the experience. Action and the result of that action have to be united through perception:

> "…art operates by selecting those potencies in things by which an experience - any experience – has significance and value. Elimination gets rid of forces that confuse, distract, deaden, Order, rhythm and balance, simply means that energies significant for experience are acting at their best." (Dewey, 2005:192)

Bakhtin also references rhythm with respect to experience in his writing. Haynes writes that rhythm was "Bakhtin's way of naming a way a particular lived experience or an inner situation could be ordered in time" (Haynes, 2008:64). She continues to explain that, for Bakhtin, rhythm does not express the lived experience and that it is not a reaction to an object but a reaction to the reaction and the experience of an object.

For Lefebvre, rhythm is key to his work on rhythmanalysis, where he comments that there is no rhythm without repetition in time and space, while emphasising that there cannot be one continuous repetition. There is always some element of difference in the repetition; an experience can never be repeated exactly (Lefebvre, 1992:17).

In my own work rhythm in experience featured strongly. Clinically I was focussed on the rhythms of the body as indicators of disease and abnormality. In addition, there

were rhythms associated with the way a hospital ward operates: the underlying steady rhythm was punctuated throughout any twenty-four hour period with unplanned emergencies. No two days were the same, indeed in intensive care there was not even the stability of a normal diurnal rhythm. Reprioritisation of tasks was a constant across each twelve- or twenty-four hour shift.

The ability to take a pragmatic approach to experiences was demonstrated throughout this research where I was required repeatedly to respond to the interruption of circumstance, resulting in varying degrees of impact to the study. Two simple examples occurred on changing location from the south coast to Islay and Pembrokeshire. In neither of these was it possible for me to continue working in the same way due to a combination of factors relating to the weather and personal safety. Focussing on the experiences encountered I was able to work with new lines of enquiry that in both cases led to an advance in theoretical and practical research, demonstrating the notion that experiences can be a series of new discoveries. I believed that proceeding in this way meant that my work was more responsive to place and time and perhaps more original. This approach is used by other land-based artists such as Drury, Long and Goldsworthy.

A more significant interruption with far greater impact, one which temporarily disrupted the rhythm and flow of progression, occurred in the third year of the study. It was something over which I had no control and something that necessarily took priority over working on location. At this point I could have taken a sabbatical but declined, believing that by adjusting focus again I could still fulfil the demands of the research. Instead of directing my thoughts towards those sections I was unable to complete at that time, I reordered my work plan to accommodate those that I could concentrate on without losing track of the lines of investigation. This presented new opportunities to review the structure of the thesis and resulted in an increased understanding of both the key elements of the research and way that I worked clinically and creatively. Further significant interruption occurred in the final stages of the study. The ability to adjust and refocus, learned previously, assisted in the completion of the work.

I also explored the use of text, poetry and the relationship to rhythm in the production of images. My investigations into rhythm and repetition, extended by studying the nature of experience and the importance of the use of language within my writing, led to research into the work of poet and musician Richard Skelton. I had previously identified the use of poetry as a textual image, not only in terms of the

language used but also the way the words are set out on the page. Skelton's work using emergent poetry in response to the land takes this one stage further, so that the poetic text image is also a drawing. This led to the creation of a series of drawings using found text. In creating the text drawings I used my audio and video recordings as an adjunct, re-experiencing the events and producing new images that became the templates for the poetry.

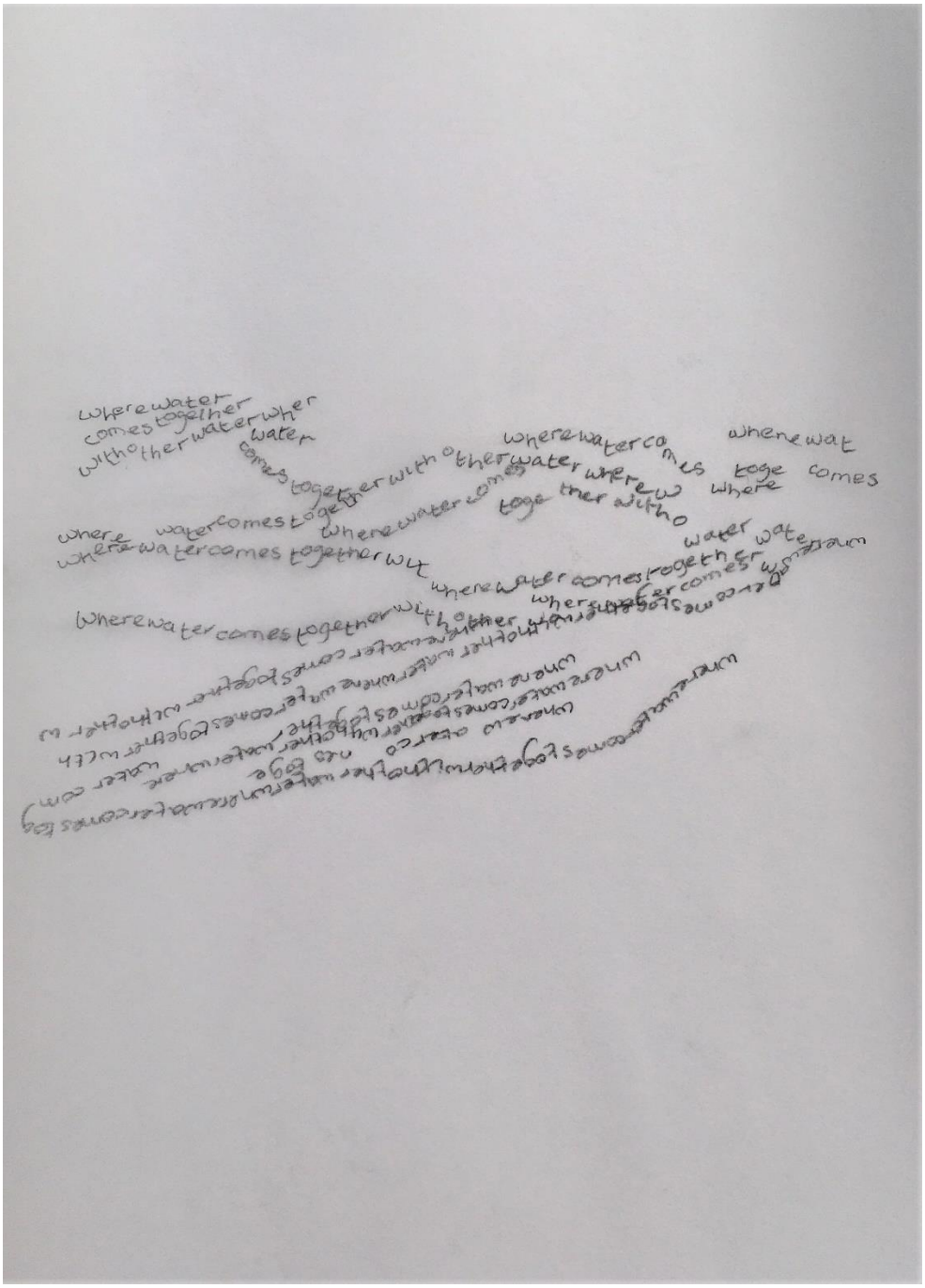

Fig. 69 *Where Water Comes Together With Other Water* (2019)

This image was created from a video of the meeting on the shore of the sea and a river on Islay. The words are taken from a poem by Raymond Carver. (Carver, 1984:17)

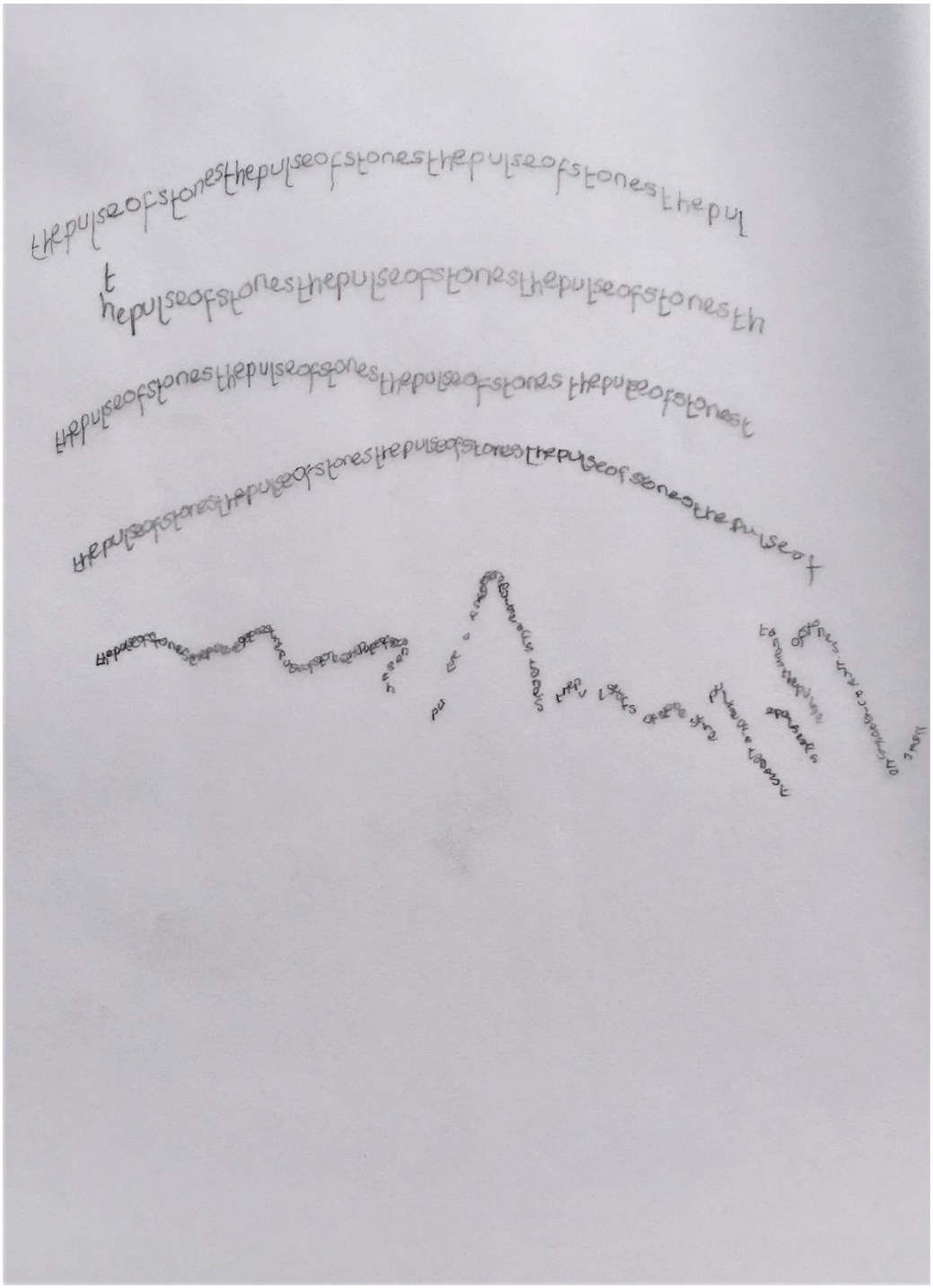

Fig. 70 *The Pulse of Stones* (2019)

The *Pulse of Stones* was a re-presentation of *Five Lines in the Sand* using found text. (Skelton, 2018)

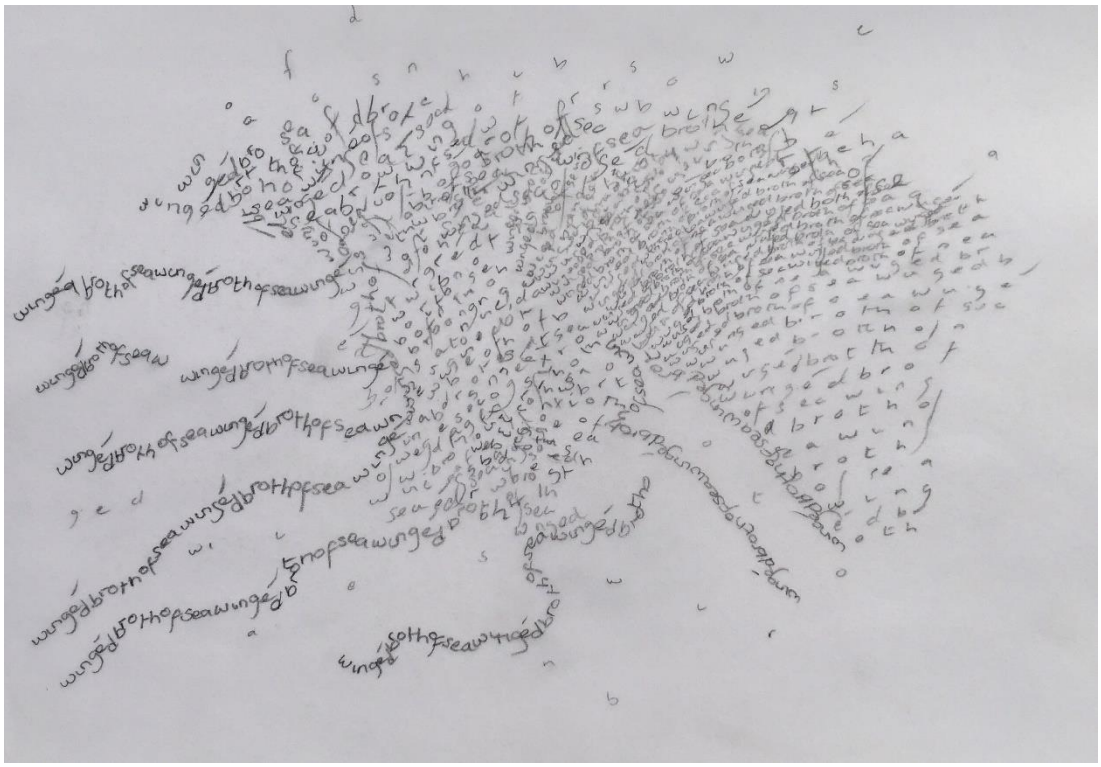

Fig. 71 *Wingéd Broth of Sea* (2019)

This was taken from an image of a large wave hitting a sea wall. The words are from *Reliquiæ Volume Six* (Skelton, 2018).

Fig. 72 *Sjushamillabakka* (2019)

The line used to create this piece was the outline of the end of one wave as it met the shore on Islay. *Sjushamillabakka* is an archaic Shetland word used to describe the area between the sea and the shore. “It is in the shifting space between high and low tide, neither quite water, nor quite land. Metaphorically therefore it is a threshold or a border realm.” (Macfarlane, 2018)

The work of Eduardo Kac was instrumental in considering the innovative development of poetry and text. Taking text off the page and utilising technologies such as video, holography, programming and the web, he has formulated a range of poetic projects under the umbrella term ‘media poetry’, including holopoetry, computer holopoetry and biopoetry (Kac, s.d.a). Just as McGregor used DNA to choreograph *Autobiography* (*Autobiography*, 2018), Kac uses DNA sequencing in transgenic poetry and other works (s.d.b). He also works with the brain-body, incorporating the use of the senses to appreciate poetry through aromapoetry and haptic listening (s.d.c).

Fig. 73 *Aromapoetry* (2011)

The images on this page show two views of the holopoetry piece entitled *Maybe Then, if only as* by Kac. As he states, it is impossible to "convey the readerly interactivity and the spatiotemporal qualities of these pieces" on a two dimensional page. (Kac, s.d.d)

Fig. 74 *Maybe Then, if only as 1* (1993)

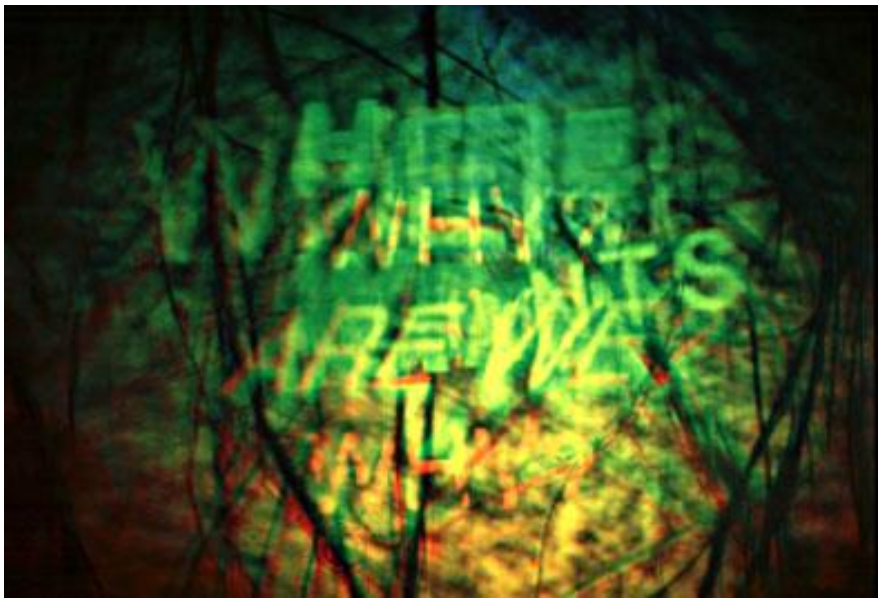

Fig. *75 Maybe Then, if only as 2* (1993)

My thoughts about textual imagery are illustrated in the work of the Scottish poet Katie Paterson's *Book of Ideas - A place that exists only in moonlight.* This is a collection of one hundred poetic texts relating to the landscape, time and the universe. The artwork is produced in the mind of the reader and thus becomes a representation of the idea. The artist Anselm Kiefer also uses poetry to inform his work, as cited by Janne Sirén in the chapter accompanying Kiefer's 2020 exhibition *Superstrings, Runes, The Norns, Gordian Knot* at the White Cube. Here, Kiefer states:

> "I think in pictures. Poems help me with this. They are like buoys in the sea. I swim to them, from one to the other. In between them, without them, I am lost. They are the handholds where something masses together in the infinite expanse." (Siren, 2020:49)

Poetry is linked to breathing and the heart beat through rhythm.

Breathing as Experience

Respiration is controlled by the autonomic nervous system and influenced by a wide range of internal and external factors. For the majority of people, it is not something we generally have to think about. To be aware of one's breathing might be expected, for example, in the case of increased exertion, or where there is cause for concern about disease, physiological abnormality, or trauma. Colleagues also reported that reading about breathing can enhance awareness in the reader. Weaning patients from mechanical ventilatory support and improving respiratory function, thereby focussing the patient's attention on their own ventilatory pattern, was a key element of my professional work. It was not until I experienced acute shortness of breath when climbing in Pembrokeshire with a heavy backpack that awareness of my breathing became part of the focus of my creative work. In addition to data acquired through objective monitoring devices, I used my knowledge of respiratory function to guide personal experiments.

In the drawn series *40-2-42*, I created a new drawing each day for forty days. Working with my eyes closed, I drew my breathing for a timed three minutes each day, at varying times. I found that my concentration on breathing and the diaphragm developed as the sequence continued. Positioning my head to 'look' at the movement and at the level of the diaphragm helped to focus on the connection between my hand and the sensation of breathing, even though my eyes were closed. During the process I kept a diary for each day and noted that I experienced

a heightened awareness of other sensations such as pain, tiredness and tension, particularly in the upper thoracic spine.

I noticed that there is a tendency during the act of thread pulling to hold one's breath, particularly when working with fragile yarn. The ability to breath hold was an essential skill when working in the sea where significant wave swell may be experienced with the incoming tide. This led to my experiment with breath holding. In another piece of work, *Stitching the Void*, I combined changes of position with breath holding for as long as I could manage. Using five different positions (standing, sitting, lying prone, lying supine and modified balasana), three attempts to hold my breath were completed in each position. I made note of the length of time I was able to hold my breath in each position by means of a stop watch, over a period of five days, changing the sequencing of position every day. Using this methodology, I hoped to eliminate the training effect. As with other experiences, the experiments were not without interruptions. Again, I added diary notes and reflective analysis findings to the data collection log. This experiment became an experience through embodiment, emplacement and enaction.

Breath holding also occurs when concentration levels are intensified, for example, when patients are learning to walk again or attempting to use severely weakened muscles. While stitching *Experience*, a linen based work which served as a metaphor for the PhD study, I noticed that my breathing was far shallower and slower than normal. Using recycled thread drawn from the cloth meant the likelihood of fraying and breaking was high so my level of concentration was increased.

Walking as Experience

> "…the more a work of art embodies what belongs to experiences common to many individuals, the more expressive it is." (Dewey, 2005:297)

The ability to walk is something many of us take for granted, as with breathing. Gait analysis and re-education of mobility was the second key element of my clinical interventions with patients, so I understood the anatomy and physiology involved in human ambulation, but walking as an experience requires active engagement between the walker and the environment.

2017 saw the fiftieth anniversary of Long's art work, *A Line Made By Walking*. In this piece Long uses walking as an embodied, emplaced act to create a work of art, defining it as an experience in linking action and outcome in perception and demonstrating Dewey's definition of the work of an artist. The photograph of the completed work enabled Long to share the experience with the viewer.

Fig. 76 *A Line Made by Walking, England 1967* (1967)

As a clinician I spent many hours walking: re-educating mobility in patients, walking between wards and ward blocks, and commuting. Rarely was walking an experience in any of these scenarios. Initially I used walking in this study as a means to create physical and mental space between myself and the research. However, walking became integrated into my practice when I found that the flow experienced while walking enabled me to organise ideas and concepts, illustrating the following statement in *The Embodied Mind*:

> "The progressive development of insight enhances the experience of calm mindfulness and expands the space within which all experiential arisings occur." (Varela *et al*, 2016:80)

Further, walking alone became part of the process of experiencing locations and an opportunity to use sensory ethnography beyond vision. Luis Carlos Sotelo's statement about the way he perceives walking also shows the correlation of this practice and my investigation into space-time.

> "Rather than seeing walking as a spatial practice, I see it as a subjective, environmental and unfolding practice or as a performance of self in spatio-temporal terms." (Sotelo, 2010:61)

Walking is a clear example of the interaction between the human body (walker) and the environment.

Beyond this, during the act of walking, changes take place in the body such as an increase in temperature, respiratory rate, heart rate and rhythm. Different muscle groups automatically come into play depending on the terrain. The walker leaves traces on the path, or creates a new path, as objects such as rocks and branches can be moved. "The environment (space-time, space-in-movement) calls out to the walker, and the walker responds with physical actions and decisions" (Sotelo, 2010:61).

> "Walking, ideally, is a state in which the mind, the body and the world are aligned, as though they were three characters finally in conversation together, three notes suddenly making a chord. Walking allows us to be in our bodies and in the world without being made busy by them. It leaves us free to think without being wholly lost in our thoughts." (Solnit, 2014:5)

Rebecca Solnit's volume, *Wanderlust*, offers a wide variety of insights into the history of walking, different views about walking and the philosophy of walking

(Solnit, 2014). In this work she comments on the tendency for people to see the body as essentially passive rather than as a tool for work or travel.

Walking takes time and energy and is still often viewed as a waste of time when transport could be used to reach one's destination more speedily. However, the current developing trend for mindfulness and the importance of slowing one's pace occasionally have led to a renewed interest and appreciation of the practice. This would support Solnit's observation that when walking, the mind and the body can work together so that thinking "becomes an almost physical rhythmical act" (Solnit, 2014:167). In addition, it serves to counter the Cartesian mind-body divide as discussed in chapter two of this study. She writes that "…walking is itself a way of grounding one's thoughts in a personal and embodied experience of the world" (Solnit, 2014:26).

Of further relevance to this study is this statement, linking two elements of my creative practice: "Each walk moves through space like a thread through fabric, sewing it together into a continuous experience." (Solnit, 2014:170) She describes the act of walking as a purposeful act that is closest to those involuntary rhythms of the body such as breathing and the beating of the heart, "a bodily labor that produces nothing but thoughts, experiences, arrivals" (Solnit, 2014:5), which certainly reflected my engagement with walking. She notes that a lone walker, such as myself, is both present and detached from the world. It was my experience that when I was involved with walking as research, I was aware of the world but able to choose my level of interaction with it. By this I mean that I might have been less receptive to the presence of other people and more focussed on my response to place.

Psychogeography

As with embodiment and enactivism, psychogeography is evolving both in definition and in the way it is applied. The word psychogeography was first introduced by Guy Debord in Paris in the 1950s but it has its roots in the activities of the nineteenth century *flâneur*. The *flâneur* was an urban explorer. In the twentieth century the word was reinterpreted by the French Situationist International group who sought to 'reclaim' the streets of Paris after the second world war. Debord's psychogeography involved embarking on a *dérive*. Abdelhafid Khatib offers this description of the *dérive*: "At the same time as being a form of action, it is a means of knowledge" (Khatib 1996:73 cited in Richardson, 2015:2). In the notes to Merlin Coverley's chapter 'The Art of Wandering' he includes McKenzie Wark's description of the

origins of the word *dérive*, where the use of language shows links to my work in the littoral and my clinical specialty:

> "Its Latin root 'derivare' means to draw off a stream, to divert a flow. Its English descendants include the word 'derive'; and also 'river'. Its whole field of meaning is aquatic, conjuring up flows, channels, eddies, currents and also drifting, sailing or tacking against the wind. It suggests a space and time of liquid movement, sometimes predictable but sometimes turbulent." (Wark, 2011:22 cited in Coverley, 2015:112-3)

Coverley also states that psychogeography is "the point at which psychology and geography collide, in an attempt to calibrate precisely the psychological impact of place" (Coverley, 2015:104). Ian Marchant comments that increasingly psychogeographical explorations are closer to what would be termed field trips and do not encompass reference to the psyche (Marchant 2015:50). Coverley's use of 'place' rather than city would seem to imply that psychogeography can be employed at any location, but several writers allude to the fact that psychogeography is an urban activity (Marchant, 2015; Richardson, 2015; Bayfield, 2015). My understanding was that while the origins of the practice were in the city, it was becoming acceptable to use the methodology in a range of locations. Victoria Henshaw mentions several different types of areas in her essay on sensory walks: urban, rural, agricultural land or the areas between these, on the edge of the city but not quite rural (Henshaw, 2015:205). Tina Richardson notes that researchers involved in psychogeography are developing their own terminology to describe the focus of their activity: psychogeophysics, cryptoforestry, mythogeography and schizocartography are just some of those identified in the introduction to *Walking Inside Out* (Richardson, 2015).

It was Henshaw's writing on sensory walks in particular that prompted me to consider whether my work fell into the category of psychogeography. Henshaw notes in her essay that studies using sensory walks have been in progress since the 1960s, which indicates that they emerged at the same time as the move towards earth/land art. Henshaw defines sensory walks as a branch of psychogeography "with a focus on environmental characteristics, experiences and perceptions gained through one or more of the senses" (Henshaw, 2005:195). She goes on to comment that their use as methodology in research occurred as a result of developments in philosophy and academic deliberation but was also impacted by "feminist and ecological movements where the investigation and analysis of everyday

experiences are argued important and necessary in gaining insights into the physical and social environment" (Henshaw, 2005:195). Directed towards the objective researcher Henshaw's essay considers the practicalities of conducting a sensory walk, such as choice of location, route and method of data collection, whether subjective or objective. She adds that subjective data will furthermore be impacted by other factors, for example, "social and cultural norms, memories, experiences and expectations" (Henshaw, 2015:196). The choice of location is a significant element, providing both the site and motivation for the line of enquiry (Henshaw, 2015).

Contemporary developments regarding psychogeography might have suggested that my work was psychogeographical in nature but there were other factors to consider that persuaded me that this was not the case. Using sensory walks as a research methodology, as described by Henshaw, had a different motivation to the way in which I worked. While I was looking to gain insight into the environment, I achieved this by recording the internal and external sensory responses of my body to place, in order to inform creative practice. For example, Henshaw notes that use of the olfactory sense in these studies has proved problematic since there is no formal classification system available for universal use. Focussing on the intermodality of the senses rather than seeking to classify sensory responses resulted in further experimentation in drawing: the aroma of the peat smoke mixed with rain mist on Islay inspired the use of smoke and sea water to create a series of drawings.

Reading and Writing as Experience

> "Language, like the wind, is hard to pin down. It relies on movement for its existence, as we rely on breath for life. The sound of language also often reminds me of water. It forms, runs, braids, pools, rustles, rushes, flows…" (Day, 2019:1)

Gareth Rees's observation on walking demonstrates that there are other ways in which to participate in reading and writing:

> "The routes we travel are scars on the topography. Memory trails where we can't help but leave our footprints nor avoid following the footprints of others. Walking is unavoidably an act of reading and writing...the landscape is heavy with text." (Rees, 2015: 127)

Having read the landscape through walking, I planned to create personal maps from my diary sheets and the objective data recorded on the Hexoskin equipment. I read and wrote the materials I used to construct interpretations of my experiences and working in the sea I learned to read the waves.

Symbiotic reading, writing, recording and creating reinforced the materialisation of the experience, where the use of text alone might sometimes have been inadequate. As Richardson and Skelton write:

> "…unlike the physical certainty of the soil core, the linguistic record is imperfect… By comparison, the landscape itself has an immense capacity to 'remember' to record its own history." (Richardson and Skelton, 2018a:xi)

Skelton's writing, in the form of poetry and music, is composed in response to the quality of the eerie that he finds in the landscape.

In referencing his work, I considered the term eerie alongside weird and uncanny and established my interpretation of each term. I believe Skelton's use of the eerie is very specific and one to which I was able to relate. Although they seem to be three separate words, the thesaurus and dictionary cite them as synonyms for each other. In addition, their definitions do not always demonstrate a clear difference.

The uncanny, in particular, demonstrates the problem with translating words into a different language. Words that are tacitly understood in the mother tongue may be corrupted in meaning on translation. Uncanny is similar to the Japanese concept of *ma* and also the Danish word *hygge*. Uncanny is the word used as the English translation for the German *unheimlich* in relation to Sigmund Freud's essay *Das Unheimliche* written in 1919. The literal translation for *unheimlich* would be unhomely. As David McLintock has identified in his notes, while unhomely is "etymologically and morphologically comparable" it is not "semantically equivalent" (Freud, 1919:lxiii). In Scotland and the north of England, uncanny was used as an antonym for canny, which had two different meanings. While in Scotland canny meant astute, in northern England it implied pleasant, as in the phrase, 'a canny lass'. Later uncanny came to mean that something seemed to possess a supernatural character or origin which educed fear. In present day usage, however, uncanny often seems to refer to something unexpected or coincidental rather than frightening. Both the weird and the eerie are associated with the strange. In *The Weird and the Eerie* Mark Fisher comments that the appeal of these ideas is that they lie beyond ordinary perception and experience (Fisher, 2016:8). The weird is

associated with a presence which does not belong, which explains the association of the weird with surrealism. The weird can act as a portal to something which lies beyond the familiar so can also contain the idea of 'in between'.

Fisher writes that a sense of the eerie is rarely experienced in enclosed spaces and is more likely to occur in landscapes, particularly those with little evidence of human occupation (Fisher, 2016:11). While I was unlikely to use uncanny as a descriptor for landscape, I experienced the eerie whilst walking alone at the top of a slate cliff. My interpretation of eerie was that it stems from the sense of an imbalance; either something is present when there should be nothing, or there is an absence where there should be something. The sense of the eerie often dissipates when the reason for the imbalance is established. This imbalance may cause the perceiver to feel uncomfortable, showing the possible use of the translation of uncanny as supernatural or mystical in origin in this situation.

Skelton's sense of the eerie in the landscape is associated with what Fisher terms a "failure of presence" (Fisher, 2016:61), seen in Skelton's simple use of lists of toponyms that emphasise the impact of human occupation on the landscape. For example: Harter Fell (Mountain of the Red Deer), Mart Crag (Pine marten) and Tewit Moss (Lapwing) (Richardson and Skelton, 2018: viii). In each of these places the key element of the name is either no longer present or so reduced in number as to be in danger of extinction. His music is written in response to his perceptions of place and is focussed on an area of Cumbria. Initially he used his instruments in the landscape but changed to working inside when he realised that composing on site was intrusive for the place. In writing the poetry he employs archaic and modern language, text as image and 'list poems'. He also exhibits with the artist Autumn Richardson. Their combined work serves to convey in a gentle but nonetheless direct way the impact of human life throughout the Anthropocene and demonstrates the variety of ways that reading a landscape can be communicated in writing and other art forms.

My sense of the eerie was also associated with the history of place and could occur inside ancient buildings or ruins as well as outside. It was related to the previous inhabitants of the place and events that occurred in the past. I found that when understanding was achieved, the eeriness subsided. Eeriness serves as another layer of perception and demonstrates Bakhtin's chronotope and unfinalisability, as well as the Japanese concept of *ma*.

Collation of Data as Experience

My experimental approach to creative practice was grounded in my clinical work which was underpinned by evidence-based practice, a working understanding of double-blind clinical trials and participation in clinical audit. Collation of data and analysis of findings informed daily clinical interventions. The organisation of data presented an opportunity for creating rhythm and flow through evaluation and demonstration of understanding. Combining objective data with subjective sensory observations to inform my creative practice demonstrated the transference of skills and knowledge across disciplines.

In this chapter I took an objective view of the experiences undergone as an autoethnographer and author throughout the period of the PhD. In the final section of the thesis I review the motivation for the study and the means by which this was achieved, as well as summarising the findings of the study.

Thesis Review

I elected to title this section ‘thesis review’, rather than the traditional ‘conclusion’, to reflect the fact that it was underpinned by the concepts of unfinalisability, chronotope and flow, so signifying the end of the study but not the end of embedded, emplaced, experience for the author.

The study explored whether transdisciplinary collaboration could not only reduce the art/science divide, but also enhance research in both the arts and the sciences. Working as an autoethnographer with both science and art-based professional training, the main question driving the research was, how could I demonstrate the synthesis of clinical and creative practice through space-time, addressing the idea of transferable skills and language across science and art?

Just as cloth is formed by the interlocking of different threads, the synthesis has been reflected both in the structure of the thesis and the development of the creative practice. The contextual review, encompassing texts beyond academic theory such as fiction, film, dance and analysis of practice, has been interwoven throughout the text, further demonstrating the transdisciplinary nature of the study.

I explored a range of themes that united clinical practice with creative practice through the key lines of enquiry: space, time, space-time, rhythm, the body, embodiment, emplacement, enaction and experience.

The writings of Bakhtin, Bergson and Lefebvre were referenced to investigate two dualisms: space and time and mind and body, to establish that in each case these were inextricably linked and not separated. While the approach of each of the writers was different, I have shown that their concepts are connected both with each other and the Japanese aesthetic of *ma*. Consideration of *ma,* intrinsic to the Japanese way of life, presented another opportunity to explore space-time across art and science, while acknowledging that ownership of this aesthetic by a Western artist was not possible or intended.

Research into the mind and the body explored in chapter three was supported by the contemporary notion of mind/body as opposed to the binary mind and body, which has led to a renewed interest in phenomenology. In the 1990s, recognition that no one discipline could deal with the complex issues involved in phenomenology brought about the idea that a scientific approach could be utilised to validate research. In addition, it was recognised that the concept of enaction could form a bridge between science and experience. (Varela *et al*, 2016:lii) In considering these

relatively new ideas in the cognitive sciences I concede that they were still in development.

I reviewed the predominant Western understanding that there are five key senses in the body to show that the three groups of senses, interoception, perception and proprioception demonstrate the interaction and interdependence of mind and body through the neural network. Again, this was an area that was still evolving and may warrant further exploration in the future.

Introspective analysis of the way I worked clinically demonstrated an awareness and utilisation of the intermodality of the senses. I identified similar behaviour in creative practice, showing how automaticity in clinical practice led to mastery in creative practice. In this way I avoided the pitfall identified by Pink that although most academics researching or writing about sensory representation are aware of the intermodality of the senses the tendency is to focus on just one (Pink, 2015:186).

As a littoral artist I researched the work of land artists such as Goldsworthy, Drury and Gormley, where I found frequent references to time, space and space-time. These were also found in statements from McVetis, Serra and Kiefer. Looking outside land and studio art practice to consider the work of the filmmaker Kötting, the choreographer McGregor and the music and art of Cage, I discovered that each of these had been involved in collaborative endeavours demonstrating the breadth of multi- and transdisciplinary projects.

In the studio and on location the theoretical research facilitated exploration of my own binary: clinical and creative practice. However, as the study progressed it became evident that separating clinical and creative practice in the future would be unnecessary, as ‘practice’ encompassed all my work through drawing as gerund. The notion that drawing as noun and verb referenced clinical and creative practice informed the construction of the thesis title, Drawing Water, Drawing Breath, Drawing Thread.

Further Research Potential

If any practice is to evolve then it will be unfinalisable but will also possess chronotope. In this work I addressed several themes and concepts common to both clinical and creative practice, which were woven together to present a unified response to the question driving the research: how can I demonstrate the synthesis of clinical and creative practice through space time?

In taking a pragmatic stance from the outset I did not plan for preordained outcomes and in using Bakhtin's concepts of unfinalisability and chronotope to underpin the study, the findings presented in this thesis might be viewed as a fluid conclusion. My research was a developing process, one of evolving and revealing through reflection and analysis, demonstrating that studies such as this not only answer questions but also raise points for consideration in the future. As a result, the model developed here suggests the potential for further studies to be undertaken.

Beyond my practice, the research offers the opportunity for the concepts investigated and the methodologies employed to be used in the growing trend for trans- and multi-disciplinary studies in the cognitive sciences and other settings. Collaborations between artists and scientists might not only bridge the divide between them but enrich both factions. The development of faculties such as the Center for Art, Science and Technology (CAST) at the Massachusetts Institute of Technology demonstrates a growing awareness of the benefits to be gained through unexpected partnerships.

Contribution to knowledge

In articulating a personal approach to the use of sensory ethnography my study advances the means by which this can be utilised to contribute to knowledge. Pink writes:

> "A sensory ethnography invites new forms of ethnographic knowing and routes into other people's experiences… The results are inspiring new layers of knowing, which when interpreted theoretically can challenge, contribute to and shift understandings conventional to written scholarship…" (Pink, 2015:187)

My decision to use embodied enquiry was prompted by Todres' observation that "in research methodology… embodied, understanding is not just cognitive, but involves embodied, aesthetic experience and application" (Todres, 2011:3) Critical analysis, sensory autoethnography and reflective practice have revealed a new synthesis between clinical practice as a highly specialist respiratory therapist and creative practice using cloth and paper, in which I have identified links through the use and application of skills and a common terminology. Analysis of skills mastered in respiratory therapy enabled new approaches to creative practice, both on location and in the studio, supporting the concept of transferability and challenging the persistence of an art/science divide.

Understanding the tools and materials used in one practice can open new lines of enquiry in another practice. Taking a scientific approach to data collection and collation, I appropriated tools used outside creative practice, such as the Hexoskin body metrics suit, to collect objective data about respiratory and cardiac function to inform creative work with cloth and paper.

The term drawing was key to this research, underlined by its repetition in the title of the thesis. Several papers explored here highlight the relevance of drawing to knowledge, a notion summarised in this quote from Garner.

> "If, as John Berger said, 'drawing is discovery', then perhaps drawing research is 'making knowledge'. All of us will develop our own strategy for this through drawing, talking, reading, writing or any combination of these. Given our uniquely visual domain and our predominantly visual culture the various methods and procedures we devise for drawing research can make an important contribution to the arts and the sciences." (Garner, 2008:25)

Writing, drawing, talking and reading demonstrated the key elements of my practice: space, time, body, rhythm and energy.

The development of walking as a methodology within the study and the findings linking this with flow theory are endorsed by contemporary studies in the cognitive sciences and neurophysiology.

The research is also validated by findings in the publication, *Expert* by Roger Kneebone, in which he argues that medicine is not a science, a craft or an art, but a practice which combines all three (2020:3). Nor is it alone in this respect. He writes that for any expert, "technical skill is necessary, but not sufficient. It's how you apply that skill that matters" (2020:207) and that "multisensory awareness is what experts depend on" (2020:87).

While I have demonstrated the synthesis between clinical and creative practice I consider that the application of the methodology developed in the model of research explored here offers the potential for employment in further studies beyond the health/art environment.

The study holds implications for policy through consideration of the education of mature students or those who for a variety of reasons wish to change profession. The phrase 'transferable skills' often appears in the desirable skills column of job description forms. Analysing digital skill acquisition for myself revealed that this

extended beyond computer software programmes and could open new opportunities for life-long learning and professional development. Applying these findings to my practice demonstrated that in transitioning between science and art, I am what I do and I do what I am.

Afterword

The impact of Covid 19 on this study must be acknowledged, firstly in terms of the personal restrictions imposed on activity and the inability to complete all the work I had planned to undertake on location. However, there were other considerations to be taken into account, specifically the fact that Covid 19 targeted the respiratory system. I believed that this would lead to further studies in the future which could be supported by the methodology and findings within this research.

Unfinalisability and the chronotopic nature of this research accurately reflected the character of the medical professions, as demonstrated in the management of Covid 19. Treatment options, pharmaceutical preparations, interfaces for and modes of supported ventilation were all reviewed during the pandemic. New practices were trialled, learned and disseminated. Transferable skills were demonstrated by costume makers, formula one car mechanics and many others in response to the demand for personal protective equipment (P.P.E.) and non-invasive ventilatory support machines.

For those seriously affected by the virus, rehabilitation would be very slow and they would all be acutely aware of their breathing as changes in the lungs limited recovery to full function. Understanding how breathing and positioning affect the activities of daily living could facilitate treatment and rehabilitation.

Walking is one of the prime activities to improve lung function. It was also recognised as one activity to be retained during lockdown for all those not requiring shielding, referencing mental as well as physical benefits. In exiting lockdown, emphasis was placed on retaining social distancing as far as possible, promoting walking and cycling as a means to return to safe working.

All these factors presented global research opportunities both within and external to the health professions.

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Glossary

Blirtie

(adj) as applied to the weather, inconstant; ‘a blirtie day’ one that has occasional severe blasts of wind and rain

Brym

(adj) of the sea, raging, swelling

Daggling

Daggle (v), to fall in torrents

Hale Water

(n) a phrase denoting a very heavy fall of rain, in which it comes down as if poured out of buckets.

Liddisdale drow

(n) a shower that wets an Englishman to the skin

Nooping

Noop (v), to walk with downcast eyes and nodding head

O’erswaks

(n,v) the rush or noise of a wave breaking on the beach

Pirl

(v) to be gently rippled, as the surface of water by a light wind

Rave

(v) used of the wind, to make a wild roaring sound

Slonking

Slonk (v), the noise feet make when sinking in a miry bog, also, when walking with shoes full of water.

Smir

(n) extremely fine, misty rain

Waff

(adj) solitary, wandering alone; denoting the awkward situation of one who is in a strange place where he has not a single acquaintance.

All words and explanations have been taken from Thomson, A. (2018) *A Scots Dictionary of Nature*. Glasgow: Saraband

Appendix 1

April 6 1922 Einstein and Bergson Debate Time

In essence: 'Einstein and Bergson differed in their views about the nature of time and the power of science to reveal it.' (Canales, 2015: 24). Reportedly, Bergson was a reluctant participant in the proceedings and spoke first, stating his belief that time should be considered philosophically and not solely through science. Einstein's response was swift: '*Il n'y a donc pas un temps des philosphes*'[20] followed by, 'there remains only a psychological time that differs from the physicist's.' (Canales 2015: 5)

While Einstein considered physical and psychological as the only two valid ways to understand time, Bergson countered with his focus on the *élan vital,* the impulse behind the drive for creativity, a factor he felt could not be satisfactorily explained through an exclusively scientific approach.

For Einstein, on a personal level, the meeting meant that the Nobel Prize committee decided not to award him for his work on relativity, in part because they felt that Bergson had shown that relativity relates to epistemology rather than physics.

The debate provoked a lasting rift between the two that split scientist and philosophers around the world. As a result, research into the nature of time was divided between the two factions well into the twentieth century with science on one side and philosophy, politics and art on the other. Both views have been shown to impact the work of artists and writers of literary works.

[20] 'It is therefore not a time for philosophers'

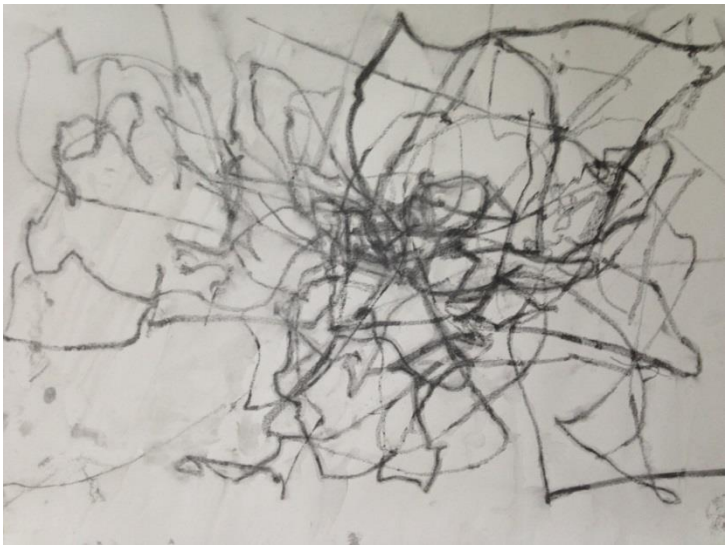
Appendix 2 – Reflection on Sea Drawing

Sea Drawings 3

Describe the learning activity
29.7.15 – 30.7.15
A second series of sea drawings, this time using the Art Graf water soluble graphite stick

Session 1 29.7.15 17.30 – 18.00
Incoming tide and very windy, also raining hard
First attempt at videoing too.
Hard to achieve any marks but paper tore quickly and I spent a lot of time chasing scraps
Deeply shelving beach difficult to maintain footing and even harder to position myself beyond the break point
However, it was a good example of nature and human interacting!

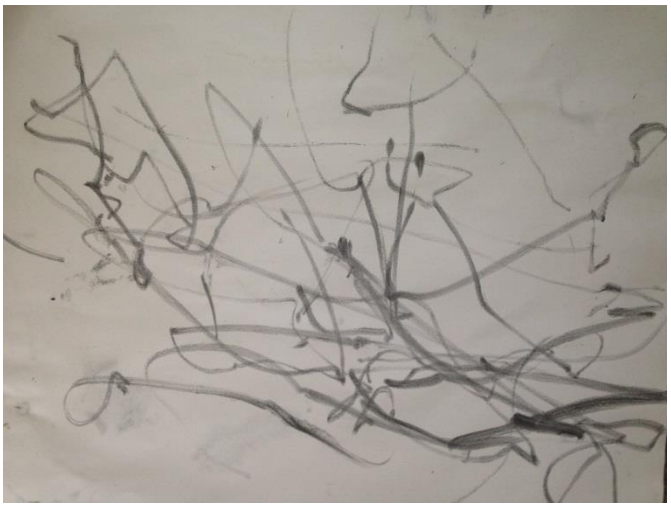
Session 2 30 .7.15 08.30 – 09.30
Gentle incoming tide – lots of seaweed from last night's rough tide
Sunny and no wind
Battery ran out on the video camera halfway through. This is a learning curve so any result is of benefit and will inform my practice for next time.
Managed 3 large pieces that stayed as 3
Very different marks to those made using the pencil last time. The marks are lighter than those made in fresh water in the shower. This is due I think to a combination of the fact that this is now sea water and the paper resting on the body board is bobbing on the water and it is difficult to exert any pressure while trying to record the movement rather than impose a mark.
I am learning to accept that what happens is what happens



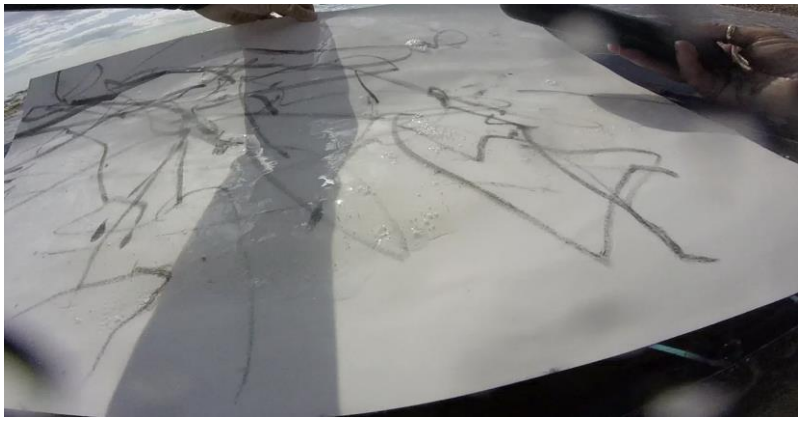
Session 3 30.7.15 16.30 -17.30

Beautiful calm sunny afternoon
Still lots of seaweed but for the first time I was in the sea at low tide. I had to walk out a long way to get to the right depth for working – a long way beyond the break point. I had no idea that at low tide the sea bed was sand rather than pebbles – very different to stand on, far less movement. I tried some different paper – some I had used previously, with lower rag content and therefore more stable in water. I also tried kneeling in the water at the low tide break point. Far gentler than last evening. I also removed the ankle strap because I felt it was influencing the movement of the board. I had recharged the camera and paused between each paper change. I look forward to the results – I now need to learn how to edit the videos. Managed four single pieces.

Standing at depth



Kneeling at break point



What did you learn from it?

Overall, I found the marks from the Art Graf stick more defined than with the pencil but more difficult to work with. I need to persevere with it though.

More experimentation is required with respect to papers as I did with the ink drawings.

Hove beaches are far less crowded than Brighton

Having watched the video back I can see how the camera can inform future practice. I need to learn more about use and editing. I also need to keep a check on how much water remains over the lens after submersion.

It is not about changing the time of day but the variation in tide levels that will result in a greater change in the work produced and the associated experience.
How will this be useful in your current or future practice? My technique is now more refined, leaving me the potential to experiment with papers, other mark making tools and different locations I can see how the camera can inform future practice.
What evidence do you have of your learning and the impact it has had on your practice? A growing collection of images showing development of technique A video record of my techniques
What further learning /action is required I need to continue to develop technique and analysis to take this part of my practice forward
Date 2.8.15