How do young children engage with more-than - human entanglements during outdoor play: shifting towards common worlds pedagogies.

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Abstract

Following a common worlds theoretical framework, this study explored attending to the ways young children engage with more-than-human entanglements in the outdoor areas of their nursery school assembling rich relational insight into child/more-than human relationships. Pedagogical narrations as a method enabled to think with both human and more-than-human participants in research. Employing lively storytelling approach, the stories created and retold offered an opportunity to assemble relational and situated pedagogies and to reconceptualize methodological approaches to studying early childhood. The three months' study *with* 12 two-year-old children, entangled with their nursery school's garden, revealed complex, often uneasy relations with the more-than-human world. Everyday small, mundane encounters mattered within their local more-than-human assemblages. Amongst many encounters, ice became an apt figure for being, doing and thinking with ethically, inclusively, politically, also worldly. Children learn to live relationally within their common worlds if human adults are to attune, be with(in) and think with(in) and collectively and inclusively shifting their positionality from conventional doing research to more worldly ways which posthuman, post- qualitative and new materialist thinking offers.

Keywords: more-than-human, common worlds, posthuman, new materialist, early childhood pedagogies, entanglement, ice

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Chapter 1

Introduction

1.1 Rationale

An interest in common worlds pedagogies arose whilst articulating my pedagogy for a postgraduate course. Through developing critical consciousness which 'conjoins with deep personal meanings and common purpose' (McLaren, 2000: 6) it came from "mind" as well as "heart". In an attempt to understand my "self", I was reflecting on what Freire (McLaren, 2000) would call "teachable heart as the teachable mind". With the use of photography as a tool to articulate one's pedagogy, whilst engaging in the reflective dialogue with myself, peers and tutors, I produced pedagogic documentation which I called "Pedagogy of Wonder under the Sky". The process had encouraged me to develop a "cycle of inquiry" (Gandini and Goldhaber, 2001) drawing parallels between documentation and research, however, the process itself was 'neither linear nor tidy' (Gandini and Goldhaber, 2001: 135). It was not simply a linear array of separate strategies that lead to a fixed endpoint. Instead, it was an 'intermingled assemblage of human and nonhuman elements that are in a constant state of becoming' (Merewether, 2018: 274). Reading Freire, through common world and Regio- inspired thinking, I became involved personally, affectively, intellectually, professionally, worldly in the intermingled assemblage.

The process highlighted the complexities of childhoods and pedagogies. The image of the child within my "Pedagogy of Wonder under the Sky" was no longer fitting the initial romanticised and nostalgic notion of Rousseau's Nature's Child, natural childhood, Frobel's child in the garden as pure and innocent. Africa Taylor's (2013) work on reconfiguring the natures of childhoods encouraged shifting from my Romantic coupling of child and nature to more messy and complicated common worlds pedagogies, with new pedagogical possibilities. Common worlds pedagogies encouraged seeing the connection with nature beyond idealised and romantic Euro-Western views. As Taylor (2013: 61) puts it: 'This idealized union of childhood and Nature is intended to protect Nature's child from the corrupting influence of

adult society and technologies, but it effectively separates children off, at least semiotically, from the rest of humanity'. Built on Western logic and binary thought, the notion of perfect match between a child with nature creates the divide between nature and culture. Furthermore, responding to calls from around the world to facing ecological challenges and 'in order to survive, we as humans need to re-evaluate our position in the world' (Lindgren and Öhrfelt, 2019: 287). Thinking with posthumanism ideas and common worlds pedagogies offers an alternative way to respond to and engage with the realities of 21st-century children (Hodgins, 2019).

1.2 Policy and Research in Sustainability Education

Education has been recognised as a crucial element in an appropriate global response to climate change (UNESCO, 2015), and pedagogical response is needed to make more liveable worlds (Kummen et al., 2020). Common Worlds Research Collective's (2020: 2) critique is relevant here: the world has 'highest number of "educated" people in its history and yet is the nearest to ecological breakdown' as a reminder that 'more of the same kind of education will only compound our problems'. In the facing of the multiple environmental threats, this is a call for an urgent need to respond to such problems by reimagining educational policy. Although the United Nations (2015) has set 17 sustainable development goals and education can be a tool to encourage learners to decision making and responsible actions for environmental sustainability for present and future generations, there is a lack of research in how sustainability can be approached in early childhood education (Borg and Gericke, 2021). Common Worlds Research Collective's (2020) visionary declaration points out that although there have been efforts to promote education as key to achieving sustainable lives, schools continue to prioritise economic growth over environmental sustainability.

Weldemariam et al. (2017) have argued that within the Australian, Norwegian and Swedish early childhood curricula the importance of outdoor learning environments has been acknowledged by having a requirement to connect children to nature to contribute to a sustainable future. However, the USA and the English curricula have limited acknowledgement of outdoor education (Weldemariam et al., 2017). Despite the growing

interest and recognition of value of the outdoors in early childhood (Knight, 2013; Sobel, 2008) with such initiatives as forest schools and nature preschools growing in popularity, the English early years framework is limited to acknowledging the importance of children's understanding of world and relationships with people and communities (DfE, 2017).

At a time of writing this work, England's early years framework has been revised. *The Birth to 5 Matters* guidance proposes to support children to understand their 'world and their place within it through nurturing their wonderment, curiosity, agency and develop a sense of civic responsibility, a duty to care, a respect for diversity and the need to work for peaceful co- existence' (Early Years Coalition, 2021: 42). This is an important recognition in addressing the need to live sustainable lives by caring for natural world providing children with an appreciation of ecological balance and care for environment. Although an applaudable move towards sustainable future education, Weldemariam et al. (2017) urge to consider alternative frameworks to existing curricula that offer more inclusive worldviews embracing human and more-than-human within an assemblage of common worlds.

Similarly, the Common Worlds Research Collective (2020: 2) in their *Education for future survival* paper make it clear that to 'achieve sustainable futures that continue to separate humans off from the rest of the world are delusional and futile'. Silova (2021) elaborates that the approaches considered include existing education practices rooted in Indigenous knowledge, land-based and place-based pedagogies and Non-Western education alternatives. Alternative visions of education are needed to encourage relational worldviews which 'presuppose that there are infinite human and more-than-human worlds within worlds', (Common Worlds Research Collective, 2020: 4) all of which are interdependent (Silova, 2021).

Although focusing on the prescribed developmental goals as other previous English curricula, the guidance (Early Years Coalition, 2021: 33) proposes to consider 'wider contexts that involve principles of common worlds'. It is highlighted that in the urgency of climate change

early years settings need to get involved in networks focused on sustainability and environmental restoration. It is, however, questionable if and how such a statement may be translated and implemented in early childhood practice by the workforce delivering it, hence, the importance of supporting research made available in the English context. Echoing with common worlds pedagogies framework (Taylor, 2013; Common Worlds Research Collective, 2021), the guidance sets out the vision how 'such involvement can help challenge unhelpful distinctions that keep communities of human, non-human and other entities apart' (Early Years Coalition, 2021:33). The move to acknowledge the existence of the more-than-human may 'create openings that unhinge the humanistic learning child as the sole centre of early pedagogy' (Nxumalo, 2017: 562) and attention to more-than-human world in early childhood education, particular in the English context, is welcomed. However, coupled with the impacts of developmental psychology embedded in early childhood practices, a shift from the persistent romantic framing of nature may be a challenging move.

Further extending on various initiatives towards sustainable education outlined earlier, helpful is Dahlberg et al.'s (2007) argument. They remind that attempts have been made to respond to such needs and the most original and creative work in early childhood education draws inspiration from trans-disciplinarity. For example, Taylor (2013) brings reconceptualizations of nature from science studies and human geography into her childhood pedagogy. Drawing on the philosopher Bruno Latour's (2004) common world idea and feminist scholar Donna Harraway's (2004; 2016) work who ties science, technology, anthropology and animal studies together, Africa Taylor (2013; 2017a; 2017b) contributes to designing inclusive and ethical common worlds pedagogy. Thinking within feminist theory and philosophy, Taylor (2013) also draws from the ideas of Karen Barad, Gilles Deleuze and Félix Guattari, and Rosi Braidotti, focusing on the relations between human and more-than-human worlds.

1.3 Summary

In my study I attempt to explore and understand (re)occurring young children's entanglements with the more-than-human in their outdoor spaces of nursery school and

consider how these entanglements coexist. My aim is to contribute to knowledge in pedagogical possibilities by assembling deep relational insight into the possibilities of situated and relational pedagogies. I position my enquiry in the review of existing research literature in Chapter 2. In the third chapter I present the methodological approach which guides me to implementation of the study. In the fourth chapter I present five lively stories with my interpretation accompanied by theoretical understandings of each phenomenon in the chronological order of collection to avoid hierarchical binary thinking. The final fifth chapter culminates with an analysis emerging from lively stories and returns to the research question posed. I conclude the dissertation by reviewing the research process and examining the implications of my findings for practice and research along with making recommendations.

Chapter 2

Review of the Literature

2.1 Overview

This chapter aims to provide a framework to my study by reviewing literature related to theoretical roots of common worlds pedagogy. The review considers the “post” paradigms in education, care and stewardship, children’s encounters with more-than-human, materialist ways of knowing. The role of vitality and agency of matter in new materialism and common worlds framework’s position of resisting human centred approaches is discussed. Consolidation of the existing studies will enable me to understand the possibilities of knowing as well as challenges to common worlds pedagogical approach. The arts of noticing along with relational and emotional aspects of observing are considered and discussed as essential aspects within common worlds theoretical framework.

2.2 A shift towards posthuman frameworks

Somerville and Williams (2015) in their review of literature in sustainability education in early childhood education found three major theoretical categories: connection to nature, children's rights and post-human frameworks. Studies with a discourse to connection to nature largely draw on Louv's (2005) argument of a "nature deficit disorder" believing that children have become disconnected from nature. Therefore, early childhood programmes have to re-connect children to the natural world, recalling a romanticised and Eurocentric notion of childhood. However, Nxumalo and Cedillo's (2017: 101) critique is that nature based early childhood settings view '(human)children and (nonhuman)nature are separate and the focus is on anthropocentric child-centred developmental learning about the nonhuman environment'. Sommerville and Williams (2015) make recommendations of posthuman frameworks, which are theoretically rigorous, to researching early childhood education for sustainability.

2.3 "Post" paradigms (and beyond) in education

Euro-Western scholarship critiquing foundational and structuralist conceptualizations, often labelled as "the posts" (postmodern, poststructural, postcolonial, postfoundational), has led to rethinking and reimagining of research and ontological loyalties (Hodgins, 2019). For Braidotti (2019), the posthuman is a trans-disciplinary field of scholarship which leans towards the construction of different subjects of knowledge and is 'an amazing opportunity to decide together what and who we are capable of becoming…through creativity and empowering ethical relations' (Braidotti,2013: 195). Posthumanism offers 'a chance to identify opportunities for resistance on a planetary scale' (Braidotti, 2013:195). The potential of posthumanist theorising in the field of early childhood for sustainability has been debated and acknowledged (Taylor, 2013; Common Worlds Research Collective, 2020) and Osgood and Giugni (2015: 347) support that 'there has been something of a paradigm shift' which contributes to an ontological turn (St. Pierre et al., 2016). Aligning with Taylor's (2013) inclusive common worlds idea outlined in the introduction paragraph, there is a need to revaluate human position and superiority in the world by decentring the human. Although posthumanism enables such a shift, Murris (2020b: 63) is cautious of "missing peoples" in

posthumanists' claims when referring to the phrase "human exceptionalism" as something to be disrupted as 'they tend to assume adult humans of a particular age and their claim to knowledge, but they do not include young children and their knowledge claims'. For Kraftl (2020: 5), 'the idea of the "post" is both too much and not enough, all at once', in attempt to decentre as 'decentring is not (yet) sophisticated enough'. Rather, Kraftl (2020: 7) proposes to extend 'beyond both the approaches and the languages of contemporary childhood studies by asking what it might be like to *think and do after childhood*'.

In the further understanding of the posthumanist turn Barad (2003), a physicist, combines philosophy and physics in her theorisations of the posthuman. A posthuman understanding of materiality critiques humanist assumption regarding knowledge production assigning epistemic relevance to the more-than-human. Barad (2007) questions the idea of the human as a self-contained subject being apart from the material world. Applying "knowing in being" as *ontoepistemology*, Barad (2007) discourages binary thinking, and proposes that we "know" because of our "being" as part of the world. This means that what is "known" about the environment cannot be in an isolation from "being" a part of material encounters in interactions with more-than-human including objects, weather, animals and other life forms. Kraftl (2020: 22) argues that a larger 'proportion of scholarship on children and non-human actants focuses on more obviously bounded things – such as animals or toys – rather than the more elusive materialities', such as weather, an important acknowledgement for my study on ice/children entanglements.

The philosopher Andrew Stables offers an alternative view by considering an ecological posthumanism as 'posthumanism per se may not provide a sound basis for environmental ethics' (Stables, 2020: 889). For Stables (2020), not all posthumanist thinking is environmentally responsive and responsible. It is essential to recognize 'forms of both humanism and posthumanism that manifest genuine respect for non-human nature' (Stables, 2020: 892). Blaise et al. (2020) steer away from committing to a particular label- posthumanist, poststructuralist, new materialist, as labels can "pin down" and define what one can or cannot do. Blaise et al.'s (2020) commitment is to keep the common worlding alive and they urge scholars to experiment with research- such movement requires risk and deals with uncertainty, experimentation and collaboration, and must not heavily rely on labels such

as “posthumanism”, “new materialism” or even “common world”. However, Arndt’s (2020) quote acknowledges that researching from posthuman lens allows to “stay with the trouble” (Harraway, 2016). ‘We can’t and we shouldn’t solve a research problem… but we should be ongoingly provoked by it… to keep thinking, keep that trouble-ing alive’ (Arndt, 2020: 8).

2.4 Vibrancy and vitality of agency in new materialism

In the further shaping of the framework for my research, I consider Lenz-Taguchi’s (2010) scholarship that non-humans also have agency. Within new materialism the more-than- human, according to Lenz-Taguchi (2010: xiv), has a role in the ‘performative production of power and change in an intertwined relationship of intra-activity with other matter and humans’. This thinking considers humans, non-humans and all matter as ‘an assemblage of forces and flows that emerge in the interaction in between these different components’ (Lenz Taguchi, 2011: 38). Such construction of reality assigns agency to all participants in inclusive pedagogies. However, Blaise et al. (2020) ask what those tools are to explore and research agentic relationships in the child-centred practices reminding that assigning agency to materials can be a challenge. In relation to listening to children Davies et al. (2020) suggest documenting children’s thoughts as they unfold. Kraftl (2020) encourages a “pull-focus” by moving children as if out of the focus and locating children’s positions in understanding their voice and agency within the study situations, helpful and relevant for my study.

For Arndt (2020), in a posthuman ethics, children’s voice and agency can only ever be shared. In Arndt’s (2020) research, human, including children who she is researching with are decentred, paying more attention to worldly relationships. In such thinking Harraway’s (2003) ‘relations of significant otherness’ are recognized. Drawing on Barad’s (2003) notions of intra- relationality, children are constructed with and through their relational entanglements with materialities, forces and energies. However, considering the vibrancy all around in the children’s environment, the ethical implications for children’s voice become very complex (Arndt, 2020). Similarly, Blaise et al. (2020) in their thinking with agentic world, where agency

is relational and collectively distributed, remind that such research may be problematic methodologically. Duhn (2012: 100) encourages early years pedagogy to seriously consider the agency and vitality of matter not to provide answers, but to 'stimulate thought regarding the entanglements of self, matter and place'. Such theorisations provide a conceptual framework to explore posthumanist early childhood pedagogy.

2.5 The Common worlds pedagogical framework

A brief insight in policy and early childhood curricula for sustainability was offered in the earlier writing. Having discussed theoretical understandings of "post" paradigms, new materialism and agency, further questions arise in the art and practice of teaching, which is called pedagogy (Ulmer et al., 2020). Interrogation of my own values and beliefs from Freire's (McLaren, 2000) "teachable heart as the teachable mind" in articulating pedagogy led me to writing this work. Common worlds pedagogy, underpinned by new materialist and feminist philosophy, is therefore considered as a way of addressing the tensions, questions, uncertainties, wonderings and ponderings that had arisen from the exercise of articulating own pedagogy.

The Common Worlds Research Collective's (2021) pedagogical framework is seen as a creative way to respond to anthropogenic challenges because it allows early childhood practices to be extended to consider the more-than-human worlds, the complex entanglements, building a collective and inclusive rather exclusively child-centred pedagogy. The emphasis is placed on living in a "common world" (Latour, 2004) together, as the world is inhabited not only by humans within diverse contexts, but also by more-than-humans. The more-than-human turn challenges human exceptionalism enabling reconceptualizations of human/nonhuman binaries (Whatmore, 2006), therefore reshaping early childhood studies. For Whatmore (2006), we (including human, animals and other bodies) are interwoven in bodily and material ways and the term 'more-than-human' attempts to undo a human privileged view of the world. The Common Worlds Research Collective's (2021) scholars resist human-centred approaches and encourage to work with the complexity in the Anthropocene positioning their work as an alternative response to stewardship models in environmental education (Nelson

et al., 2018; Taylor, 2017a). The popular stewardship pedagogies create thinking which opposes collective thinking and entanglements with the world reinforcing the nature-culture division. The common worlds response to the Anthropocene differs from the stewardship response by proposing that we become more worldly by refocusing our attention on the nature of our relation to more-than-humans. As Taylor (2017a: 1458) puts: 'it is a low-key, ordinary, everyday kind of response that values and trusts the generative and recuperative powers of small and seemingly insignificant worldly relation infinitely more than it does the heroic tropes of human rescue and salvation narratives'. Quay (2020) adds that stewardship pedagogies reinforce human exceptionality and separate humans from the world as well as framing nature as a wilderness untouched by humans. According to Quay (2020) by framing nature as the "wild" the nature-culture divide is reinforced, and actions are inscribed in the binary thought of what/who is bad or what/who is good to nature.

2.6 Common worlds studies

Research in common worlds pedagogies (Pacini-Ketchabaw et al., 2015a; Taylor, 2013; Nelson et al., 2018; Blaise et al., 2019) indicates to the pedagogical possibilities of thinking beyond binaries studying children's relations with more-than-humans. Situated outside the existing formalised, often top-down, pedagogical contexts drawing on observations of children's interactions with the more-than-human, studies reveal that children's interactions with the more-than-human are already imbedded into existing practices (Taylor, 2017a). Kimmerer (2013: 57) argues that children naturally have the ability to extend to plants and animals 'until we teach them not to'. Quay (2020: 1), however, points out to the challenges faced as early childhood educators are still grappling with teacher-centred versus student-centred pedagogies, "let alone having to engage with posthumanist ideas" (Quay, 2020: 11).

Some of the pedagogical initiatives to move beyond the existing practices of learning *about* the world with human exceptionalism are evident in Common Worlds Research Collective work (Blaise et al., 2017; Pacini-Ketchabaw et al., 2016). According to their studies, children, who are not yet fully enculturated into the subject/object divides of modern Western education and its humanist premises, are

less likely to separate themselves off from the rest

of the world (Common Worlds Research Collective, 2020). Unfolding pedagogical relations between young children and more-than-human others in their common worlds open possibilities for collective more-than-human learning *with* the world, aligning with Haraway's (2003) ideas which inform the practices of thinking *with* rather than *about* that are emphasised by scholars who address common worlds (Hodgins, 2019; Taylor, 2013). Blaise and Hamm (2019: 93) shift attention from focusing on 'matters of fact', which dominate early childhood teaching, towards making room for 'matters of concern', such as climate change, within pedagogies. Such shifts, however, entail foregrounding relational and connected knowledge processes and requires making room for more-than-human relations.

Furthermore, Blaise and Hamm (2019: 94) argue that human exceptionalism prevents us from learning with multispecies relations and encounters because 'it is predicated on the desire to know what the species is and why it is relating this way or that way'. An alternative way to challenge anthropocentrism is to decentre humans by including a 'nature-centred pedagogy' (Quay and Jensen, 2018: 296) also questioning the child-centred position (Nxumalo, 2018). Thinking about the practice of environmental education without framing the human as nature's saviour is central to common worlds theorisations, challenging the notion of the human as the steward of nature. Tsing (2005) encourages to think that 'there is a lot we may never know about the motivation and behavior of more-than-human organisms, but we can imagine that they, like us, want to live' (Tsing, 2005: 172). Whereas Stables (2020: 898) theorises that teachers should 'explore their own ethical and ontological frameworks, warts and all' to questioning their own respect towards more-than-human rather treating it 'merely as human plaything'.

The empirical research conducted by scholars who think with common worlds frameworks include children's relations with place (Nxumalo, 2017; Pacini-Ketchabaw, 2012), materiality (Rautio, 2013) with other species (Nelson et al., 2018; Nxumalo & Pacini-Ketchabaw, 2017; Taylor and Pacini-Ketchabaw, 2015) the weather (Blaise et al., 2019; Rooney, 2018) and feminist methods (Blaise et al., 2017). These empirical works refuse humancentric perspectives and refocus on the entanglements with more-than-human, framing the central

question of my research on how young children engage with more-than-human entanglements. Rautio (2013) reflects on children's encounters and relations in her wonderings about stones children carry in their pockets, offering a glimpse into what relational learning might look like. Reading children's everyday encounters with materials that might be considered trivial by adults, she brings attention to children's relations and doings to things that matter to them, and intrinsic meaning is not necessarily needed. Rautio (2013) reads these encounters outside educational settings, challenging developmental discourses and considering material entanglements and relations. Nxumalo (2017), drawing on Haraway (2016), highlights the relevance of "staying with the trouble" within pedagogical practice in a move of not answering questions but rather paying attention to what kind of dispositions our relations with the worlds might create.

Somerville and Powell (2019: 836) research with mud, 'as a living element of the world' which can be understood in the same context as the sea or fresh and flowing waters, experiencing the world in its "oozing, mobile, sticky, sensory liveliness", but it also discourages a "sanitised view of nature" (Malone, 2018: 82). MacRae (2020) researches tactful hands and vibrant mattering with sand and Loveless (2013) thinks with time examining ecologically themed durational performances by performance artists. Rowan's (2017) Nunangat pedagogies are informed by relationships with land, water and ice as she rethinks curriculum by engaging with foxes in early childhood practices on Inuit indigenous land. Lawrence (2019) focuses on children's relations; also involving parents and practitioners in the interpretation of relations which allows for the potential of relation with the more-than-humans, including the environment. In order to summarise the common worlds studies in how young children engage with the more-than-human, an interesting and valid point for my study is raised by Kraftl (2020) that some common worlds research is carried out not with bounded objects like animals and toys. 'They may not take material forms at all; yet energies, and energetic phenomena, may have material effects and affects; they may interface with (parts of) humans or other machines and media' (Kraftl, 2020: 17). Such more-than-human objects under question are not so readily identifiable, haeccetic or bounded, therefore extending and distending an ethics of common worlds.

2.7 The arts of noticing

The review of common worlds studies has revealed that researchers must embrace complexity, uncertainty and unpredictability when attending to the more-than-human. In the times of precarity Anna Tsing (2015) encourages to learn to practice “arts of noticing” and pay attention to enable navigating through uncertainties. Instead of centring narratives on children’s doings, Pacini-Ketchabaw et al. (2016) pay attention to the moments of decision intra-actions create. Pacini-Ketchabaw et al. (2016: i) focus on the alternative ways to “capitalist narratives”, they write about various material inquiries with children, focusing their attuned perception to the in-betweens of those encounters. Wondering about what it means to “think with things”, Pacini-Ketchabaw et al. (2016) offer something that cannot be reproduced or generalized but instead engages ideas of relationality and shows how encounters can be faced as risky, demanding, and unique. For Kraftl (2020: 203), arts of noticing is not only theoretical, attention is drawn ‘to stuff that matters’ and which traditional social-scientific approaches to childhood cannot fully apprehend: in his study, plastics in children’s everyday lives and environments.

2.8 Relational and emotional aspects of research

Paying attention to matters of fact through observing children has a long tradition in early childhood. The traditional way of observing has changed to such forms as pedagogical documentation and narrations. One major practical and methodological implication arising from Alcock’s (2016) work ‘is to observe: reflectively, relationally, critically, deeply, and with feeling’, adding ‘feeling-based and relational dimensions in observations’ (Alcock, 2016: 192). Another critical viewpoint is offered by Blaise (2021) bringing linguistic imperialism into consideration as even the language hinders thinking with relations. Alcock’s (2016) work is helpful when addressing practical implications in early childhood settings from relational perspectives viewing children as intra-/ inter-connected with others. Bodies with feelings matter in the complex processes of learning, being and becoming. Viewing ‘children’s relational and emotional ways of being and belonging’ (Alcock, 2016: 192) and bodily felt ways of learning fills a gap in the developmentalist notions of young children’s learning. Furthermore, MacRae (2020) brings awareness of sensing bodies as in her research children’s

hands are conceptualised as sense organs and bodies not only feeling bodies, but also thoughtful bodies.

2.9 Summary

Reconceptualizations of childhood and pedagogies have been helpful to acknowledge the potentialities for common worlding pedagogies opening up possibilities to democratise the messy, complex, entangled human and more-than-human relationships. Taylor's (2013: xiv) envisionings are 'unexpected and lively with the potential to reveal a different kind of inclusive ethics for coexisting in more liveable worlds'. Through adapting common worlds framework, complex and inclusive ways of researching childhood pedagogies can be generated. The childhood is seen as messy rather than pure and innocent in an entanglement within worldly relations. Common worlds paradigmatic shift from ways in which childhood and nature are conceived, critically reassesses the naturalist childhood pedagogies.

Essential in formation of my research question has been Affrica Taylor's invitation:

> My academic enactments are only preliminary steps in shifting our relations to nature and thus to childhood. I have made them in the hope of envisioning and supporting more livable common worlds and futures for twenty-first-century children. I look forward to seeing what kinds of on-the-ground doings might be enabled by such a shift towards common worlds pedagogies (Taylor, 2013: 124).

Therefore, I am responding to the challenges in anthropogenic times by offering my "on-the ground" doing in a shift towards common worlds pedagogies. Drawing on the detailed and in- depth theoretical framework discussed in this chapter, I set my research question:

> How do young children engage with more-than -human entanglements during outdoor play: shifting towards common worlds pedagogies.

Chapter 3

Methodology

3.1 Background

With the intensifying engagement with “post” forms of thinking and doing research – post- qualitative, posthuman, to enable researching with common worlds framework, in this chapter I aim to outline methodological aspects of researching young children’s engagement with more-than-human entanglements. I will offer a brief insight in methodological “post” paradigms along with non and more-than-representational tensions. Slowing down to pay attention is considered as an essential methodological aspect for this study and pedagogical narrations as a research method is deemed to be suitable to align with” post” forms of doing research. As pedagogical narrations entail not only narration, but also include images and video, theoretical aspects of visual research methods are going to be discussed. Ethical considerations and enabling visibility and liveliness of human and more-than human participants in research through pedagogical documentation and lively storying will be discussed. “Thinking with data” approach to data analyses will conclude this chapter.

3.2 “Post” research paradigms

I offer a brief overview of “post” human/ qualitative research paradigms, but it does not mean that research will follow neatly in a linear order as paradigm(s) are not neat, tidy boxes or things that we need to fit into (Kuby, 2020). For Hodgins (2019), innovative methodologies within childhood studies are urgently needed to address, respond to and engage with the realities of 21st-century children. Taylor and Hughes (2016) also acknowledge that in the theoretically and philosophically rich field and rapidly growing engagement with posthumanism, sufficient attention must be paid to methodological import of debates. Within empirically driven posthuman research, there are multiple genealogies and intents which are often put to work through concepts such as assemblage, thing-power, vital materiality, and entanglement- the concept I applied within my enquiry (Taylor and Hughes, 2016). Such

research often ‘unpicks the normative codes of dominant research and presents radical, creative and innovative research engagements’ (Taylor and Hughes, 2016: 1), inviting ‘us (humans) to undo the current ways of doing- and then imagine, invent and do the doing differently’ (Taylor, 2016: 6).

As discussed in the literature review chapter, common worlding studies, underpinned by posthumanist philosophical, political and ethical thinking, require a shift to different modes of knowing, being and doing and the key element is paying attention to a more-than-human. The common worlding approaches activate shift from anthropocentric thinking by challenging human exceptionalism. Therefore, research practices encouraging to view humans as ‘not the only “participant” within a research study’ (Rotas, 2015: 102) destabilize many of the ways knowledge about education has been produced (Taylor, 2016). Undoing the binaries such as human/nature, human/animal, theory/practice as well as thinking relationality with other beings and matter is required. Creating such knowledge is not an easy task and researchers themselves become caught within the knowledge of own academic histories (Taylor and Hughes, 2016).

Furthermore, St. Pierre (2019) emphasises the urgency of new concepts and practices by putting methodology aside. St. Pierre (2019: 10) encourages to read ‘widely across philosophy, social theories, and the history of science to find such concepts to reorient thinking. ‘There is no recipe, no process’, therefore the focus of methodology ‘is not on things already made but on things in the making’ (St.Pierre, 2017: 1). Similarly, Taylor (2016: 18) argues that ‘posthumanist research is an enactment of knowing-in-being’ emerging in the event of doing research itself. For Lather (2013: 635), ‘there is no methodological instrumentality to be unproblematically learned’, instead there is ‘methodology-to-come’ to ‘begin to do it differently’. Whether thinking differently, thinking with or without a method, but with ‘always more than one’ (Ulmer, 2017: 841), it is important to consider the labels, be a qualitative or a post-qualitative and how labels limit and form frames creating binaries (Blaise et al., 2020).

Aligning with St. Pierre’s (2019) and Lather’s (2013) theorizations, Hodgins’s (2012) view is that post qualitative research is a thinking-doing process and it challenges humanist

qualitative research with its conventional identifiers of truths and subjectivity. However, much of education research operating within a performative context, with regimes of accountability, the requirement to “evidence”, are the dominant ways of thinking (Taylor, 2016). Bearing complexities of posthuman research in mind, Taylor’s (2016: 18) argument is helpful to view posthuman research as an invitation to experiment, create what is available, may or not become useful, ‘because you don’t yet know’ into research. It also ‘can be performed, enacted and embodied in a multiplicity of ways’ (Osgood and Giugni, 2015: 348) through movement, poetry, storytelling, visual representations, not privileging textual ones among other mediums. The questions that posthumanist researchers raise about what research is and how it might be done differently, lean towards visual, sensory, arts-based and creative writing practices (Taylor, 2016), an essential consideration in navigating through methodological aspects of this research.

3.3 Non/More-than representational research

Deleuze and Guattari’s work has been influential to scholars writing within post-qualitative feminist research supporting a rethinking and redoing of qualitative methodology as experimental and non-representational (Hodgins, 2019). Bringing the “post” to qualitative enables to reimagine and reinvent qualitative inquiry beyond humanism and human superiority and allows to understand the world through entangled relations, including the inseparability of knowing and being. Vannini (2015: 7) theorises that non-representational research concentrates on events occurring as happenings and unfoldings revealing potentialities for collective ‘being, doing, and thinking’. Such research privileges the study of relations, ‘not units in controlled isolation but rather the processes through which relations take place’ (Vannini, 2015: 8).

Aligning with scholarship (St. Pierre, 2019; Taylor, 2016) discussed in the previous section, non-representational research shares a disinterest in absolutist, universal knowledge, positioning it as personal and situated (Vannini, 2015). It also ‘challenges the prescription of method by arguing that standardized methods do little more than provide a false sense of security that knowledge is stable, or even knowable’ (Ulmer, 2017: 838). Additionally, Millei

and Rautio (2017) highlight that non-representational engagements require critical reflection on the temporalities of research: questioning the linear production of knowledge and slowing down, witnessing “overspills” beyond what traditionally “matters” during conventional data collection and analysis. Kraftl (2020: 23) helpfully explains that non-representational theories, sometimes replaced with “more-than”, focus on ‘affect - on shared emotions and atmospheres, on embodiment’. In my study, rather attempting to employ non- representational methods, I am challenged and inspired by Vannini’s (2015) and Kraftl’s (2020) theorisations to think beyond representation in orienting my own thinking.

3.4 Slowing down to pay attention

Ideas from a feminist scholar, Isabelle Stengers (2018), are relevant within the common worlds framework. These include ideas about collective thinking and slowing down to be able to ‘notice what else is going on and what is at stake for all who belong in this world’ (Taylor and Pacini-Ketchabaw, 2018: 15). During journey of articulating my pedagogy, the collection of the photographs and narratives were telling me that the clouds in the sky, the garden swings, trees, germinating seeds, mud puddles in the bluebell woods all deeply encourage children to wonder, think deeply and importantly, slow down, what Brazilian-Italian writer and pedagogue Gianfranco Zavalloni calls “the pedagogy of the snail” or “slow pedagogy” (Zavalloni, 2009). Such thinking has encouraged me to consider the arts of slowing down, noticing and paying attention to everyday realities in the work of early childhood education. Similarly, Kummen et al. (2020) promote a slow, tentative and situated pedagogy, maintaining a space for more liveable futures. In the English context, in the light of supporting slow pedagogies and slow knowledge, Frobel Trust’s (2021) research project resonates with Kummen et al.’s (2020) argument. The urgency to be slow is explored with a focus on the relationship with time in the early childhood environments examining different understandings of time that are relevant for young children’s lives including “clock time”, “playtime”, “embodied time” (Frobel Trust, 2021). Additionally, applying the concept of “slow research”, Millei and Rautio (2017) address methodological issues that concern how research might be done and considerations of the affective ways in which we produce knowledge including the thinking, embodied, and feeling humans.

3.5 Pedagogical narrations as a method

Aligning with “post” research paradigms, to work with concepts and ideas, here I will set out a method which enables exploring young children’s engagement with more - than-human entanglements. In a choosing of a method, a consideration was given to enabling research *with* the children, to have their voices, many of them which were nonverbal, heard in research. Hodgins (2012) considers pedagogical narrations, often used to enhance practice, as an educational research method disrupting modernist assumptions about knowledge and children in research. Therefore, I employed pedagogical narrations as a method which is observational practice that does more than simply represent, document, or narrate (Pacini- Ketchabaw et al., 2015b). For Blaise et al. (2017) pedagogical narrations make children’s learning visible through anecdotal observations, video recordings, photographs, and ideas documented by children. They show how children become entangled and the researcher is right there and ‘an engaged participant in the meaning making’ and researcher ‘exposes what she does not know and how she is thinking’ (Blaise et al. 2017: 38). Pedagogical narrations, an assemblage of field notes, video and photography communicate and acknowledge the liveliness of the world. Conversations, reflections, questions, interpretations, wonderings in a research journal is an assemblage of an ever-unfolding relationship, in entanglements with humans and more-than-humans.

3. 6 Video

The choice to use video-recorded episodes as part of pedagogical narrations enable more inclusive opportunities to involve (Haggerty, 2020) and empower children in research (Rutanen et al., 2018) to observe not only talk, but also their other voices and modes (Kress 2010) through gestures, facial expressions, posture, movement, action. Through the ipad’s camera lens, both as seen by myself and the children, the concept of multimodality (Kress, 2000) is applied. Referring to communicative resources such as language, image and sound (Pauwels and Mannay, 2020), video technology plays a role in understanding how different modes such as movement and vocalisations can also be used in meaning-making (Flewitt, 2006). Importantly, this highlights potentials and usefulness of approaches and methods that

consider modes beyond language to understand educational processes. Whatmore (2006: 606) highlights that there is a need to replace humanist methods relying 'on generating talk and text with experimental practices that amplify other sensory, bodily and affective registers and extend the company and modality of what constitutes a research subject'. Marks (2002:
xix) views videos as 'an intercorporeal relationship', meaning that the video is as much of a body as the human is without the interpretation of what the videos mean. Such process enables to find richness and vitality and 'increase the surface area of experience' (Marks, 2002: x).

For Rose (2016), video documentation is an effective tool for capturing the affective and non- representational aspects of social life enabling to generate knowledge differently, also serving as a record keeper, becoming a web of thinking, materiality and movement. Murris and Menning's (2019: 2) research in videography highlights a potential to shift from following only the human (the child) with further possibilities of paying attention to the material world. Noteworthy is Giorza's (2019) shifting to disrupt the practice which favours the visual aspects of video, rather, attention is paid to the sounds not noticed before. By replaying video footage again and again, affords new stories to emerge 'like invisible writing revealed by a flame' (Giorza, 2019: 8) showing the potential for the sound as one of many modes of multimodality to be considered in research. Digital video as a research tool, 'multi-sensorial and multi- modal' (Pink, 2008: 190) can produce rich and thick cultural document. Video recordings can also be debated, disputed, remixed and contested 'keeping them alive and contemporary' (Garrett, 2010: 534), also forming bases for inviting children into dialogue, both verbal and non-verbal, rather relying on written descriptions and conversations alone.

Additionally, rather using video to "collect" data, de Freitas (2016: 554) views video research as 'materially implicated in the production of new knowledge and new kinds of knowers' (de Freitas, 2016: 554). Video recording is not viewed as an objective, neutral methodological tool, but as 'seeing with the camera' where the eyes of different organisms or machines "see" differently (Murris and Menning, 2019: 2). Video-practices are not passive, observing instruments, rather, are performative in how meaning is given to what is seen. One can also "flow with" (Angrosino 2007:91) video rather than fix or capture. A different lens to my

researcher's role can be applied borrowing the "travelling with" metaphor (Kvale, 2007: 20) or in translation from Latin 'wandering together with'. My position can be understood as a researcher-traveller who wanders through 'the landscape and enters into conversations' (Kvale, 2007: 20) exploring many domains of the place. The knowledge, through the stories then is unfolded through my own narratives and interpretations.

3.7 Ethical Considerations

Photo and video permissions were obtained from families and ethics clearance granted by the university and all children's names are pseudonyms. In following other scholars to work ethically with video in research with children (Rose, 2016; Flewitt, 2005), I treated consent as provisional, continuously checking children's responses with the concept of assent in mind rather than 'a once-and-for all event at the start of the research' (Rose, 2016: 335). Furthermore, Flewitt (2006) applies the concept of "provisional consent" (Flewitt, 2006) giving consideration to participant/researcher relationships, resolving ethical dilemmas as they emerge, in their local and specific contexts. I also acknowledge that the most images and videos in my research are from the gaze of the researcher. Given that my intention was to research *with* the children, instead of having research done to or on them, I spent a session of encouraging children to take photos and videos with my iPad. This enables children to be more visible in research, gives them voice, enables to contribute to data collection through their eyes (Pink, 2009). After the session I played the videos and photos back to the children to not only see their response, but also to attempt to get an insight in how and what children see when they have a camera.

Visual research methods, such as videography, face challenges in relation to concerns about the anonymity, therefore, sounding over all names was carried out to anonymise video data. Images identify individuals as well specific places (Rose, 2016), however, for Wiles et al. (2012) the wealth of information that a photograph or video can convey, can be so important that it overrides the right to anonymity of the places and people pictured. Digital technology enables the obscuring of on-screen images to protect identity, however, it is suggested that obscuring faces or landmarks

can be dehumanising and disrespectful (Nutbrown, 2011). Holliday (2004)

proposes that recognisable images of research participants can enhance power in research with more ethical potential than anonymised images. Kraftl et al. (2021) highlight that visual and digital techniques require a re-evaluation of notions of privacy and anonymity, particularly when there can be no absolute guarantees about data security, and when privacy needs to be balanced with children's (and parents'/carers') right to be visible.

Discussion about ethical conduct in research with children remains human-centred, also calling for ways to decentre children along many established notions of children's rights, in conducting more-than-human childhood studies. Kraftl et al. (2021) question what kinds of research ethics might be appropriate in the context of posthumanist, new materialist, common worlds approaches to childhood research which almost entirely 'decentres' children. However, Taylor and Pacini-Ketchabaw (2018) point out, so powerfully, to focus on the entangled rights, responsibilities and ethics of care. Co-implicating children with companion species requires a situated and relational sense of ethics that can complement and extend notions of individuated rights, as well as critique those rights. Considering interdisciplinarity of common worlds framework, Kraftl et al. (2021) also call for more diverse, if not radical, interdisciplinary constellations of scholars in critical, careful responses to such challenges and efforts to find other considered ways of witnessing the more-than-human entanglements in which children are caught up. An alternative position to decentering and re-centering child, for Kraftl (2020) is bringing childhoods in and out of focus referring to Tsing's (2015) 'arts of (not) noticing'. Importantly, well-being of the children was never out of mind even if the focus shifted.

For Rose (2016: 369), reflexivity in visual research is prerequisite for ethical research and there are no ethical guidelines which offer 'cast-iron rules' guaranteeing ethical research. This means there needs to be a constant, careful and consistent awareness of what the researcher is doing, why and what the possible consequences in terms of relations between researcher and researched, during and after the process. Pink (2020) encourages to consider that different people and cultures have different notions of ethical practice. Looking comprehensively at visual objects, and at their social conditions and effects, requires that researchers apply reflexivity in their research, exploring and taking into account their own manner of looking (Pauwels and Mannay, 2020).

3. 8 Tracing happenings

As discussed in the literature review chapter, this postgraduate work is a response to Taylor's (2013) call for "on-the-ground doings" in a shift towards common worlds pedagogies. Over a period of three months I collected on-the-ground happenings, generative and creative, "aggressively creative" in Holmes and Jones's (2016: 116) words, as part of pedagogical narrations. "Happenings" as a plural of the noun can also be understood as occurrences, events, incidents, affairs, occasions, actions, experiences therefore fitting well the research moments I was witnessing. The happenings, no matter how small, surprised, emerged, made me wonder and wander, think with, be and become with, also unexpectedly. The 'ing' suffix is of the importance as Taylor (2021: 9) writes 'knowledge-ing acknowledges the processual nature of knowledge-making' shifting to knowledge as 'a doing, an unfolding, a process that is open, nomadic, unfinished and perhaps unfinishable. Knowledge production produces knowledge as boxed and done and sellable as such; knowledge-ing is alive and attentive to the ongoing mattering of the world's unfoldings'.

Happenings also contribute towards the 'low-key, ordinary, everyday kind of response that values and trusts the generative and recuperative powers of small and seemingly insignificant worldly relations ... that many young children already have with the world. They are full of small achievements. We can learn with them' (Taylor 2017: 11-12). Furthermore, those reading my work may take some of its ideas in own doings, becoming-with it and making it into something different whilst working through how to reconfigure knowledge, research and pedagogy whilst navigating the posthumanist and post-qualitative terrain across disciplines (Murris, 2020a). The happenings have been collectively (by humans (myself and children) and the more-than -humans (iPad, pen, journal)) woven into writing 'as an affirmative way of highlighting and bringing to life our more theoretical wonderings (Murris and Menning, 2019). The handwritten notes and video clips of on-the-ground happenings are not for a collection of data or evidence of learning only. Rather, it is a kind of research where 'it is materially implicated in the production of new knowledge and new kinds of knowers, also attending to the unique qualities of digital nature of video data for how it mobilises new social and cultural relations' (de Freitas, 2016: 554). I hold onto Menning et al.'s (2020) idea that research data

cannot ‘be treated as lifeless slices of reality ready for analysis’. Furthermore, using traditional tools such as thematic analysis to deconstruct data in common patterns and themes does not align with the common worlds framework. Inspired by feminist researchers, I offer lively storytelling (van Dooren, 2014) to articulate my understanding of the children’s engagements with the more-than-human activating multispieces relations. For Blaise and Hamm (2019: 94), lively stories do not describe rather, they ‘are about the pulses that bring together multispieces relationships and encounters’.

3. 9 Lively Storying

I was following the view of Hodgins (2019: 4) on the position of a researcher which is embedded within the entangled life-worlds seeking to explore, ‘researching to learn with rather than learn about’. Lively storying (van Doren, 2019) can be seen as a way to shifting such paradigms in early childhood. Lively stories also enable from moving focus solely on children, towards stories that respond to living in common world (Blaise et al., 2017). Donna Harraway’s (2016) rhetorical question why tell stories like her pigeon tales is summarised in Blaise et al.’s (2017) quote: ‘because there are quite definite reponse-abilities that are strengthened in such stories’. For Blaise et al. (2017: 39), lively stories produce an engaged account of happenings as they are ‘engaged by bringing together…the teacher and the child, the human and the more-than-human in ways that allow for a kind of knowing more’. Telling lively stories such as Blaise at al.’s (2017) enhances collective thinking and movement in complexity and challenges human exceptionalism whilst multispecies relations are activated bringing nature and culture together (Blaise and Hamm, 2019).

3. 10 Human and more-than-human participants made visible

Towards the end of the first research month, when most of research sessions had taken place in the frosty garden, I started increasingly noticing how children had been gravitating towards ice which was often available in the garden after sub-zero temperatures in nights. Happenings with ice had become politicizing moments for this study. Whilst thinking with ice, pedagogical documentation became well suited to document and make children’s being, living and

learning with ice (the more-than-human) visible, also affording a collaborative space for thinking with children. Importantly, the researcher is not situated outside of experiences, but is entangled with layers of complexity, therefore affording thinking, questioning, and interpreting as well as engage with multiple meanings (Iorio et al., 2018). Traces of happenings, everyday moments, conversational exchanges, noticings and wonderings in the form of pedagogical documentation became well suited to be shared with children, teachers and families. Pedagogical documentation also served as a creative way to present findings of this study in Chapter 4, as Osgood and Giugni (2015) encourage to consider visual representations, not privileging textual ones among other mediums. Iorio et al. (2018) acknowledge that it also illustrates the relationships children develop with more-than- human, creates collaborative spaces to revisit experiences and expand questions. Pedagogical documentation is seen as an instrument of reflection, interpretation and revisiting of encounters. Additionally, video, images, notes generated through individual and group experience collectively contribute towards knowledge creating process (Iorio et al, 2018).

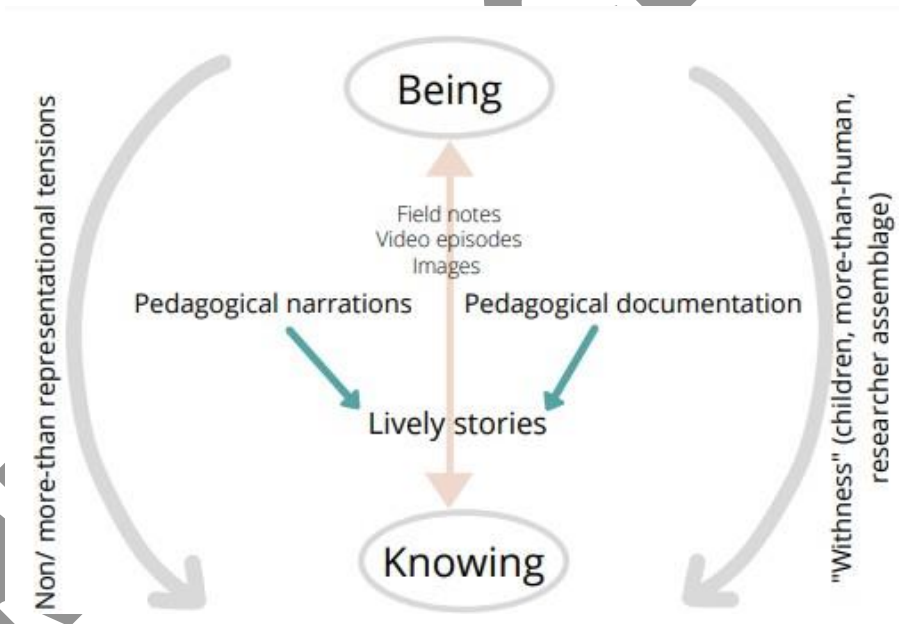

Figure 1. Knowing in being.

Before I turn to the final section what in traditional research would be termed as "data analyses", I point out to the summary of the 'how' in producing knowledge. The figure 1 is my attempt to summarise how data and knowing is generated within my approach.

Amongst the non/more-than representational tensions, the emphasis in my research is also placed on the (re)occurring “withness” with its non-linear nature to knowledge production.

3.11 Thinking with data

For three months once a week, along with 12 two-year-old children, I became part of the lively worlds of the nursery school’s garden. During the two-hour sessions, in collaboration with children, I was recording research moments through writing in my journal, photographs and video episodes which then became tangible traces for reflection and analysis. Steering away from categories, boxes, tying data down, even avoiding using the term, rather, encouraged by Manning and Massumi (2014) I was thinking with data.

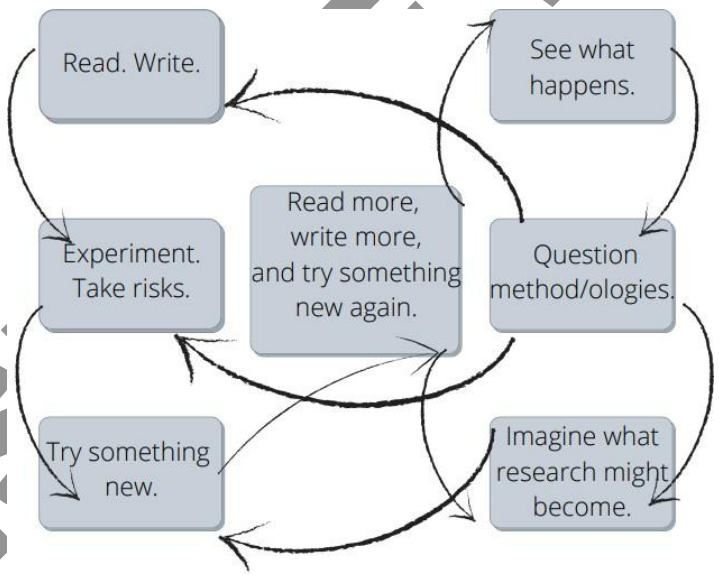

Figure 2. Adapted from Ulmer (2018: 40)

So, I did. Ulmer’s encouragement became my mantra to navigate through the posthumanism and post-qualitative research of writing this chapter, also reminding of non-linearity of such thinking. Her words encouraged me to stay with uncertainties and risks because ‘(post)qualitative research is nuanced, multifaceted, situational, unpredictable, intuitive, and creative, and thus it does not easily align itself with normative, predictable, or even humanistic/caring judgment’ (Koro-Ljungberg, 2018: 25).

Countless encounters and entanglements were accounted for, thus, in Chapter 4 I will be thinking with ice as the ice-child-garden entanglements are going to be further emerging, becoming live, visible and also heard. Although post-qualitative research does not reject qualitative research, it works 'differently with data and opens up new perspectives of what counts as data' (Murris, 2020b: 6). Therefore, I have cautiously approached my "on the ground doing" as "data". Koro-Ljungberg et al. (2018: 563) 'interrogate the meanings and typologies that surround the word, including big data; little data; raw, hard, and soft data; slices of data; first-order data; qualitative and quantitative data…reliable data; and emotional data'. Although resisting to code, box or tie data down I admit that the tendency has been to stay safe (Holmes and Jones, 2016). In my work I have practiced 'thinking-with and across techniques of creative practice' (Manning and Massumi 2014, 88-89) shifting from approaches that collect, extract, and then represent data towards an emergent, affective and relational research approach (Thrift, 2008). Something new might emerge if 'prepared to slow down and experiment with stories (data) that glow' (Millei and Rautio, 2017: 475).

3. 12 Summary

In this chapter, I have engaged with theory of "post" paradigms to research in order to devise methodology, a research method and ethical issues of such inquiry. The following "thinking with data" chapter will entail, in MacLure's (2008: 174) words, 'poring over the data, annotating, describing, linking, bringing theory to bear, recalling what others have written and seeing things from different angles'. Interpretating data will concern less of "representational fidelity" and more thinking with data which enlivens rather than reports, renders rather than represents, resonates rather than validates, ruptures and reimagines rather than faithfully describes (Vannini, 2015). Furthermore, the "thinking with" chapter compliments Barad's (2007) onto-epistemology as knowing and being inseparable. There is no knowing without being, nor being without knowing as 'we don't obtain knowledge by standing outside the world; we know because we are of the world' (Barad, 2007: 185). Therefore, in the following chapter I propose to be thinking with ice, through the notion of van Dooren's (2014) lively stories to pour over, experience, make alive, enliven and connect with multiple ice/ children entanglements. The findings I have selected to

present will be combined with discussion in Chapter 4 followed by addressing the research question in Chapter 5.

Chapter 4

Thinking with Ice

4.1 Becoming entangled with ice

A cold winter morning in a West Sussex nursery school's garden. I can see my breath in the air and hear crunching sounds from my boots breaking up the frozen leaves, soil, sticks, woodchips on the garden floor. It is taking a little longer than expected for the children to come outside. Gemma, one of the practitioners, comes to tell me that it is taking "forever" to get the children ready for the cold morning, "gloves, hats and all that". I wish I had a scarf and gloves…. I hear the slower-than-usual cars on the icy near-by road… I hear voices: "look, ice", "be careful, it's slippery", "leave your gloves on, please", "cold", "slippery" … (excerpt from journal entry 28/01/21).

The very first research morning was followed by multiple episodes, as documented in appendices (A; B), of children's, teachers' (and mine) engagement with ice, often uneasy, uncomfortable, time-consuming and disruptive for the usual routines. Ice drew children to pick, carry, throw, lick, crunch, move, drop, break, melt, hold, hide, step on and kick it. I could hear ice being crashed, crunched, thrown, dropped, scraped. Ice was being discussed by teachers, children, parents and myself. Whilst resisting categorising and resisting themes, I am offering my thinking with ice drawing on the selected happenings to witness ice/children entanglements: ice/body/climbing frame; thinking with sound; following ice (literally); through children's eyes; ice provocations, along with my interpretations and discussion.

4.2 Ice/body/climbing frame entanglement

Today's research morning has been chaotic…the children have found ice or ice finds children's already cold hands, lips and tongues… seemingly "out of hands" ice-tongue encounters are taking place (excerpt from the journal entry 4/02/21).

Eric is asked to stop licking ice… He turns his head, briefly smiles, closes his eyes, moves arms behind his back. His fingers are tightly holding onto ice. Ice falls on the floor, he looks at me, sticks his tongue out, bends down, crouches onto the floor, spreads his legs wide and stays in this position still till an adult has approached him, firmly asking to let go of his piece of ice (excerpt from Eric/ice/climbing frame transcription).

Figure 3. Ice/ body/climbing frame assemblage. Screenshots from Author's video. Journal Entry 4/02/21.

The two excerpts above (journal entry 4/02/21 in appendix A; Eric/ice/climbing frame transcription in appendix B) and the pedagogical documentation (figure 3) shows the intensity and energies that ice has afforded in relationship to children like Eric and practitioners who discuss on how to approach the children licking ice. Eric is almost 2 years old in the video where he engages with ice. His is only beginning to name things, therefore language here is only one language among many. I am fascinated how I can read his other languages, communicated between him and ice, also how he communicates through his body.

I am also reading this as ice draws Eric into contact, where Eric not only is doing something with or to the piece of ice, but ice itself is doing something to Eric. Ice draws Eric closer, to the climbing frame floor, draws his body to be moving in a variety of ways: stretching, crouching, hunching, lying flat. Ice encounter also opens new possibilities for connecting with other materials and places. Eric's piece of ice has picked up woodchips and sand. In this entanglement I am also thinking of the central modes being enacted through the lived body. Eric is involved in environment through his body being positioning in relation to human and more-than-human. Eric positions himself in certain ways and certain places in relation to

human and more-than-human others involving materiality, sensations and movements. Positioning of the body accompanied is as valid as verbal utterances.

Ice/body/climbing frame entanglement not only poses questions but also challenges with ice play- ‘don’t put ice in your mouth’, ‘ice is dirty’. Ice hurts children’s hands and teeth, balancing on what is appropriate/inappropriate practice. Despite the hurting experiences, the children including Eric continue to be drawn to ice as they shape and test new relations along the course of research sessions. As I watched the slow-motion video clip of Eric’s encounter with ice, I had to attempt to resist from explaining what children mean or why they lick ice, rather focussed attention on the sensation of ice-mouth-relation and the felt sensation of ice licking and crunching.

Ice-play is a common activity within early childhood settings. It offers children sensory possibilities to explore different materials, learn about processes in the environment, promotes their understanding of scientific processes, sparks curiosity. Prom the cognitivist view, it can be explained as a sensory motor stage of development (Piaget, 1967), relevant in the current context of the setting, whereas MacRae (2020: 92) explains the contact episodes (teeth-ice; hands-ice) as ‘sensed response to the world that takes place through kinetic dialogues activated by a curious reaching out’ (MacRae, 2020: 92). Eric’s body as sensorial body, as coined by Malone (2019: 3) tells ‘some of the story through gesture; most is speculation’. Encouraged by Malone (2013: 3), I resist to ‘tell what happened in these encounters’ but to enable opportunities for multiple readings. Ice has been drawing Eric to move his body, reach hands out for it, stick his tongue out, find ways of possessing ice. Malone’s (2019) concept of “bodies sensing ecologically” enables to understand how Eric engages/communicates with the more-than-human-world before language acquisition. His sensual knowing emerges to make sense of things (ice) in the act of sensing. Within a sensorial ecological encounter Eric is finding ways through his body to be with more-than-human.

I experimented with MacRae's (2019:11) slowing data and framing it 'as a methodological resistance to fixing data in time, so that data is less about time, and becomes instead, the "stuff of time"'. As I watched the slow-motion video clip of Eric's encounter with ice, instead of attempting to explain the behaviour, I focussed attention on the sensation of ice-mouth- relation and the felt sensation of ice licking. 'It is the humanist habitual gaze that draws us into the role of an interpreter, interrogating images and trying to find out what is represented in them' (Mening et al., 2020: 161). When we disrupt our habitual gaze, it opens the possibility of seeing new connections and assumptions about the world. Attending to the small units of happening within ice/body/climbing frame encounter cuts 'us adrift from the common sense of the linear, progressive and standardising narratives that dominate early childhood about learning and development' (MacRae and MacLure, 2021: 13). Rautio (2013) suggests considering seriously what children find rewarding and spend time engaging in, such as Eric and ice.

Within ice/body/ climbing frame encounter the adults are calling Eric to stop putting ice in his mouth, he looks at the camera, smiles, yet falls to the climbing frame floor and covers the piece of ice with his whole body to carry on licking it. This is ice's "thing-power" (Bennett, 2004); I call it "ice-power", drawing on Bennett (2010), its capacity to affect. If in Baradian terms, Eric and ice become a phenomenon of intra-acting agency, drawing on notion of correspondence (Ingold, 2013), ice/body/climbing frame encounter can be re-conceptualized as the relationship between child's entanglement with the world (the ice, climbing frame, mud, woodchips) and his multimodal meaning-making. Ingold (2016) describes it as a "dance of animacy" between human and nonhuman actors, in which each takes a turn to pick up the baton and run with it. Furthermore, Lawrence (2021: 14) proposes that 'materials and objects create meeting places by affecting or "calling"', in this entanglement Eric is being affected or called by ice.

When (re)watching video clips with Eric's parents, they use the word 'curiosity' to refer to the driving force for the emerging child's relations with ice. This way young children engage with the worlds in their environments when/if given the space and time to attend to the

happenings to create possibilities for new relations to emerge. Thinking curiosity as care (Harraway, 2008) it is helpful to consider both human and nonhuman relationality and interdependence, where care operates with/ in natureculture assemblages (Hodgins, 2019). Furthermore, there is relationality between ice and Eric. In relation to the ways Eric builds relationships with ice I witness interactions between the ice and the child. Witnessing this ice/body/climbing frame intra-action also affects staff who query and wonder what to do with ice in the garden. The ice/children entanglements have invited children to move and be intra- active with their environment. Ice/body/climbing frame encounter resonates with Rooney (2019) who points out to the "risking sticky attachments" when notorious status of children's play with sticks is shown through adults' "put the sticks away" and inevitably such play can come with risks. Rooney (2019) encourages to think of the risky encounters rather than the ones the children should avoid, instead think of such interactions as a reminder from Instone (2015: 36, cited in Rooney, 2019) as 'reaching out and risking attachment with all manner of unlike others'.

4.3 Thinking with sound. Sound as affect. Sound entangles.

Figure 4. Sound entangles. Sound of ice as affect.

Left- screenshots from Youtube video. Top right- Author's photo. Top right- excerpt from journal entry 11/02/21. Bottom right-excerpt from transcription "John listening".

The journal entry 11/02/21 (appendix A) shows my increasing attunment and thinking of sound as affect and how I became entangled with the sound of children's voices resulting in taking a photo of the treetops of the garden. Thinking with sound further also posed questions from the video where John is placing ice to his ear (appendix B: Transcribed video "John Listening"). This provoked me to spend some time with John finding more ice in the environment to listen to. We then found out from YouTube video clips that ice cracks and creaks and even sings! This resulted in me creating pedagogical documentation *Sounds* to make children's (and my) experiences and thinking visible. It also became a collaborative space for a dialogue with teachers. Does ice sound? How might John have heard it? How does it sound? It sounds when it is stepped on, crunched between teeth, but it also sounds as it melts. From google search with John and by then also other children we learned from projects of arts that melting ice sounds. I was becoming aware of my previous thinking of the agency of sound and that sound does more than symbolic communication and representation. My increasing noticing and attunement to sound, as well as the video episode of John listening to ice are the ways in which ice/child relations posed questions of how materials, elements may sound and become entangled. Furthermore, thinking with sound continued as I was attempting to transcribe videos:

BEEEEEEP!……HOOOONK! BRUMMM….(car park sounds) …sounds from feet walking on the
car park gravel….ARRRRGH….(laughing)…. Crunching ice. Scraping sound. (excerpt from transcription: Sound Noticing 1).

Re-watching the video Sound Noticing 1 (transcription Sound Noticing 1 in appendix B), each time I not only saw differences, but I also heard different sounds: children's voices, car engine noises, horses neighing in the neighbouring field as well as more ice crunching, creaking, cracking from children's actions with ice making transcription a rather problematic task.

Thinking with (ice) sound and attempting to transcribe sounds, helpful is MacLure's (2008) acknowledgement that the use of words to represent experience often cover the experiences themselves. Throughout the process of transcription and analysis of videos I struggled with the inadequacy of words, aligning with Hackett and Somerville's (2017) findings that the way words require to be arranged in linear and logical

sentences, create only partial accounts of intra-action with sound. I have described ice breaking, creaking, cracking, shattering and

singing. Although what I and John hear is socially and culturally constructed, for Gallagher (2016), sound, as resonance created by vibrations, has the potential to affect and be affected, but also exists beyond human perception.

Dernikos's (2020: 139) conceptualization of sound as a 'form of affect that activates feelings and emotions' has been helpful to understand how sound connects, changes, and moves bodies, both human and more-than-human. 'Reimagining sound as affective recognizes sound as vibrational waves moving and affecting matter, where affect can be transmitted through both linguistic (e.g. voice) and nonlinguistic utterances' (Dernikos, 2020: 139). Along with movements and gestures, words, voices and sounds can also be understood as relationally entangled. Sound as affect in my study is confirmed by Gallagher (2016: 43), it is a difference, 'an intensity that moves bodies, a vibration physically pushing and pulling their material fabric' activating feelings and emotions. Furthermore, Chadwick (2020) acknowledges the "embodied" aspects of voices with their energies and rhythms as an essential part of meaning-making processes. Chadwick (2020) points out that although research often involves listening to, collecting embodied voices, it is often lost in discussions, resulting fleshy and material voices being abstracted and often erased.

4.6 Following ice (literally)

This morning, there is lots of ice available in the garden: in the role play and mud kitchens, tyres, trays, frozen puddles, all in different shapes and origins. Upon my arrivals, I had started noticing that unlike with many other objects, work, makings, the children did not offer me ice. So, I decided to follow ice (literally) (journal entry 18/02/21).

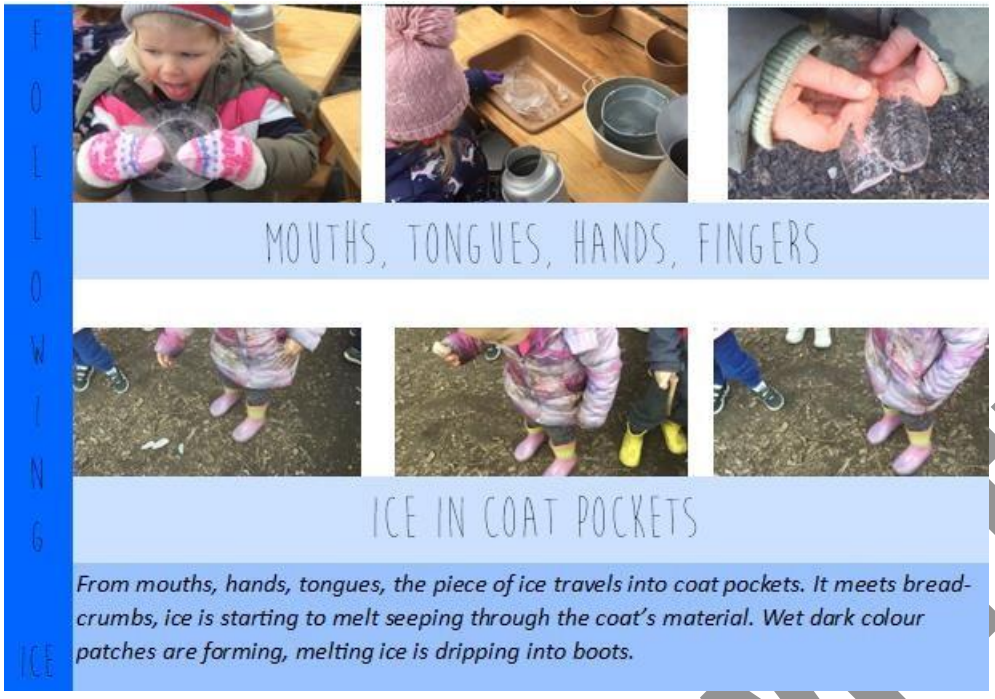

Figure 5. Staying with ice, staying with trouble.
Screenshots from Author's videos. Excerpt from journal entry 18/02/21.

Towards the end of the first research month video had become a well-suited method of viewing episodes to attend to the entanglements that encountered the space of the outdoor areas. In a shift from following human to following more-than-human and in a fascination with ice/children entanglements, I followed and traced a round piece of ice which initially was held and licked by Emma (see Ice/Emma and Ice/Cara video transcriptions in appendix B). What struck me the most was how many hands, mouths and feet were being with the piece of ice: it was licked, carried, broken in smaller pieces, crunched with teeth, dropped, crunched by feet, and then melted in coat pockets. So, I stayed with ice till it melted seeping through Cara's coat and dripping in her boots. By following ice, videoing, holding onto video episodes, reviewing them, writing, and thinking with this data, I also became part of the ecology of the melting ice entanglement. Following ice, I was slipping in and out of material- centred way of seeing. Further questions arose. Where were the children, where were breadcrumbs in pocket in relation to ice? What can we learn from attending to how the children and ice affect each other? Intra-relationality enables see children not as separate entity, but as always becoming and constructed with and through relational entanglements with the more-than-human. Children's voice and agency which is shared, such as Emma, Alice's broken ice, Cara and ice and her coat pockets and breadcrumbs all had agency.

Along with changing environmental conditions, a melting piece of ice can serve as a metaphor for what goes on in the world. The children experience the melting ice phenomena through all their senses: mouths, bodies, hands, through their clothing and ice dripping in boots, it creates mess, according to Ava, but it also can be an apt figure to resonate with the fast-changing climate conditions. The children who have been, become with ice and learned with ice, through many of their senses, relationally, in dialogue, are entangled already with this apt figure. It is not just an individual piece of ice that opens new ways of connecting with the world. On icy research mornings I find myself looking down to the ground in anticipation of finding a slippery patch that become potentially dangerous site for being there. Despite my worries, the children do not avoid these areas but rather continue returning to them, circling, moving through, slipping and sliding, through and over the slippery surface. In these moments I witness again the liveliness of matter as the slippery ice floor resists, draws and pulls down.

This lively story resonates with Rooney's (2019) points of connection between children and ice as 'far from singular and isolated from the world but rather seem to be always entangled in a messy collective of more-than-human worldly relations' (Rooney, 2019: 48). Ice can also be classified via the term "energetic phenomena" (Kraftl, 2020) with a deeper
attentiveness to 'social-material processes that are characteristically massy, indivisible, unseen, fluid and noxious' (Horton and Kraftl, 2018: 928 cited in Kraftl, 2020). Kraftl (2020) also acknowledges that these kinds of processes have rarely been the subject of scholarship in interdisciplinary childhood. Kraftl's (2020) proposal allows me to consider the material affects of the sound, energy of it, and other nonphysical elements in an assemblage.

Furthermore, agency can be assigned not only exclusively to humans (children), but also more-than-human (ice, iPad), considering the vibrancy all around in the children's environment. For Blaise et al. (2020) agency is relational and collectively distributed. Imagining children and agency as shared, everything around is agential with them (Arndt et al, 2020). This conception shifts seeing Emma, Alice and Cara agentically with ice. The ice too is agentic, as are breadcrumbs attached to ice, affecting ice, children's skin, teeth, tongues

and pockets. Like Rautio's (2013) stones the piece of ice I followed has (intra)agency: ice does things to children, to us and with us.

4.5 Through children's eyes

Figure 6. Child /camera/ ice in ice time.
Top: Photos and screenshots of videos from 25/02/21 session. Children authors unknown.
Bottom: Screenshots from Author's video footage.

The children were given the iPad. Amongst many photos and videos, for pedagogical documentation I selected the images of ice or what the children were referring to as ice. Careful, serious attunement and attention was paid to children's responses, both verbal and non-verbal, when they were involved in reviewing the material they had produced. The children's photographic and video material was available indoors on the whiteboard screen. There were screeches, jumping, twirling, and twisting, laughing, covering faces with their hands when we were watching the video episodes of their engagement with ice. It was important to observe their responses to my research material in a raw form (appendix A, journal entry 25/02/21).

John jumped up from the chair and laughed when he saw the Lego figure in ice photos. Another response from John on the mud photo made me take a note that even invisible to my eye, John pointed to the photo exclaiming: "ice in mud". The image of the grey sky is a screenshot from a child's video of the sky. Barely noticeable by me, but Maria exclaims: "snowing" as she runs from the whiteboard screen to the window and points to outside, saying again: "snowing" (excerpt from journal entry 25/02/21).

Do the children see/ sense/hear entanglements in a different way than us? Possibly. What I read as a footprint in mud, John's experience, knowledge, interpretation was of ice in mud. Interestingly, children's photos and videos do not hold the children in the centre. Instead, they attend to objects, Lego figure in ice, own feet, ground, but also, they were worlding towards the sky with the changing weather patterns as the snow was falling, strikingly and powerfully documented by the children. In line with common worlds philosophy, I have been wondering how and whether I decentre the children. How could I approach it in relation to listening to them? Also, a question of how families would respond to the children being de- centred. This question has been troubling me all throughout research as it concerns ethics and politics of researching *with* children. It still poses many questions.

From the 'iPad in child's hands' session I had become increasingly entangled with ice myself. The forecasted cold spell continued the following week when I wrote a note having watched the video of a hand scraping ice. In ice time.

Child's hand is reaching for ice, scraping, crunching, gently touching, stroking and tapping it. With care and attention. Fingerprints and marks left are visible traces of the encounter. I rewatch the ice-hand video several times, also in slow motion. First times I mainly hear child's vocalisations, but with each time I hear something new, such as ice sounds when tapped, scraped and touched. Paying attention to the small and subtle details, being in tune with ice within ice time (journal entry 04/03/21).

Could it be that the children themselves, as they were taking photos of ice, spending long periods of time engaged scraping ice, were positioning themselves in different temporalities? Young children do not locate themselves in the traditional times of clock. They live by dinner time, nursery time, home time, garden time. Children's engagement with ice must be attended to and taken seriously. Can it be that during ice entanglements children also can possibly locate themselves within ice time?

Similar to crow time (Kummen, 2019), forest time (Pacini-Ketchabaw and Kummen, 2016), I felt there were opportunities for children to locate themselves within ice time: moving, sliding, crashing, crunching, munching, melting, throwing, marking, shaping and remaking shifts the focus from the conventional "clock-time" to another mode of attentiveness to the environment (Rooney, 2019). "Forest time" can be experienced whilst the children sit "with" the forest in order to experience the changes over time (Pacini-Ketchabaw and Kummen, 2016), similar how children in my research stay with ice. Borrowed from Pacini-Ketchabaw and Kummen (2016) my video clips reveal how children also experience ice time and move, sit, engage, get entangled with ice whilst attuning to temporalities of the ice world in this entanglement. For Loveless (2013), such orientations to time tell certain stories and assign certain values, leading to certain ways of being in the world, in certain relations, facilitating certain modes of being. Ice time theorization has enabled me to recognize that we are already surrounded by other times. Importantly, the significance of having attuned to ice-time is expressed in Loveless's (2013: 136) quote: 'the radical simplicity of ice melting actions asks for no other engagement but to witness matter in motion, many, new clocks'.

4.4. Provocation "Shells in Ice"

The emerging, occurring and reoccurring children/ice entanglements invited me to experiment with provocations… it served as an invitation in the context of children's previous entanglements. I had also printed pictures of frozen lakes and rivers (pedagogical documentation 'Provocation') for further visual clues. I was setting out the photos, talking to myself that ice can be found as frozen lake, rain, and river water when Maria looked at the frozen ice- block in her hands, playfully laughed and said: "this is tap water, you silly!" (excerpt from journal entry 8/04/21).

Figure 7. Provocations and responses assemblage.
Top 3 photos - google images. Bottom right corner- Author's video screenshots. Excerpts from transcriptions Dripping and Dropping. Journal Entry 8/04/21.

Although I came to this research to learn with and from the children, from with(in) their entanglements, during one of the sessions I brought in provocations. During provocation with ice morning, I noticed Daniel leaning over the side of the vegetable bed, holding his piece of ice over the freshly dug up soil, really concentrating, keeping his body still until ice fell out of his hand. Whilst I was lingering over and over the video, a barely noticeable, child's voice appeared. *Daniel is counting: "1;2;3..(pause) 4;5;6 (very fast)" (transcribed video: Dripping and Dropping).* Of course, he must be counting the water drips!

Along with romantic notions of the beauty of ice, whilst thinking of possible provocations, I was thinking of the usefulness, its vital role for the planet. We all can become entangled with ice: food in our freezers, car crashes on icy roads. Ice traps people and animals, often deadly. Ice also preserves. Ice petrifies, ice refreshes, ice soothes. Ice provides opportunities for artists to sculpture, to capture and to listen to ice sing. Ice is also available to many in the world in many forms, in many contexts, available to rural and urban children. In winter Olympics we watch athletes compete in ice-hockey, figure skating. Planes must be de-iced

before taking off. Ice preserves life, therefore, holds stories. Children's entanglement with ice have enabled me to become entangled with many forms of ice: through internet search, freezing the water for provocations and checking on my children's snowman in the freezer from last winter's cold spell when we climbed snowy South Downs in the context of pandemics. My children's frozen snowman in the freezer holds stories too.

Thinking with ice as provocation, as a pedagogical potential, I had written:

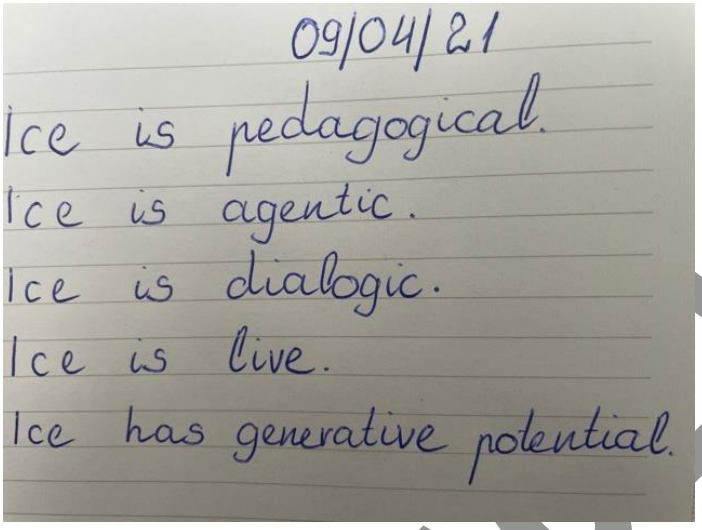

Figure 8. Journal entry "Ice is pedagogical".

Maria's and Daniel's engagement with ice blocks further evoked thinking of pedagogical possibilities ice holds. As a teacher, I saw pedagogical possibilities about its importance in the world, water's transformation into ice but, as a researcher, I started questioning my own biases of the usefulness of this activity. Could I have engaged differently without my prior knowledge *about* ice or thought what the children should/could/might learn.

Helpful is Barad's (2003) thinking of materiality assigning relevance to the more-than-human, challenging ideas that the human is set apart from the material world. Such thinking shifts from ice as a resource to a notion of ice as agent of intra-action. Hultman and Lenz Taguchi' s (2010) a relational materialist reading can be applied to Daniel's actions: as much as Daniel is playing with the ice as it is the ice playing with Daniel as if asking to be played with. Therefore, this episode can be viewed as an example of intra-activity with other matter (Lenz- Taguchi, 2010) in an assemblage of forces and flows emerging in the interaction. Rautio (2013)

writes on the phenomenon of children who pick up stones, encouraging to recognize such encounters as a way we might come to know ourselves as part of the world rather consider encounters trivial or even harmful. Pacini-Ketchabaw et al. (2016: 46) describe a material object as also 'a continuum, a story, an event, a happening, a doing' with materiality of ice is being evident in what Daniel and ice are doing to each other.

Additionally, Daniel's video episode moving backwards and forwards and making stops and starts gives me a view of the event and child that is repeatedly new (Giorza, 2019), when losing water out my sight and being able to return to its virtual solid state. Here, video invited me to diffract. Diffracting with viewings of video clips, also in slow motion, forward, backward, stopping, similar to Giorza (2019) I found that forward and reverse movement and stops in different moments throughout repeated viewings of the same video footage produces different and new 'stories' about the events and the children involved.

Chapter 5

Evaluation. Implications. Conclusion.

5.1 A return to the research question

I had proposed to explore young children's entanglements with the more-than-human in their outdoor areas of the nursery school in a shift towards situated, relational, more inclusive common worlds pedagogies. The three months' period, being with(in), becoming with, learning with, experimenting, writing, thinking with, collaborating, entangling, grappling, and thinking again, collectively, enabled me to conceptualize child/more-than- human relations and explore the pedagogical possibilities it affords. The relations witnessed through children's and my own engagement in entanglements were diverse and multiple: with materials, elements, weather, plants, insects, and birds, foregrounding promising potentialities for any further exploration. Amongst many noteworthy encounters, children's engagement with ice entanglements lay at the heart of the study and the agency of ice found in the garden had over two-year-old children demonstrates how common worlds

pedagogical practices (Taylor, 2013) enable experimentation with learning to live amid the inevitable relations within the world. Common worlding and thinking have revealed multiple, diverse, often uneasy, and messy children's entanglements, all of them starting from mundane, small everyday encounters, but with attunement and by slowing down, with the notion of lively stories, politically and ethically raised big questions for me as a teacher and researcher.

5.2 Evaluation

Although the ice/child entanglements inevitably remind about directions we are heading into, important in answering my research question was that the children in my research engage in the entanglements with ice creatively, with care and curiosity. The entanglements reach into the attention to such encounters to be with, to learn with forming relations
through many of children's senses. The multisensory children's encounters engaging touch, sound, taste, embodied modes of relating, are particularly relevant in the climate in which two-year-olds have become central to concerns and focus on ensuring the normative development of spoken language (MacRae, 2019). Furthermore, ice can be an apt figure for storying more-than-human climate capable collectives (Verlie, 2021). Ice can also refer to other kinds of collectives apt in the relations between ecological, atmospheric, or social processes (Meredith et al., 2019) in the light of climate change. Attunement to and the arts of noticing of such processes, according to Kraftl (2020: 203), is not only theoretical, attention is drawn "to stuff that matters", I can argue that in the context of climate change particularly, ice is "the stuff that matters".

An inquiry into potentials for alternative pedagogies, my work was not to discover a prescriptive process for understanding entanglements in our everchanging and diverse common worlds. Neither my research intended to uncover unknown truths or suggest "better" ways. Rather, offering a lively storying of human/more-than-human relations, my research seeks to hold different and new stories and ways children express collective being and thinking. Unexpected and unique and with each research session more visible emerged ice/children entanglements. Giorza's (2019: 3) quote describes my research in which as modest-witness, 'in a cyborg form of human-with-camera, I/we dance among the intra-

actions and entanglements of spacetime to find new multisensory narratives of learning and becoming'. In my case, lively stories of encounters (van Dooren, 2014) with ice produced an account of happenings that emerged from the everyday activities and noteworthy moments, when sometimes there was 'almost nothing to see' (Braidotti, 2002: 173). By
taking these stories seriously, we take seriously children's ways of doing, knowing, being, and making, and also acknowledge that children are not the only significant actors in their early childhood spaces.

Having followed Barad's (2007) notion onto-epistemology as knowing and being inseparable in producing knowledge, I have been further reassured by Kraftl (2020:14) who thinks
'different modes of (re)presentation are as important as "high" theory to stretching ways of thinking and doing". My research also offers opportunities to 'start-with a range of ways of knowing' childhoods (Kraftl, 2020: 207) and "other material stuff", I started with thinking with ice, exemplifying the worth of forms of thinking and doing. Kvale's (2007:20) quote resonates with my journey in leading to new knowledge, where 'the traveller might change as well', initiating reflection and leading the traveller to uncover previously taken-for- granted customs and values.

It has been intentional to position early years practice as a situated and collective learning in our common worlds (Land et al., 2019). Seeing children as not the central or most important participants does not mean completely decentering of human agency (Pacini-Ketchabaw et al., 2016). Focusing on ice meant sharpening the focus on other matters and 'does not mean that children were either absent or decentred' (Kraftl, 2020: 203). Through pedagogical narrations, pedagogical documentation, lively stories children move in and out of focus in different ways. Here, de Castro and Hennessy's (2020) research on pedagogies of indeterminacy helps to move away from an individual child to a collective lens of thinking with children. Such disposition involves humans to learn with the worlds in which they are already entangled. Applying the idea of entanglement, has enabled to think beyond the

human. In posthumanism, Braidotti (2013) reminds us not to lose the human. We, and the children are still there, doing the thinking, the engaging, the analysing.

5.3 Recommendations and Implications

Whilst being the insider in my research, with already established relationships with parents through daily work, the parents were interested in how my research was progressing. Very organically, an opportunity arose during a conversation with Eric's parents during pickup time, to share a video recording of Eric engaging with ice. This can be viewed as "shared attention" (Lawrence, 2019: 319) which enables 'dialogical relation as participants perceive, co-construct and communicate meaning together'. With Eric's parents' consent to be included in this study, their comments were relevant and added another layer of
understanding child's relations with the more-than human. The episode of Eric's parents' involvement encourages to include children's parents and practitioners to interpret together how young children regard others (Lawrence, 2019: 318). For Lawrence (2019), relation with more-than-human can be understood "through a Dialogical Approach to Observation", hence a recommendation for further research. Additionally, the period of time for this study was restricted to three months which was appropriate and sufficient to obtain material for my research. A similar study over longer period of time involving various seasons could gain a different insight in the agency of atmospheric conditions and climate.

In response to *The Birth to 5 Matters* (Early Years Coalition, 2021) calling to consider common worlds in early childhood practices, helpful starting point is how and what we notice, or Tsing's (2015) arts of noticing. Children in my research notice already, for example, John notices ice sounds. As a researcher and teacher, I took it seriously, and attunement enabled further thinking with ice sounds and many other worldly sounds. I
could have further sat with John (and other children) that day and listened to ice, like Blaise and Hamm (2020: 12) encourage attentiveness through, for example, suggesting that
'Kangaroo grass and wind might be dancing together. Can you hear them dancing? Can you smell them dancing?' Such attentiveness is a move towards paying attention

to how we are connected with world, rather than separated from it. Embodied and sensory encounters

that enable ways of seeing and understanding the world requires careful attunement. Situated, slow pedagogical approaches allow to wait and notice, rather than tell and explain, becoming 'practices that can underpin pedagogical intentions of being open and attentive to the ways in which we are entangled with the world' (Blaise and Hamm, 2020: 12). Ice- prompted pedagogy has challenged me, made think differently, think with (Ulmer, 2017) ice, it has prompted to rethink the potentials in the current English context of early childhood practices of learning *about* ice. My ice pedagogy is relational rather than instrumental therefore not human centred. The analyses of sound as affect also encouraged me to listen differently, identifying potential for further research based on the premise that the more-than-human is worth listening to.

Additionally, Loveless's (2013) thinking rationalises the ice time I proposed: 'The life we know requires water. Ice is frozen water. Unlike nearly every other element… when water gets cold and turns into ice…it takes up more space rather than less. And, as it takes up space, it takes up time' (Loveless, 2013: 135). The way to experience the ice time, or other world's times, however, is to be with 'allowing the almost imperceptible movements of matter – human and non-human – to become worthy of attention' (Pacini-Ketchabaw and Kummen, 2016: 435). Noticing ice time, different from the pedagogical clock driving most early years settings, can serve as 'an invitation into attentiveness that has implications for how we do our ecological thinking' (Loveless, 2013: 130).

Research in children's entanglements with the more-than-human has drawn attention to way of relating to materials not only in research, but also implications for practice. Hackett's (2021) report on more-than-human literacies is reassuring in seeing potential for my study to inform early childhood pedagogy and practice. Hackett (2021) acknowledges that more- than-human: sounds in the environment, the weather, animal and natural things as well as the intangible: relationships, a feeling, are all worthy of our consideration. Hackett's (2021) work on the more-than-human literacies recalls that of Freire's writing from where I started. Reflecting on how he came to read, Freire insists he had to first learn to read the world (Freire and Macedo, 1987: 30), 'in a series of things, objects and signs…in the songs of the birds…in the rainwaters playing with geography' another implication from this study in early literacies through common worlds lens.

The 2-year-old participants of my research were in different verbal stages, some pre-verbal, some verbal. Encouraged by Kress (2010), I was “reading” other modes and how they can be read in relation to children’s entanglements whilst acknowledging that they are sensational bodies entangled with the world. This premise needs to be further addressed, as educational approaches consider senses of sight and hearing as of higher importance, while smell, taste and touch are the “lower” senses (Ødegaard, 2021). Ødegaard‘s (2021) argument aligns well with Hackett’s (2021) report on valuing all kinds of literacy and language practices. My research has highlighted that it is possible to read other languages of very young children and it is necessary to notice and ‘resist socializing young children towards particular literacy and language practices as quickly as possible’ (Hackett, 2021). My study has a potential to provide opportunities to examine not only more-than-human literacies, but also complexity of the human and more-than-human relationship and can be reconceptualised in early childhood settings.

5.4 Conclusion

I have made a shift towards common worlds pedagogies by having become entangled, together with the children, with the lively worlds of the nursery school’s garden, particular deeply entangled with ice through paying attention and attuning to ice. MacRae’s (2019: 4) quote accurately summarises my work as this is ‘not a place from which I started out, but rather a ground that is still in the process of composition through my own dance with theory and method while thinking with the data’. I think of my research as wanderings; this means that bodies flow and meander with the more-than-human others generating new wonderings. Yet, this is writing is also going to generate new wonderings for those reading it. As I continue to wonder, I come to know the others differently. Common worlds framework has allowed to approach knowledge differently. Rather humans as the only producers of knowledge, the common worlds approach values the coexistence and involvement of all agents, including children themselves as their perspectives are an important part of the assemblage (Taylor, 2013). The happenings in my common worlds research are examples how even very young children combine and entangle with, ‘people, and more than-human in their

meaning-making, creating common worlds and entanglements' as Iorio et al. (2017: 131) put it.

Thinking with ice, there is also inevitably and urgently recognised Notz et al.'s (2020) prediction that climate change will cause the Arctic to be almost free of sea ice by the middle of this century. Such knowledge produced is arguably valuable to recognise the seriousness of the Anthropocene, therefore, as proposed by common worlds scholars, pedagogies need to reorient to avoid human exceptionalism as the root cause of the current ecological crisis (Taylor, 2013). Furthermore, witnessing climate realities through small everyday experiences such as melting ice might help us better 'attune to the transcorporeal affective agency of climate change and articulate our relational climate responsibilities' (Verlie, 2021: 80). Witnessing climate realities can enable us to add additional modes of knowing, being and relating to climate change to our repertoires of climate responsiveness.

Wordcount: 16064 words.

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Appendix A. Journal Entries

Journal Entry 28/01/21

A cold winter morning in a West Sussex nursery school garden. I can see my breath in the air and hear crunching sounds from my boots breaking up the frozen leaves, soil, sticks, woodchips on the garden floor. It is taking a little longer than expected for the children to come outside. Gemma, one of the practitioners, comes to tell me that it is taking "forever" to get the children ready for the cold morning, "gloves, hats and all that". I deliberately decided to meet the children in the garden, dressed in my researcher's coat to be distinguishable from my teacher's role. I also wanted to meet the garden to sense and feel it as this is going to be the place we might become entangled. I feel the cold on my toes and hands, I hear the slower- than-usual cars on the icy near-by road. The children's voices are travelling through the air. There is excitement in the air. I hear voices: "look ice", "be careful, it's slippery", "leave your gloves on, please", "keep your hats on, please", "cold", "slippery", "oh, no". It is time to say hello to the children.

Journal Entry 4/02/21

Today's research morning has been chaotic, full of the unexpected as the children have found ice or ice finds children's already cold hands, lips, and tongues. I hear John's voice from the distance: "Cold hands, ouch". He starts crying. I hear a practitioner asking him to put ice down and find gloves in his bag. Undecided on whether to intervene with the seemingly 'out of hands' ice-tongue encounters taking place and offering alternatives of exploring ice, I record a 1.56 m long video episode.

Curious hands are moving ice into mouth. A supervisory gaze results in ice being dropped on the muddy climbing frame floor. With cautiousness and care ice is carried, touched, licked,

and possessed again. The body has crouched down to the floor covering ice from another supervisory gaze. There is a moment of anticipation as the sound of the voices of not to lick ice is vibrating in the air. I decide to witness the moment. Ice meets the tongue again. The climbing frame here is in a contact with ice, tongue, teeth and cheeks in this entanglement.

Journal Entry 11/02/21

The sound of children's voices has arrived before their bodies. Head tilted back, the finger pressing on the iPad's camera button to witness this. Invisible to the eye of the viewer amongst the treetops, yet, live and agentic as I am writing and thinking with the sound.

Journal Entry 18/02/21

This morning, there is lots of ice available in the garden: in the role play and mud kitchens, tyres, trays, frozen puddles, all in different shapes and origins as after each day all equipment outdoors must be washed to prevent the spread of virus. Washed outdoor equipment means plenty of ice after cold nights. Upon my arrivals, I had started noticing that unlike with many other objects, work, makings, the children did not offer me ice. So, I decided to follow ice (literally).

Journal Entry 18/02/21

The ipad camera is following ice. Cold ice is meeting a warm tongue. The vibrations from the teeth crunching the ice are travelling through the air. Ice is meeting the hand again. The melting piece of ice is meeting the ground before another foot crunches it into small pieces.
From mouths, hands, tongues, the piece of ice travels into coat pockets. It meets breadcrumbs, ice is starting to melt seeping through the coat's material. Wet dark colour patches are forming, melting ice is dripping into boots. Cold air is pinching my hands and toes, the sound of the ice crunching and scraping is pinching my ears. The camera is now interacting with the ice, the tongue, hands and the cold winter air to emerge in generating a videoclip.

(Journal Entry 25/02/21).
We have just reviewed the children's photographic and video material indoors on the whiteboard screen. There were screeches, jumping, twirling, and twisting, laughing, covering faces with their hands when they were watching the video episodes of their engagement with ice. John jumped up from the chair and laughed when he saw the Lego figure in ice photos. Invisible to my eye in the muddy ground photo, John pointed to the photo
exclaiming: "ice in mud". The image of the grey sky is a screenshot from a child's video of the sky. Barely noticeable by me, but Maria exclaimed: "snowing" as she ran from the
whiteboard screen to the window and pointed to outside, saying again:

"snowing". (Journal Entry 04/03/21)

Child's hand is reaching for ice, scraping, gently touching, stroking and tapping it. With care and attention. Fingerprints and marks left are visible traces of the encounter. I rewatch the ice-hand video several times, also in slow motion. First times I mainly hear child's humming and talking, but with each time I hear something new, such as ice sounds when tapped, scraped and touched. Paying attention to the small and subtle details being in tune with ice within ice time.

Journal Entry 8/04/21

The emerging, occurring, and reoccurring children/ice entanglements have invited me to experiment with provocations. As the end of my third research month is approaching, I have brought ice-blocks with frozen shells in them. It is a warm spring day, and I am wondering how quickly ice would melt.

The provocation served as an invitation in the context of children's previous entanglements. I had also printed of some pictures of frozen lakes and rivers (pedagogical documentation
'Provocation') for further visual clues. I was looking through the photos and accounting for ice as frozen lake, rain and river water when Maria looked at her frozen ice- block, laughed and said: "this is tap water, you silly!"

Dripping and dropping. Ice in its liquid H2O form is starting to drip down in the freshly dug up soil. Two, three, four drips, they all quickly disappear from the human eye, and from the iPad lens in the deeps of the soil. The facts from school science lessons rush through head that scientifically it does not disappear, only changes form. The unexpected happens when I watch the slow-motion video backwards. New possibilities are emerging. I witness the water drops return to their solid state when the video episode is rewound, slowed down, kept still.

Journal Entry

9/04/21 Ice is

pedagogical.
Ice is
agentic. Ice
is dialogic.
Ice is live.
Ice has generative potential.

Appendix B. Transcribed Videos.

Sound Noticing (21 seconds)

BEEEEEEP!……HOOOONK!....BRUMMM….(car park sounds) …sounds from feet walking on the car park gravel….ARRRRGH….(laughing)…. (a sound of a loud bang as the ice block falls on the climbing frame floor). Crunching ice. Scraping sound.

John Listening (19 seconds)

John is carrying a piece of ice holding it with his both hands. He moves it close to his lips, licks it with his tongue. As he notices me with the iPad, he stops licking ice and starts walks round the metal utility box. He holds ice against the box and moves it up and down with large movements against the metal surface. John moves behind the box, he has placed his piece of ice to his ear. I say: "You must be listening". He nods affirmatively.

Eric, Ice, Climbing frame (23 seconds)

Eric walks onto the climbing frame holding a piece of ice. He licks it, looks around. He covers ice with his whole body to protect his possession and starts licking it. He looks at the camera and smiles. He turns his back to the camera. In a distance one of the adults is calling
"children, please do not put ice in your mouths". Eric turns his head, briefly smiles, closes his eyes, moves arms behind his back. His fingers are tightly holding onto ice. Ice falls on the floor, he looks at me, sticks his tongue out, bends down, crouches onto the floor, spreads his legs wide and stays in this position still till an adult has approached him close firmly asking to let go of his piece of ice.

Maria and Ice (38 seconds)

Maria is bringing a metal bowl filled with water from the mud kitchen. She has placed the piece of ice in the water (The one she referred as tap water in the earlier conversation). She walks slowly, so the water does not overspill, puts the bowl on the bench next to the pictures of ice. She then looks around, runs to get a stick she has spotted, with her arms in the air holding a stick, smiling, runs back and starts poking, stirring, moving the ice around the bowl.

Robin/ Ice Episode (54 seconds)

A robin is walking on the playground, around the plastic cars, amongst other toys. Alice throws the ice-block towards the bird. The ice block smashes into many small pieces, robin
flies onto the picket fence. I am saying "shhh". In the 26th second robin flies back to the floor and walks amongst the pieces of ice. A child's voice "robin dancing, shhh". Robin is weary, but stays amongst ice pieces for the duration of the video episode whilst the children tell
each other to be 'sshhh' and 'quiet'.

Worms/ Ice Episode (1 min 8

seconds)

Sam is holding a stick and poking soil, he is also reaching out for pieces of ice with his other
hand and stick, but unsuccessful. Alice is leaning over the side of the vegetable bed and

swinging her body back and forth. John comes along with a piece of muddy ice and throws it in soil. John stands still facing ice in the soil. “Worms are yacky! His face is yacky and ice is too!” Accompanied with gestures and facial expressions, the pitch of Alice’s voice is getting higher and higher. She shrieks and now stands still, with arms folded. Meanwhile, John leans over the vegetable bed. John: “Worm is cold (5 second pause)…worm dead (3 second pause)… its ice (3 second pause)…no, no, it’s moving”.

Ice/ Emma (3 min 58 sec)

Emma is holding a round piece of ice in her hands. She places it to her lips for 3 seconds, smiles, turns to John, shows him her piece of ice and smiles. Alice walks up to Emma with a smaller piece of round shaped piece of ice. Emma places her ice in the role play kitchen sink and takes Alice’s piece of ice. Alice grunts, crosses her arms, turns to the sink ang quickly
grabs Emma’s ice. She walks from the roleplay kitchen , slowly first, then faster and faster to the woodchip area of the garden. Alice slightly trips, manages to keep her balance, but ice falls out of her hands and lands onto a wooden stepping stone breaking in many pieces. She bends down, picks a piece of ice, says “dirty” drops it on the floor and runs away. For 2min 46 seconds ice pieces are all on the stepping stone and woodchips until Cara comes up to me, looks at me holding the iPad towards the ground. Silently, she picks up one of the pieces of ice and runs away.

Ice/ Cara (4 min 21 sec)
Cara is standing near the birch with holding her ice and licking it. She looks up at my iPad and quickly moves her piece of ice in her pocket. Her both hands are in coat pockets. Cara is slightly smiling and looking at me. I say that I noticed her putting ice in the pocket. Cara smiles and nodds, takes ice out of the pocket showing it to me. It is covered in woodchips, mud and breadcrumbs. Cara says “Bread for ducks”, puts ice back in her pocket and sits on the wooden garden bench moving her hands in and out pockets, swinging her legs, looking up and down . Cara then runs and climbs up the climbing frame, stands on top and shouts “King of the castle”. I say to her that ice is starting to melt and her coat is getting wet as there are now wet dark patches forming and dripping down. Cara runs away and I stop videoing.

Dripping and Dropping (47 seconds)

Daniel is leaning over the side of the vegetable bed. He is holding a piece of ice in his right hand. He is looking at his hand, with concentration. His body is very still. Other hands next to Daniel are moving a plastic digger in the soil. Water is dripping and disappearing in the deeps of the freshly dug up soil. Daniel is counting: “1;2;3..(pause) 4;5;6 (very fast). In the 41st second ice falls out of Daniel’s hand and lands in soil.