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Paying attention to water relations: Poetic inquiry and pedagogical documentation as curious practices

Claire O'Callaghan
Edith Cowan University

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**Paying attention to water relations: poetic inquiry and
pedagogical documentation as curious practices**

This thesis is presented for the degree of
Master of Education by Research

Claire O'Callaghan

Edith Cowan University
2021



PAYING ATTENTION TO WATER RELATIONS:

**Poetic inquiry and pedagogical
documentation as curious
practices**

Claire O'Callaghan

Figure 1 Water in hands

28TH JUNE 2021

**Master of Education by Research
SCHOOL OF EDUCATION**

**SUPERVISORY TEAM:
Professor Mindy Blaise
Doctor Jane Merewether
Doctor Jo Pollitt**

Abstract

This project explores climate pedagogies with particular interest in Western Australia's current water crisis. Human and more-than-human relations are explored with young children and educators from an early learning centre in Perth, Western Australia, with a view to reimagining education in the context of rapid environmental change. The project is grounded in feminist new materialist knowledge and is framed by an attentive focus to amplify the non-binary nature of both human and more-than-human counterparts. The research focuses on challenging colonial ways of knowing water, by decentring the child, unsettling norms, and reinstating reciprocity between human and more-than-human others (Nxumalo & Villanueva, 2019). Poetic inquiry as curious practice is explored, and how it highlights the present absences of the mutual becomings of water and child by conducting experimental, creative, and inventive arts-informed explorations with a lens of keeping water in sight and in mind. Videography and photography as tools of pedagogical documentation are a primary data-creation method and are both experimental and creative outputs. The following questions guide the research:

1. How does poetic inquiry as curious practice help me to address children's relations with water beyond the child/water binary?
2. How does poetic inquiry as curious practice help me to understand poetic characteristics of water such as movement, sound, duration, speed, timing, etc.?
3. How does pedagogical documentation inform poetic data creation and analysis?

The project lends itself to radical ways of thinking. It engages with poetic inquiry as curious practice, paying attention to present absences, and examining the poetics of pedagogical documentation to create meaningful data as poetry (Faulkner, 2009; Leavy,

2009). Poetic outputs include responses that take the form of video-poems, creative texts, and images with decisions about research direction being made in the moment and in response to grounded experiences. This study contributes to a shift and expansion of pedagogical practices and educators' understanding of the gaps in current sustainability and environmental education.

I certify that this thesis does not, to the best of my knowledge and belief:

- i. incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;
- ii. contain any material previously published or written by another person except where due reference is made in the text of this thesis; or
- iii. contain any defamatory material;



Claire O'Callaghan

Acknowledgements

I would first like to pay my respects to Elders past and present, of Wadjuk Noongar boodja, unceded Aboriginal Country on which I live, work, and write. As an uninvited settler, I recognise responsibility to examine my part in ongoing settler colonialism.

Throughout the writing of this thesis, I have received a great deal of support and assistance.

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Note to Reader

This thesis is established as an interactive document where each chapter begins with a video link and corresponding poetic rendering. There are six video link and poetic rendering accompaniments throughout the thesis. Both the video footage and poetic renderings arise from moments within my data collection and are attributed to the poetic nature of my research; where curious practice, poetic inquiry, and pedagogical documentation come together as an assemblage. Discussed in more detail in Chapter Three, the videos are edited to enhance poetic elements within the clips sometimes by slowing the speed, changing the colour, or repeating and reversing the footage. Similarly, poetic renderings are derived from snapshots of vocabulary and descriptions within my Water Log (refer to Chapter Three for further discussion). The poetic renderings are representative of my experience as a participant-observer within the research and provide a snapshot of what might be seen or unseen within the video clips.

Figure 2 to 4, 6 to 14 (inclusive) and figure 16 are all interactive. Click on the image to view the video footage. As you click, a separate window will open to show a YouTube video clip. When the clip has finished, simply return to the thesis document to continue reading. Chapter Four has specific video links in the form of moments that pertain to the description of water-child encounters, which will be analysed and discussed in Chapter Five.

I encourage you to engage with the moments, encounter, and re-encounter them as was done throughout the research process, and as pedagogical documentation asks of us. I invite you to engage with water, relate with water, and become-with water as the children and I have.

1

INTRODUCTION



Figure 8 Chapter One video-poem

It begins, rain.

Water, water is everywhere.

I can hear it, I can see it, I can smell it, I can feel it.

Gush, trickle, drip. Down the pipe, down the drain. It flows, it splashes.

(O'Callaghan, 2020)

This thesis, entitled *Paying attention to water relations: poetic inquiry and pedagogical documentation as curious practices*, addresses research undertaken within an early learning centre on Wadjuk Noongar boodja, also known as Perth, Western Australia. With a specific focus on water, this research approaches climate education in the early years with a lens of paying attention to water-child relations as they are formed through real and situated encounters. Curious practice, poetic inquiry, and pedagogical documentation present as an assemblage within the research, particularly through moments as video-poems as a construct of compiled data.

This thesis comprises of six chapters, each indicative of significant elements within the research process. This chapter, Chapter One, introduces notable characteristics of my personal background that have influenced the research process. This is followed by a discussion of key foundational elements to the conception of the research project, to situate the research. Chapter Two discusses ethico-onto-epistemology, water, and thinking-with care. This is done by referring to distinguished scholars within their field, as relevant to the content of this thesis. Chapter Three outlines the research methodology including the role of the researcher, data collection strategies, and how thinking-with – curious practice, poetic inquiry, and pedagogical documentation – is relevant to the research process. Chapter Four highlights three key moments within the research which form part of my data set and includes a series of short video clips in the form of video-poems. Chapter Five follows, with an analysis of the three key moments in the preceding chapter which is discussed in response to the research questions and with relevance to current literature. The final chapter, Chapter Six, provides a summary of key research findings as well as highlighting some of the limitations of the study. This is followed by a discussion of recommendations for future research.

Unique to my thesis is the inclusion of key moments at the beginning of each chapter in the form of video-poems and poetic renderings from my data. While the moments

themselves are not discussed, their relevance pertains to the significance and assemblage of curious practice, poetic inquiry, and pedagogical documentation within and throughout the research process. The video moments highlight the importance of making them visible, to re-encounter experiences, and engage with pedagogical documentation throughout.

Background

Although later discussed in more detail, it is important to note that feminist new materialist theory informs much of my research. Throughout my thesis, the significance of 'lived experience' as perceived by many as the foundation of feminism - the personal, psychological, and emotional - is particularly relevant (Hughes, 2002). Writing in first person is crucial in signalling a political act in the production of knowledge as per the perspective of myself, the researcher (Hughes, 2002). Feminist studies philosopher Donna Haraway (1991) acknowledges that the construction of women's experience is also a political act and is necessary to make women visible in mainstream science. Consequently, Haraway's cyborg metaphor is a politically motivated representative that proposes an alternative story about women's experiences (Haraway, 1991). Haraway denotes that the impression of one's reality is inclusive of some but not all experiences with philosopher Isabelle Stengers (2018) stating "being capable of situating oneself – situating what one knows, and actively linking it to questions that one brings in and to ways of working that respond to it – implies being indebted to the existence of others who ask different questions, importing them into the situation differently, relating to the situation in a way that resists appropriation in the name of any kind of abstract Ideal" (p. 45). Accordingly, it is important for me to situate myself appropriately and provide the audience of this thesis with an insight to me and my story, with its relevance to the prevailing research.

I identify as a white, female, colonial settler living and working on unceded Aboriginal land, specifically Wadjuk Noongar boodja, also known as Perth, Western Australia. I have

lived my whole life in Perth, growing up in a middle-class nuclear family. During my childhood I spent much of my time with Derbarl Yerrigan (Swan River), which snakes its way through the city's suburbs. Whether driving over a bridge on the way home, or in a boat, or on the banks of the river, I recall combing the sand for shells, fishing, crabbing, swimming, spotting dolphins and walking - fostering a love of the place I live and a deep connection with the natural world. On occasion, I would venture further, to national parks where I could climb trees, dam streams, and hop barefoot over rocks. These childhood experiences have left a mark on me, and I believe have fostered my love and excitement for outdoor adventure as an adult. I am also an enthusiastic hiker and rock climber, often spending weekends in the south of Western Australia scoping out the trails and crags, finding the perfect rock to situate myself for the day. When I am there, I find myself paying close attention to my surroundings - the waves crashing on the rocks, the sound of water trickling down the gully, the lizard sunning itself, scavenging ants, wind blowing, fish, crab, leaf, branch, tree, rock, water. I have been a part of and witnessed slow but small changes to these environments both from human and more-than-human impact. These changes include the introduction of faux nature play spaces in an already natural play space; dry waterholes that were otherwise frequently filled with water; and algae-riddled lakes. My experience with and connection to the natural world around and within me has inspired my research. I have a passion for encouraging children to experience the natural world in its 'real' state and experiencing all that it has to offer as mutual relationships are built through shared experience.

Dancing was also a big part of my childhood. I was and still am an Irish dancer, having danced now for twenty-two years. Irish dance is a traditional and disciplined dance form that has contributed to much of my life. It is through my training as an Irish dancer that I have developed a strong and somewhat intuitive understanding of rhythm, movement, timing, spacing, repetition and tempo, as well as musical and choreographic understanding - elements also shared with other art forms such as poetry, as relevant to my research. Irish dance is of precise and intentional movement where line, technique and simultaneous

movements are essential elements; and although this dance form does not leave much room for 'not knowing' it has contributed greatly to my capacity for attending to specificity and detail. It was common practice during classes to film dances and slow the footage to focus in on individual movements. This is related to much of my research when referring to slow motion video footage of water to pay attention to movement and the poetic nature of water.

When I began this research, I was teaching four-year old children at a 'Reggio-informed'¹ school setting where creativity and symbolic representations of meaningful experiences are integral to the Reggio Emilia experience (Edwards et al., 2012). In this environment, an educator's role is complex and multifaceted, flexible, and responsive to the interests of children and this role is traced and made visible through the process of pedagogical documentation. Pedagogical documentation is a visual representation of thinking and learning, and is dynamic, evolving, and subject to change as children and adults respond to and with it (Dahlberg et al., 1999). Pedagogical documentation is a practice of not only documenting learning, but it is also a presence *within* the learning itself. It can be considered a poetic practice and form the basis of data creation, communicated in the form of poetry. This aligns with Reggio's multimodal poetic approach to pedagogical practice, as highlighted by Loris Malaguzzi's (as cited in Edwards et al., 2012) poem, *The Child is Made of One Hundred* which begins: "The child is made of one hundred. The child has a hundred languages, a hundred hands, a hundred thoughts, a hundred ways of thinking...the hundred is there" (p.3). Carla Rinaldi (2006), a pedagoga² and leader in Reggio Emilia education worldwide, refers to the 'languages' as more than just oral or verbal, but instead as another

¹ A perspective on education that is inspired by schools in Reggio Emilia, Italy. The approach is informed by a strong belief in community, families and children as active, capable and valuable members of the community with educators seen as collaborators within the learning process. The learning environment plays an important role in daily experiences and is seen as 'the third teacher'.

² A pedagoga is someone who contributes to educational experiences pedagogically with an interdisciplinary approach.

form of understanding, or another language. For example, a child's language or way of expressing their understanding might be through dance, paint, or poetic responses. This is echoed Giamminuti (2013), as she reflects on Malaguzzi's poem and the theory as support for meaning making and communication; "this is true of experiences with materials in the atelier and classroom as it is true of documentation, which makes use of 'words' of many different kinds" (p.201). Pedagogical documentation is poetic in process with deliberate choices and decisions being made to create 'stories' that tend to generate more questions than answers (Rinaldi, 2006).

With all things considered, much like the role of a teacher within a Reggio-inspired setting is responsive, flexible, and multifaceted, so has been the process of my research. I have been deeply challenged, surprised, inspired, and nurtured throughout this process.

Situating the Research within Watery Relations

Water is central to my research as a response to global water shortages. It is referred to within my research to provide an alternative way of approaching climate education in the early years. Water is essential to all life, both human and non-human; as anthropologist and philosopher Deborah Bird Rose (2016), an advocate for social and environmental justice, writes, "water, commands respect and care; it gives life and thus is a source of life". Australia is in the midst of a climate crisis. As an environmental response to past and present human actions, we are living in one of the driest locations in the world (CSIRO, 2011; Linton, 2010). It is our responsibility now more than ever to educate children of the twenty-first century as inevitable inheritors of these issues. Due to the nature/culture and colonial/decolonial divide, Melanie Yazzie, and Cutcha Risling Baldy (2018), draw from Indigenous cultural perspectives when referring to relations with water; "water is seen as an ancestor and as a relative with agency within this network of life, one who deserves respect,

care, and protection” (p.1). It is suggested that with knowledge of water and environmental concerns, humans will be equipped with empathy and understanding to tackle climate change (Rose, 2016). Environmental historian Ruth Morgan (2015), echoes this when writing of the current water crisis in Western Australia, describing growing concerns for increased water scarcity and climate change; particularly as a result of the state’s dependency on industrial development at the expense of the natural environment. Astrida Neimanis (2017), a feminist interdisciplinary water researcher, also states that the current water crisis is a result of overengineered water management systems which have led to a human-world disconnect. She states that “the water crisis is worlded from the entanglement of material water scarcity and pollution with our idea of water” (p. 20). In an early childhood education context, water is being addressed as a resource to be conserved, learned about, and played with, with the aim to achieve curriculum outcomes. It is within this context that my research aims to bridge human-nature gaps through emergent water pedagogies.

Scholars Paul Crutzen and Eugene Stoermer (2000) propose that Earth has entered an epoch known as the Anthropocene, defined by the unprecedented and rapid changes that humans impose on the natural environment (Chin et al., 2017). This concept has gained recognition in a range of academic disciplines. However, in an educational context, climate change is overwhelmingly taught through a Holocene lens, or the current geological period as conventionally defined. This creates an understanding of climate change as a problem that can be scientifically explained and technically fixed whilst decentring its social dimensions. Typically, a Euro-Western education approach to climate change is limited to arming students with the facts about causes and possible adaptive responses at an impersonal level, without exploring how it affects everyday lives (Leichenko & O’Brien, 2020). More broadly, Euro-Western education focuses on a fact-based teaching model where information is predominately either presented or represented to children (Lenz Taguchi, 2009). In other words, children are taught *about* objects, matter, and the world rather than given the opportunity to engage and form ideas on their own; or with the world

but without over-educationalisation, as described by education theorist, Gert Biesta (2020), as *learnification*. Commonly, in early childhood education settings, water is matter that is learned about through carefully planned experiences that teach concepts of the water cycle, about the properties of water, or how to manage water through the three Rs - reduce, reuse, recycle. This approach is problematic in the current climate crisis as it does not address care for, engagement with, or relations with water. Instead, it positions water as something separate from humans (Linton, 2010; Neimanis, 2017).

Education researchers and scholars, Helen Clarke, and Sharon Witt (2019), lead the way in transforming existing approaches to climate education in collaboration with student and early career teachers. They work with an eco-playful pedagogy which invites a hopeful perspective on climate education rather than one of catastrophising. Much like Clarke and Witt, my research challenges existing approaches to Euro-Western education by exploring water relations with an attentive focus in early childhood education settings; to meaningfully pay attention to water, and to develop a relationship with it beyond it merely being a resource to be taught about or played with. My research engages water and children in mutually reciprocal relations, evoking care, respect, and compassion, embracing human and more-than-human entanglements to substantiate knowledge.

In order to frame my research, I draw on feminist new materialist theory which places emphasis on deconstructing binaries including male/female, nature/culture, real/material, mind/body, water/child to a decolonised understanding of the world (Alaimo & Hekman, 2008). This is done with the intention to move towards reciprocal understandings of and between human and more-than-human entities. As a feminist new materialist practice, Stacey Alaimo and Susan Hekman (2008) postulate the significance of understanding more-than-human presences as more than just resources, but rather as agentic entities that act with consequence on both human and more-than-human others; “material feminism demands profound - even startling - reconceptualisations of nature” (p.5). This is important

as it foregrounds the intention to move from a humancentric understanding of the world, to a common world where relationships are formed and entangled with characteristics of reciprocity. Discussed in more depth in the literature review, a ‘material turn’ in feminist theory refers to the idea of thinking with matter, rather than just about matter “in ways that articulate specific ontological, epistemological and ethical commitments.” (Braidotti & Hlavajova, 2018, p.242). Material feminism engages with binaries by exploring the pre-existing relations between two elements without privileging either of them (Alaimo & Hekman, 2008).

A feminist new materialist framework is often applied in conjunction with Common Worlds theory, which posits that living well together – between human and more-than-human others – is paramount. This is of great importance to the prevailing research as it is a clear entanglement of two worlds coming together to create a common world. Pacini-Ketchabaw et al. (2016) refer to Bruno Latour to describe their research with more-than-human others as counter to the “human-centric impulse to divide ourselves off from the rest of the world and re-enact the self-perpetuating nature/culture divide” (p.150). Their research challenges the legacy of colonialism – in other words attitudes of human domination over more-than-human others – that is prevalent in Western society. This is done by examining how more sustainable life possibilities can be achieved through learning with other species in a more-than-human world. This is relevant to Black Studies scholar, Sylvia Wynter’s (2003) exploration of the prevalent white, heterosexual “Man” that is overrepresented as the human species itself and the struggle that exists against this overrepresentation. Wynter (2003) states that “all our present struggles with respect to race, class, gender, sexual orientation, ethnicity, struggles over the environment, global warming, severe climate change, the sharply unequal distribution of the earth resources - these are all differing facts of the central ethnoclass Man vs Human struggle” (p. 260). This is particularly relevant in the current epoch, with specific reference to the Black Lives Matter movement that is occurring all over

the world as a consequence of blatant injustice and the white/black culture divide that still exists.

My research took place at an early learning centre in the southern suburbs of Perth, Western Australia on Wadjuk Noongar boodja, also known as Perth, Western Australia. Each day, 35 children from two to five years of age, are welcomed to the centre. Approximately 15 staff are employed at the centre. The majority of the staff have strong artistic capabilities and a passion and appreciation for learning and striving for new ways of 'doing' which is reinforced by Peter Moss's (2010), image of the educator as needing a "certain attitude of mind that desires to research and experiment" (p.4). Inspired by Reggio Emilia's education philosophy, children at the centre are free to access all aspects of the centre with exception to rest, large group meetings, and lunch times. Children are invited to engage in projects and inquiry-based experiences that attend to their interests and desires. Throughout the research process, adult educators were sometimes challenged by the research process because it required them to embrace discomfort as they stayed with the trouble of the water crisis, rather than 'fixing' it. This involved unlearning what they know to be 'right' and taking risks. It also involved a certain type of vulnerability, of being okay with failures, unknowings, and uncertainties to embrace the power of paying attention to water and child. With this in mind, educators and children at the centre were invited to participate in the research. Following ethics protocols, I ensured that ongoing consent was gained throughout the project. This was done each day by asking both adult and child participants if they would like to take part in experiences. Engagement in the research was on a voluntary basis and participants could knowingly cease their involvement at any time. The child participants visible in Chapter Four – Fraser, Emily, and Declan (pseudonyms) – are all aged three and regularly attend the centre. Fraser, Emily, and Declan were frequent, keen, and interested participants throughout the duration of the research data collection phase, and I was able to note their participation on a number of occasions.

My research focused on challenging humancentric ways of knowing water, by decentring the child, unsettling norms, and reinstating reciprocity between human and more-than-human others (Nxumalo & Villanueva, 2019). I explored how poetic inquiry, as curious practice, highlighted the present absences of mutual becomings of water and child by conducting experimental, creative, and inventive arts-informed explorations with a lens of keeping water in sight and in mind, using tools of pedagogical documentation. Videography and photography as pedagogical documentation became a primary data creation method as both an experimental and creative output. The following questions guided my research:

1. How does poetic inquiry as curious practice help me to address children's relations with water beyond the child/water binary?
2. How does poetic inquiry as curious practice help me to understand poetic characteristics of water such as movement, sound, duration, speed, timing, etc.?
3. How does pedagogical documentation inform poetic data creation and analysis?

Two times a week, over the course of ten months I visited the centre where the longevity of my engagement with water and child was concurrent with my role as a Research Assistant as part of Social Sciences and Humanities Research Council, Canada (SSHRC) funded research with Principal Investigator, Veronica Pacini-Ketchabaw. The SSHRC-funded research explored climate change pedagogies with children, and children's relations with waste and materials, in Canada, Australia, and Ecuador.

The purpose of my research was to contribute to a shift and expansion of pedagogical practices and educators' understandings of the gaps in current sustainability and environmental education; to highlight the value of paying attention to intra-actions with human and more-than-human others in early childhood education; and to the understanding of the current climate crisis that is being faced in Western Australia and around the world. Together, the children, educators and I have contributed to a shift in understanding and perception of pedagogical documentation in early childhood education settings. Educators

and children accentuated this by bringing pedagogical documentation to the forefront of early childhood education as a significant part of not only reflection, but also the learning process.

Now that I have presented background to the research and situated this study within watery relations and feminist new materialist theory, I turn to relevant research and theoretical literature that inform my work.

2

LITERATURE REVIEW



Figure 9 Chapter Two video-poem

Every time I watch this footage, I find myself paying attention to something new. It might be the water reflection, leaf crumb or the water's beveled edge.

Children join me in this moment, they lie next to me, with their bodies, eyes and ears focused on a more-than-human entity. I wonder now if we are paying attention to the same entity? What is it that drew us in?

(O'Callaghan, 2020)

In response to Western Australia's growing water scarcity and climate crisis, the literature review will refer to water as a more-than-human entity; addressed in early childhood education settings as an equally significant body to a child's learning. Currently, more-than-human others are perceived as something less-than with human privilege overriding any potential for the formation of reciprocal relations between more-than-human and human entities, specifically water and child. The literature review aims to challenge the water and child binary by referring to multidisciplinary and leading feminist new materialist scholars in water knowledge and early childhood education.

It is our responsibility, as educators, to educate children of the twenty-first century as future and inevitable inheritors of the water scarcity issues, we are leaving behind. Currently, a Euro-Western education approach uses a teaching model where information is either presented or represented to children (Lenz Taguchi, 2009). However, as described within the following review of literature, this teaching model can be problematic as it reveals a particular way of learning about climate issues, rather than inviting and referring to relevant and relatable experiences for children. The concepts that will be referred to in the literature review have each been considered as radical or conducive to reorienting thought and these concepts will be discussed in relation to water as a more-than-human entity, particularly in an early childhood education context. First, thinking-with ethico-onto-epistemology will be discussed with reference to existing concepts of ethicality, ontology, and epistemology. This discussion will foreground the literature review – providing an overarching theoretical perspective – followed by a discussion of water with specific reference to the current water crisis and how this is taught to young children in early education settings. This will be followed by a discussion of the concept of thinking-with care with specific reference to Maria Puig de la Bellacasa's (2017) triptych of care as a feminist ethics of care. The topics discussed in the literature review will provide a scholarly foundation for the succeeding research discussion.

Ethico-onto-epistemology

'Ethico-onto-epistemology' is a term coined by feminist physicist-philosopher Karen Barad (2007), to describe the entanglement between ethics, ontology and epistemology when engaging in knowledge production with the world and its human and non-human inhabitants. It is the study of the practice of knowing and being (Youngblood & Mazzei, 2012). Ontology, as a singular concept, is the study of being, or of existence; epistemology is the study of knowing, or knowledge production. Both concepts, in combination with ethics, and moral philosophy, cannot be separated (Barad 2007; Haraway, 1988). Haraway proposes the idea of non-binary occurrences as having unstable boundaries, and in line with this perspective, Barad believes that the practice of knowing and being, or ontology and epistemology, are not isolated; "The separation of epistemology from ontology is a reverberation of a metaphysics that assumes an inherent difference between human and non-human, subject and object, mind and body, matter and discourse" (Barad, 2007, p. 185).

The notion of the objective scientist, as one that stands and gathers data from afar as a pure act, is criticised in the feminist literature. Haraway (1988) refers to this as "the god trick", implying that it is nearly impossible to perform such a manoeuvre. In other words, it is difficult to research as an objective observer, who is somehow separated from the world. Much like First Nations ways of being, ethico-onto-epistemology implies that humans are no longer accepted as innocent bystanders looking over the world and its phenomena as separate beings. Instead, humans are immersed beings living within the world as co-constructors of knowledge (Barad, 2007). Similarly, feminist early childhood researcher, Hillevi Lenz Taguchi (2009), recognises the learner and the world as co-dependent, entangled becomings. In other words, humans and the world are observed as agentic

material objects in an entangled state of interdependence; of knowing and being together (Barad, 2007; Lenz Taguchi, 2009). These practices are not isolated from each other, but instead they are reciprocally embedded; the material world acts with human thinking just as much as human thinking acts with the material world (Youngblood & Mazzei, 2012).

Both Lenz Taguchi (2009) and Barad (2007) refer to humans as being in a co-dependent, thoughtful and intra-active relationship with the world where 'being' is not on an individual basis; but rather, humans are in a relationship of entanglement with the 'other', or the more-than-human. This relationality is based on an ontology of immanence whereby all matter presents the same qualities and there is no distinction or hierarchy between matter, human and non-human organisms, and objects (Lenz Taguchi, 2009). "We are not put into the world in order to put ourselves above it, go beyond it, or transcend it; rather, we are made from the same substances as the rest of the world, we are a part of it, and we are simply making ourselves intelligible to one another in a process of mutual and interdependent becoming" (Lenz Taguchi, 2009, p.42). In other words, the learner and the world are in a constant state of entanglement and mutual constitution with human existence being entirely dependent, and mutually reliant, upon non-human entities (Lenz Taguchi, 2009). This is in line with Haraway's (1988) 'god trick' due to the impossibility of standing outside as an objective observer. Barad (2007) emphasises that humans must understand that they themselves are also material objects of the world. Rose (2017) reinforces this with reference to *animism* as something that signifies connectivity, kinship, and agency among human and non-human entities. This is essential in an early childhood educational context where learning is dependent on the existence and surroundings of the non-human world (Lenz Taguchi, 2009; Rose, 2017). It is within this context that there are mutual responsibilities between human and more-than-human entities to uphold.

An ontology of transcendence, however, implies that humans are separate from each other and the world (Lenz Taguchi, 2009). From this perspective, the world remains without agential qualities and exists passively (Lenz Taguchi, 2009), implying the existence of a hierarchy between human and non-human entities. In an educational context, where the world is either presented or being represented to the child or learner, physical tools are often used in learning experiences. Within an ontology of transcendence, the tools are perceived as passive objects with the learner influencing the tool with control and agency (Lenz Taguchi, 2009). Barad (2007) however, argues that knowing does not occur passively but instead it comes from direct encounters with the world and the world being an active participant in these encounters too. Lenz Taguchi (2009) examines Barad's (2007) ethico-onto-epistemology in the context of early childhood education where she focuses on research encounters with physical materials, or matter.

In research exploring sand-child relations, Lenz Taguchi (2014) works from an ethico-onto-epistemological standpoint to explain how child, sand, and sand tools intra-act; where the ability to act emerges from within the relationship of child, sand, and sand tools, not outside of it. Rather than referring to the child as the only agentic subject in the scenario, from an ethico-onto-epistemological perspective, the sand and the sand tools also present agentic qualities as they intra-act with the child (Lenz Taguchi, 2014). Lenz Taguchi describes this experience as a significant shift from contemporary early childhood understandings of research and practice whereby the child is often the central focus. This is considered to be a significant shift towards a *material turn* where "matter [sand or sand tools] is seen to matter in more forceful ways" (Lenz Taguchi, 2014, p.80). A 'material turn' bestows more-than-human entities with agency, for reasons of ethics, sustainability, and equality (Lenz Taguchi, 2014). In other words, a 'material turn' challenges preconceptions of humans at the centre of knowledge production, rather humans are considered reciprocal participants with non-human matter, material. A 'material turn' coincides with ethical implications. Affrica Taylor and Miriam Giugni (2012) refer to Jeannie Baker's (2000)

children's book, *The Hidden Forest*, to explain ethical implications of a material turn. In *The Hidden Forest* a boy, Ben, finds himself encountering sea life as he explores underwater after untangling his fish trap; "when he enters...he not only gains new understandings about and perspectives on his coastal world, but he is provoked to assume a new kind of ethical responsibility for this world he shares with the whale, as well as with the kelp and the other sea creatures" (p.110). Rose (2017) reinforces this by sharing her understanding of water as entangled with, and responsive to ethical matters such as care. In other words, care implies connection and expression as actions of ethical concern.

Conventional Euro-Western schooling acts to reinforce contemporary research and practice related to early childhood by conceptualising the learner and world as separate entities and presenting or representing this world to the children (Lenz Taguchi, 2009). This method of learning devalues matter as a valuable participant and co-learner and as a tool for learning with no agency. Lenz Taguchi (2009) argues that it is the influence of the carefully planned environment, the adults' planned expectations and society's planned developmental outcomes for the children that is reflecting a different ethico-onto-epistemological point of view. The aforementioned traits of traditional schooling are somewhat habits of teachers not knowing how to change, not knowing they need to change, or too afraid to. Considering a shift towards a 'material turn' and implicating an ethico-onto-epistemological standpoint in early childhood education, creates another educational focus to instead "stay with the trouble" (Haraway, 2016) of real contemporary cultural and climate issues rather than teach facts on what these issues are and how to fix them. When educators engage with the idea of staying with the trouble, children are also invited to engage with real, relatable, and ongoing issues, which invites ethical, ontological, and epistemological entanglements. Further, it generates a radical understanding of how we can retreat from binary framings such as nature/culture, human/non-human, adult/child divides (Hodgins, 2019) and move towards a world of relational entanglements. Such binaries hold with them

the assumption that adult human bodies are hierarchically superior which causes nature, child, and non-human imbalances. Sarah Crinall (2017) notes “the separation of nature and culture has been identified as a significant problem underpinning the failure to adequately address issues of planetary sustainability” (p.95). Therefore, it is hoped that by challenging these binaries, multispecies entanglements - humannature, natureculture, etc. - become normalised practice in human and non-human relations.

The Common Worlds Research Collective (Common Worlds Research Collective, 2020a; Hodgins, 2019) uses specifically crafted Common Worlds methods to pioneer multispecies entanglements. This research collective takes seriously the proposition that by resituating our lives within indivisible more-than-human common worlds, research and education can (re)focus on the ways in which our past, present and future lives are entangled with other beings, nonliving entities, technologies, elements, discourses, forces, landforms and so forth (Hodgins, 2019, p.4). Common World pedagogies value the agency of both human and non-human counterparts, to learn alongside each other with the world, rather than exclusively about it (Taylor, 2017). This approach is important as it reveals entanglements between human and non-human entities that would otherwise go unnoticed. Hodgins (2019) describes Common Worlds methods as valuing learning with human and non-human entities as opposed to learning facts about or mastering a form of subject matter. Bruno Latour (2004) argues that matters of fact are merely partial explanations of matters of concern, in other words “reality is not defined by matters of fact” (p.232). This process of research is reciprocal and places emphasis on non-human thought, just as much as human thought; human and non-human entities learn with each other about what is already happening in the world, a form of collective learning that is created by non-human daily encounters (Taylor, 2017). For example, I imagine water running over a bed of rocks in a narrow stream and as Water meets Rock, it has to navigate around, over, and

under Rock to pass. As it passes, small air bubbles form as a response to their natural encounter.

This contrasts with what commonly occurs in early childhood education settings whereby water (or the non-human) is merely portrayed as a resource to be used by the child (or the human). Comparably, Common Worlds acknowledge the importance of entangled relations. Haraway (2008) discusses the entanglement of natureculture as a non-binary relationship that encompasses Common World views whereby human and non-human entities are not separate. In other words, natureculture is an amalgamation of both nature and culture; therefore, when referring to the entanglement of water and child, water-child evolves. This creates an inseparable connection, reconfiguring the otherwise binary view of the world. Fikile Nxumalo and Marleen Villanueva (2020) acknowledge that such practices are challenging to impose in early childhood education as previously romanticised views of education and the world are intentionally being troubled. However, Nxumalo and Villanueva (2019) provide insight into how they can and have been successfully enacted, within water pedagogies; “activating relational affect between children, place stories, sacred songs, water’s liveliness, drawing...and more, can work in ways that challenge settler colonial ways of relating to the more-than-human world” (p.53).

Water

As previously discussed, water pedagogies in typical Euro-Western early childhood education settings are focused on human-centred experiences that ultimately portray water as a resource to be used (Nxumalo & Villanueva, 2020). Veronica Pacini-Ketchabaw and Vanessa Clark (2016) acknowledge the frequent use of water in learning experiences, however as a material to master, control, or manage. Pacini-Ketchabaw and Clark (2016) challenge a contemporary perspective on water in an early childhood education setting as a

resource to be managed. They explain, for example, how in early childhood education the water table is often used to hold water and tools for engagement in sensory, social, and cognitive experiences. These experiences focus on what the water does for children's learning and development. However, by valuing water as a species and engaging with it as more than just a material evokes reciprocal water-child relations.

A Common Worlds approach to education aims to reimagine interaction with water and ways of knowing water, by unsettling typical Euro-Western water relations. To alter the educator and researchers' focus from simply following the child to instead tune into multispecies relations. In other words, rather than focus on a child's natural inquiries, a shift toward more-than-human relationality is favoured. Rose (2016) acknowledges water as an active participant in human and more-than-human encounters. In other words, water is lively; "It gives life and thus is a source of life" (Rose, 2016). Rose recognises water as a significant element of the physical human construct; as well as earth, plants, and animals; water flows through everything. Neimanis et al. (2013) echo this perspective, describing water as something that is a part of our entire material existence; without water there is no human or non-human liveliness. Rather than human and non-human entities (in this case water) being considered separate beings, we are in fact living within one body of water, sharing its voice, movement, and tangibility.

Pacini-Ketchabaw and Clarke (2016) discuss the importance of acknowledging water's unfamiliar characteristics. They propose that by thinking-with water early childhood educators are able to "get closer to water, become worldly with water, bring water to...Common Worlds pedagogies" (p. 100). Pacini-Ketchabaw and Clarke's statement brings water to the forefront of pedagogy. It reminds us that water is a vital element within our world, that it is lively (Rose, 2016) and that it is worthy of reciprocal human and more-than-human relations. The liveliness of water can, for example, be seen within the movement of water, not just the movements we notice, but also the movements that often go

unnoticed. These visible and invisible noticings can be employed as a curious practice, as discussed with reference to Haraway's (2015) understanding of present absences (see Chapter Three for further discussion). However, it is only through reciprocal acts of care between human and more-than-human entities that these present absences are revealed.

Thinking-with Care

Care is a complex practice that is often perceived as an uncomplicated aspect of early childhood education (Ailwood, 2017). In an early childhood education context, care is often romanticised as 'women's work' where "women are seen as naturally suited to nurturing" (Rutman, 1996, p.630) to fulfill the needs of children. Early childhood educators are perceived to be gentle, nurturing beings as they teach children how to care for the people, objects and environments surrounding them (Rutman, 1996). In these instances, care is believed to be a non-reciprocal practice whereby the carer does not receive care in return, it is an asymmetrical doing (Puig de la Bellacasa, 2017). For example, children are taught to care for a plant by watering it, making sure it gets sunlight and air, whilst being ignorant to the fact that the plant is caring for humans and more-than-humans at the same time by being a source of oxygen, food, and a home to many species.

In the field of early childhood education, the idea of care is rarely associated with more-than-humans. Rather, care is considered a complex and situated process where humans and more-than-humans alike are called to respond as they are presented with ethical and political challenges (van Dooren, 2014). It is imperative to dissociate from a mentality of human-centred care, and to reintroduce care as a meaningful and reciprocal practice with human and non-human entities (Ailwood, 2017). This perspective awakens the potential for recognising water-as-carer rather than merely water-as-cared-for by the otherwise human-as-carer. Puig de la Bellacasa (2017) refers to a triptych of care consisting

of affective, ethical, and practical facets (“ethics-work-affect”). These ‘doings’ act as a stated model for engaging with co-constructed relationships between human and non-human entities (Puig de la Bellacasa, 2017). Referring to Puig de la Bellacasa’s triptych of care Hodgins et al. (2019) recognise the role of the researcher and educator as active responders with children as they entangle with the human and more-than-human in supporting their existing practice of poetic inquiry.

As a tribute to her membership in the Potawatomi tribe in Canada, Indigenous botanist Robin Wall Kimmerer’s (2013) scholarship assigns pronouns to more-than-human others such as animals, plants, and landscapes. A powerful quote from Kimmerer reflects on the importance of this role as she states, “our toddlers speak of plants and animals as if they were people...until we teach them not to” (p.57). This is an example of how the exchange of one simple word, in this case ‘she’ to ‘it’, alters the human perception from someone to something (an object) taking away the aspect of relationality (Kimmerer, 2013). Consequently, as humans we are less inclined to treat an object, or a non-human entity such as water, with care.

Pacini-Ketchabaw and Clark (2016) refer to water as a matter of care, as something worth listening to in early childhood education settings. They acknowledge that water is often perceived as a resource for creative learning experiences. However, it is rare for water to be acknowledged as something capable of destruction (Pacini-Ketchabaw & Clark, 2016); something that is all too real for many citizens of Western Australia in light of the increased frequency of flooding and other water related natural disasters (Morgan, 2015). Consequently, Pacini-Ketchabaw and Clark (2016) invite early childhood educators and researchers to listen to water with children, and bear witness to “water’s dangerous specificities” (p. 100).

Listening is a practice valued in Reggio-informed education. In these settings, a pedagogy of listening is so important that it should ground a school. For example, “This is what a school should be: first and foremost, a context of multiple listening” (Rinaldi, 2006, p.51). A pedagogy of listening is more than just the physical act of listening with our ears but also with our senses. It is accompanied by curiosity, doubt, emotion, sensitivity, interpretation, judgement, and importantly, as the premise for any learning relationship (Rinaldi, 2006). Listening can also be associated with miscommunication and distortion. For example, Pacini-Ketchabaw and Clark (2016) direct their readers’ attention to the idea that it is impossible, due to already entrenched power differences, to listen wholeheartedly. In other words, children, educators, and researchers may listen but will not always hear water. Indigenous artist and member of the Lac Seul First Nation, Rebecca Belmore’s (2005) artwork, *Fountain* – a video installation where water transitioning to blood is projected on to a waterfall – disrupts listening with water pedagogies. Referring to ‘*Fountain*’, Pacini-Ketchabaw and Clark, suggest of listening to water; “we are aware of the distortions, what we cannot claim to hear of pain and survival. We think about how so much pain and violence continues to float in the water, as it becomes a messenger” (Pacini-Ketchabaw & Clark, 2016, p.102). This implies that listening is a non-innocent practice due to human and non-human entities making complex decisions using ethical sensitivity regarding care. Haraway (2016) refers to this as *response-ability* whereby it is the action of cultivating “collective knowing and doing” (p.34) as a multiplicity of responses that defines others as capable beings. Likewise, Barad (2007) emphasises that humans and non-humans act in care with a morality of thought influenced by ethics, being, and knowing which can no longer be separated.

In an education context, curriculum as care enables children to be active participants in their learning, to be naturally curious and aware of their surroundings. It invites educators to understand and be aware of their actions in their practices with children, families, and the wider community. Curriculum as care responds to twenty-first century material, colonial, and

environmental concerns that children are destined to inherit (Hodgins et al., 2019). Hodgins et al. challenge educators to distance themselves from exclusively employing traditional curriculum approaches of fact-based learning, and instead respond to twenty-first century questions where “matters of fact become matters of concern” (Hodgins et al., 2019, p.205) or care, with the notion of care requiring responsible action.

Hodgins et al. (2019) invite educators to consider a feminist ethics of care, whereby ‘care’ is considered far more than women’s practice, but more so as a value that encapsulates relationality with the human and more-than-human; implying reciprocity between all human and non-human entities. In other words, and more specifically, human-as-carer and water-as-carer. Similarly, Latour (2004) understands that care emerges within human and more-than-human assemblages or entanglements. It is through these entanglements that humans engage in practical acts of care, a knowledge that holds humans accountable for their doings (Latour, 2004; van Dooren, 2014). Consequently, in early childhood educational settings educators are encouraged to rethink their role as merely ‘caring for children’ and instead consider ‘curriculum as care’ (Hodgins, et al, 2019). Curriculum as care looks beyond traditional scientific developmental milestones as a basis for learning, but instead recognises development as a “complex entanglement of human and more-than-human relations” (Hodgins et al., 2019, p. 221). It invites educators to “stay with the trouble” (Haraway, 2016) by resisting a more traditional fact-based approach to instead engage with the idea of not knowing as resistance to a humancentric desire to know.

(In)Conclusion

This review highlights how three concepts within the literature of feminist new materialism informs a radical rethinking of pedagogical practices in early childhood education. The concept of ‘ethico-onto-epistemology’ positions humans as immersed beings

living within the world as co-constructors of knowledge, and with an ethical responsibility to consider the inseparability of human and more-than-human entities, particularly humans and water. This concept encourages early childhood educators to consider how children not only impact but are also impacted by more-than-human others, such as water. Projects from the Common Worlds Research Collective are shared as examples of current scholarly research of water pedagogies. These examples form a foundational understanding of how early childhood researchers are beginning to approach water pedagogies throughout the western world. Finally, 'Thinking-with care' as a concept explored within the literature review considers care as a situated and ethical practice that is performed by both human and more-than-human entities. This concept highlights the need for educators to foster an intra-active relationship between children and more-than-human counterparts, such as water.

3

METHODOLOGY



Figure 10 Chapter Three video-

It trickles down the slide. This time, a dark colour. Mixed with sand, dirt and other matter found down the back. There is something entrancing about the movement as it trickles, twisting and turning as it encounters small scratches and bumps on its way down.

(O'Callaghan, 2020)

This chapter will discuss key methodological practices that influenced the research process throughout my study. The chapter will begin by foregrounding a theoretical foundation of these practices, including the concept of care. This will be followed by a discussion of data collection strategies and the role of the researcher. Further, the concept of 'thinking-with' will be introduced with three key ideas that shaped the methodological practices throughout the research process: thinking-with curious practice, thinking-with poetic inquiry, and thinking-with pedagogical documentation. Due to the creative nature of the research methodology, each of these three key ideas will overlap and interrelate. This research is embodied and emerging in nature, yet for the purpose of this chapter the ideas of possibilities and video will be discussed in relation to pedagogical documentation.

Leading educational scholars, Stephanie Springgay and Sarah E. Truman (2017) discussed the “need to shift from thinking about methods as processes of gathering data toward methods as becoming entangled in relations” (p. 2). Until recently, the theory-practice divide saw bias towards methods where rigidity and linear progression within data collection and methods as necessary. In other words, by privileging ‘practice’ it was assumed that the ‘how’ was separate from the ‘why’ (Springgay & Truman, 2017). Consequently, arts-based research processes were overlooked as valid research fields due to their emergent, responsive, improvised, and situated nature (Vannini, 2015). Cultural theorist and political philosopher Erin Manning (2015) proposed arts-based research as a “concrete assemblage for rethinking the very questions of what is at stake in pedagogy, in practice, and in collective experimentation” (p. 53). In the context of my research, I embraced and welcomed emerging practices in the speculative middle (Springgay & Truman, 2017). Specifically, I refer to a transition from objectively detailing the world to a way of being with and within the world. These practices created tension, unpredictability and “encounters *with* unease” (Giamminuti, Merewether & Blaise, 2020, p.8), thus challenging conventional humanist qualitative research practices that were influenced or grounded by desires to know (St. Pierre, 2011). The nature of my research privileged

children and water as reciprocal co-constructors of knowledge from an ethico-onto-epistemological standpoint (Barad, 2007; Haraway, 2015).

In her research of care in more-than-human worlds, Puig de la Bellacasa (2017) privileges more-than-human entities as capable beings; as capable of caring, rather than just being cared-for. Throughout my research, the concept of care (Puig de la Bellacasa, 2017) acts as an overarching foundation through which **curious practice** (Haraway, 2015), **poetic inquiry** (Leavy, 2009), and **pedagogical documentation** (Dahlberg et al., 1999) flow. Care enables humans and more-than-humans to be active participants, to be curious, and aware of their surroundings. In an educational context, the concept of care invites educators to understand and be aware of their actions in their practices with children, families, and the wider community. This conceptualisation of care responds to twenty-first century material, colonial, and environmental concerns that children are destined to inherit (Hodgins et al., 2019). In the context of my project, the concept appears within possibilities that arise from tactile and mediated water-child encounters. Hodgins et al. (2019) challenge educators to distance themselves from relying exclusively on traditional curriculum approaches of fact-based learning, and instead respond to twenty-first century questions where “matters of fact become matters of concern” (Hodgins et al., 2019, p.205; Latour, 2004).

Throughout my research, the concept of care (Puig de la Bellacasa, 2017) enveloped curious practice (Haraway, 2015), poetic inquiry (Leavy, 2009), and pedagogical documentation (Dahlberg et al., 1999); much of which was made visible through video footage and photographs. Video-methods scholar Anne Harris (2017) argued that video as a research tool is both method and methodology. So rather than following on with the methodology and methods sections of this paper, I instead refer to my methodology as including practices and strategies that I used throughout the research process that invited encounters with unease, including those with children and water. As evident in the following

discussion, the research process was ongoing and emergent, illuminated by video poems as a result of water-child encounters.

Data Collection Strategies

My research was documented on a number of platforms including a Water Log, documentation journal, and video footage. Each of these platforms formed the basis of my research data.

Water Log

The Water Log might otherwise be referred to as my field notes which I had on my person when with water and children. Named the Water Log due to its focus on water, rather than the child, it was primarily for my personal use as a researcher. It was in the form of an unlined A5-sized notebook which invited me to jot words and phrases, as well as small sketches and diagrams. Occasionally the children would add their marks to the pages too. Due to its momentary nature, the Water Log was not a neat and tidy document by any means; instead, it was water-stained, crumpled, weathered, messy, and scribbled on (see Figure 5). Even without my notes and sketches, it seemed to tell a story in itself. The Water Log was a document that portrayed my thinking and observations in the rawest form. These thoughts and observations were summarised with key experiences appearing with accompanying photographs in the documentation journal described below.

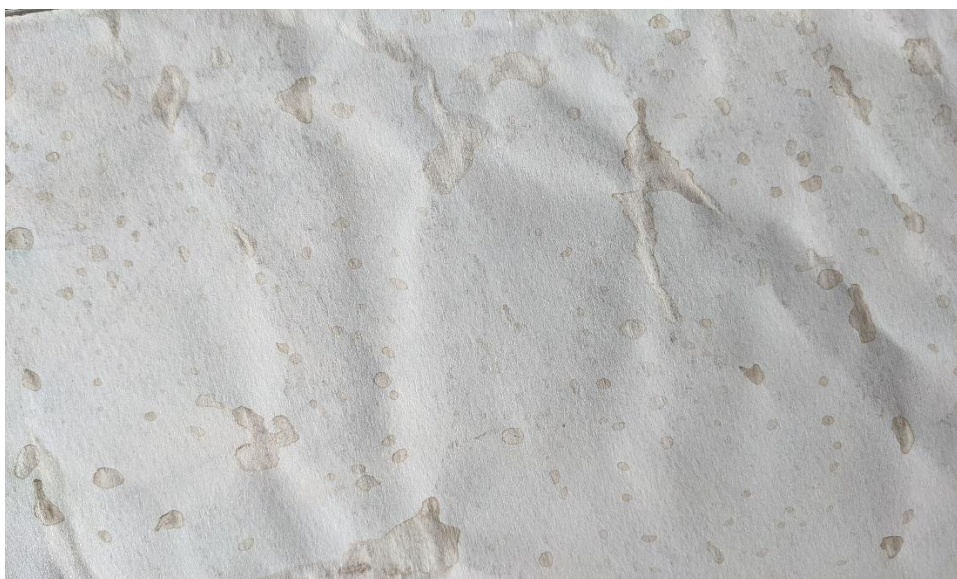


Figure 11 Water-stained, crumpled Water Log

Documentation Journal

The documentation journal acted as a platform for re-encountering experiences where photos were used to ignite a reflective piece of writing, questioning, and wondering as part of the pedagogical documentation process. While I often undertook this task on my own, occasionally I would put it together in the outdoor space where children would approach, question, and help the process. This was an example of how the documentation journal provided opportunities to re-encounter the experiences. The documentation was made available to children and educators on an accessible table within the centre. While the intention was for active engagement, inviting reflective responses and suggestions, it was mostly passively engaged with by educators and parents.

Video Footage

As evident throughout my thesis, video was used as a data collection strategy. The footage was taken on a smartphone device, and the smartphone editing features, as well as Adobe software, was used to create video-poems. These video-poems were used for me, children, and educators to re-encounter water-child experiences as a process of pedagogical

documentation. Described in more detail later in this chapter, video footage was edited to enhance poetic characteristics of encounters with water.

Role of the Researcher

As an active and responsive participant observer, my role was to employ practices which enabled me to keep water in sight and in mind. As an early childhood teacher, this was a difficult task, because as a pre-service teacher I was often taught and reminded to focus on the child and what they could *do* with materials, rather than how humans could think-with and become-with materials (Pacini-Ketchabaw, Kind & Kocher, 2016). To focus on the material, or water in this instance, was a new frame of research for me and much like Veronica Pacini-Ketchabaw, Sylvia Kind, and Laurie Kocher's (2016) encounters with materials, my role was to "engage with each encounter as an event that demands its own questions, its own concerns, its own method...inhabit each encounter...situate[d] in each encounter's situatedness" (p.1). The process of encountering materials and thinking with them as an experimental approach could be considered poetic, with a heavy emphasis on movement, sound, rhythm, stillness, and pace (Pacini-Ketchabaw, Kind & Kocher, 2016). So, when I was approached by adults and children at the centre and they asked, "What are you doing today?" I often had no answer, I never really knew. In my Water Log, I reflected on this:

I often wonder if my practice of visiting and questioning with slow intention is observed with outside eyes as 'passive' and uninteresting, uncharacteristic of typical early childhood practice. There were days that I would merely sit, watch, and wait – whether it be in the rain, on the rockery, on the grass or near a tap. It was common for educators to approach me similarly with the question 'What are you looking for today?' my response being, 'I don't know'. A difficult experimental practice to explain to those who might not fully understand (O'Callaghan, 2020).

Stengers (2018) reflected on how the female primatologists she researched “allowed themselves to be affected by the beings with whom they were dealing” (p.42). In the context of my research, I learnt to allow myself to be affected by water. Springgay and Truman (2017) reinforced this process by emphasising that this kind of research was not about reporting findings, but instead to trigger thought and unsettle the Euro-Western desire to know. Stepping back from a typically perceived ‘adult’ researcher/educator role of ‘knowing’, there was a breakdown of preconceived hierarchical barriers between children and myself (Henward, 2016).

Much of my role came down to being present with water, with children and with myself. Part of this presence involved using pedagogical documentation to “see thoughtfully” (Merewether & Fleet, 2021, p.76). As forms of pedagogical documentation, edited video footage and the Water Log were ways I made this presence visible to both the children and educators. This presence validated a sense of deep listening (Horsley, 2020); another act of curious practice enabled by slowing down and letting go of common Euro-Western educational practices, such as learning about water rather than learning with water. Specifically, the way that video footage was used as pedagogical documentation to engage with throughout the research process “acts as a bridge which supports developing trust and communication between researchers and participants as co-constructors of knowledge, participation and generation of new contextual and theoretical insights.” (Horsley, 2020, p.3).

In addition, I established a number of research protocols and used them to ensure consistency throughout the data creation process. For example, I would arrive at the centre when children were in their morning or afternoon meetings, and in these instances the main parts of the centre’s environment were child-free. This enabled me to situate myself within the centre, with the presence or absence of water. I would sit, watch, observe and note what

I saw, heard, felt, etc. The following was an excerpt from my Water Log and demonstrates my thought process at the time:

Slight breeze, can hear the wind rustling leaves in the bamboo. I sit on a rock, in front of me are water remnants from the rain last night. I see the reflection of bamboo in the puddle. The puddle is still. It is 26 degrees, blue sky, and some clouds. How will we become with water today? (O'Callaghan, 2020).

I would choose a space to situate myself for the visit based on the presence or absence of water, or remnants of children's water play and interaction. By doing this with slow and mindful intention, I was able to leave my other thoughts, worries, and concerns at the door, to focus and be present and in the moment – an essential factor for the poetic inquiry process. It was a time to remind myself to slow down, and 'be', as an example to the children who would surround me. Without allowing myself time for this process, I would find this a disruption to my data creation. I would find myself interjecting in moments that would otherwise call for silence from the adult educator as an active and responsive participant observer.

Thinking-with

Familiar to the Common Worlds Research Collective, thinking-with derives from an awareness of humancentric ways of desire, thought and actions (Common Worlds Research Collective, 2020b). The concept of thinking-with is a radical shift from human exceptionalism to a mutual understanding between both human and more-than-human entities forming reciprocal relations. Thinking-with is the research approach that I am looking through to connect three key methodological practices (thinking-with curious practice, thinking-with poetic inquiry, and thinking-with pedagogical documentation) that offer new emergent water-child relations.

Thinking-with Curious Practice

Curious practice is a research approach that embodies methods of paying attention (Haraway, 2015). It is a responsibility towards more-than-human and human others and an ability to meaningfully respond, not just to them, but with them (Zurn & Shankar, 2020). Curious practice is driven by a desire to delve deeper, without a premeditated endpoint, not just to find out more but also as a present and situated act of knowing and doing. Haraway (2008) reinforces this by stating, “curiosity should nourish situated knowledges” (p. 289). Curious practice invites the researcher to “go visiting, to venture off the beaten path to meet unexpected, non-natal kin, and to strike up conversations, to pose and respond to interesting questions” (Haraway, 2015). Therefore, the role of the researcher in curious practice is a body that listens attentively, pays attention, and becomes attuned to human and more-than-human presences (Duhn & Galvez, 2020). Bidisha Banerjee and Mindy Blaise (2013) reinforce this idea when they highlight human researchers and the data they curate are entwined with their environment. The emergence of this practice evokes a response where “the non-innocent poetic voice weaves a passage to the elusive dimensions of human, non-human, and the more-than-human existence” (Duhn & Galvez, 2020, p. 734).

Haraway (2015) and Vinciane Despret (2004) draw attention to present absences; noticing and paying attention to the otherwise unnoticed. Despret’s curious practice of polite inquiry “demands the ability to find others actively interesting” (Haraway, 2015, p.5); where Despret’s politeness invites present absences to emerge, only by giving permission for intra-active human and more-than-human relations to occur. While Despret works closely with animals, her practice informs further intra-active relations with other human and non-human beings such as child and water.

Education-researchers Brad Gobby, Jane Merewether, and Annette Nykiel's (2020) recent study saw them visit the Noorook Yalgorup-Lake Clifton thrombolites, or 'living rocks' in south-western Australia with an aim to "generate pedagogical insights through approaching the threatened thrombolites and their environment with curiosity, openness and attentiveness" (p.1). With children, they engaged with Haraway's (2015) notion of visiting as a curious practice, to form relations through attentiveness and curiosity that disrupted traditional practices that privilege the human in knowledge-making. Some of their visiting as a curious practice included "looking at the world with thrombolites, rather than merely looking at them as dispassionate observers" (Gobby et al., 2020, p. 224). To encourage a curious practice that involve looking with thrombolites, children were invited to 'visit' by questioning, wondering, drawing, writing, and taking photos, all while engaging with thrombolites and adults who themselves were also visitors.

The concept of 'thinking-with curious practice' encourages researchers to explore and experience their environment rather than to seek answers to premeditated questions. It is a research approach that embodies unique methods of paying attention (Haraway, 2015). It is a responsibility towards more-than-human and human others and an ability to meaningfully respond, not just to them, but with them (Zurn & Shankar, 2020). Likewise, curious practice is driven by a desire to know differently, not just to find out more, but also as a present and situated act of knowing and doing.

Thinking-with Poetic Inquiry

While there is no clear definition of what poetic inquiry is, it is established within the literature that elements of affect are invariably involved (Prendergast, 2009; Faulkner, 2017; Leavy, 2009). Patricia Leavy (2009) expands on this as she recognises poetry corresponding with affect on human experience. While Leavy simply refers to the human experience, it can be likened to the more-than-human experience, with particular relevance

to my research with water and child relations. In her writing, Sandra Faulkner (2009) highlights the validity of poetry in conveying information about the human experience. She considers poetry an ideal way to capture and present this experience in a more easily consumable, powerful, emotionally poignant, and accurate form than prose research reports” (p.22). Faulkner (2009) reinforces the value of poetry as data analysis, underscoring that human speech as being closer to that of poetry rather than research prose. Furthermore, the ‘speech’ of more-than-human others is considered poetic, whether it be through sound, movement or intra-action with human or non-human others. Leavy (2009) argues that poetry is a valid representation of data in qualitative arts-based research where “attention to the poetic form itself enhances the aesthetic qualities of the work, which in turn increases positive audience response; the audience response is itself a validity checkpoint in arts-based research” (p.82). Poetic representation of data in arts-based research is valid and trustworthy when judged on its ability to produce connections and inspire political or socially conscious action.

Poetic inquiry is an emergent and accepted method for research as “[it] challenges the fact-fiction dichotomy and offers a form for the evocative presentation of data” (Leavy, 2009, p. 63). For some scholars, poetry is a tool that “makes writing conspicuous and pays attention to particulars in opposition to transparent invisible scientific writing that focuses on comparative frameworks” (p.25). Together, poetic inquiry and poetry as data communication, work together to bring about a holistic arts-based research process. For the purpose of my research project, poetic inquiry is a method that allows data to be collected, presented, and analysed in creative ways which corresponds well with pedagogical documentation.

The curious practice of poetic inquiry is more-than-human in nature as it captures the liveliness of human and more-than-human others, presenting otherwise invisible data as visible (Leavy, 2009). Paying attention to water invites a curious practice of poetic inquiry,

one that invites stillness, and silence as human and more-than-human entities respond with each other. Water as a more-than-human body poetically responds to its pre-existing relations, both human and more-than-human through sound, movement, stillness, and silence.

In the project *Conversations with Rain* (AGWA, 2019), both young children and adults participated in a multi-sensory experience and demonstrated a poetic response to curious practice, or embodied attention, where “you are listening not just with your ears, but with your whole body” (Blue, Pollitt & Blaise, 2019). Poetic practices of sensing, noticing, breathing, wondering, and experimenting were used in the curation of data to create a more holistic and meaningful experience (AGWA, 2019). *Conversations with Rain* could be used as a pivotal example of poetics as a radical way of ‘doing’ climate education in an early childhood context, unlike previously discussed conventional Euro-Western approaches.

Although poetics was a broad field that was only touched upon within this project, I employed a particular set of skills that borrow from poetic inquiry as part of the research process. I have engaged with techniques of improvisation, intuition and analysis which were skills that I employed with a design and dance background – having studied interior design, and as an Irish dancer – and as a teacher in a Reggio-informed school. These skills and techniques formed the basis of all poetic representations shared and presented throughout the research.

Thinking-with Pedagogical Documentation

Coined by Gunilla Dahlberg, et al. (1999), ‘pedagogical documentation’ is a term used to describe the practice of encouraging reflective and democratic practices in the Reggio Emilia educational approach. Originating as part of a post World War II educational

reform in Reggio Emilia in northern Italy, is renowned for its unique approach to education where the child is the protagonist, the teacher is partner and collaborator, the environment is the third teacher, parents are partners, progettazione is curriculum framework, and pedagogical documentation is communication (Giudici, et al., 2001). This is reinforced by Will Parnell (2011) as he states, “all of the educators hold a value of collaboration and work to observe, listen, document, and contaminate the walls of the school with their learning experiences” (p.294). The key distinction between what is referred to as pedagogical documentation and what is simply documentation, is that notes and records regarding teacher and child conversations, experiences, and encounters, are left to be interpreted, revisited, and engaged with, rather than merely keeping a record of what took place (Dahlberg et al., 1999). Jeanne Marie Iorio et al. (2017) expand on this, identifying pedagogical documentation as a framework for revisiting past experiences, as well as for generating new questions, hypotheses, and processes.

As Parnell (2011) explains, “our meaning of documentation informs the practice of documentation” (p.296). Therefore, it is implied that pedagogical documentation can transpire in many forms, both through content and process. It is with this approach to pedagogical documentation that it becomes an informed practice of not only documenting learning, but also as an active presence within the learning itself (Dahlberg et al., 1999). As a response, teachers worldwide are using pedagogical documentation as a tool for building ethical relationships with more-than-human others and the world. Pedagogical documentation is common practice among educators globally, however it is frequently touted and misunderstood as a means of evaluation and reflection in early childhood education. According to Rinaldi (2006), pedagogical documentation is the creation of relationships born of mutual curiosity between the subject and object. This intrigue is ignited by a query that prompts the subject and the object to interact. Jane Merewether and Alma

Fleet (2021) discuss this further as they describe pedagogical documentation as something that “demands an attitude of curiosity” (p.74).

Pedagogical documentation is also an opportunity for educators, and others, to contribute to the research, to evaluate, to engage in professional development and planning (Giamminuti et al., 2020; Moss, 2010). As highlighted by Jan Millikan and Stefania Giamminuti (2014), pedagogical documentation is not only pedagogical, but also a social and cultural process to promote collegiality among educators. It is within this process that a shared understanding is built, new meaning is created, and new questions are proposed. Millikan and Giamminuti (2014) acknowledge “the questions, interpretations and conclusions are what distinguish documentation as a research process rather than simply a narrative recount or assessment of learning outcomes” (p. 73). Iorio et al. (2017), also refer to pedagogical documentation as a process whereby teachers are increasingly questioning pedagogy, making the familiar uncomfortable and providing opportunities for rethinking practice. It is also where queries, explanations, and assumptions distinguish documentation as a research process rather than a narrative recount or evaluation of learning outcomes.

Poetic inquiry as curious research and pedagogical documentation have been deliberately chosen for the purpose of the research, due to my interest and studies in design, and experience and teaching background in a Reggio-informed school. Rinaldi (2006) writes of pedagogical documentation as “a construction of relationships that are born of a reciprocal curiosity between the subject and the object. This curiosity is sparked by a question that stimulates the subject and the object to encounter each other” (p.53). Pedagogical documentation as content refers to written notes, audio, video, photos, or children’s work, whereas pedagogical documentation as process is the process of undertaking the research (Dahlberg et al., 1999). Rinaldi (2006) refers to pedagogical documentation “as a visible

trace and a procedure that supports learning and teaching, making them reciprocal because they are visible and shareable” (p. 77) rather than just displayed documentation panels.

Pedagogical documentation is a method that is already used by educators at the early learning centre where my project took place, to make research and learning visible (Moss, 2010). Educators at the centre use pedagogical documentation primarily as a means for research and as a professional tool for communication and reflection. Pedagogical documentation at the centre is available to children, families, educators and other community members as wall panels, documentation books, learning stories, photographs, videos, and written notes. The intention of using pedagogical documentation as a method in my research, is to provide a familiar and evocative platform for open dialogue, exchange and sharing “everything with everyone” (Moss, 2010). However, it is much more, it is an opportunity for educators, and others, to contribute to the research, to evaluate, to engage in professional development and planning (Moss, 2010). Pedagogical documentation does not only lend itself to interpretation, but it is a search for meaning, “it is a moving and poetic sense, that only a poetic, metaphorical and analogical language can construct in its holistic fullness” (Rinaldi, 2006, p. 78). Both poetic inquiry and pedagogical documentation are entangled throughout the research process. This reflects a feminist ethic of research as it represents embodied practices.

Possibilities

Possibilities throughout the data-creation process were the experimental, creative, and inventive arts-formed explorations which kept water in sight and in mind. Possibilities took on the form of materials, environments, experiences, or other encounters with more-than-human others, such as water. The intentional choice of the word ‘possibilities’ implied that there was no targeted focus, but rather to paying attention to the data possibilities that arose. It “encourage[d] researchers to unplan and make themselves available to the yet

unknown, for every single encounter with the other is a mixture of unpredictability, the researcher's attentiveness and imagination" (Vladimirova & Rautio, 2018). Possibilities derived from previous water-child encounters, and I created data in the form of pedagogical documentation based on water-child encounters that occurred within possibilities.

Video

Video footage was used in the study to capture water-child encounters as they occurred in real time. The data encapsulated situated, embodied, and moving forms of meaning-making as a form of poetics with the use of video-editing software such as Adobe Premiere Pro to create slow-motion and colour-edited clips. The clips aimed to decentre the child in order to focus on the more-than-human entity 'doings'. Murris and Menning (2019) refer to videography as something that enabled visibility of "the complex set of bodily presences and absences, movement in the space, material details, colours, sounds, and rhythms" (Murris & Menning, 2019, p.1). This in turn recognised video as a poetic form of data-creation and documentation.

In my research, video footage was filmed on a smartphone device with the specific intention of recording evidence of movement, relations and intra-actions between humans and more-than-humans in 'real' time. There was an emphasis on editing video data, using both the immediate smartphone editing features, as well as external editing software such as Adobe Premiere Pro. Specifically, I edited video footage by manipulating the composition using slow-motion, repeat, and reverse features, as well as colour editing. This could be likened to Christina MacRae's (2020) research with young children where slow-motion video was used to capture children's hands as they played with toys in a sand tray. In response to her research, MacRae (2020) notes "close attention to motion makes perceptible more-than-human qualities of communication that are expressed through desiring bodies in relation to

sand, toys and other hands” (p.91). This example illuminates the possibilities that arise from video editing where changing the pace of more-than-human others through video, could also change the pace of noticing.

In my research, slow motion was used as a tool for noticing present absences. The video editing process that I employed was very instinctual, with a lens of slowing down and paying attention to the otherwise unnoticed. In some instances, footage was merely slowed down, however at other times further editing took place. For example, the moment captured at the beginning of this chapter was edited for viewers to tune into water flow by editing the colour to be blue, a colour typically associated with water. In conjunction with the video’s audio, viewers will be enticed to watch, listen, and pay attention to water as it moves, flows, and drops. As seen in the next chapter, Chapter Four, the edited video footage provided possibilities for children to engage with water. It was common for video moments to be slowed, repeated, or looped. Independent filmmaker and director of ‘Dead Man’, Jim Jarmusch highlighted the importance of such moments as “moments between what we think of as significant” (Jaffe, 2014, p. 15), which was a powerful summary of his work. Much like Jarmusch, I endeavoured to use my slow footage of water encounters to enhance the presence or absence of more-than-human others as they moved and intra-acted.

(In)Conclusion

This chapter has discussed data collection strategies, as used throughout the research process. The Water Log was in the form of a book and served as a tool for writing, drawing, and jotting data in the moment. The documentation journal provided a platform for a polished version of key moments from the data to share with children and educators within the centre. Video footage was captured, edited, and subsequently used as a process of

pedagogical documentation throughout the research process. My role as an active and responsive participant observer was key in keeping water in sight and in mind.

Three methodological practices informed by the concept of thinking-with were key contributors to my research process – curious practice, poetic inquiry, and pedagogical documentation. When assembled, it resulted in a series of video-poems or micro-poems. The video-poems and micro-poems enabled a slower sense of responding to my experience as a researcher in the field. It was a slow process of deliberately viewing the footage and reading through the Water Log to re-encounter the experiences as pedagogical documentation. The following chapter, Chapter Four, is a practical demonstration of how video was used as a tool of more than mere observation throughout the research process.

4

WATER-CHILD MOMENTS

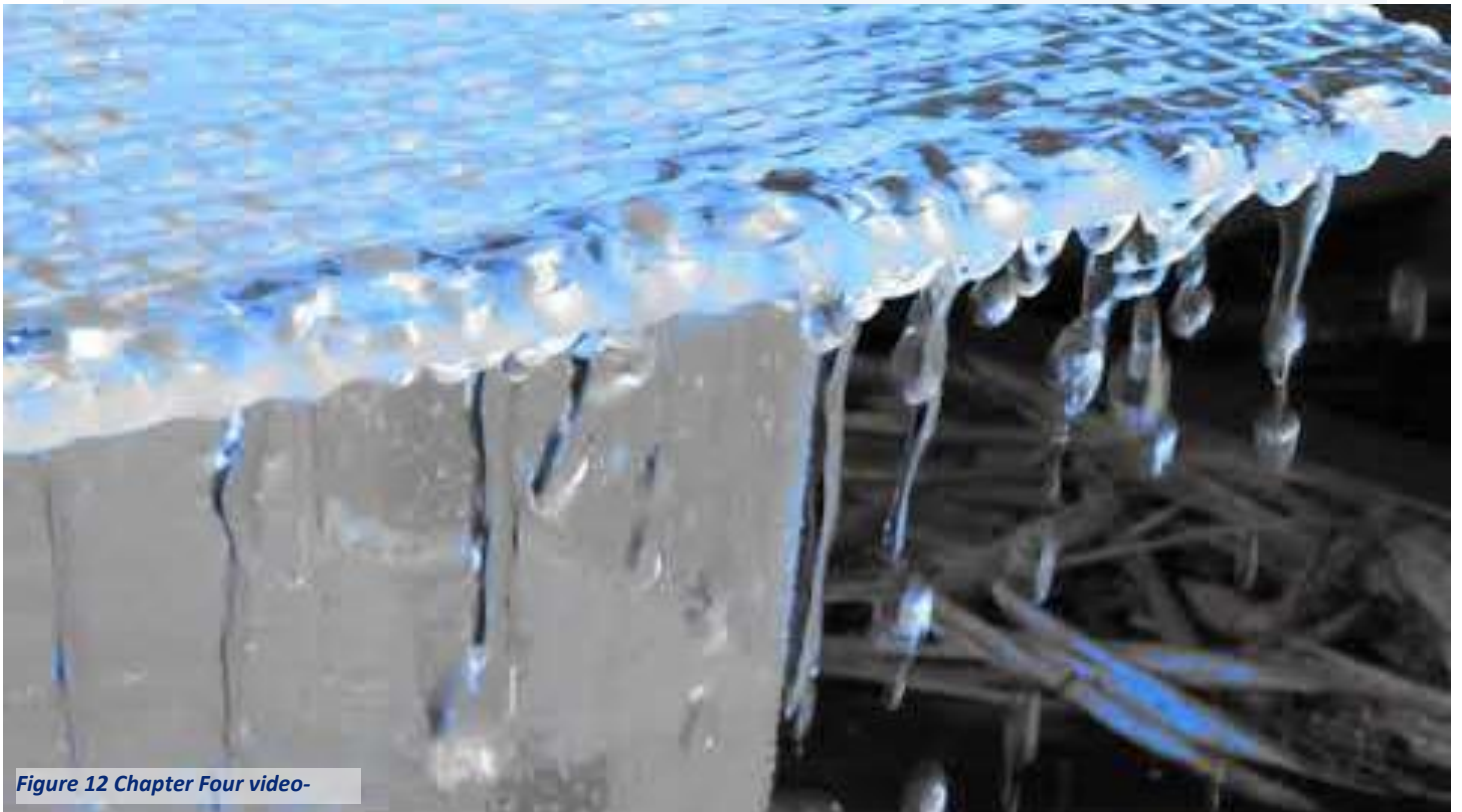


Figure 12 Chapter Four video-

Trickle, drip, drip, dribble, drip drip,

Trickle, drip, drip, dribble, drip drip,

Trickle, drip, drip, dribble, drip drip,

Trickle, drip, drip, dribble, drip drip.

(O'Callaghan, 2020)

This chapter reveals three key moments as video-poems: Water-child Movement Responses, Water-child Representations, and Water-child Repetitions. Each moment is described not only in relation to the video-poem, but prior to, during and after. It is important to state why the word ‘moment’ has been used to distinguish between significant elements within the data of the research. In scholarly writing there is a broad scope of language to describe similar encounters including murmurations (Merewether, 2019), minor gestures (Manning, 2016), and fragments (Gannon, 2016). The word ‘moment’ derives from the Latin word ‘momentum’ and refers to movement or motion. This was later transferred to the idea of a measure of time, indicating a ‘moment’ as a small or short division in time. The question of ‘how long is a moment?’ is something neuroscientist, David Eagleman (2012) explores with his research indicating a moment as an undefined portion of time with worlds overlapping. This uncertainty sits well with Erin Manning and Brian Massumi’s (2014) statement regarding moments; “Even now, in the immediacy of the moment, something is already calling out for the right to stand out, efficaciously or poetically— it is not yet clear” (p. 14). The idea of a moment in time where worlds overlap, coincides with my research whereby both children and water exist and relate together within a common world (Hodgins, 2019). The moments to follow indicate significant relations between human and more-than-human others as they exist in moments together. As seen below, each moment is more than just a video, it also exists before, after and within the video. So, when each moment is indicated, for example Water-Child Movement Response, it refers to the whole moment, not just the video.

As a visible trace of data throughout my research, pedagogical documentation appears in the form of field notes, video/graphy, audio, photo, and artefact samples. While these forms are captured in the moment, they are also subsequently used to pay attention to moments that were otherwise unnoticed. Three significant moments are shared below and not only act as three explicit examples of pedagogical documentation, but they are also

examples of how pedagogical documentation is more than just documenting. Pedagogical documentation is a process that Rinaldi (2006) refers to as “a procedure that supports learning and teaching, making them reciprocal because they are visible and shareable” (p. 77).

The footage at the beginning of this chapter is a poetic representation of water flowing and dripping down. I am drawn to the movement of water trickling, dribbling, and dripping down. Colour and speed are edited in the video image to enhance one’s ability to pay attention to water. The colour blue is used, first absently, then intentionally. I question my choice of the colour blue; while it is often a colour associated with water, I considered challenging this by choosing an unlikely colour like pink or yellow. However, I chose not to because my research is not about challenging representations of water, but instead about drawing our attention to water, so what better way to do that than to use a colour with which it is already associated, like blue.

As the water flows, the edited footage affords many possibilities throughout the duration of the data collection and pedagogical documentation process. In the centre, Video was projected as a large image on the wall of a darkened room. The footage was used on repeat, both as repetition across experiences and within experiences. The footage became familiar to children and educators, however each time it was presented as a possibility, children had varied responses, using different ‘languages’ to relate with water and to respond with water. This is seen in the moments that follow.

Water-child Movement Responses



Figure 13 Water-child Movement Responses, Fraser swaying with outstretched arms.

Projected on the wall is a representation of water; zoomed-in, enlarged, and moving. Fraser stands afar, simply watching and waiting; cautiously, curiously, as the wall becomes water. He watches children as they become-with water as water bubbles jumping and popping. Fraser seizes an opportunity to move closer to water. He takes a few steps forward, towards the waterwall. I watch as he slowly stretches his arms outwards, looking ahead as he embodies water (see figure 7). He is now a part of the water representation. He uses his body to flow with water, swaying from side to side, arms outstretched, watching, and becoming-with water. His movements are slow and intentional, smooth, and watery. Fraser embodies all that is water; or as Neimanis (2017) would say, we are all bodies of water.



Figure 14 Water-child Movement Responses, Fraser introduces his painting to the projection.

Fraser returns sometime later, after painting a representation of water (see figure 8). I observe as he introduces his painting to the projection; watching as water painting becomes-with water. He moves, slowly from side to side, twisting his body, the paper, the water before he announces, “there’s water on my paper!” (See figure 9).



Figure 15 Water-child Movement Responses, Fraser announces "There's water on my paper!"

Water-child Representations



Figure 16 Water-child Representations, children move with the water wall.

Again, water projects as a representation on the wall; zoomed-in, enlarged, and moving. For some time, it is just me. The table with paper and oil pastels is an invitation for possibilities that may arise. I sit and I am still, while waiting for water to invite children in. Emily approaches, and asks “What are you doing?” Rather than responding with words, I continue what I am doing. I am sitting and being with water. She joins by sitting next to me, bringing a piece of paper with her, and grasping a purple oil pastel. She watches water on the wall and draws with water - a representation of a representation of water. In other words, Emily has drawn water as a portrayal of the water projection before her. While drawing, Emily engages me in conversation, stating “It drops like that...it’s blue.” After watching and waiting, Emily runs over to the water projection and places her water drawing on the water wall projection, with two other children in tow. The three children spend time moving their water drawings up and down the water wall (see figure 10). They are flowing with the projected water, in sync whilst singing “up again and up again and up again, and

down again and down again.” Their movements are slow and intentional. They are moving with water as it flows and drops. Their water drawings are *with* water, and together they now exist as a water-paper-child entanglement. Emily leads the way around the early learning centre, bringing her water drawing with her. She uses the water drawing to mimic tasks that often require water such as watering the plants, cleaning the tables (see figure 11), and splashing in puddles.



Figure 17 Water-child Representations, Emily cleans the table.

Water-child Repetitions



Figure 18 Water-child Repetitions, water is poured from a red bucket.

Possibilities arose as water cascaded down from a red bucket (see figure 12); a familiar action in early childhood settings that would otherwise draw attention to the aftermath - that the sand is now wet, making it difficult for other children to slide down the slide. Instead, the strategy of video editing allowed me to engage with water as an entity with worth and value. I slow the footage down, watch it, I reverse it, and play it on repeat. Editing the footage in this way allows me to see water and its movements, its relations, its presence, and its absence.

I shared this video with Declan, the same child who actioned pouring water on the slide in Figure 12. Declan fondly remembers his encounter with water and responds to the slowed footage with keen interest. He comments on what he notices. He says, “It [water] melts the sand...it [leaf] floats on the water...see it’s moving, the air must be pushing it”. He

turns his attention to a small rock, watching as water flows over it, covering it so it is out of sight. He says, “Oh it’s turned invisible, because when water is dark it makes things invisible and when there’s so much there it can hide stuff”. Declan is attuned to water as an agentic other. Every time the footage repeats, Declan begins to choose other more-than-human entities to pay attention to, such as rock, leaf, sand, and the movement of water. This is where he moved his finger to mimic the movement of water as it poured, swayed, swirled, and pooled (see figure12). I hear myself asking questions, but Declan chooses to respond by moving his finger with water’s movements. This embodied experience lends itself to paying attention to the otherwise unnoticed, a key element of Haraway’s (2015) curious practice.



Figure 19 Water-child Repetitions, Declan mimics water movements with his finger

Repetition of the footage sparked new possibilities. After engaging with the footage on repeat for approximately five minutes, Declan asked me to follow him, back to the slide. Along the way he collected a red bucket that he filled with water. Upon arriving at the slide, I

watched as he scooped up armfuls of sand and dumped it on the slide. Seemingly ready, he asks, "Claire, can you get your video? The slow one?" I stand there, phone ready to video the action that will take place. I film using the slow-motion feature as Declan pours water from the red bucket, over the sand on the green slide. A repetition of video, leading to a repetition of experience. It makes me wonder what effect repetition has on video, water, and child.

Trickle, drip, drip, dribble, drip drip.

5

ANALYSIS AND DISCUSSION



Figure 20 Chapter Five video-poem

Water is warm.

Hands dip.

Hands swim.

Hands dance.

Water dances.

(O'Callaghan, 2020)

This chapter focuses on analysing the key moments and discussing them in relation to current research and scholarly papers to answer the three key research questions outlined in Chapter One. The first section analyses water and child relations as revealed in the three key moments, this is discussed specifically with Neimanis' (2013) hydro-logics in mind. The next section analyses pedagogical documentation with specific reference to digital technologies, video-poetic representations, *digitalnature* (Vecchi et al., 2019), and touch theory (Ahmed & Stacey, 2001; Barad, 2012). Finally, poetic characteristics of water will be analysed with specific discussion regarding the curious practice of visiting.

As discussed by atelierista³ Sylvia Kind and infant and toddler educator Adrienne Argent (2017), research can be described as a *poetising activity* in which researchers generate potential explanations of an encounter using a "language that sings the world" (p.91). Rather than being the focus of analysis, the resulting text evokes the experience in such a way that the reader is moved to respond, and new ideas emerge (Kind & Argent, 2017). Throughout my research, data analysis has been ongoing and emergent and presented as poetry in response to, and as a response with, pedagogical documentation. This has formed the basis of data analysis as it has emerged and formulated further questions rather than answers. It is also important to acknowledge that I have consistently approached data collection and subsequent analysis with a 'watery lens'. In other words, throughout the research process I tuned in to water and what it had to offer. This is evident in the creation of poetic representations of data, or video-poems, where water is a focus.

³ Central to Reggio Emilia pedagogy, an atelierista is an individual with a background in education and the creative arts who works directly with children and educators to support investigations with a creative lens.

It is important to highlight that poems were never created or executed, but rather poetic representations were created as a response as/in/for inquiry (Faulkner, 2017). I refer to and borrow from these genres to amplify embodied experiences, however as Faulkner (2017) explains, poetic inquiry is more than poetry and poems, it “goes further inside to the hidden, or waiting, treasure that the first, or second glance does not give access to” (p.210). Poetry is also considered an embodied practice that stimulates the body, heart, mind, and imagination while also opening new ways of paying attention to and becoming-with the world (Kind & Argent, 2017).

Faulkner (2009) describes poetry as “an excellent means to present data about the human experience” (p.22) and considers poetry “an ideal way to capture and present this experience in a more easily consumable, powerful, emotionally poignant, and accurate form than prose research reports” (p.22). While I was able to make visible human experiences throughout the research process, I endeavoured to amplify far more of more-than-human others, in particular water in its many forms. This is supported by Faulkner (2009) who reinforces the value of poetry as data analysis, highlighting human speech as being closer to that of poetry rather than research prose. It is implied that the ‘speech’ of more-than-human others is poetic also, whether it be through sound, movement or intra-action with human or non-human others.

Throughout the research process, poetry as data analysis was intended to be shared as pedagogical documentation and articulated on various accessible platforms to evoke discussion and invite participation, including a blog, Water Log, videography, and social media platforms including Twitter and Instagram. However, upon reflecting on this process, I found my intention was lost due to a lack of engagement and time; and therefore, my drive to continue with this was dampened. Consequently, I chose to continue with the Water Log, videography, and a documentation journal as evocative poetic platforms within the

immediate research community - including educators, my supervisory team, and other interested colleagues. These were platforms that were either used in the moment, such as the Water Log and video, or used as a reflection platform with others involved with the project, such as the documentation journal. This choice was validated by Leavy (2018) as she writes “we need not publish all poetry we write as part of a research project” (p.214) because the writing of some poetry, as I found, was merely suited for my benefit as part of the research process rather than sharing with others.

Water and Child Relations

How does poetic inquiry as curious practice help me to address children’s relations with water beyond the child/water binary?

Thinking with poetic inquiry as a curious practice opened my eyes to new possibilities and ways of becoming *with* water, abridging the disconnect between water and child. Neimanis (2017) reminds us that “we as human bodies do not sit atop and apart from the entanglements of the material worlds; we are instead consistently pulled out of our place of privilege by our symbiotic relationality to other bodies” (p.44). This very much sets the scene for the analysis to follow; where possibilities that have arisen from the research speak to the transformation of anthropocentrism where humancentric relationships with water occur, due to the breakdown of human privilege to more-than-human others. At first, this was a challenge for me, particularly due to my education as an early childhood teacher which emphasised a focus on the child and what the child knows, rather than the more-than-human and what the more-than-human can bring to us as humans. This approach to teacher education is problematic because it focuses on the human as a protagonist in human and more-than-human relationships rather than seeing the potential for more-than-human others to be protagonists too. Therefore, decentring the human and creating new relationships with water is to bring binaries, such as child and water, closer together (Berry et al., 2020).

The entanglement of humans and more-than-human others, such as water, is fostered by a Common Worlds pedagogy and disrupts settler-colonial 'romantic' relations with place. Nxumalo (2016) "take[s] inspiration from Indigenous knowledges, which are rooted in more-than-human reciprocal relationalities that are situated in place" (p. 645). The more-than-human is a familiar concept within Indigenous cultures around the world where relationships are based on a shared understanding of non-hierarchical encounters. In fact, water is considered a "...relative with whom we engage in social (and political) relations premised on interdependency and respect" (Yazzie & Baldy, 2018, pp. 2-3). Specifically, in Australian Indigenous Noongar culture, in Wadjuk Noongar boodja (Perth, Western Australia), water is sacred and is the giver of all life (Nannup, 2020). In Noongar culture water is more than a mere resource that is learned *about*. It is embodied, respired, felt, seen, and tasted; it is connected to so much that humans simply cannot see (Nannup, 2020). This research is relevant to concepts surrounding curious practices, poetic inquiry, and pedagogical documentation. It brings into focus child and water relations as they become together; relations that are not immediately apparent and emerge as a response to the aforementioned strategies.

Neimanis (2017) also recognises water as more than a mere resource. Her research explores bodies of water - both the water our bodies comprise of, as well as the water our bodies embody. She reiterates this as she states, "For us humans, the flow and flush of waters sustain our own bodies, but also connect them to other bodies, to other worlds beyond our human selves." (Neimanis, 2017, p.2). This provokes us to question the origins of water, the journey of water, and the possibilities of water. Further explained by Neimanis (2013), she coined the term 'hydro-logics' with logics referring to the capacity "of certain bodies to affect other bodies" (p.30). Hydro-logics will be referred to within the data analysis

to justify the complex social systems that arise as a consequence of poetic inquiry as a curious practice.

In the context of my project, *Water-Child Repetitions* (Moment Three) captures the movements of water as it is poured from a bucket onto a slide; as it collides with leaf, sand, stick and slide, and as it responds with these more-than-human elements as a consequence of a child's motivation to pour. From the perspective of a 'typical' early childhood teacher, it would be easy to focus on the child's hands and what the child does or says about the experience, and to focus on *their* learning. From a Common Worlds perspective, this is problematic as it merely pays attention to water from a humancentric perspective. For the purpose of my research, I encourage you to focus on water, on leaf, on sand, on stick; the more-than-human elements within this moment as they intra-act and are entangled together and with child. By giving value to these elements, we as humans are introduced to a whole new world of understanding, a 'common world' (Hodgins, 2019). In other words, the combination of these human and more-than-human entities forms a link built on reciprocal and respectful relations (Common Worlds Research Collective, 2020a). Paying attention to the watery world in *Water-Child Repetitions*, created on the slide by Declan, allows us to move beyond a typically viewed child/water binary. Instead, an amalgamation of reciprocal relations as water-child or child-water arises. The hyphenation symbolises human and more-than-human worlds coming together to become one in a common world.

Palimpsests

Neimanis (2017) refers to the idea of a palimpsest in her writing about bodies of water. It is a term that is otherwise used in the world of writing and literature and referred to as a layered and illegible writing on a papyrus manuscript. Neimanis (2017) however, uses the idea of layering but instead refers to the idea of body, upon body, upon body. She refers

to multidisciplinary artist Belmore's (2005) artwork entitled 'Fountain' uses digital projection as a medium for artistic and performative expression as she projects footage of water over the top of a literal wall of falling water. Neimanis (2017) would liken this to a 'palimpsest'; or a "body, upon body, upon body, upon body" (p.167). In other words, the body of water as a digital projection, upon body of water as a water wall (see figure 15). Neimanis acknowledges the significance of this, with specific reference to Belmore's art in the following statement: "Writing, images, objects, and other art forms can work in these ways, giving us access to an embodied experience of our wateriness that might otherwise be too submerged, too subcutaneous, repressed, or too large and distant" (Neimanis, 2017, p.55). In the context of my project, Water-child Movement Responses (Moment One) and Water-child Representations (Moment Two) make visible a relationship between water and child in various ways. For example, where water was filmed, where water footage was projected, how the water projection was engaged with by children, and how the children become-with water - body, upon body, upon body, upon body. Specifically, Water-child Movement Responses shows Fraser embodying water as he slowly sways from side to side, with arms outstretched, the water representation draws him in as he responds with body movements. There is Fraser's physical body of water, representing and moving as a body of water, holding a body of water, as he embodies water as a projection of a body of water. Similarly, Emily in Water-child Representations, embodies the projected water, draws a body of water, and then carries her water drawing around the centre to water plants, clean tables and splash her peers. This draws other children in as they are 'wet' from the splashes and drawn into the relationship. This can be likened to a social experience with water acting as the protagonist within the relationship.



Figure 21 A palimpsest; a body of water as a digital projection, upon body of water as a water wall, upon human body of water

From an educator's perspective, it could have been easy to stop Emily's relationship with water by introducing a watering can or a sponge to help make these tasks more 'real'. It would have been easy for me to ignore the relationship that had formed and pass it off as silliness. Or, I could have remained with the 'planned' experience of the projection, with children who were still engaging with it. So often, educators spend a significant amount of time planning experiences with set outcomes in mind, and with little to no flexibility in allowing the child to express their process and their relations. This comes back to the humancentric point of view of early childhood education where often the adult is the primary protagonist. Comparatively, pedagogical documentation allows the process and relations to be traced and valued as important in early childhood education. It was a learning process for me, to come into these experiences with flexible intentions, rather than specific outcomes to achieve. While I always had a lens of paying attention to water, it was Haraway's (2015) curious practice of visiting that allowed me to take a step back and allow water to act as protagonist.

Hydro-logics

Hydro-logics encourages us, as humans, to attend to water and poetic water representations. Particularly, with a lens of curious practice, paying attention, and visiting require slowing down and noticing more-than the surface level of a material or resource. Neimanis' (2013) scholarship of hydro-logics captures the material capacities, or ways of

being, that both human and more-than-human – specifically water – embody. Hydro-logics include a myriad of water sensibilities such as gestation, dissolution, communication, differentiation, archive, and unknowability; characteristics that humanise and recognise water as something more-than. Neimanis (2013) attributes hydro-logics to a schematisation that “helps us grasp the multivalent ways in which watery bodies are more than just fluid” (p.30). This is significant in the context of my research as it provides a strong knowledge base for water as something already more-than.

Neimanis’ (2013) hydro-logics of ‘differentiation’ can be used to explain the myriad of water representations, or the palimpsest. This is what Neimanis (2013) might say is the “continual reorganisation and redistribution” (p. 31) of water. These hydro-logics foreground water’s liveliness and multiple qualities that push educators to move beyond considering it as just fluid (Neimanis, 2013). With Fraser, water seemed to act as a current, drawing him in, and as he moved away, drawing him back and willing his return. In other words, he was embodying the ebb and flow of water. Upon his return, Fraser introduces a new body of water in the form of a water painting. This action makes me wonder what willed his return. Was water in control? Was water autonomous? And was water acting and communicating *with* child? This can be likened to Neimanis’ hydro-logic of ‘communication’ where water acts as a medium of communication, for “the flow and flush of waters sustain our bodies, but also connect them to other bodies, the lifeworld and our environment...that in a material sense course through us, replenish us, and draw upon our own bodies as their wells” (Neimanis, 2013, p.31). The hydro-logics of communication proposed by Neimanis (2009) helps to clarify the dynamic relationship that develops between a child and water, which is more than just a matter of materiality, but also a means for communication of compassion, care, and understanding; characteristics essential in forming reciprocal relations.

This draws me to the qualities present within a relationship shared by water and child, specifically the children as participants in all three moments: Declan, Emily, and Fraser. It makes we wonder if these water relations have always existed, or have they gone unnoticed due to the absence of curious practices? While I cannot confirm nor deny if there has been a shift in relations between water and children, I can explain that by slowing down to participate with relations between water and child there has been a shift in *my* understanding and *my* way of seeing. Throughout the research process I resisted the urge of needing to know, to instead take a step back to observe with slow intention. With a focus on water doings rather than on the children's words and iterations, I note in my Water Log; "I watch and wait for water to respond, the slight breeze brushing over the water's surface as it gently responds with tiny ripples. No child is in sight, just me and water....and wind....and stick....and fly..." (O'Callaghan, 2020). A practice that brought me, as a human, closer to water, and water closer to me.

Pedagogical Documentation as Data

How does pedagogical documentation inform poetic data creation and analysis?

For the purpose of the following analysis, it is important to reiterate that pedagogical documentation is more than just documenting children's learning; it in fact requires a particular kind of observation, attention, and recording to attend to things that matter (Kind & Argent, 2017). Parnell (2011) reinforces this as he describes the Reggio Emilia approach to pedagogical documentation as "capturing and thinking about learning experiences through observation, documentation, interpretation, reflection, and a pedagogy of listening...and making children's work visible through a well-planned and carefully selective design of documentation" (p.296). In order to analyse data throughout my project, pedagogical documentation as a 'process' was implemented as a basis for data representation as video-poems (Lee-Hammond & Bjervås, 2020). Poetic representations were created from data as

collected through pedagogical documentation which was a deliberate decision-making process. Typically, poetic representations were created from pedagogical documentation as 'content' and took on many forms including audio, video, spoken and/or written dialogue, photo, physical or abstract artefacts; although for the purpose of this analysis, video as pedagogical documentation will be referred to. Throughout the research, poetic representations entailed a variety of poetic styles that emerged as a response to pedagogical documentation. All poetic representations aimed to pay attention to present absences as a result of curious practices.

Throughout the research process, pedagogical documentation was more than merely a means of representing and making data visible. Rather, it informed much of the data process where video footage, for example, was made visible and acted as a way of communicating and re-encountering experiences, and bringing the event back to life, rather than looking back on it as a distant memory (Kind & Argent, 2017). This is particularly important as pedagogical documentation is often misunderstood by those who deploy it outside of Reggio Emilia where it is powerfully conceptualised and use it simply as a record for accountability purposes. Such interpretations neglect the role that pedagogical documentation plays not only in tracing the research as it progresses, but also its role in propelling the research itself. In Reggio Emilia, the process of examining pedagogical documentation as it emerges, rather than summatively, is what determines ongoing pedagogical experiences (Dahlberg, et al., 1999).

Having worked as an educator in a Reggio-informed school, I draw from personal experience with pedagogical documentation. For example, final project write-ups were always made visible through digital communication platforms, wall panels, journals, and notebooks, however the pedagogical documentation process of actively engaging and revisiting was rare, to my own fault. Until recently, I do not think I understood the value of

pedagogical documentation as more than a visible trace of children's learning. So, in the context of my research I felt it was important to challenge my own practice, and the practice of educators within the centre, to revisit and re-encounter experiences *with* pedagogical documentation as an active agent within research and experiences. One of the most prevalent ways in which this was done, was through the practice of revisiting video footage, to re-encounter water experiences. Each time this was done the video footage was re-encountered as part of the pedagogical documentation process, new relations were formed, and old relations were fostered, and strengthened in different ways. Parnell (2011) reinforces the value of this when he refers to a project of educators working with a child throughout the documentation process to convey a story. He shares that, "we can revisit a way of thinking coming forth from the child and, as Marsha suggests, enact the meta-cognitive field by making 'meaning out of her theories together with her'" (p.304).

Within the context of my project, *Water-child Repetitions* portrays the significance of working with children throughout the documentation process, Declan re-encountered an experience with water, noticing and paying attention to more-than-human others. *Water-child Movement Responses* and *Water-child Representations* also reveal the relevance of pedagogical documentation as a process with both Emily and Fraser engaging with edited video footage from a previous water encounter. While all three moments are examples of the pedagogical documentation process, *Water-child Movement Responses* and *Water-child Representations* are unique in that Emily and Fraser were not re-encountering a prior experience, they were instead encountering it for the first time, creating a new story of relations, knowledge-making, and responses to the water footage. I feel it is important to note here that both Fraser and Emily's responses were different from one another despite both drawing water as a reaction to the same projection. This is an example of how children's relations with water do not exist in isolation, but rather are formed and fostered through shared and repeated encounters.

Digital Technologies

With the COVID-19 pandemic rife throughout the world and Australia for the duration of my research and data collection process in 2020, the use of technology spiked, and face-to-face human interaction was limited due to social distancing protocols. Whether it was meetings via a digital platform such as Zoom, signing in to locations via smartphone technology, or using contactless payment methods, humans were forced to embrace and adapt to a world ruled by technology (Queen, 2021). For me, the increase in technology use during the COVID-19 pandemic has drawn my attention to the potential of digital technologies, which I believe influenced my choice to pursue video as a form of pedagogical documentation.

The exposure and use of Information and Communication Technologies (ICT) with children both in home and education settings has limitations including negative public attitudes, the ability to stay present with children, distraction, and time commitment for learning how to use certain technologies (Parnell & Bartlett, 2012). My research disrupted some of these negative perceptions with the use of digital technologies as pedagogical documentation and digital-visual poetic representations. Technology, in particular the smartphone, is an effective tool for pedagogical documentation and is at the fingertips of the educator-researcher to document, reflect and plan in the moment (Cowan & Flewitt, 2020; Parnell & Bartlett, 2012). By using my smartphone, a tool that myself and many educators/researchers frequently have on hand, I documented by using the easily accessible video and photography features. The smartphone is also a familiar tool to children, with many children now growing up with daily exposure to the screen. They know how to swipe, capture, and navigate through the settings - something that some adults struggle to do. I experienced children's familiarity with smartphones throughout the duration of my data-

creation with children using language and movements that demonstrated a clear understanding of their experience and exposure to such technologies. I note in my Water Log:

Declan takes hold of my phone, as he films, I notice him press a button on the bottom right-hand corner, this did not pause, stop, or exit the video feature. I wonder what the button did. Later I noticed Declan had used the button to take a series of video-stills whilst filming in real-time. This was a new feature of my phone that I did not know existed.”

The use of technology forged the creation of a space to learn together; not only in relation with adults and children, but also between humans and water (Kind & Argent, 2017). It allowed me to be in the pedagogical moment together with both water and child, with my smartphone acting as a prosthesis, or a tool, for creation of data video-poems. Water-child Movement Responses and Water-child Representations are both examples of how having an accessible smartphone can capture spontaneous and unpredictable moments – of which pedagogical documentation in early childhood settings is – as they occur in real time. Both moments capture significant details in water-child relations as they emerged before me. I could have simply used my Water Log to describe what I saw, and I could have captured one or two photographs to provide some context. However, notes and photographs would simply capture *my* experience as I encountered it, rather than video footage which enables the viewer to determine their own understanding and re-encounter the moment from the researcher’s filmed perspective.

This is evident in Water-child Repetitions where Declan and I sit together and re-encounter the experience of pouring water on the slide through edited video footage. While we were both there in real time, re-encountering the experience allowed us to notice and pay attention to more-than-human others as they were encountering each other in the moment. In real-time, both Declan and I did not notice the ‘small’ relations and encounters that were occurring. For example, we did not notice the leaf swirling as a response to the water

pouring, the sand moving away from the centre as a response to the water being poured, or the formation of small bubbles and their disappearance as they interacted with more-than-human others in the rush of water pouring. As Declan and I re-encountered the moment with pedagogical documentation as a poetic-visual representation, we were able to approach it slowly and with curiosity in the nature of curious practice, as a visitor (Haraway, 2015). This process acted as a foundation to relaunch the experience, a familiar aspect of engaging with pedagogical documentation in Reggio Emilia to generate and propel research. This was enacted with Declan heading back to the slide, with red bucket in hand, to recreate and repeat the experience with a lens of noticing the otherwise unnoticed. This gives recognition to the fact that using the smartphone and laptop capabilities to enable multiple encounters of a single event invites a multitude of possibilities.

It is here that I problematise the possibility of the absence of technology, specifically the smartphone. As an early career educator, I have not experienced a time in teaching and researching where the smartphone was not present. I have only known it to be a tool at my fingertips to record, document, and re-encounter experiences. I wonder how the experience with Declan in Water-child Repetitions would be different with the absence of technology. Would it be possible to notice and pay attention to more-than-human relations? I speculate that it would be very difficult, without being able to re-encounter the same experience, slowing it down, and repeating. These were the elements that allowed Declan and I to notice and pay attention. I suggest that it would take a very special type of training to notice these relations in the first instance. But maybe this is what we as humans need to pay attention to more-than-human others as a daily practice.

Video Poetic Representation

As an interactive, interpretive, and creative poetic medium, video as pedagogical documentation has a lot of potential (Kind & Argent, 2017). As described earlier in this chapter, video allows for poetic gestures in everyday more-than-human encounters to be foregrounded using various video editing strategies. These strategies enhanced my ability to allow for thinking in and with movement, a poetic gesture that allowed me to pay attention to more-than-human possibilities and potentialities. Or, as Kind and Argent (2017) state, “the potential of video is also how it can give glimpses into the materiality of things and how materials and children move together” (p.88). So, in the context of my research, video allowed humans to pay attention in particular ways and produce unique understandings.

Compelled by the poetic, sensory, and embodied nature of experiences we encounter, children in the first two moments intra-acted with the digital projection, becoming-with water as they responded with embodied movement. The children responded to water documentation using their bodies to move, or materials provided as a provocation to represent their experience. In *Water-child Movement Responses* Fraser responds to the video's poetic representation of water first with embodied movement, as he sways back and forth with water as it moves, followed by a palimpsest as he introduces a new body of water, his water painting. In *Water-child Representations* Emily's response to the video poetic representation of water, is first responding with a drawn response, to then making a connection with her drawn representation to the video-poem, and later as a capable body of water to clean and water the plants. Here I question, how does re-engaging with experiences through pedagogical documentation influence children's relations with water?

Kind and Argent (2017) explored the potentialities of video as pedagogical documentation as more than an analysis making sense of children's experiences, but more

as a way of seeing-with children. In a particular encounter with educators at an exhibition of conceptual artist Kimsooja's work, Kind and Argent note how Kimsooja's video projections embody empathy, that draws the viewer in as both a spectator and participant. They comment, "This was not a passive or voyeuristic experience. We became drawn in and caught up in the rhythms and flows of movements, colours, sounds and sensations" (p.90). They return to the atelier and reflect on their own practice where "editing of the video selections so that more refined, shorter and more specific segments can be returned to the children to provoke and engage children's continued explorations and the educators thinking" (p.87). Researchers with an interest in digital technologies in early childhood, Kate Cowan, and Rosie Flewitt (2020), worked with early childhood educators to investigate valued signs of learning and challenges with using digital technologies as part of the documentation process. They reflect on their research with educators using video as a tool for documentation. They state that one educator highlighted the significance of video enabling her to slow her thinking down, alongside another educator that shared the significance of video revealing something that may not have been noticed beforehand. In other words, they engaged in a form of curious practice as they slowed down to notice present absences.

In the context of my project, the video editing process was very similar, allowing me to shorten, repeat, and reverse clips that were returned to children as pedagogical documentation to re-engage with and promote further exploration and thinking. *Water-child Repetitions* captures Declan's response to edited footage on a laptop screen. Whereas *Water-child Movement Responses* and *Water-child Representations* are examples of how the same presentation of footage can bring about different experiences and relations between more-than-human and human. For example, *Water-child Movement Responses* saw Fraser respond with whole body movement, as well as respond artistically. Whereas *Water-child Representations* captured Emily as she made a deep connection between three

significant water representations. Specifically, Emily's water drawing response, the water projection and water as used as a resource to water the plants and clean the table. It was not a focus on children's theories or ideas that emerged, but rather a sensitivity to children's relations and movements that occur as a response to more-than-human encounters which enacts the thought of "video as a poetic-material-pedagogical interplay and see the possibility of video for creating new modes of thought and action" (Kind & Argent, 2017, p. 96). In all encounters, video as pedagogical documentation enables a new way of seeing, and a new way of paying attention. In other words, it allowed me and the children "to get close to the ways that things unfold and come into being" (Kind & Argent, p.89).

Analysis of this data has occurred throughout the research process, specifically, as Anne Harris (2017) acknowledges, "analysing begins while the filming is still in process" (p. 442). And as part of the process a pedagogy of listening was used as an element of curious practice; "sometimes we must learn to listen under the words, to hear what is not being said" (Prendergast, 2009, p. 550).

Digitalnature

In 2015, an international centre advocating for children and the Reggio Emilia approach, Reggio Children, launched a travelling exhibition-atelier *Bordercrossings: encounters with living things and digital landscapes*. The exhibition showcased digital technologies as more than mere tools, but as poetic mediums for bringing worlds together - in this case the digital world and the natural world, coined *digitalnature* (Vecchi et al., 2019). Much like the Bordercrossings exhibition, the video-poems as part of my research are examples of multiple worlds coming together, the human and more-than-human, the digital and natural worlds. The idea of digitalnature enables the formation of new relationships, parallels, and dialogues, as well as new perceptions of the topics we are familiar with, in this case water. It is "an attempt to integrate nature's complexity with the

complexity of the digital" (Vecchi et al., 2019, p. 14). In other words, digital nature humanises the digital interactions with nature by making it more poetic, resulting in an amalgamation of reciprocal worlds where analogical and digital, or tactile and mediated, co-exist, and create new ways of being.

The video-poems within my research, represent an amalgamation between the human world and the natural world, in particular water. There is a correlation with the relationship between human and more-than-human, and the presence of noticing as a curious practice. For instance, *Water-child Repetitions* shows the evolution of Declan's relationship before, during, and after paying attention in new ways. In this instance video acts as the material that adds to the narrative of Declan's relationship with water, the video activates a new reality and stirs a particular act of noticing, of paying attention (Vecchi et al., 2019). This is particularly evident when there is a noticeable change from Declan's interaction with water from the initial event of pouring water from the bucket, to re-encountering the experience through edited and slowed video footage, to re-encountering it again as he repeats the physical experience, noticing and paying attention to water with a newfound respect for their relationship. All three encounters that Declan experienced are representative of both tactile and mediated touch which will be further discussed below.

More-than Tactile Touch

Touch, as explained by Sara Ahmed and Jackie Stacey (2001) "must be conceptualised as the site of possible encounters between bodies and worlds" (p. 234). In other words, it is more than the immediate touch between skin-to-skin or skin-to-object; rather there is no direct physical contact involved but instead a form of embodiment (Ahmed & Stacey, 2001; Barad, 2012). Barad (2012) explains this in terms of quantum physics where transience exists between all matter. In other words, what most of us understand as

touch, is merely 'touching' on the concept. In the world of quantum physics, touch is happening all of the time; my hand touches as it hovers over my keyboard waiting for the next letter to type, or my eyes touch the screen as they read the words on the page. It can also be said that touch brings more-than-human and human worlds together (Haraway, 2008; Puig de la Bellacasa, 2017). In the context of my research, the use of digital technology in the form of video offers another way to touch through similar embodied experiences. We see this in *Water-child Movement Responses* where Fraser becomes-with water as he touches and is being touched within a palimpsest (Neimanis, 2017) – a body, upon body, upon body. His arm and his body becomes-with water as the projection acts as a prosthesis of embodiment. While this is not considered tactile or immediate touch, mediated touch is occurring through “entangled agencies, practices of matter and meaning that techno-scientific worlds come to matter” (Puig de la Bellacasa, 2009, p. 303). It is through the prosthesis of digital projection that Fraser and water are immersed with each other in this moment. Through mediated touch, similar embodied experiences are triggered. This can be likened to double embodiment whereby children who like Fraser have had prior tactile touch experience with water, then encounter and embody water through digital projection.

Poetic Characteristics of Water

How does poetic inquiry as curious practice help me to understand poetic characteristics of water such as movement, sound, duration, speed, timing, etc.?

Neimanis (2017) refers to watery bodies as having the capacity to move in time referring to the “was, is, and yet-to-come” (p.88) as part of movement that is fast, slow, with other bodies, in multiple movements, repetitive and continually unfolding. Poetic inquiry as a curious practice is a way of seeing water as more-than-human, exposing poetic

characteristics of water such as movement, sound, duration, speed, and timing. Video can be used as a research tool to enhance these poetic characteristics to encourage a particular way of seeing; “In video, it is possible to reverse footage, vary the speed, cut, and repeat segments, and re-order moments, echoing poetic elements of tempo, pattern, repetition and juxtaposition” (Kind & Argent, 2017, p.93). In the context of my project, slowing down and reversing the video footage enabled the children and myself as a participant observer to pay close attention, acting with curiosity, to movements as more-than-human and child intra-act and relate with each other. Video footage was edited where watery bodies were highlighted as more-than-human with movement, timing, speed, and colour playing a significant part in making poetic characteristics visible. Water-child Repetitions is an example of how this occurred within my research where video footage has been edited to be slower, reversed, and repetitive to highlight more-than-human intra-actions as they occurred within the encounter between water and child. This process of editing created pedagogical documentation in the form of a video-poem where poetic elements such as movement, pattern, repetition, and speed were highlighted.

Water-child Repetitions captures not only the edited footage, but also Declan’s response to the footage as he re-encounters the experience. I watch as Declan and water touch and are touched by leaf, stick, sand, rock, and slide. In this moment, water acts as the common element bringing both human and more-than-human entities together. By slowing down the pace of noticing, I recognise and acknowledge relations that might have already been there but have otherwise gone unnoticed. It brings a relationship that already existed to the foreground, a relationship of politeness between water and child. Comparably, within their research project, Kind and Argent (2017) re-visit a research encounter with young children through video:

We could see the huckleberry bush as a significant gathering space, feel the poetics of movement and the circular running of the children around the bush, and

appreciated the beauty in daily rituals of berry picking, collecting, and eating. We noticed the presence and elusiveness of memory, and how for this one child, fragments of memory were combined, and evoked through movement, colour, touch, and taste. We were touched as well by yearning, loss, and desire. (p.94)

Re-encountering the experience through video footage, stimulated noticings and reflections that would have otherwise gone unnoticed, such as the poetics of movement.

In the context of this project, video as pedagogical documentation and as a method of poetic inquiry was used to assist my understanding of poetic characteristics of water, which in turn has brought water as a more-than-human entity to the forefront of analysis. To pay attention in such a way, requires an intentional act of slow research which Stengers (2018) refers to as both a reference to the process by which researchers take to gather data as well as the speed in which it is done. For the purpose of this analysis, I note Stengers' reference to slowness as movement where "slowing down means becoming capable of learning again, becoming acquainted with things again, reweaving the bounds of interdependency. It means thinking and imagining, and in the process creating relationships with others that are not those of capture" (Stengers, 2018, p.82). Water-child Repetitions encapsulates the essence of this when Declan uses his fingers to trace and move with water. As Declan re-encounters water through edited video footage his finger and torso move up and down, and in small circles. I hear myself asking questions aloud, however Declan chooses not to share his experience with words, but rather he seems entranced with water movements. I recall thinking, after the fact, that I should have resisted asking questions at all, however this seems to be an example of the drive of the desire for humans to know. It was a practice that I did not think about at the time, a typical early childhood habit of questioning children and placing high value on their words rather than actions. A reminder to be curious and act as a polite visitor to encounters with more-than-human others.

Visiting

Influenced by Despret's (2004) curious practice of visiting, I endeavoured to engage in polite encounters where finding human and more-than-human others interesting is key. To do this it was important for me to slow down, observe and participate consciously and with intention and attention to the things that were before me. By doing this my eyes were opened to children and how they see the world. Children are curious beings with a deep connection to the things around them but often influenced by the adult (whether intentionally or not) to shift their actions and encounters. As an adult, unlearning and relearning to politely encounter as a visitor, I was able to tune in to these moments and be with children as they taught me how to learn with more-than-human others. For example, *Water-child Movement Responses* captures Fraser as he observes water in the form of a projection from afar, while I do not know what he is thinking or specifically experiencing, I notice his actions, however small, as he approaches the projection; his body responding with movement, rather than sound. It was at this moment, I needed to act as a polite visitor to a place where tension is present. It was not my turn to disrupt and ask verbal questions, but instead distance myself as an adult in the room where my presence could act as a disruption to Fraser's experience and response to and with water; an act that is so unlike how early childhood teachers are conditioned to engage. Haraway (2015) refers to asking questions in her reflection on Despret's practice where she states "asking questions comes to mean both asking what another finds intriguing and also how learning to engage that changes everybody in unforeseeable ways. Good questions come only to a polite inquirer" (p.6). By engaging in a different way, the subtleties of Fraser's encounter were magnified, making an otherwise unnoticed moment visible for analysis and discussion. Fraser's speed of subtle movement and flow was intensified as I paid attention and experienced it as a polite visitor. If I did not approach this moment in this way, I speculate how my adult interjection in the form of questions, distance, attention, and influence may have affected Fraser's

encounter and relationship with water. While I do not have an answer, I expect the outcome of my experience as well as Fraser's would have been very different. Fraser may have ceased his engagement with the water projection, and he may have felt pressure to engage with it in a way he thought that I, the adult, wanted. I speculate that I would not have noticed the subtleties of Fraser's embodied experience, and that I would not be describing the moment in detail as I just have.

(In)Conclusion

This chapter has referred to three key moments – Water-child Movement Responses, Water-child Representations, and Water-child Repetitions – to analyse and discuss in relation to current research and scholarly papers. Water-child relations have been analysed with specific mention of Neimanis' (2017) reference to palimpsests and hydro-logics. Additionally, pedagogical documentation in early childhood education settings has been challenged and extended with a discussion of digital technologies and video-poetic representations. This was followed by a comparison between the term digitalnature (Vecchi et al., 2019) and the data that was created as part of my research project. Touch was also considered with reference to relevant literature and the use of digital technology within my research. It was discussed as something more-than physical touch, but instead as another way to offer touch through embodied experiences such as video. Finally, the poetic characteristics of water led to an analysis of water-child relations regard to the curious practice of visiting and how this influences relations between children and water. All these findings will be summarised in the following chapter, Chapter Six.

6

IMPLICATIONS FOR PRACTICE



Figure 22 Chapter Six video-poem

I notice one boy crouching down towards a muddy puddle and then ever so slightly dipping his foot onto the surface. He notices the slight movement of water as his foot creates small ripples. He then pauses in silence. After some time, the boy introduces water to stick, announcing “stick in the water.” The boy continues this pattern of pausing as he notices water further, by dipping his fingers in and out of the muddy puddle.

(O’Callaghan, 2020)

Overview

This study aimed to investigate children's relations with water by paying attention to more-than-human others; curious practices, poetic inquiry, and pedagogical documentation forming the basis of inquiry. My thesis was comprised of six chapters with each chapter indicative of significant elements within the research process and beginning with a key moment in the form of a video-poem. The thesis began with Chapter One situating the research in the context of the climate crisis, as well as key theories such as the Common World framework and feminist new materialisms. Chapter Two followed with a review of key literature to establish a strong foundation of current theory and research that forms the basis of my own. This was followed by Chapter Three that detailed the methodology and strategies used to undertake the research process. Chapter Four detailed three significant moments that were captured throughout the data collection process, with these moments forming the basis of key analysis and discussion in Chapter Five. The current chapter, Chapter Six, will provide a summary of the key findings from the research process, while also acknowledging limitations of the study, and providing implications for practice and recommendations for future research.

Unique to my thesis has been the addition of key moments as video-poems at the beginning of each chapter. While the moments were not specifically analysed, their relevance pertained to the significance of pedagogical documentation within and throughout the research process. The moments highlighted the importance of pedagogical documentation for making experiences visible and engaging with it throughout the research process.

Key Findings

1. Video poetic representations as a poetic inquiry and pedagogical documentation process enables participants to re-encounter experiences, and strengthen relationships with more-than-human others

My research found that engaging and re-engaging with encounters through pedagogical documentation strengthened the children's and my ability to notice and pay attention to agentic qualities possessed by more-than-human others, specifically water. The human experience in real time proved to be a surface-level of engagement, as opposed to re-encountering the same experience with pedagogical documentation where encounters were slowed, reversed, and repeated. The experience described in *Water-child Repetitions* is a key example of engagement with pedagogical documentation to re-encounter and strengthen understanding and relationships with more-than-human others. This is significant as it challenges preconceived misconceptions of what pedagogical documentation is in the Euro-Western education system. As explained in Chapter Two, pedagogical documentation is frequently misunderstood as a means of evaluation and reflection. Further, the use of video-poems as a form of pedagogical documentation brought technology to the forefront as a valued pedagogical documentation tool for re-encountering experiences and consequently paying attention to more-than-human qualities of water.

2. Approaching more-than-human others as a visitor and through an act of curious practice encourages children to relate and express themselves to and with water, without inhibition.

It was evident in this study that direct adult intervention can inhibit children's expression and curiosity towards more-than-human others. As a participant observer, I recall many moments throughout the research process where I consciously positioned myself at a distance from the children, but close enough to document and record the experience. There was no doubt that the children knew I was there, however I sensed they

felt less pressured by their perception that there was a right way to be engaging with the space. It was almost as though the distance between us was an unspoken permission slip for children to freely express themselves. This is significant in an early childhood education context where a typical focus on children's dialogue is challenged to instead focus on the more subtle gestures and relations within an encounter. This is particularly evident in Water-child Movement Responses as Fraser engaged with the watery projection. He approached after other children had left the space and he seemed to prefer exploring with little to no potential for disruption. Fraser was a visitor as he politely approached the projection and interacted with water in a very uninhibited way, slowly and intentionally relating.

3. By decreasing a humancentric desire to 'know', relations between human and more-than-human others are illuminated.

This study demonstrated a strong correlation between slowing down the pace of noticing and the desire to 'know' with strengthened and more visible relations between human and more-than-human others. By paying attention at a different pace, children's relations with water were brought to the forefront of observation. I speculate that these relations between children and water were pre-existing however they merely went unnoticed by adult educators and researchers. By noticing and attending to these moments, relations are strengthened and fostered not by a humancentric desire to know, but a mutual coming-together. This is significant when reconsidering the current Euro-Western approach to climate education as this project draws attention to real experiences and relations rather than ones forged on often abstract fact-based learning and curriculum goals. This is particularly evident in all three moments where Fraser, Emily, and Declan had the space and time to form their own relations with water, on their own terms, without external pressures of immediate adult intervention, curriculum goals and a desire to know. Fraser, Emily, and Declan's experiences were unique to each other; however, they all share in the same aforementioned qualities where human and more-than-human relations were illuminated.

Stumblings

As with all research studies, there were drawbacks to this study. First the research process was undertaken in the midst of the COVID-19 pandemic. Although Western Australia has not been drastically affected, throughout the duration of my research, there were certain restrictions still in place with centre routines which in turn affected some participants and their engagement. While I had no official participant withdrawals, there was a sense of unease among educator and child participants as a knock-on effect of the uncertainties that COVID-19 presented. This appeared as wariness regarding close contact between myself and others, and COVID-19 is something the children were wary of too. This was raised in a number of conversations, particularly with one child stating that “the black floaty bits in the water is coronavirus, we need to get rid of it”. This played a significant part in my participation as a researcher and as a visitor to the centre. While I was always welcomed by children and educators, I was empathetic to the fact that there were a lot of stressors present within the centre throughout the duration of my visits. This impacted on my engagement with educators as I was conscious of adding to their already unprecedented and unsettled workload. As a result, my focus was almost always drawn to engaging with the more-than-human, when children and educators were choosing not to participate. While engaging in this way was highly beneficial for many aspects of my research, I understand the data is limited to more-than-human and child encounters, rather than also involving educators, and therefore should be considered a limitation.

Another limitation, and a consequence of the aforementioned concerns, was a misunderstanding in the interest of my research. Educators that demonstrated interest asked questions that I did my best to answer, however without a deeper level of conversation, a mere surface level of understanding resulted. With more time set aside,

these conversations could have been more informative, however again I was conscious of adding tension to the already unprecedented COVID-19 workload. Misunderstanding presented itself as some educator expressed environmental concerns about ‘water waste’ as children engaged with water. In fact, children were engaging with water, forming relations, and learning with water.

It is also important to consider that the sample group was from one early learning centre that was specifically chosen due to their philosophy revolving around nature, beauty, integrity, art, and wonder. The centre already has an established culture around project and inquiry-based learning, stemming from the interests of children. Therefore, coming in as a researcher with a similar background in education, the groundwork for inquiry was already in place. This might be considered a limitation as the results may not be consistent with settings that are not familiar with a similar approach to education and therefore findings cannot be generalised to all early childhood settings.

Implications for Practice

The current climate crisis that children are destined to inherit calls for a change in how educators approach climate education. As previously discussed, the current Euro-Western approach to education on climate change is limited to arming students with facts about causes and possible adaptive responses at an impersonal level, without exploring how it affects everyday lives (Leichenko & O'Brien, 2020). As demonstrated in Chapter Five, the research found that children engage with and build caring and care-ful relations with more-than-human others, specifically water, in authentic and real-life encounters; both as literal bodies of water and representational bodies of water such as video footage. This contrasts with the current educational approach, specifically in early childhood education where children are exposed to water ‘facts’ in mind, such as at the water table where measuring cups and spoons might be placed to satisfy mathematical or scientific curriculum

outcomes. The subsequent discussion highlights a number of implications of this research for educators in practice, as well as suggestions for future research to contribute to a shift in approaches to early childhood climate change education.

1. I propose that the findings from this study contribute to a **shift and expansion in pedagogical practices and** will contribute to an **expansion of educators' understanding of the gaps in current sustainability and environmental education**. Communication of findings may occur in the form of in-person or online professional development, with practicing teachers as the target audience.

2. I propose that the findings from this study has **highlighted the value of paying attention to human and more-than-human relations** in an early childhood context. The study provides new insight into the relationship between human and more-than-humans as they intra-act with each other; something that occurs daily but was left otherwise unnoticed. This study has demonstrated how slowing down and paying attention to 'smaller' moments, relations that already exist are brought to the forefront and seen in a deeper way. Paying attention in such a way encourages noticing more-than-human others, as a move away from a humancentric world to a Common World.

3. I propose that the findings from this study signals a **significant shift in the way children are seen by adults to respond to more-than-human others, specifically water**. As discussed, it appears as though children and water were already in relation, however when the adult is removed from the situation, these relations are amplified.

4. I propose a shift in the **understanding and perception of pedagogical documentation** in early childhood education settings. As discussed, pedagogical documentation is frequently touted and misunderstood as merely a means of evaluation and reflection in early childhood education. My project has brought pedagogical documentation

to the forefront of early childhood education as a significant part of not only reflection, but also the learning process of both educators and children. Specifically, this insight relates to pedagogical documentation in the form of video as poetic representations. I propose an advance in technology as an acknowledged research tool in engaging with pedagogical documentation as a process.

5. I propose a continued **shift in recognition of poetic inquiry as a valid and reliable research method within educational research**. The amalgamation of poetic inquiry with pedagogical documentation and curious practice allowed for a new way of seeing and paying attention.

6. I propose a restoration of a pedagogical understanding of the **benefits of learning through direct experiences** to form relations with more-than-human others, specifically water. With the use of technology in many Euro-Western classrooms, children are exposed less and less to 'real' and direct experiences. However, my research has proved that technology can be used to enhance direct relations as children re-encounter experiences, again and again.

Recommendations for Future Research

As implied by the stumblings identified and as with any research project, I will make recommendations for future research endeavours. Due to the limits in educator participation, as a result of the COVID-19 pandemic, subsequent research should consider educators' perspectives and experiences as they approach and form relations with water as part of their teaching practice. This might involve documenting educator experiences as they 'unlearn' typical Euro-Western approaches to climate education in early childhood education settings; an important step in engaging with and forming relationships with more-than-human others. By undertaking this research, I anticipate data will emerge to assist in

forming conclusions regarding educators' influence and perspectives in effecting changes in climate education approaches.

I also recommend that further research could be undertaken with a specific, and small, sample group of children with a specific interest in tracking their relations with more-than-human others. This would be beneficial in understanding how or if relations with more-than-human others are formed, maintained, strengthened, or pre-existed. This was difficult to track within the research project due to inconsistent attendance of children due to the COVID-19 pandemic. I anticipate the data would provide more detail on the quality of relations between human and more-than-human others which could provide a baseline for climate education reform.

Finally, I recommend that the project design be undertaken in a similar manner to establish or strengthen relations with more-than-human others such as tree, wind, and rock. As my focus project has established, paying attention to more-than-human others with a lens of curious practice, pedagogical documentation, and poetic inquiry, opens new ways of seeing. Therefore, I expect additional data would provide further evidence of relations between more-than-human and human others, further supporting the need for climate education reform.

Concluding Remarks

Throughout the research, I drew from feminist new materialist theory which emphasised a deconstruction of colonial binaries. This is evident as colonial knowledges such as valuing mind over body, male over female and Euro-Western over Indigenous dichotomies are challenged. Key to a feminist new materialist perspective is critiquing an overreliance of attempts to find a single solution to a problem. Consequently, this research

has challenged colonial ways of needing to know by reinstating more than one way of knowing, with reciprocity between human and more-than-human others.

The current climate crisis calls for a reform in climate education, particularly in early childhood education settings. Presently, a Euro-Western approach to climate education focuses on teaching children almost exclusively about the facts, rather than developing relations with more-than-human others, such as water, acting as a mere resource within the learning experience. It is here that the concept of care plays an imperative role, to move away from a mentality of human-centred care, and to reintroduce care as a meaningful and reciprocal practice with human and non-human entities. This perspective awakens the potential for recognising water-as-carer rather than merely water-as-cared-for as a resource. With the help of early childhood education and feminist environment scholars, I was able to challenge this perspective by acting on mutual and reciprocal encounters between humans and more-than-human others, specifically water.

Poetic inquiry, curious practice, and pedagogical documentation are all significant methodologies and concepts that brought water to the forefront of this research. Particularly when ‘unlearning’ typical early childhood teaching behaviours of paying attention to the child and their experiences. This research recognised the importance of pace, slowing not only video footage, but also our pace of being and noticing with more-than-human others. This was made particularly visible through pedagogical documentation in the form of video-poems.

Digital technologies, specifically video on a smartphone device, have played a significant role in re-encountering experiences with water; by editing to slow the pace, repeating, and reversing the footage. As discussed within the thesis, the use of digital technology in the form of video offers more than just a visual platform to encounter water, it in fact offers another way to experience water through touch. In other words, from a

quantum physics perspective where transience exists between all matter, throughout my research, more-than tactile touch occurred in the form of mediated touch. This supported a different kind of noticing through curious practices, noticing present absences, and fostering reciprocal relations between human and more-than-human others. Video editing also enhanced these experiences by creating video-poems which also played a significant part within the pedagogical documentation process.

The embedded videos coupled with poetic renderings to begin each chapter of this thesis is a reminder of the significance of poetic elements within the research. By showing this research in the form of interactive pdf I hope that I include some of the experiences of being there, the slow motion, ways of noticing, in an early childhood setting that makes room for a different kind of thinking in the Anthropocene. That reminds us to pay attention to what water-child relations can teach us about greater ecological crisis.

My research offers a unique assemblage of curious practice, poetic inquiry, and pedagogical documentation in the field of early childhood education. Throughout this thesis, and with the video and poetic elements, it is evident that a combination of these three practices provides possibilities for a potential way forward in early childhood climate education.

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