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Young Children's Perspectives of Outdoor Pedagogical Spaces

Animated and Entangled Becomings

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Abstract

This thesis-by-publication charts animated and entangled becomings emerging out of encounters in outdoor spaces at two early learning centres in Perth, Western Australia. Deploying multimodal and multiperspectival research approaches used by the educators of Reggio Emilia (Davies, 2014a; Fleet, Patterson, & Robertson, 2006, 2012, 2017; Giamminuti, 2013; Giudici, Rinaldi, & Krechevsky, 2001; Pacini-Ketchabaw, Nxumalo, Kocher, Elliot, & Sanchez, 2015) and the Mosaic approach (Clark & Moss, 2001; Clark, 2017), the research which contributes to the thesis assemblage began with an intent to explore ways of seeking the perspectives of young children whose communication often does not rely on words. In that process, however, the children brought the author's attention to the forces of the materials in the spaces, highlighting the intra-action (Barad, 2007) of human and nonhuman matter. The thesis, therefore, moves from a predominantly sociocultural worldview into one increasingly informed by theories of new materialism and posthumanism. The thesis follows a shift from conventional thematic analysis into experimentations with diffractive analysis (Barad, 2007; Haraway, 1992), leading to a proposal of a "murmurative diffraction" approach to research. Throughout the thesis, children's sensitivity to the liveliness to the world, revealed through their animation of materials, objects and things, is a constant refrain. The implications of this study for researchers and teachers in educational settings in a time of unprecedented environmental devastation is to ensure we are attentive to the perspectives of human *and* nonhumans. Educational settings are an assemblage of intra-active human and nonhuman materials in which humans are not the only custodians of knowing (Barad, 2007). This needs researchers and teachers to be open and alert to the intra-actions that may occur, including children's "enchanted animism" and attentiveness to the surrounding materiality. It requires flexible approaches which recognise that researching and teaching are always becoming *with* (Haraway, 2008) the materials around us.

Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

I certify that all data analysis was completed, and all papers were written by me. Publication 2 includes one of my supervisors as a co-author. In this case, I was supported in working through the thinking and the processes by my co-author, but I had primary responsibility for all aspects of the reported work including the design, data collection, data analysis, and manuscript preparation and revision.

The research presented in this thesis was granted clearance by the Macquarie University Ethics Review Committee (Human research), reference number 5201400027, on 27 March 2014.

Jane Merewether

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List of Publications

This thesis-by-publication is based on the following publications:

1. Merewether, J. (2015). Outdoor spaces in pedagogical settings: More than playgrounds. *Professional Educator*, 15(4), 25-26.
2. Merewether, J. & Fleet, A. (2014). Seeking children's perspectives: a respectful layered research approach, *Early Child Development and Care*, 184 (6). 897-914.
3. Merewether, J. (2015). Young children's perspectives of outdoor learning spaces: What matters? *Australasian Journal of Early Childhood*, 40(1), 99-108.
4. Merewether, J. (2017). Environment: The third teacher. In B. Gobby & R. Walker (Eds.), *Powers of curriculum: Sociological perspectives on education* (pp. 394-420). Melbourne: Oxford University Press.
5. Merewether, J. (2017). Making the outdoors visible in pedagogical documentation. In A. Fleet, C. Patterson, & J. Robertson (Eds.), *Pedagogical documentation in early years practice: Seeing through multiple perspectives* (pp. 131-145). London: SAGE.
6. Merewether, J. (2018). Listening to young children outdoors with pedagogical documentation. *International Journal of Early Years Education*. Advance online publication. doi:10.1080/09669760.2017.1421525
7. Merewether, J. (2018). New materialisms and children's outdoor environments: Murmurative diffractions. *Children's Geographies*. Advance online publication. doi:10.1080/14733285.2018.1471449.
8. Merewether, J. (2018). Listening outdoors with young children: Enchanted animism of trees, rocks, clouds (and other things). *Pedagogy, Culture & Society*. Advance online publication. doi:10.1080/14681366.2018.1460617

Each publication included in this thesis is the final submitted version; formatting has been adjusted for consistency with the rest of the thesis.

PRELUDE: *Spinifex hirsutus*



Figure 1 *Spinifex hirsutus*. Author image

Spinifex hirsutus

I live in a small city on the west coast of Australia, near the beach where the shifting sands of the coastal dunes present a constant challenge for local authorities who try to keep them in check with rocks, groynes, walls, diggers and bulldozers. In spite of all these attempts to pin the dunes down, they are always on the move.

Not far down the coast, past the city limits and human intervention, the dunes are held together by plants. But this is no place for rigid trees; dune plants must be able to “go with the flow”. Many, like *Spinifex hirsutus*, have a habit of putting down roots along adventitious stems which creep along and within the sand. *S. hirsutus* does not resist the dunes, wind and sand; rather, it moves with, affects and is affected by the dune assemblage and thus survives storms, sandblasting, exposure and inundation. In fact, it relies on being buried by the sand; it can then develop roots at its nodes that will both anchor it and provide a new position for advancement.

I am calling this thesis a “spinifex-thesis” as it has much in common with *S. hirsutus*. They are both wandering and adventitious explorers that take what Deleuze and Guattari (1987) might call a rhizomic¹ approach: “A rhizome has no beginning or end; it is always in the middle, between things ... proceeding from the middle, through the middle, coming and going rather than starting and finishing” (p. 25). Anyone who has tried to rid their garden of couch and kikuyu grass, *S. hirsutus*’s rhizomic cousins, would know the never-ending-ness of these plants. They are survivors. Spinifex-thesis is a survivor. It has moved with all that can be thrown at it, only to emerge here, for the time being. It will no doubt head underground again, as theses often do, re-emerging somewhere else, possibly far away from this point.

Some refrains

Spinifex hirsutus has taught me that spinifex, sand, wind, water, time and everything else are endlessly entangled and must move together if they are to flourish; to think that humans are somehow exempt from this is hubris in the extreme. Thus, spinifex-thesis’s wandering and experimental ways are offered as possibilities for teachers and researchers working in these times of Earthly precarity; times that have been called the “Anthropocene” (Crutzen & Stoermer, 2000) due to the indelible mark left by humans on planetary processes. It seems that reliance on linearity, predictability and notions of “control” are what led us to this fate; for teachers and researchers finding new ways of living with the world, ways that eschew certainty and hierarchy, has become a matter of urgency.

But I am getting ahead of myself already. Before we go on, I will sketch out my use of some refrains which make repeated appearances in this spinifex-thesis. In music, a refrain is a recurring phrase or idea, so in keeping with my use of dramatic devices to organise this thesis (see “Act I: A Map”), and again taking inspiration from Deleuze and Guattari (1987), I use “refrains” as steadying beats which bring order to ideas that are repeated throughout the thesis. In Deleuzeo-Guattarian (1987) terms, refrains are not only musical but can be “any aggregate of matters of expression that draws a territory and develops into territorial motifs

¹ Deleuze and Guattari (1987) take a more inclusive view of rhizomes than botany. In Deleuzeo-Guattarian terms, rhizomes even include some animals and burrows:

A rhizome as a subterranean stem is absolutely different from roots and radicles. Bulbs and tubers are rhizomes ... Even some animals are, in their pack form. Rats are rhizomes. Burrows are too, in all their functions of shelter, supply, movement, evasion, and breakout. The rhizome itself assumes very diverse forms, from ramified surface extension in all directions to concretion into bulbs and tubers ... The rhizome itself assumes very diverse forms, from ramified surface extension in all directions to concretion into bulbs and tubers. The rhizome includes the best and the worst: potato and couchgrass, or the weed. (Deleuze & Guattari, 1987, pp. 6-7).

and landscapes (there are optical, gestural, motor, etc., refrains)” (p. 323). I list the refrains in this sequence for no other reason than alphabetical convention; it should not be taken as an order of importance.

Becoming (with)

Throughout this spinifex-thesis, I use the refrains “becoming”, “becomings” and “becoming with”. In doing so, I draw on Deleuzeo-Guattarian thinking where a “line of becoming” is not defined by the two points which it appears to connect; rather, it runs between points with no beginning or end, only a middle: “A becoming is neither one nor two, nor the relation of the two; it is the in-between, the border or line of flight or descent running perpendicular to both” (Deleuze & Guattari, 1987, p. 293). Becoming, then, is not one thing transforming another, nor is it imitation, but is “the very dynamism of change” (Stagoll, 2010, p. 26). Similarly, in Baradian² (2007) thinking, becoming involves *enfolding*, not unfolding; it is not a linear laying out in terms of time or space: “the past and the future are enfolded participants in matter's iterative becoming. Becoming is not an unfolding in time, but the inexhaustible dynamism of the enfolding of mattering” (p. 234). Multiplicity is inherent in both Deleuzeo-Guattarian and Baradian conceptions of becoming, but by using the term “becoming *with*”, Donna Haraway (2008) reminds us that becoming is never an individual affair: “[t]o be one is always to *become with* [original emphasis] many” (p. 4). Furthermore, to accentuate becoming’s multiplicity, I often use the term “becomings”, however, I am uncomfortable with the grammatical awkwardness that accompanies “becomings with” so I have avoided this.

Environment

Environment is a term that is often associated with the “wilderness”, “nature” or “wild” creatures like whales. Or environment may be seen simply as the passive background for human endeavours or as an inert resource for humans to use. Spinifex-thesis, however, takes a much more inclusive and lively view of environment. In Publication 4, “Environment: The Third Teacher” (Merewether, 2017a), I define “environment” like this:

The environment in educational settings involves the space, inside and outside, where children and young people interact with materials, each other and adults to engage in activities that nurture their learning and wellbeing. The environment includes the physical structures—the size,

² Karen Barad’s (2007) work, particularly her seminal book, *Meeting the Universe Halfway*, has been hugely influential in this thesis. Barad’s theory of *agential realism*, which uses quantum field theory to propose an “intra-active” relationship between discourse and matter, nature and culture, gave me new ways to think about, and with, outdoor environments.

walls, windows, light, colour, textures. It also includes the materials—the equipment, plants, objects, furniture, decorations. Finally, it includes the organisation—the way the structures, resources, time and experiences are presented and arranged. (p. 395)³

Here, the environment includes the material and the discursive, and is not limited to “nature” or “culture”. By the end of the thesis, I take a more enfolded, intra-active view of environment which sees humans and nonhumans as intertwined and inseparable; as intra-actively co-constituted (Barad, 2007). Thus, children, discursive practices and things are not separate from environments or even *in* environments; they are *of* environments, and children and their materialdiscursive surroundings become-with each other in a constant process of (co)reconfiguration.

Reggio Emilia

Reggio Emilia is a constant refrain throughout the thesis. Reggio Emilia is an Italian city in the Emilia Romagna region with a population of around 170,000 people. The city’s municipality-run educational project for young children (three-months-to-six-years old), and more recently primary school-aged children, has inspired my practice for more than 20 years. The progressive approach to education taken by the municipal schools and infant-toddler centres in Reggio Emilia emerged in the aftermath of World War II when the citizens of the city determined to forge an approach to education that has been internationally influential since the education system was hailed in *Newsweek* magazine (Hinckle, 1991; Kantrowitz & Wingert, 1991) as being among the best in the world. The “Reggio Approach”, as this system has come to be known, is a comprehensive, complex and constantly evolving approach to education based on collaborative inquiry which involves children, adults and the environment. For more information about the educational project of Reggio Emilia, refer to, for example: Edwards, Gandini, and Forman (2012); Rinaldi (2006); Giamminuti (2013); Baldini, Cavallini, Moss, and Vecchi (2012); Cagliari et al. (2016).

Tilde

While writing Publication 5 (Merewether, 2017b), I was inspired by Marg Sellers (2015) who uses a tilde (~) to indicate co-implicated terms~concepts~ideas that are in a reciprocal relationship; for example, “teacher~researcher”. I considered using double arrows (< >) to suggest the relationship between the words in question, but they seemed too rigid. The tilde

³ In this thesis, page numbers for direct quotes from my publications refer to the published version of the publication.

has a less linear character, and although not perfect, it reminds me, the writer, and I hope the reader, of the endlessly oscillating connectedness of the terms.

These refrains hint at the meandering, interconnected story of becoming with that lays ahead. This story of movement and experimentation that sets out to listen to children and along the way(s) draws in and enfolds so much more, opens up a space for rethinking the way we work with children in education and research in times of great planetary upheaval.

ACT I A BEGINNING AND A MAP

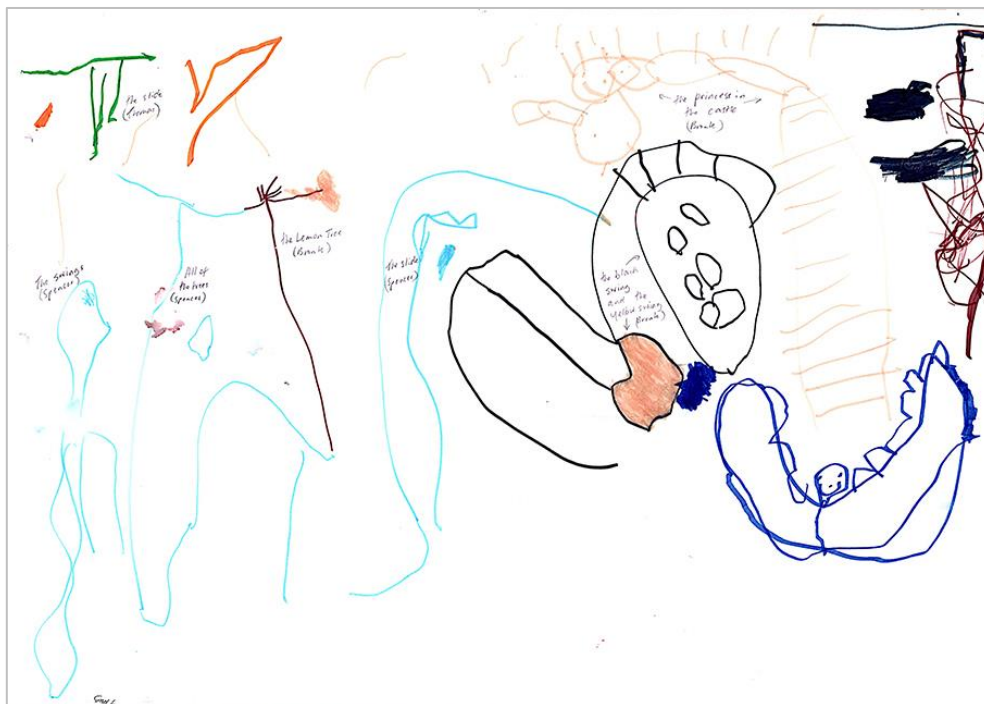


Figure 2 Collaborative drawing: “What’s good outside at [the Centre]”

A Beginning

This “beginning”, like all beginnings, is always already threaded through with anticipation of where it is going but will never simply reach and of a past that has yet to come. It is not merely that the future and the past are not “there” and never sit still, but that the present is not simply here-now. Multiply heterogeneous iterations all: past, present, and future, not in a relation of linear unfolding, but threaded through one another in a nonlinear enfolding of spacetime-mattering, a topology that defies any suggestion of a smooth continuous manifold.

Karen Barad (2010, p. 244)

This thesis is a story of entangled becomings. Nothing stands alone. The past, present and future do not stand alone; you and I don’t stand alone. Nor do ideas, publications, things, words, time, spaces, people or places. In such a world, there can be no “I” that authors this story; all of us, human and nonhuman, “write” each other as we go along. This is not to deny my own contribution to this thesis, or to say that all contributions were equal, but as we shall see, humans are but one agential participant in all Earthly matters. My contribution here exists as part of a confederation of infinitely connected human and nonhuman elements. In using the word *entangled* I am leaning on the work of theoretical physicist, Karen Barad (2007, p. ix), a key player in this thesis, who, drawing on quantum theory, explains:

To be entangled is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence. Existence is not an individual affair. Individuals do not preexist their interactions; rather, *individuals emerge through and as part of their entangled intra-relating* [emphasis added]. Which is not to say that emergence happens once and for all, as an event or as a process that takes place according to some external measure of space and of time, but rather that time and space, like matter and meaning, come into existence, are iteratively reconfigured through each intra-action, thereby making it impossible to differentiate in any absolute sense between creation and renewal, beginning and returning, continuity and discontinuity, here and there, past and future.

Thus, this spinifex-thesis is an ever-connected and ever-becoming story with no beginning or end. I cannot pinpoint with any certainty a definable starting point for this story¹. Some might argue that it started with confirmation of my candidature or maybe even my enrolment. But to dismiss, for example, my 18 years of working as a teacher of young children, my previous work as a research assistant in agricultural science, my childhood spent in a remote Australian community on land I helped my parents “clear” native vegetation for farming, my birth on an isolated Pacific island, amongst many other things, would be to ignore the ongoingness or rhizomic nature (Deleuze & Guattari, 1987) of this story; of every story. Therefore, like all stories this one begins in the middle and has no discernible endpoint; it is a story that continues to reverberate well beyond the last word written here.

Framing the Research

My thesis proposal asserted my study would seek the perspectives of children at early learning centres in Perth, Western Australia. It also said the study would explore methods for seeking young children's perspectives, as conventional qualitative research, which relies so heavily on words, is not very good at researching the perspectives of very young children for whom words are often not a primary means of communication. I had read with interest place-based research that employed multimodal data-generation strategies with children including informal discussions, walking interviews, photography and drawing (Green, 2012; Malone, 2008; Marr & Malone, 2007; Tranter & Malone, 2004). These approaches resonated with me as my experience as an early childhood teacher had led me to believe that children possess multiple means of expressing their thinking and ideas. I was particularly interested in the relationship between the strategies used in this kind of scholarly research and the strategies of pedagogical documentation used by the educators of Reggio Emilia, strategies I too had used for many years as a classroom teacher~researcher. This experience with pedagogical documentation as an educator suggested to me that there was a good deal of potential in these ways of researching with young children, although they are not generally discussed in the scholarly literature as approaches for researching with children in more formal research, such as that submitted for doctoral theses and scholarly publication.

¹ Officially, my PhD enrolment began, as a part-time student, in 27 March, 2014.

As a way of framing my research, I established for myself two broad overarching lines of inquiry:

- *How do children encounter the outdoor environment at their early learning setting?*
- *What research strategies are effective in working outdoors with young children as co-researchers in an early childhood educational setting?*

But I would come to see these questions not as cages for my research but more as possibilities or lines of flight (Deleuze & Guattari, 1987)² which might lead me elsewhere. My thesis's title, *Young Children's Perspectives of Outdoor Pedagogical Spaces: Animated and Entangled Becomings*, perhaps suggests I will present what might be described as “findings” in response to these questions. Yet this is only part of the tale I tell here. In the process of becoming with this thesis, I have become wary of terms like “results” and “findings” which imply there is some kind of definitive conclusion to be found “out there”. I have discovered there are always more ways of thinking with data. Indeed, as I proceeded through this project I came to question the very notion of “data”. More about this later. Nonetheless, as I walk among different stories of entangled becomings, I will also try to shine a light on stories I am moved to tell in relation to these two enquiries.

Ways of Working

This thesis is provoked, among other things, by my encounters with two early learning centres. At the first centre, I took inspiration from the Mosaic approach, developed by Alison Clark and Peter Moss (Clark, 2017; Clark & Moss, 2001), encouraged by the authors' claim that this approach had been “inspired by ‘pedagogical documentation’ as developed in the pre-schools of Reggio Emilia” (Clark & Moss, 2001, p. 1). The Mosaic approach brings together participatory strategies for inquiry used by researchers like the place-based scholars previously mentioned (Green, 2012; Malone, 2008; Marr & Malone, 2007; Tranter & Malone, 2004), with a conceptual framework that I was familiar with from my teaching~researching practice. Importantly for me, the Mosaic approach is grounded in a view of children, or “image of the child” (Malaguzzi, 1994), which constructs children not as empty vessels but as “active participants in their own learning” (Clark & Moss, 2001,

² Line of flight (French = *ligne de fuite*) is another term from Deleuze and Guattari (1987). In his notes, Massumi (1987), the translator of *A Thousand Plateaus*, notes that in French, “*Fuite* covers not only the act of fleeing or eluding but also flowing, leaking, and disappearing into the distance (the vanishing point in a painting is a *point de fuite*). It has no relation to flying” (p. xvi). Thus, I see lines of flight as adventitious explorations, wanderings, or offshoots, however, as Deleuze and Guattari (1987) point out, “the line of flight is part of the rhizome. These lines always tie back to one another” (p. 9).

p. 9). It is also a multimodal approach which potentially allows children to express themselves using “one hundred languages” (Infant-toddler Centres and Preschools Istituzione of the Municipality of Reggio Emilia [ICPIMRE], 2010, p. 10). The hundred languages metaphor highlights the potential of children to communicate, think, understand and encounter the world in multiple ways. It behoves being open to non-verbal means of listening to children, a key consideration when working with children whose verbal communication is in its early stages.

As I report in Publications 2 and 3 in this thesis (Merewether, 2015b; Merewether & Fleet, 2014), I found the Mosaic approach to be a very successful qualitative research approach for exploring children's relationship with the outdoor spaces at their early learning centre. Furthermore, I could see links between the Mosaic approach and the philosophy and strategies I have seen in action in Reggio Emilia and used as a teacher myself. Nonetheless, as my thinking developed, I became concerned that the way I had used the Mosaic approach paralleled the “conventional humanist qualitative methodology” that Elizabeth St. Pierre (2011, p. 611) critiques, so I decided to modify my initial plan to repeat the same approach at more sites. Thus, at the second early learning centre I instead deployed pedagogical documentation in a way that more closely resembled my practice as an educator, hoping it would enable me to engage with children and the outdoor spaces in an even more open and emergent way. This spinifex-thesis traces my unfolding explorations at both sites.

Before mapping out the thesis, I would like to touch again on what I alluded to in the Prelude; this is a thesis of shifts and changes. It was very tempting to stick with my original plan and continue to trial the Mosaic approach as a strategy for listening to young children. At the outset of my candidature, the Mosaic approach had really only been tested by its original authors and I saw a need for others to put it to work in other contexts, particularly in Australia and particularly with younger children. A second site using the same strategies seemed like a straightforward next step, however, following my encounters at the first centre, I came upon new materialisms (Barad, 2007; Coole & Frost, 2010; Dolphijn & van der Tuin, 2012; Lenz Taguchi, 2010), along with critiques of conventional qualitative research (Lather, 2013; Lenz Taguchi, 2013a; St. Pierre, 2011), and these opened me up to different possibilities for working in the second site; possibilities I felt I could not ignore. I realised I had approached the first centre as an outside observer with a predetermined plan and as separate from the children and the environment, but, as Barad (2007) suggests: “[w]e are not outside observers of the world. Neither are we simply located at particular places in the world; rather we are part of the world in its ongoing intra-activity” (p. 184). While I found the notion

being *of* the world's intra-actions, not simply *in* the world to be an attractive proposition, it was a paradigm shift that would require a good deal of experimentation to put to work. Nonetheless, my human-centric leanings had been rattled.

As well as coming to the work of new materialists already mentioned, during the time I was between the two research sites I also read Deleuze and Guattari's (1987) *A Thousand Plateaus: Capitalism and Schizophrenia*. This introduced me to concepts such as *assemblage*, *rhizome*, *lines of flight*, further emphasising a "logic of connection, a logic of the *and* (this *and* this *and* this *and* ...), of becoming" (St. Pierre, 2013, p. 652). Deleuze and Guattari's dense and complex writing does not make for easy reading and I continue to grapple with it; nonetheless, their experimental and exploratory ontology held particular appeal for me as it aligned with my years of observing as a teacher young children's approach to the world.

As I reveal in Act III of this thesis, these provocateurs and others, including the children I was listening to, would lead to a crisis in my candidature. They would exhort me to question the humanist genealogies of socioculturalism, social constructivism, social constructionism and other humanist conceptual frameworks I had been drawing on. I had set out to seek children's perspectives about the outdoors, but as I became more and more enfolded in what some have called the "posthuman turn" (Braidotti, 2017; St. Pierre, 2014; Ulmer, 2017), I became more and more attuned to the links between human-exceptionalist thinking and human-induced changes to the Earth. Although I never let go of my desire to listen to children, my dawning realisation of the children's and my own inextricable embeddedness in living on a damaged planet (Tsing, Swanson, Gan, & Bubandt, 2017) gave me pause for some serious re-thinking of my theoretical stance(s). I would come to see that privileging the perspectives of humans, even if they are humans that other humans overlook, is human-centric nonetheless. Put simply, child-centredness is anthropocentric and as my research progressed I became increasingly uncomfortable about the notion of child-centredness and the risk it carries for perpetuating human-exceptionalist ways.

I would also find, as we have already glimpsed in the Prelude, that the concept of the always-exploring rhizome that simultaneously makes its way in multiple and unknown directions in a process of ever-becoming, would be a generative metaphor for my methodology, helping to release me from the structures of "conventional humanist qualitative" (St. Pierre, 2011, p. 611). Deleuzo-Guattarian thinking would come to be an influential player in my research as is foreshadowed by the following mapping of the thesis.

A Map ³

As anyone who has authored one will likely know, the production of a thesis is a drama, an adventure drama of comedy and tragedy and all that goes in between. The final thesis invariably shows no trace of the preceding angst, heartache, battles, highs and lows. Therefore, in a nod to this thesis's becomings, what I present here is a drama, a three-act play with musical overtones⁴ and multiple characters: the research, me, the participants, my computer, my supervisors, the research sites, the beach, the literature. The main protagonists are the publications. Admittedly, it is likely to be more of a closet drama, a drama written to be read rather than performed on stage (Matthews, 1908). But, closet or not, it is a participatory form of theatre, in which the audience is expected to shout out to the performers. Be my guest.

This spinifex-thesis, then, is an assemblage⁵; a series of acts, asides and interludes which wander smoothly at times and striatedly at others, through a sand dune of what I might possibly call "data". It was conceived with sociocultural intentions, has post-qualitative/posthumanist dreams, but is also imbibed with a good dose of structuralism, the very thing it and I would like to resist. This is the nature of structuralism; it is dominant after all.

I began my thesis-by-publication adventure with a simple plan: come up with some research questions, plan the research, seek ethical approval, conduct the research, write it up. The logical thing to do, as more than one person suggested, would be to arrange my publications around the introduction-literature review-methods-results-discussion-conclusion structure that is very often taken for granted in qualitative research. This would mean one paper would serve as a literature review, another would describe methods, another two or three would discuss

³ Deleuze and Guattari (1987) equate rhizomes with maps, for, as they say:

The map is open and connectable in all of its dimensions; it is detachable, reversible, susceptible to constant modification. It can be torn, reversed, adapted to any kind of mounting, reworked by an individual, group, or social formation. It can be drawn on a wall, conceived of as a work of art, constructed as a political action or as a meditation. (p. 12)

Therefore, in calling this section a "map", I am not suggesting a rigid blueprint for approaching this thesis; rather, I invite readers to choose their own pathway through it.

⁴ I use a number of dramatic devices to organise this thesis, but I also include a prelude and a duet, devices more commonly found in music.

⁵ Dictionaries will tell you that assemblage is a collection of things, or the act of making something from a collection of things. It is at once a thing and an act. Or, as Deleuze and Guattari (1987, p. 88) explain:

On the one hand it is a machinic assemblage of bodies, of actions and passions, an intermingling of bodies reacting to one another; on the other hand it is a collective assemblage of enunciation, of acts and statements, of incorporeal transformations attributed to bodies

findings. A series of straightforward steps. A clear structure. I wrote my research proposal and successfully defended it, even saying this highly structured approach would be poststructural! Everyone seemed to be reassured by my tried and true approach.

I commenced my candidature by looking again at the data I had generated as part of my Masters research; this would be the first “site” for spinifex-thesis. Revisiting this material and writing it up for publication seemed like a sensible way to think through my next steps. As my writing proceeded for these papers, I found myself increasingly uncomfortable with the introduction-literature review-methods-results-discussion-conclusion structure expected of the conventional qualitative methodology. Yet I discovered in my early attempts to submit to journals that straying from this formula was a route to rejection. As the author of a thesis-by-publication, this was of great concern, so, in the interests of getting publications accepted, I largely fell into line.

The orthodoxy for conducting qualitative research is also mirrored in advice for writing theses. For example, *Writing Your Thesis* (Oliver, 2008) has chapters titled: “The Preliminary Pages and The Introduction”; “The Literature Review”; “Methodology”; “The Data Analysis Chapters”; “The Conclusion”. Similarly, *Mapping Your Thesis: The Comprehensive Manual of Theory and Techniques for Masters and Doctoral Research* (White, 2011) has chapters titled: “The Introduction”; “Literature Review Part One”; “Literature Review Part Two”; “Methods”; “Results”; and “The Discussion”. Thus the temptation to produce a thesis using a similar format to a traditional thesis was very real. Fortunately for me, though, the *Macquarie University Higher Degree Research Thesis by Publication Policy* (Macquarie University, 2017) provides significant and much appreciated leeway, stating “[the thesis] needs to include a critical introduction to the work, sections that link the papers together, and a concluding section that synthesises the material as a whole.” This was good news for someone trying to throw off the shackles of what St Pierre (2011, p. 613) refers to as the “conventional, reductionist, hegemonic, and sometimes oppressive” orthodoxy of qualitative educational research. This thesis, then, does not include stand-alone papers which correspond to “literature review”, “methods”, “results”, or “discussion”. Instead, I have taken a diffuse approach to these elements and have woven them into each publication and throughout the thesis.

I am required, as noted above, to include “sections that link the papers together” (Macquarie University, 2017). In complying with this, and in keeping with my use of dramatic devices as thesis organisers, I take inspiration from St Pierre’s (1995) dissertation

and precede each paper with an “aside”. *The Merriam-Webster Online Dictionary* defines an aside as “an utterance not meant to be heard by someone; *especially*: an actor's speech heard by the audience but supposedly not by other characters” (aside, n.d.). The asides in this thesis, then, are a space to speak to you, my esteemed reader, where the publications, the main protagonists in this performance, cannot hear me. The asides allow me to step outside the structural demands of conventional qualitative inquiry and academia while also staying within them: “this movement of play, permitted by the lack or absence of a center or origin, is the movement of supplementarity” (Derrida, 1978/2005, p. 365). Each aside endeavours to explain how the publication fits into the overall inquiry; however, I do not insist that the thesis be read from beginning to end in the order presented. My aim is to offer an open-ended assemblage in which each publication tangles with and interrupts the others. After all, this is how most readers will encounter these publications. I will leave this up to you, but whatever you decide, for the purposes of this thesis, I recommend reading the accompanying “Aside” prior to tackling each publication.

As per Macquarie University *Higher Degree Research Thesis by Publication Policy* (Macquarie University, 2017), theses-by-publication may include papers “published, accepted, submitted or prepared for publication for which at least half of the research has been undertaken during enrolment.” All papers in this thesis have been prepared during my enrolment and all have been submitted for publication. The following list shows the publications in the order they appear in this thesis and indicates the publication status of each one at the time of submission of this thesis:

Act I

1. Merewether, J. (2015). Outdoor spaces in pedagogical settings: More than playgrounds. *Professional Educator*, 15(4), 25-26.

Act II

2. Merewether, J. & Fleet, A. (2014). Seeking children's perspectives: a respectful layered research approach, *Early Child Development and Care*, 184 (6). 897-914.
3. Merewether, J. (2015). Young children’s perspectives of outdoor learning spaces: What matters? *Australasian Journal of Early Childhood*, 40(1), 99-108.

Interlude

4. Merewether, J. (2017). Environment: The third teacher. In B. Gobby & R. Walker (Eds.), *Powers of curriculum: Sociological perspectives on education* (pp. 394-420). Melbourne: Oxford University Press.

Act III

5. Merewether, J. (2017). Making the outdoors visible in pedagogical documentation. In A. Fleet, C. Patterson, & J. Robertson (Eds.), *Pedagogical documentation in early years practice: Seeing through multiple perspectives* (pp. 131-145). London: SAGE.
6. Merewether, J. (2018). Listening to young children outdoors with pedagogical documentation. *International Journal of Early Years Education*. Advance online publication. doi:10.1080/09669760.2017.1421525
7. Merewether, J. (2018). New materialisms and children's outdoor environments. *Children's Geographies*. Advance online publication. doi:10.1080/14733285.2018.1471449
8. Merewether, J. (2018). Listening with young children: Enchanted animism of trees, rocks, clouds (and other things). *Pedagogy, Culture & Society*. Advance online publication. doi:10.1080/14681366.2018.1460617

I will confess that in many ways I would like you to read the last two publications first, as they are an indication of where I am ... so far. But were you to do that, you might miss the entangled becomings enfolded within these two articles. If the publications are read in the order presented, they roughly map the development in my thinking over the course of my enrolment in doctoral studies. This sequence, on the whole, shows my gradual letting go of the conventional qualitative analysis and publication structure. It also reveals my increasing willingness to experiment and take risks with both analysis and writing. As I received what was largely very encouraging and constructive feedback from a range of scholars through the peer-review process, I became more and more confident with my approach. This is a stand-out advantage of a thesis-by-publication; not only was I being mentored by my learned supervisors, but also, I was learning from another set of scholars. Perhaps another publication that documents the highs and lows of this experience will be part of this thesis's ongoing becomings.

ASIDE: NOTES ON PUBLICATION 1

Outdoor Spaces in Pedagogical Settings: More Than Playgrounds

Having introduced the thesis and its guiding questions, I now present the first publication (Merewether, 2015a) as a way of setting the scene. It is a short paper written for an educator audience, penned very early in spinifex-thesis's adventures. I include it here as it sheds light on my background as a teacher, as well as my thinking at the outset of the thesis project. In conventional qualitative research, it might be seen as contributing to what is sometimes known as a "subjectivity statement" (Preissle, 2008). In such a statement, one is supposed to reveal one's background and how it might affect the research. The impossibility of this is not lost on me—what I think, where I came from, my age, culture, values, gender, experiences, and so on—can never be shoehorned into "a sentence or two in a journal article or several pages in a book" (Preissle, 2008, p. 2). Nonetheless, I include this publication to lay out some of my starting orientations and motivations for the study, as part of the thesis refrain, "becomings". It is by no means comprehensive but it reveals, for example, my long-term interest in outdoor learning spaces and the importance of provisioning them with elements such as shade, natural materials, loose parts. These are all nonhuman aspects; thus, this article foreshadows the emerging emphasis on nonhuman matter in subsequent publications which contribute to this spinifex-thesis. Furthermore, I talk about the way trees and other plant material at my early learning centre drew children outdoors, and I introduce the notion of the environment as an educator. Although I didn't realise it at the time, attributing agency to nonhuman matter in this way paves the way for what follows in this thesis.

PUBLICATION 1

Outdoor Spaces in Pedagogical Settings: More than Playgrounds

Merewether, J. (2015). Outdoor spaces in pedagogical settings: More than playgrounds. *Professional Educator*, 14(4), 25-26.

Pages 18-20 of this thesis have been removed as they contain published material under copyright. Removed contents published as:

Merewether, J. (2015). Outdoor spaces in pedagogical settings: More than playgrounds. *Professional Educator*, 14(4), 25-26.
<https://www.austcolled.com.au/wp-content/uploads/2017/09/38.-Prof-Ed-Aug-2015.pdf>

ACT II A DUET

Merewether, J. & Fleet, A. (2014) Seeking children's perspectives: a respectful layered research approach, *Early Child Development and Care*, 184 (6), 897-914.

Merewether, J. (2015). Young children's perspectives of outdoor learning spaces: What matters? *Australasian Journal of Early Childhood*, 40(1), 99-108.

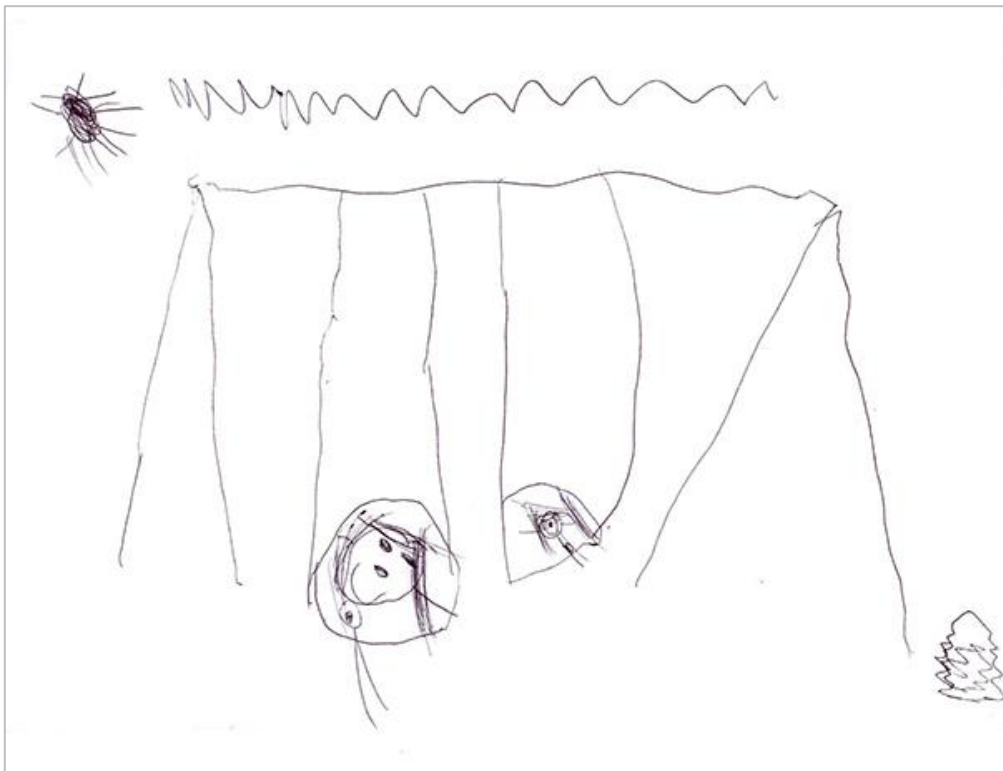


Figure 3 What I like outside: “Swings. There's two of them”, Ashlee, 3, 3 years

ASIDE: NOTES ON PUBLICATIONS 2 AND 3

The Mosaic Approach

In the previous publication, I set the scene for this spinifex-thesis with a summary of my experience as an early childhood teacher in the redevelopment of an outdoor environment for children, however, I don't describe how children contributed to the redevelopment. Nonetheless, many of the design decisions were based on knowledge I had gained from working with children in this setting over many years in Reggio Emilia-inspired projects whereby children and adults were co-inquirers. Together we had investigated many topics that involved the outdoors: birds, insects, wind, shadows, flight, plants, to name but a few. Thus I had developed a good idea of what children valued in this space. Notwithstanding this, when the opportunity for redevelopment presented itself, I thought I would ask children what they wanted in their outdoor space—they emphatically told me that they liked the neighbouring school's pre-fabricated modular playground. When I pointed out I had noticed over a period of years that very few children from that school used the playground, the children in my class assured me *they* would, given the chance. This experience suggested to me that relying on what children *say* is limited; children communicate in myriad ways, using what the educators in Reggio Emilia refer to as the “hundred languages” (Edwards et al., 2012). Voice is but one of these. I subsequently worked with a designer who agreed to incorporate the insights gained from my years of working in co-constructed, multimodal projects with children which made visible what they valued in the outdoor space.

Some years later, while studying my Master of Early Childhood, I came upon the Mosaic approach (Clark & Moss, 2001) and I used the opportunity to research it in some depth. By then, I had moved on from my school-based early learning setting into teaching in the tertiary sector and the Mosaic approach appeared to be a promising possibility for bringing together conventional research strategies of the academy and those I had employed in my previous practice as an early childhood teacher-researcher. Importantly, it used multimodal strategies which did not rely solely on what children say.

The next two articles, Publications 2 and 3 (Merewether, 2015b; Merewether & Fleet, 2014), therefore reveal my experimentation with the Mosaic approach, which at the time offered a straightforward series of steps that were very reassuring and “safe” for a novice academic researcher. The articles play a “duet” in this thesis performance. They share a methodological approach and introduce the first of the two early learning centres I engaged

with for this thesis. I concede I am taking a liberty in calling these articles a duet; duets are two pieces of music played at the same time. These papers, then, are really more of a complementary pair as it is probably not possible to read both at the same time, nonetheless, I ask you to indulge me in my play.

The first of the duet articles, Publication 2 (Merewether & Fleet, 2014), documents my experience using the Mosaic approach methodology. It begins with a brief history of changing views of children in educational research then introduces some key ideas underpinning the educational project of Reggio Emilia, which include respecting the views of children and listening to them with openness, rather than observing to fit with preconceived universal understandings. The article explains the design, method and approaches to data generation for this part of the study. As one of my thesis research questions was “*What research strategies are effective in working outdoors with young children as co-researchers in an early childhood educational setting?*” in conventional qualitative research terms, this article could be seen to be contributing to both “methodology” and “findings”.

The Mosaic approach, which was developed for working with young children as co-researchers, is consistent with qualitative approaches described in various research methods textbooks (for example, Groundwater-Smith, Dockett, & Bottrell, 2015; Merriam, 2009). In particular, the Mosaic approach is consistent with *participatory* research, which involves participants, to varying degrees, in the planning and unfolding design of the research (Groundwater-Smith et al., 2015). Much participatory inquiry has its origins in research with non-literate participants in rural areas (see for example, Chambers, 1994; Dunn, 1994; Richards, 1995); it therefore offers promise for those working with children who are not yet reading or writing and may even not be speaking. However, as Bergold and Thomas (2012) explain, rather than being a strict set of procedures, participatory research is more a research style or orientation. Central to a participatory research orientation is an attitude of researching *with* participants, rather than researching *about* them, and I was very sympathetic to such a standpoint. In my years of working as a teacher of young children, I had found them to be very knowledgeable about many things that adults did not give them credit for, so I was keen to undertake research that might incorporate children’s views and make their perspectives visible.

The Mosaic approach’s data generation strategies are adaptations of those found in other qualitative approaches. For example, the tour strategy described in the following articles is similar to “transect walks” used in Participatory Rural Appraisal (PRA) which involve “walking with or by local people through an area, observing, asking, listening, discussing, identifying different zones, soils, land uses, vegetation, crops, livestock, local and introduced

technologies, etc; seeking problems, solutions and opportunities” (Chambers, 1994, p. 960) . In the Mosaic approach, children are usually invited to take photos on these tours; this is similar to the “photovoice” (Wang & Burris, 1997) strategy developed for community-based research which invites community members of all ages to produce and discuss photos they have taken in their community. The Mosaic approach’s “Magic Carpet” (Clark & Moss, 2005) has a corollary in “photo elicitation” used in other approaches where participants respond to photos that they or others have produced (Dockett, Einarsson, & Perry, 2017; Harper, 2002; Rose, 2016). The Mosaic approach also adapts interview and focus-group-interview strategies which are ubiquitous in qualitative research.

Encouragingly, the Mosaic approach’s developer, Alison Clark, summarised Publications 2 and 3 (Merewether, 2015b; Merewether & Fleet, 2014), and presented them as a case study in the revised and expanded edition of *Listening to Young Children: A Guide to Understanding and Using the Mosaic Approach* (Clark, 2017). This latest edition of Clark’s acclaimed and widely influential book includes case studies from four countries: England, Denmark, Norway and Australia; my study is the Australian study. As I mentioned in Act I, my original intention for my thesis was to extend the Mosaic approach to an Australian context, so it was very gratifying to see my work recognised by the Mosaic approach’s original developer.

The second article in the duet, Publication 3 (Merewether, 2015b), written for a primarily Australasian audience of educators and researchers, might loosely be described as “findings” in response to my second research question, “*How do children encounter the outdoor environment at their early learning setting?*” While it repeats some of the background material discussed in the previous article (musical duets do this too; Deleuze and Guattari (1987) might call it a “refrain”!), it also draws on more literature and provides further commentary regarding children’s preference for outdoor spaces. This article articulates my use of thematic coding for this research. What it doesn’t articulate is the angst coding caused me, and my decision to steer away from this kind of analysis in future. The more I began to think with theory (Jackson & Mazzei, 2012) the more I started to see other possibilities for research. According to Elizabeth St Pierre (2014), I was not alone in lacking theoretical tools: “To think with theory, one must first read theory; but I’ve learned that people do qualitative studies without reading much theory at all” (pp. 8-9). This is not to say that in retrospect I now disagree with the findings in the next article; in fact, in re-reading it I can see a good deal of merit in the four categories that emerged: places for socialising; places for pretending; places for observing; and places for moving. But, at the time of writing Publication 3

(Merewether, 2015b), I did not have the theoretical tools of new materialism or post-qualitative methodologies to think with. The diffractive analysis that I experiment with later in this spinifex-thesis emerged from the uneasiness I experienced undertaking the thematic analysis I conducted for this article. It seemed to me that coding required a “this” or “that” decision, a binary choice which did not allow for uncertainty, surprise, multiplicity, or complexity. My subsequent reading of Barad (2007), whose theory of agential realism posits that “phenomena are the ontological inseparability of intra-acting agencies” (p. 206) and “entanglements are not isolated binary co-productions” (p. x) served to fuel my unease.

Therefore, I can see how Publication 3 (Merewether, 2015b), the second duet article, prefigures my movement towards new materialisms and post-qualitative methodologies. At the end of this article, I discuss the interdependence of the four themes and the fact that they almost always coexisted with one another, signalling the limitations of coding analysis. Moreover, as with Publication 1 (Merewether, 2015a), where I mention the environment as a teacher, this publication again reveals that from the outset I was alert to the agential nature of matter. I explore this further in Publication 4 of this thesis, “Environment the Third Teacher” (Merewether, 2017a). Also, by entitling the second duet article, “Young children’s perspectives of outdoor learning spaces: What *matters*?” [emphasis added] (Merewether, 2015b), I was (albeit unwittingly) foreshadowing my move in subsequent work towards a more entangled view of “mattering”. Mattering does not just concern what is important; it also concerns physical substances. But, as Karen Barad (2007) writes, “Matter and meaning are not separate elements ... Mattering is simultaneously a matter of substance and significance” (p. 3). Put another way, *mattering concerns the nature of both matter and meaning*. In focusing on what matters to children outside, I have focussed on the meaning, thus the article misses the opportunity to consider the nature of matter *and* meaning. Nonetheless, writing this article helped to sensitise me to matter and led me to (re)think through my ongoing research approach.

The shift from what “means” to what matters would become a central move in my thinking during my PhD. Leaning on Barad (2007), Bennett (2010), Deleuze and Guattari (1987) and the new materialisms (Coole & Frost, 2010; Dolphijn & van der Tuin, 2012) led me to the view that children that are not the sole actors, nor are things; it is the whole entangled assemblage that works together here: the humans, the things, and the material and discursive (Barad, 2007). But more about that is to come.

PUBLICATION 2

Seeking Children's Perspectives: A Respectful Layered Research Approach

Merewether, J. & Fleet, A. (2014) Seeking children's perspectives: a respectful layered research approach, *Early Child Development and Care*, 184 (6), 897-914.
<https://doi.org/10.1080/03004430.2013.829821>

This article discusses why researchers and educators might choose to seek children's perspectives. It also highlights some of the key considerations when seeing children as having the right to contribute to decisions that affect them. The article draws on findings from a study that used pedagogically oriented methods for researching three- and four- year old children's perspectives about outdoor spaces in the early childhood setting they attended. The article discusses the possibilities and practicalities of this research approach for both research and for pedagogy. Examples are provided for others who may be considering working/researching in these ways.

Keywords: participatory research; Mosaic approach; children's perspectives; listening as method, young children's environments.

Introduction

This article draws on findings from a study (Merewether, 2012) that investigated three- and four-year-old children's perspectives about outdoor spaces in the Western Australian early childhood setting¹ they attended. The paper describes and advocates for methods used in this study with the hope that these accounts may be useful to others wishing to making children's voices visible in research or pedagogy. The project was a collaboration between two researchers, one with a long history as an early childhood academic and the other with a long history as an early childhood teacher. Investigating possibilities for making children's voices visible has characterised the work of both authors (for example, Fleet & Britt, 2011;

¹ In the Australian context, early childhood "settings" refer to educational and care programmes that children, usually under five-years-old, attend outside the home. These programmes may be administered by schools, not-for-profit organisations, or private businesses.

Fleet et al., 2006, 2012; Merewether, 2007a; Merewether, 2007b, 2012) who are also interested in finding ways to go beyond the theory/practice divide (Lenz Taguchi, 2010) to explore intersections between research and pedagogical approaches.

The paper begins by discussing influences that may lead researchers and educators to consider seeking children's perspectives. It then details the methodological approaches used in the study and discusses the unfolding research project. The article concludes with some reflections on the study as a whole, including implications for similar studies.

Changing Perspectives

In much research about children, they “have been the invisible and voiceless objects of concern, and not understood as competent, autonomous persons who have a point of view” (Smith & Taylor, 2000, p. ix). The field of developmental psychology, with its emphasis on universal stages of development, socialisation, and a view of children as “objects” to be studied, has dominated the way that children and childhood have been constructed (Dahlberg, Moss, & Pence, 2007; Mayall, 2002; Woodhead & Faulkner, 2008). Researchers, reflecting these dominant constructions, have subsequently tended not to have had a culture of listening to young children and have neglected their perspectives (Clark, 2005; Lansdown, 2005; Smith, 2011). This has been changing, however, and over the last two decades, rather than seeing children from a perspective of “needs”, researchers are now more commonly viewing children as knowledgeable and competent members of society who are capable constructors of their own knowledge (Bruner, 1996; Dahlberg et al., 2007; Rinaldi, 2006).

Theoretical perspectives associated with socioculturalism (Rogoff, 2003; Vygotsky, 1978) have made a major contribution to changing images of children. Sociocultural theory draws attention to the role of social context and social meaning in learning and suggests that children, from birth, construct their understandings in partnership with others, both adults and children. Sociocultural perspectives have in turn informed another influential theoretical paradigm, the field of Childhood Studies (Corsaro, 1997) (Corsaro, 1997; James, Jenks, & Prout, 1998; James & Prout, 1990; Mayall, 2002; Qvortrup, Corsaro, & Honig, 2009). Childhood Studies, which draws on a range of disciplines including sociology, anthropology, psychology, history, and geography, has highlighted the ways early childhood is constructed and reconstructed, not only for children, but also by children (James & Prout, 1990). As Smith (2011, p. 15) points out, a major contribution of Childhood Studies has been, “to recognize children's agency, and to emphasise that children are not just empty vessels whose development is determined by biological and psychological processes.” Sociocultural and

Childhood Studies perspectives vary in their orientation and emphases, but are united by their rejection of an image of children as products of socialisation or development, and instead position children as social actors capable of holding opinions and ideas.

Another contributor to the changing image of children is the *United Nations Convention on the Rights of the Child* (henceforth referred to as the Convention) (United Nations, 1989), which made a commitment to recognise children as active citizens with rights to participate in matters affecting them, including research. Article 12 of the Convention declares, “States Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child...” (United Nations, 1989). In 2005, General Comment 7 (United Nations Committee on the Rights of the Child, 2006, p. 3) specifically reiterated Article 12 applies also to younger children:

The Convention requires that children, including the very youngest children, be respected as persons in their own right. Young children should be recognised as active members of families, communities and societies, with their own concerns, interests and points of view.

There are some indications that these perspectives are influencing governments and other decision makers. In Australia, for example, the nationally mandated *Early Years Learning Framework* (DEEWR, 2009) makes an explicit link to the Convention, noting in particular, its recognition of children’s right to be “active participants in all matters affecting their lives” (p. 5). Some government resources and accreditation requirements have encouraged educators to involve children in decision making, for example: *Caterpillar Toothpaste: A Child’s Introduction to the Decision Making Process* (Lander, Tennant, & Webb, 2005), and *Factsheet 2: Involving Children in Decision Making* (National Childcare Accreditation Council Inc., 2005). Notwithstanding these contributions, it would appear that on the whole, Australian early childhood policy is yet to reflect images of young children as having rights to, and being capable of democratic participation in their daily lives (Ailwood et al., 2011; MacNaughton, Hughes, & Smith, 2007). Similarly, in England, analysis of the inclusion of children’s voices noted “a slow but growing acknowledgement of the centrality of the rights of children as citizens” (Pascal & Bertram, 2009, p. 252), but ultimately, “In many settings these hard fought for rights of children are not yet evident in practice. The same is true for much early childhood research, where children’s continued lack of voice and power persists” (Pascal & Bertram, 2009, p. 253). Seemingly, while there are moves in some spheres to include children’s voices, translation into research and pedagogical practice is still evolving.

The Experience of Reggio Emilia

One of the reasons for the lack of translation into practice is that methodologies and methods for such research are still experimental (Gallacher & Gallagher, 2008). One exception, however, is the educational project of Reggio Emilia (Edwards et al., 2012; Giudici et al., 2001; Rinaldi, 2006), which successfully makes children's voices visible and therefore offers possibilities for researchers who wish to work with children and educators in a collaborative and participatory manner. This community-based approach to education for children aged from birth to six has been evolving for over 50 years and has become internationally influential (Edwards et al., 2012). The project, with its emphasis on children and adults working together with an "attitude of research" (Rinaldi, 2006, p. 101) meticulously recorded using pedagogical documentation (Dahlberg et al., 2007; Edwards et al., 2012; Fleet et al., 2006, 2012; Giudici et al., 2001), has graphically made visible the capabilities of young children.

One of the fundamental ideas of the educational project of Reggio Emilia is the "pedagogy of listening" (Rinaldi, 2006, pp. 65-68). This pedagogy (Rinaldi, 2006) involves: Using all of the senses to listen with intent, curiosity and sensitivity; interpretation and giving meaning; being open to differences, suspending judgments and being open to change; and, understanding that rather than producing answers, listening will generate more questions. In addition, a pedagogy of listening also includes:

- "multiple listening" (p. 67), involving children's and adults' voices;
- "interior listening" (p. 65), involving individual representation of knowledge in a group context; and
- "visible listening" (p.68), which is documentation of the listening (such as photos, notes) to make visible children's and adults' theories, ideas and processes.

Another key idea from Reggio Emilia is the theory of "the hundred languages of children" (Edwards et al., 2012), a metaphor for the "the different ways children (human beings) represent, communicate and express their thinking in different media and symbolic systems" (Vecchi, 2010, p. 9). This includes verbal language forms, but also drawing, painting, music, dance, drama, clay and wire, to name a few.

The hundred languages of children, together with the pedagogy of listening, have informed researchers seeking to include children's perspectives in their work (Clark & Moss, 2001; Einarsdottir, 2005; Fleet & Britt, 2011; Harcourt, Perry, & Waller, 2011). Clark & Moss (2001) developed what they called a "Mosaic approach" to create a "composite picture or 'mosaic' of children's lives" (Clark, 2010b, p. 117) by piecing together findings from

observations, child-led tours, conversations, children's photography and drawings. Taking an eclectic approach to data generation enables children in the early stages of language development a variety of possibilities, verbal and non-verbal, to describe their environment. Therefore, our study used Mosaic approach-inspired methods to seek three- and four- year-old children's perspectives regarding outdoor spaces at the early childhood setting they attended. Our experiences with these methods will now be discussed.

Deconstructing the Approach: Layers of Intentional Decision-Making

The research used a case study design as case studies offer researchers opportunities to study a single example in-depth (Merriam, 1998). Key elements can be highlighted as characterising the layered approach used in this study, beginning with the participants.

Choosing Participants; Gaining Consent

Site selection was criterion-based (LeCompte, Preissle, & Tesch, 1993) using the following criteria: The setting

- was considering making changes to its outdoor spaces.
- valued outdoor learning as an integral part of the curriculum.
- had at least one educator of children between three and five years old who was supportive of the collaborative research approach.
- was conveniently located to enable frequent visits to the site.

Colleagues with knowledge of the early childhood sector were asked to suggest a setting that met these criteria. An early childhood setting situated in suburban Perth, Western Australia, which included two classrooms each welcoming 25 three- and four- year-olds and sharing one outdoor space, was selected.

Having chosen the prospective site, I (Jane)² spoke by phone with the director, explaining the research aims and procedures. Once the director's approval was obtained, I met with her and the two educators from each class to explain the project and their potential involvement. The director and educators were key crucial mediators in the process of gaining consent from parents so it was important they had a clear understanding of the study's purpose and methods. In consultation with the educators, eight children, four boys and four girls, were chosen as key informants. This group was selected to include a mix of interests, ethnicities, and perceived abilities, and consisted of five three-year-olds, and three four-year-olds. Three

² As Jane conducted the fieldwork, the pronouns "I" and "me" describe Jane's experiences in the setting.

of the group came from homes where a language other than English was spoken. It was also important to select children who were comfortable talking with a stranger and demonstrated willingness to articulate or draw their points-of-view.

Although data generation focussed on the subset of children, consent was sought from all parents in both classrooms. This was done to reduce situations where data that included children outside the subset group would be unusable due to lack of parental consent, for example, if one of the children from the selected group photographed a child outside the subset. The educators handed a combined information/consent letter to all parents and answered parents' queries or invited them to phone me. Two parents did not provide consent; their reasons are unknown.

The Study

Children vary in their abilities, experiences, and preferences. A key feature of this study was providing children with a choice of ways they could participate to enable them to have opportunities to express their thoughts using ways in which they were comfortable. This was not always convenient for us as researchers, particularly when children exercised their right not to participate; however, we believe that limiting children's means of expression would have detracted from the integrity of the data by increasing the likelihood of responses provided to please the adult rather than representing genuine thinking.

The study took place over eight weeks. Having gained parental consent, the site was visited each week for at least half a day, with some longer visits. Figure 4 details the focus of each weekly visit.

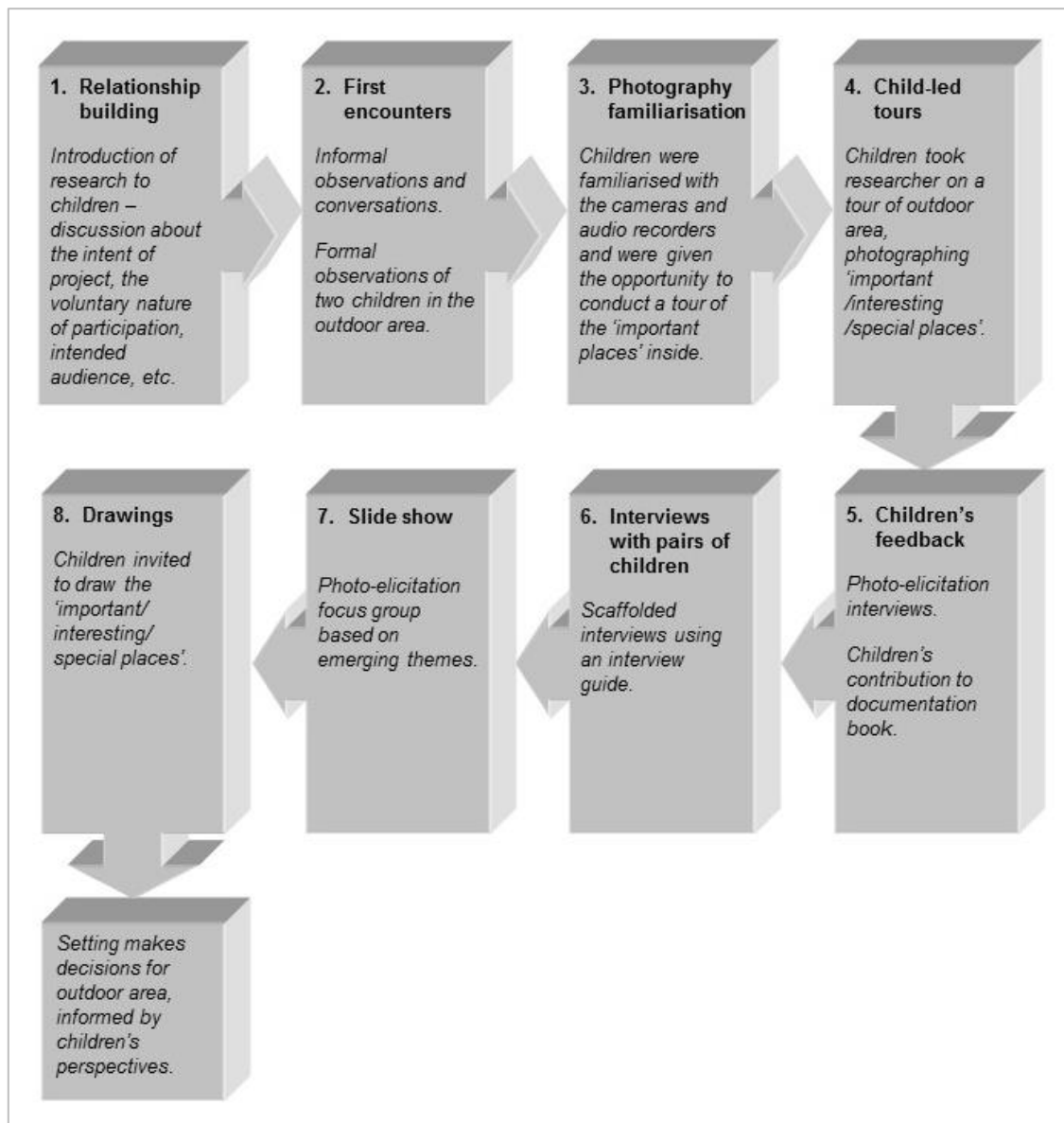


Figure 4 Study stages

Beginning the Visits: Relationship Building

The study began with a visit to the setting to introduce myself and explain the research to the children. I took care to ensure that they understood the various terms; for example, the word “research” was discussed and equated with “finding out” and “discovering”. I emphasised the voluntary nature of participation, as well as the option to withdraw at any time without consequences. I explained that only some children would be working with me each time I visited; educators were asked to conduct similar activities with other children who wished to participate as part of the regular program. Materials and equipment were provided to the educators for this purpose; for instance, I left a camera with the educators so children who wanted to take photos of important places in the outdoor space could do so.

During the first visit, I spent several hours chatting with the children who involved me in their play, asked me about myself, talked about what they were doing at the centre, told me about their families, and so on. These conversations were not recorded; rather, their role was to develop the children's confidence in me and to help me get to know them.

Gaining the Children's Consent

Ongoing consent, or "assent" was sought from children throughout the project. The term assent is used here to distinguish between the formal one-off written consent sought from adults and the unwritten agreement to participate that was gained from children. Verbal assent was sought from children throughout the data generation process, not just at the beginning of each session. Having informed children about the research at the outset, they were repeatedly re-informed during the project and asked if they wanted to continue to participate. I also watched for any signs of non-verbal withdrawal of assent. For example, if children appeared to not be interested in a particular activity, then this was taken as a withdrawal of assent. Children were reminded frequently that they could leave the activity if they wanted to, which was an option exercised quite often. Although it did not occur, had children indirectly indicated they did not wish to participate in any aspect of the study, for example, via educators or other children, this would also have been considered withdrawal of assent. Some researchers (Dockett, Perry, & Kearney, 2012; Harcourt & Conroy, 2005, 2011) have sought written consent from children but the decision was taken in this instance to rely on obtaining repeated verbal assent as it seemed to better reflect their everyday experience.

A challenge of undertaking research activities with children that are part of their everyday pedagogical experiences is the possibility that "researchers are expressly taking advantage of children's schooled docility towards such activities" (Gallacher & Gallagher, 2008, p. 506). In many aspects of their lives, children are required to "do as they are told" by adults, therefore, I took particular care to repeatedly remind children and their educators that children are merely being offered invitations to participate. By doing this, we feel confident that in our study children's participation was not a result of their "schooled docility", as they frequently exercised their right to withdraw assent, depending on their personal orientation towards each activity, and what else was happening at the time.

What About Confidentiality?

Because the study was about giving children a voice and there were to be no deficit constructions of children, parental consent was sought and obtained to use first names and

photos of faces. This was particularly important, as the data were being constantly presented and re-presented to children, families, and educators in a documentation book (Figure 8) that progressively told the story of the research. This book was kept at the centre in a prominent position accessible to children, educators and families and it would have defeated the purpose of the study to have had children's identities concealed. The continual re-presenting of data to children, families, and educators provided the option for them to change or remove it. Nonetheless, we were advised that the ethics committee would be more amenable to the use of pseudonyms in publications and presentations external to the setting. This was explained to the children who reacted with expressions of bemusement or, in the case of two children, indignation. They gave me the impression they saw my subsequent explanation as inadequate and I felt by disguising their names, I was betraying my commitment to them to make their ideas visible. Conroy and Harcourt (2009, p. 163) had a similar experience with children requesting that their real names be used as their "real names say who they really are". In future studies, we will be pursuing ways of avoiding the use of pseudonyms entirely.

Considering Power Relations

When adults work with children, there are going to be power imbalances. As Foucault says, "Human relations, whatever they are - whether it be a question of communicating verbally or a question of a love relationship, an institutional or an economic relationship, power is always present" (Foucault, 1987, p. 11). In this study, we were acutely aware of the power imbalances that exist between adults and children and took a number of steps to minimise them. First among these was to place myself in the position of learner. The children were the knowledge holders and my responsibility was to listen and learn. Second, to give the children more confidence to participate in the research activities, they always worked with me in pairs or small groups. Each pair was friendship-based (as suggested by the educators); this also meant the children did not feel they were missing out on time with their friends while they were participating in the research. An added advantage of working with the children in groups was that it facilitated the social construction of knowledge as each child responded to the thoughts of others. For example, when describing places they thought important at the setting, one pair decided to photograph where they played a game about being shipwrecked:

Levi: I'm going to take a picture of the storm things in here!

Charlie: Me too! I'm going to take a picture of the river starting getting rough!

Third, data generation took place in the children's spaces. Even though at times, from an adult perspective, it would have been easier to take children to, say, the director's office or the staffroom where there would have been fewer distractions, all research activities were conducted in children's spaces, most often outdoors.

Participating and Observing

Observation is a major means of generating data in qualitative research (Merriam, 2009) and is an important starting point for listening to young children's perspectives (Anning & Edwards, 2006; Clark & Moss, 2001). Observations occurred throughout this study, forming part of the overall mosaic or picture. These observations were made by me as a participant-observer (Merriam, 2009). The study did not presume that the observations were neutral; on the contrary, the research was underpinned by an assumption that observation is not only a process, but also a subjective interpretation (Rinaldi, 2006), made in the light of individual point-of-views, theories and hypotheses. In addition, children and adults who know they are being observed are likely to behave in socially acceptable ways (Merriam, 2009) so I needed to be sensitive to the possible effects of this on data generation and interpretation. The continual re-presenting of data to the children provided opportunities for dialogue about the effects of my presence.

It was my aim to take a "collaborative partner" (Merriam, 2009, p. 125) role in which the relationship between myself, the children and the educators was equal, although the line between being "observer" and "participant" shifted during the course of the study and inevitable power differentials were acknowledged. At the outset, my role leaned to that of observer, but as relationships developed over time, it leaned more to that of participant. As a participant, the children came to frequently request my assistance, invite me into their play, conversations, and activities. Thus, I began to take roles that might otherwise have been undertaken by the educators, such as helping children to negotiate minor differences of opinions, clean up spills, or assist with set activities. I ensured, however, that children remained aware that my primary role in the group was as researcher.

Using Photography and Audio-Recording with Children

In the last decade or so, a number of researchers have used photographs taken by children for data generation (for example, Clark, 2005; Clark & Moss, 2001; Dockett & Perry, 2005; Einarsdottir, 2005; Fleet & Britt, 2011; Loizou, 2011; Stephenson, 2009). Because they are in charge of the camera, child-led photography allows children freedom to make decisions about what will and will not be photographed (Einarsdottir, 2005). In addition, photography

provides children who may not have strong verbal or written skills with a non-verbal means of representing their ideas (Clark, 2005; Einarsdottir, 2005). Most importantly, researchers who have used child-led photography have found it has great appeal for young children (Clark, 2005; Clark & Moss, 2001; Dockett & Perry, 2005; Einarsdottir, 2005; Stephenson, 2009), something we also found. Digital cameras were used in our study for their relative inexpensiveness, ease of use, and low cost of processing. They also offered the possibility of immediate review of photos taken.

Some researchers (Agbenyega, 2011; Loizou, 2011) have used child-led photography in which children are not accompanied by the researcher as they take photos, but we decided to accompany the children, as several researchers (Clark & Moss, 2001; Einarsdottir, 2005; Stephenson, 2009) have noted the richness of conversation that occurs while children are taking photos. With the children's permission, the conversation that took place was audio-recorded, and was included as observational data. Digital audio-recorders were suspended around children's necks on a lanyard. To assist with sound quality, inexpensive clip-on microphones were used; the resulting quality of the sound was excellent. Children were very enthusiastic about the audio-recorders, particularly in recording and playing back their own voices. Unfortunately, this made keeping track of data problematic, as the children recorded over conversations that had not been transcribed. I explained this problem to the children and asked if in future it would be possible for them to not press any buttons on the recorders; they seemed happy to comply with this request. In subsequent studies, to reduce the novelty factor of recording and hearing their own voices, we would consider giving children opportunities to use audio-recorders freely prior to the data generation sessions. The educators may be able to assist with such opportunities.

Child-led Tours

On the third visit to the setting, as a way of familiarising children with the cameras and the research techniques, I presented the cameras to the children, explaining that they were expensive and somewhat fragile. I asked them to keep each camera's strap around their wrist, and showed how to frame, view, and take a photo. Several children indicated they had used digital cameras, including one who told me she had her own camera; she needed almost no instruction. Another child seemed quite unfamiliar with a digital camera, but she clearly knew something about cameras as she kept holding it up to her eye as if it had a viewfinder. Initially, this child took several photos of her own fingers as she held onto the camera with her hands on the lens. Nonetheless, within five minutes, she was competently taking photos of her surroundings.

As a familiarisation strategy, I invited pairs of children to show me, as an “authentic novice” (Clark & Moss, 2005, p. 97), and to record with photos the “interesting/special/important” places in the *indoor* setting. Although they took a few photos where the framing was out, or that were blurred (even though the cameras were self-focusing), overall on this tour, the children proved themselves to be competent photographers who took deliberate, precise photos (Figure 5).

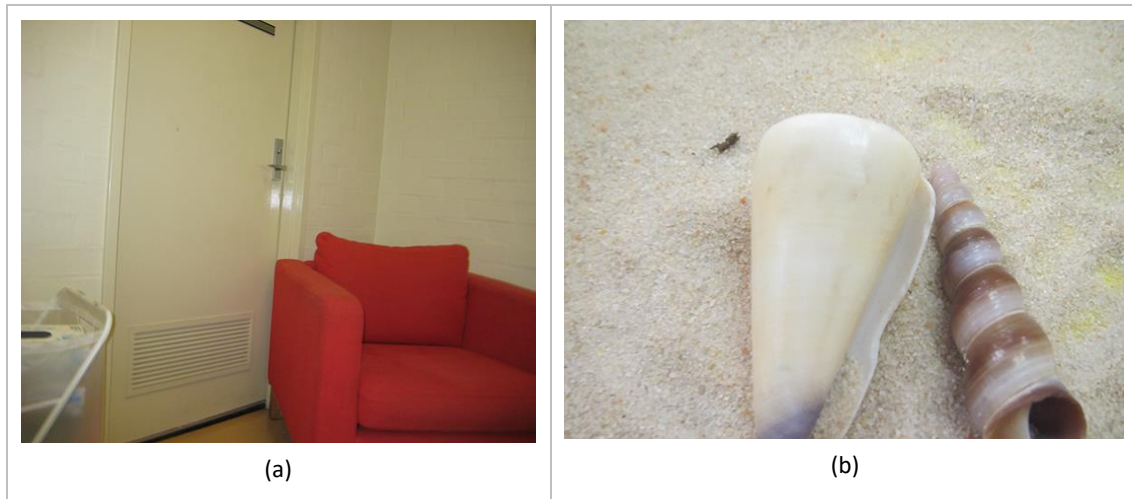


Figure 5 Children's first photos. (a) The teacher's chair and (b) shells

This first tour, however, revealed the importance of having conversations with the children about the photos they had taken. For instance, one photo appeared to me to be of a fluorescent light on the ceiling, but as the child pointed out, it was in fact a photo of me taken from a child's-eye-view: “That's a photo of you and you're important” (Figure 6). Because I am standing underneath a light in the photo, I am silhouetted and difficult to see, but the light is prominent.

Another photo could have been interpreted as a photo of a flyscreen door; however, even though the children had been asked to take photos of important places indoors, the child told me this was a photo of the outdoors.

Electing to conduct indoor tours before conducting tours of outdoor areas turned out to be very advantageous. Not only did the indoor tours provide an authentic context for children to become familiar with the equipment and practice their photography skills, but these tours also provided a chance to discover potential challenges. For example, this is where I first encountered the previously discussed issues with the audio-recorders and was also how I discovered that I needed to be explicit in asking pairs of children to take me on a tour “together”. Otherwise there was a tendency for each child in the pair to simultaneously conduct the tours individually.



Figure 6 “That’s a photo of you and you’re important”

Tours of the Outdoor Area

The fourth visit involved tours of the outdoors. In pairs, children led me on a tour, showing and photographing the “important /interesting/special places.” As well as recording the tour with photographs, our conversation was audio-recorded. As with the findings of other researchers (Clark & Moss, 2001; Einarsdottir, 2005; Stephenson, 2009), these conversations were particularly rich data.

Tours were conducted at breakneck speed. It was quite a challenge for me to keep up as we gallivanted from one end of the outdoor area and back again, traversing raised platforms, slides, sandpits, and cubbies. In one of her publications, Clark (2010, p. 55) advises keeping a rough map of the tour as it unfolds; I found this to be very useful for later crosschecking of the audio-recordings and the photos that the children had taken.

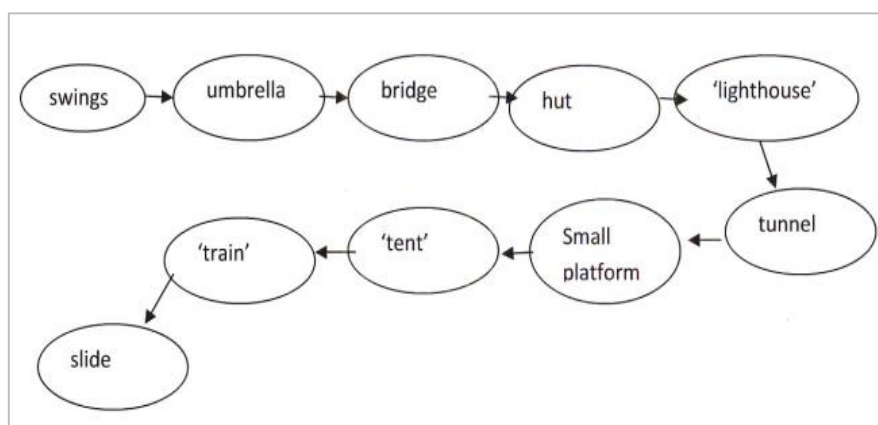


Figure 7 Example of rough map of child-led tour

The Potential for Things to Go Awry

Research of this nature is complex and unlikely to go exactly to plan. While there were no major problems, our study's mishaps occurred during the tours, involving either the cameras or the audio recorders. One child dropped her camera in the sand and although it remained operational, produced a series of photos framed by a partially opened, jammed shutter. The camera's functionality could later be restored; however, this highlights the possibility of losing expensive equipment in similar research. On another tour I overlooked turning on one child's audio-recorder but because the tours were conducted in pairs, with each child having his or her own audio-recorder, the other child's recorder picked up most of the conversation so I was able to transcribe most of what he said. Therefore, we recommend having two recorders on each tour, enabling crosschecking if one child's voice is less clear. Another tour mishap occurred when I discovered after the event that despite the fact one child had appeared to be taking photos—the camera seemed to be making all the right sounds – inexplicably there were no photos on her camera. On my next visit, I explained what had happened and the child, with her partner in tow, enthusiastically re-conducted the tour. My rough maps revealed that although she conducted the second tour in a slightly different order, she included the same sites as previously.

In spite of these hiccups, ultimately the tours were found to be a very effective method for generating rich data. They were popular with the children, who participated in them with great enthusiasm, having a means of communicating according to their own preferences and strengths. For example, one child took only seven photos but spoke a great deal, while another child, for whom English was not a first language, took 100 photos but spoke very little.

Photo elicitation Interviews

Einarsdottir (2007) advises that indirect, conversational approaches to interviews with young children are preferable to more structured approaches, although Dockett and Perry (2005) note that conversations with children have a tendency to move away from the researchers' goals. Therefore, following the tours, I returned to conduct photo-elicitation interviews (Epstein, Stevens, McKeever, & Baruchel, 2006; Harper, 2002) with the pairs of children, using their photos as a focus for conversation. The children were very excited to see their own photos printed out and all reacted animatedly to photos they had taken of their friends. Using prompting questions such as, "What can you tell me about this photo?" and, "What is interesting/special/important here?" provoked further conversation. Following these conversations, children were asked to place a sticker on "three photos of the most important places" and these were glued into the documentation book (Figure 8).

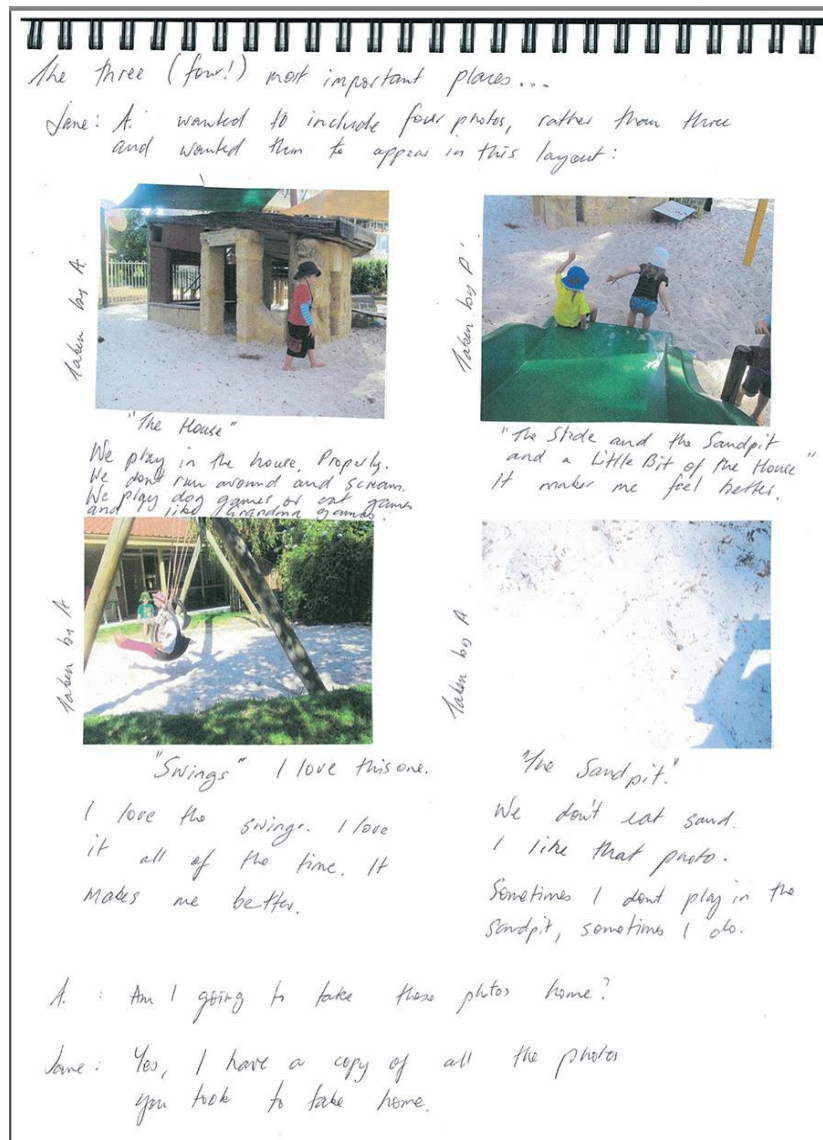


Figure 8 Example of page from documentation

The conversations elicited by this strategy were invaluable. The photos on their own told a partial story but the children's conversations added another rich layer of insights. For example, one child's photo of the sandpit provoked a lengthy description of an imaginary game she and a friend often played in this area; another child's photo of a raised platform revealed its importance as a vantage point.

Interviews

Whilst research aiming to explore children's perspectives avoids formal interviewing of children, asking children direct questions has been shown to reveal valuable insights (for example, Clark, 2010b; Dockett & Perry, 2005; Smith, Duncan, & Marshall, 2005). Certainly, in this study, interviews provided another layer of useful data—another piece of the mosaic.

Clark (2010a) notes interview questions that begin with “tell me about...” can reveal detailed observations, whereas children may refuse to answer questions beginning with “why”. Therefore, children were invited to tell me about: the best places to go outside; places they do not go; what they like to do outside; where children can play outside; and, what they might and would not change. They were also asked if they had ever used a camera before. With the permission of the children, these interviews were audio-recorded and transcribed.

Interviews with children can be more successful when held in places of children’s choosing, or on the move, such as in play (Clark, 2010a). In this study, although some interviews were conducted while children and I were sitting down - at least to begin with, interviews were invariably conducted whilst on the move as children insisted they show me the things they were explaining. Nevertheless, one pair instructed me to stay seated to ask my questions, assuring me that they would answer a few and then “go off for a play” and return later to answer more questions. I complied with their request and they stuck to their end of the bargain without any further encouragement from me.

The Slide Show: Focusing Conversations

This layer of data, or mosaic piece, is another example of photo-elicitation interviewing (Epstein et al., 2006; Harper, 2002). This strategy was inspired by Clark’s (2005, pp. 43-45) “magic carpet” whereby she showed children a slide show of adult-taken photos of a variety of outdoor environments, including the setting being studied. In our study, as a way of providing an opportunity to revisit photos taken by the children, we included the three photos each child had identified as the most important/interesting places, along with images we had chosen to see what reactions they provoked from the children. Adult-selected images included photos of the children’s garden at Melbourne Botanical Garden. Also, because these children had frequently talked about climbing, being “up” and “high”, and referred to two outdoor structures as “lighthouses”, our slide show included a photo of a real lighthouse, as well as a spiral-shaped ramp built around a tree at Tokyo’s Fuji Kindergarten (<http://www.tezuka-arch.com/japanese/works/ring/06.html>), and two photos of tower-like playground structures designed by Danish landscape architect Helle Nebelong³. Photos of modular playground equipment were also included.

Due to weather constraints, the slide show was projected in the doorway of a storage shed that opened onto the outdoor area. Unfortunately, as children were not usually permitted

³ <http://www.sansehaver.dk/asp/side/english.html>

to enter this space, it proved to be somewhat distracting. The original intention of presenting the slide show to pairs of children was not achievable as the shed attracted many other children. The resulting ruckus meant that the recorded conversations could not be transcribed.

Nonetheless, the slide show provided some useful data, though more limited than expected. We believe, however, that this strategy has potential; in future studies further attention should be given to ensuring an appropriate setting to enable children's voices to be heard.

Extending Means of Representation: Drawing

In research, children's drawings have been used for exploring their perspectives (Clark, 2010a; Einarsdottir, Dockett, & Perry, 2009; Wright, 2007). As drawing provides children with another language (Edwards et al., 2012) for expressing ideas, following the slide show, children were invited to draw what they liked about the centre's outdoor environment, or those they had experienced elsewhere. Like photography, drawing gives children the option of non-verbal expression allowing them to be active and creative. Einarsdottir (2007) advises, however, that it is important to include observations of children's narratives and interpretations as they draw, rather than trying to interpret what they have drawn out of context; advice we heeded in our study.

Drawing was certainly familiar to these children. Not only was there a designated drawing area indoors, but there was also a drawing area outside. Despite this, few children were keen to draw their ideas about outdoor environments. Three children responded by saying, "I can't draw", and while two children agreed to draw, they showed little enthusiasm after beginning. Their lack of enthusiasm and furtive looks to their peers who were playing elsewhere was taken as a withdrawal of assent, and this was confirmed when they left the activity as soon as they were reminded that their participation was optional. But for the children who were confident with it, drawing was eagerly approached, and for one child it was a particularly attractive activity and focus for our conversation.

Reflections

The challenge of our study was to find ways to seek young children's perspectives about outdoor spaces in their pedagogical setting. No single strategy used stood out as being "best". Like Clark and Moss (2001), we found using a range of strategies effective as they not only allowed for triangulation of data, but also for children's interests and strengths. Drawing, for example, was rejected by a number of children in our study, but for one it was a powerful tool. The tour strategy, with its combination of photography and conversation, appealed

greatly to children, providing many insights, but the other strategies furthered these insights. Informal conversation was pivotal to all of the strategies, but these conversations were enhanced when children had something purposeful to do whilst they were talking.

But it was not just the layering of strategies that was valuable in this study. Highly significant were the affordances the multimodal strategies provided for adult-children interactions, children-children interactions, and the possibility to make these visible. These strategies did not relegate the researcher to “fly on the wall”, nor did they relegate children to being voiceless objects of research. Rather, they provided a catalyst for dialogue amongst children and adults and thus developed relationships and the ability to communicate with each other, in a variety of ways.

A developmental paradigm may not have supported such a project as it may have engendered an assumption that these children were not yet competent (Woodhead & Faulkner, 2008). Instead, by taking a view of children as having “extraordinary strengths and capabilities, linked with an inexhaustible need for expression” (Malaguzzi, as cited in Gandini, 2012b, p. 53) and by choosing methods which provided a “discursive space for differing perspectives and forms of expression, where there is room for dialogue, confrontation (in the sense of exchanging differing experience and views), deliberation and critical thinking, where children and others can speak and be heard” (Dahlberg & Moss, 2005, p. 29), we found children to be reliable, knowledgeable, and trustworthy informants, able to convey a clear picture of what was important to them in this outdoor space.

A Cautionary Note

It is possible that consultation is undertaken and then ignored. Clark and Percy-Smith (2006, p. 3) point out, “Participation can be turned into another managerial process in order to tick boxes and meet targets according to policy priorities.” This, in our view, would be deeply disrespectful and would be worse than not seeking children’s views at all. We suggest that for similar studies, to avoid the possibility of children being consulted for tokenistic purposes, a further step is included evaluating the results of children’s participation.

Limitations

Such an approach is not without limitations. This small study focused on eight children in one setting. In a different context, researchers will need to assess if the approaches taken in this instance will be suitable. Further, this was not a speedy way to investigate; as well as time spent at the setting, large amounts of data were generated that were time-consuming to

analyse. The methods used required cameras, audio-recorders and other materials that had to be sourced and paid for. Finally, this research required skills in dialoguing with children, pedagogical approaches, and documenting children's thinking. Mac Naughton, Hughes and Smith (MacNaughton et al., 2007) suggest a lack of expertise in working with young children could be a reason why children's perspectives are not being heard in the public sphere. Our experiences in this project lead us to agree.

Conclusion

Finding ways to enable children to be heard continues to be a challenge (Ailwood et al., 2011; Pascal & Bertram, 2009). This paper has described methods used in one study to seek children's perspectives. The methods are productive pedagogical techniques inspired by the educational project of Reggio Emilia that also present possibilities for respectful research. One strategy alone was not sufficient; a combination of strategies that offered possibilities for children and adults to work together was found to provide children with the most opportunities to express themselves. It is our view that as researchers and educators, we have a responsibility to strive to find ways that children can enjoy the rights articulated in the *United Nations Convention on the Rights of the Child* (United Nations, 1989), including the right to be involved in decisions that affect them. This is a conversation that is still in its infancy; we hope that our study contributes to this ongoing exchange.

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PUBLICATION 3

Young Children's Perspectives of Outdoor Learning Spaces: What Matters?

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Outdoor spaces are a feature of most Australian early learning settings and have potential for many learning opportunities. This article reports on a study that investigated three- and four-year-old children's perspectives of the outdoor environment in their early childhood education setting. The research was conducted using multi-method approaches including child-led tours and photography, photographic elicitation and conversations. Findings emphasise the importance for children of being able to pretend, move, observe and be social. These findings have implications for designers of both curriculum and outdoor spaces for young children.

When discussing the “space” of educational settings there is a temptation to think in terms of *indoor* spaces, of the buildings and their contents. However, outdoor spaces are also part of educational environments, and research indicates that experiences outside not only improve academic performance, but also physical activity levels, social interactions and emotional wellbeing (Malone, 2008; Nicol, Higgins, Ross, & Mannion, 2007; Rickinson et al., 2004; Waite, 2011). But as Malone (2008) notes, much research focuses on school-aged children and there have been few investigations of outdoor spaces for younger children in settings such as kindergartens and childcare, particularly in Australian contexts.

Despite a lack of research, the Australian Government has made a clear statement of the role of outdoor spaces in its nationally mandated document, *Belonging, Being and Becoming: The Early Years Learning Framework for Australia* (DEEWR, 2009) for all young children (birth to five) who attend early childhood educational settings. It states: “Outdoor learning spaces are a feature of Australian learning environments. They offer a vast array of possibilities not available indoors” (DEEWR, 2009, pp. 15-16). Given this statement, researching outdoor spaces in educational settings for young children is a pressing need in Australia, and as children

are the principal users of such spaces, their perspectives are a logical starting point for the research effort. However, research including young children's perspectives is uncommon, not just with respect to the outdoors, but in general (Clark & Moss, 2005; Lansdown, 2005; Smith, 2011). Therefore, the goals of this study were not only to investigate children's perspectives of the outdoor spaces in their early learning setting, but also to investigate methods for doing this. Findings relating to the children's perspectives are the focus of this article; research methods findings are described elsewhere (Merewether & Fleet, 2014) .

Valuing Children's Perspectives

Smith (2011) points out that the world abounds with research *on* children, but the body of research *with* children that has found ways to make children's voices visible is limited, although this has been changing over the last two decades. A significant catalyst is the *United Nations Convention on the Rights of the Child* (United Nations, 1989), which recognises children as active citizens with rights to participate in matters affecting them, including research. A second contributor to changing perspectives is the field of Childhood Studies (James & James, 2008; Kehily, 2009; Qvortrup et al., 2009), which focuses on children's rights, voices and participation. By conceptualising children as social actors and capable holders of opinions and ideas, Childhood Studies presents the possibility for researchers to work together with children as co-constructors of research data. A third major contributor to strengths-based views of young children is the educational project of the city of Reggio Emilia in Italy which, through its use of multiple forms of listening and documentation, has graphically made visible the capabilities of young children (Edwards et al., 2012; Giudici et al., 2001; Rinaldi, 2006).

These catalysts influenced the work of Clark and Moss (2001) who coined the term "Mosaic approach" as a metaphor for their multi-method, participatory research approach which draws together pieces from different sources to create a "picture" of children's perspectives. The approach uses the traditional research tools of observation and interviews, as well as a variety of participatory tools that can be used by children. The participatory tools include child-led photography, book making, tours and drawing. The Mosaic approach has informed researchers who have found ways to engage and empower young children in research (Cremin & Slatter, 2004; Fleet & Britt, 2011; Smith et al., 2005; Stephenson, 2009). This work has revealed young children to be capable of providing valuable perspectives in matters of importance to them.

The present study took inspiration from the Mosaic approach to seek young children's perspectives about their early childhood setting's outdoor environment with a view to joint decision making about its future design and use. The inquiry was guided by the question: *What does it mean to be in this outdoor space?* The research used case study methodology (Merriam, 1998; Stake, 1995), as the primary intention was to gain in-depth perspectives from children in one particular context. While single-case studies do not lend themselves to generalising (Stake, 1995), insights gained from this study may be relevant for others.

Children's Preference for the Outdoors

Studies that have investigated children's environments consistently find children prefer the outdoors. For example, research with school-aged children in England (Burke, 2005; Titman, 1994) and younger children in Canada and New Zealand (Blanchet-Cohen & Elliot, 2011; Stephenson, 2002) notes children's preferences for outdoor over indoor spaces in educational settings. Stephenson (2002) postulates that children preferred the outdoor environment in the case she studied as it was more "open" in terms of space, educator attitudes, routines and equipment, and Titman's (1994, p. 27) study of school-aged children led her to conclude the outdoors "signified opportunities for a range of the things children wanted and needed to do which were not possible indoors". Rogers and Evans (2007, p. 164), in a study of young children's role-play, note outdoor contexts enable children to "exercise greater choice over materials, location and playmates". Australian studies involving school children have investigated children's preferences for certain outdoor equipment and materials (Bundy et al., 2008; Lucas & Dymont, 2010) and similar constructs have been investigated for younger children in the United States (Cosco, Moore, & Islam, 2010; Holmes & Procaccino, 2009) and Norway (Storli & Hagen, 2010). These studies suggest that if outdoor environments are to appeal to children, equipment and materials must be open-ended, and facilitate challenge and social engagement.

It is important to acknowledge that while research suggests the outdoors is popular with most children, a few prefer the indoors (Einarsdottir, 2011). Perhaps outdoor time is not as relevant for some children due to increased opportunities indoors (Waller, Sandseter, Wyver, Ärlemalm-Hagsér, & Maynard, 2010). Agency, choice and opportunities to socialise appear to be central to children's preference for outside spaces, but these elements are not necessarily unique to the outdoors. When some Australian school children were asked to recall a special place in their kindergarten, the outdoors featured in their memories; however, their choices were not so much grounded in "outdooriness", but in the opportunity to have "creative agency

and relationships” (Fleet & Britt, 2011, p. 159). The mere fact of being outside, or the amount of physical space available, does not necessarily lead to positive outcomes. Some outdoor play environments with large amounts of space but a lack of equipment and materials lead to an increase in school-aged children’s boredom and aggression, along with lower levels of social, physical and cognitive development (Evans, 2001; Moore & Wong, 1997). Little (2010) suggests that in some Australian early childhood settings, in an attempt to remove risk, “outdoor play experiences have become so sterile that the thrill and exhilaration that provide a perception of risk have also been removed” (p. 16). These “risk-free” outdoor environments are unlikely to be favoured by children.

Methods

The following is an overview of the methods used in this study. Methods are more fully described in Merewether and Fleet (2014). The research took place over two months in a Perth early childhood learning setting. Within this centre, two classes of three- and four-year-old children, each welcoming 25 children, and each with a university-qualified early childhood lead educator, participated in the study. These two classes shared one outdoor space. In consultation with the educators and children, eight children—four boys and four girls—were chosen as key informants. This subset consisted of five 3-year-olds and three 4-year-olds; three were from homes where a language other than English was spoken. For the research to proceed, it was also important to select children who demonstrated willingness to articulate or draw their points of view. Before commencing the study, ethical approval was granted by the Macquarie University Human Research Ethics Committee. In accordance with this approval, pseudonyms are used in this article and photos do not reveal children’s identity.

Data generation involved observations, along with child-led photography, conversations and drawing. The research activities in this study were designed to be part of the everyday pedagogical activities in the classroom and were grounded in a desire to: a) avoid undue intrusion; b) be non-confrontational and participatory; and c) encourage children to be a part of the interpretation process (Morrow & Richards, 1996, p. 100).

The study began with three full-day rapport-building visits in which the project was discussed with the children and they were familiarised with the methods and equipment, including the cameras and audio-recorders. Informal observations of children’s use of the outdoor spaces were also made during this time, and throughout the study. Then, in pairs at a time, the eight children took me on guided “tours” of the outdoor space at the setting, pointing out and photographing places they found “interesting”, “special” or “important”.

Conversations during these tours were audio-recorded. The following visit, the photos were used as the focus of an informal conversation with each pair. During these conversations, each child was invited to identify three photos showing the most important places he or she had photographed. The selected photos were added to a documentation book (see below) that progressively told the story of the research.

To provide another context for conversation, the three photos selected by each child were added to a PowerPoint slideshow that was shown to the eight children on my next visit. Also, because children had frequently mentioned lighthouses, steps, and being “up”, photos of other spaces containing these elements were also included. The slideshow was set as a continuous loop in a storeroom opening onto the outdoor environment and children in the subset were invited to join me to view it at their leisure. On another visit, children were invited to draw their ideas about outdoor spaces and to provide narrations of these drawings.

Documentation Book

The research was narrated in a documentation book that included conversation snippets, children’s photographs and drawings, and my interpretations. The book was displayed at the setting in a prominent position accessible to children, educators and families. It was compiled collaboratively by the children and me to provide an opportunity for “visible listening” (Dahlberg & Moss, 2006, p. 68; Rinaldi, 2006), allowing all participants—children, educators, families and me—to listen to each other. This feedback was crucial to the research design and allowed me to constantly check that the children agreed with what was being said about them.

Findings

Data analysis began at the outset of data generation. Initially, observations, photos and conversation transcripts were analysed using open coding (Corbin & Strauss, 2008). Open coding involves identifying and naming all potentially relevant pieces of data, in response to the questions, “What is this? What does it represent?” (Strauss & Corbin, 1990, p. 63). These codes were later axially coded (Corbin & Strauss, 2008) into broader categories, or themes. Four themes ultimately emerged from this process: *places for socialising*; *places for pretending*; *places for observing*; and *places for moving*. As a means of illustrating some of the findings of this study, examples from each of these themes will be presented below.

Places for Socialising

Despite repeated reminders that I wanted to know what children thought were the most interesting or special *places* at the centre, they were keen to include people in their photographs, conversations and drawings. None did this more overtly than Layla who managed to resist my prompting while we were on tour:

- Jane: [emphasising the words “place” and “where”] Places. Where’s that? Remember, you are showing me the important places.
Okay, so where’s the next important place?
- Layla: They have to be persons, I think.

When I later asked Layla to select three photos of the most important places, even though she had taken some photos that did not have people in them, she chose one I had taken of her and two of other children. It could be tempting, perhaps, to believe that a three-year-old may not have a clear notion of “place”, however Layla demonstrated she indeed understood the notion in this encounter:

- Child: Take a picture of me!
- Layla: No, I’m not taking a picture of you. I’m taking a picture of the places. Jane said.

Children did not directly make statements like, “I like this place because I can play with others in it”. Rather, this was inferred from their choices of place, other conversations, and observations. For example, during the photo-elicitation, I noticed Thierry looking closely at a photo he had taken of the swings. I asked him if he played on the swings and he replied:

- Thierry: Yes I do. Look, one, two. So two people.

It may be that Thierry was demonstrating his counting prowess, or indeed, something completely different. Nonetheless, I interpreted this as demonstrating his desire to be with others, in the light of the other pieces of the mosaic, most particularly my observations on every visit to the site of Thierry actively initiating and maintaining social interactions with both children and adults.

On the tour, Travis frequently took several photos from a range of angles of his nominated important places, but when it came to selecting one from his series of “lighthouse” (the children’s name for two one-metre-high platforms) photos for inclusion in the documentation book, he was definite about his choice:

- Jane: The lighthouse—okay. Is that the best photo of the lighthouse that you took? I think there are some over there as well.
- Travis: This one with Ryan [Travis's friend].
- Jane: That one with Ryan in it? What's special about that one?
- Travis: Ryan is there. (Figure 9)

By choosing this photo, I inferred that this place was important for Travis for the potential it afforded to be with his friends.



Figure 9 Travis's photograph of the "lighthouse"

Often, as if to affirm their relationship, each child in the pair took photos of the same thing, celebrating the act with an excited gesture or statement, frequently using the plural pronoun:

- Travis: We both take photos of the swings!

In another gesture of solidarity, children often also took photos of each other, as in the photos by Travis and Thierry taken from opposite ends of what they called the "dark tunnel" (Figure 10).



Figure 10 Travis and Thierry's photographs of each other in the 'dark tunnel'

Places for Pretending

On the tours, all eight children photographed the playhouse (which children referred to as the “hut” or the “cubby”) and the raised play structure (which children called the “bridge”), often several times. When I asked the children what they did in these places, they frequently said, in a tone that suggested they thought I was asking a ridiculous question, that they “played”. When I asked them what they played, the possibilities seemed endless:

Ashlee: Baby games, dog games, and cat games, and mummy and daddies games, and I like playing granma games.

Alternatively, my “what do you play?” question triggered stories that sounded like they had been imagined many times:

Charlie: A three-hour tour.

Jane: A three-hour tour?

Charlie: Yeah. On Gilligan's Island* I had a three-hour tour. They crashed on the island because there was some storm.

Levi: I'm going to take a picture of the storm things in here!

Charlie: Me too! I'm going to take a picture of the river starting getting rough!

Jane: So you play in here sometimes?

Levi: Yep, we do. Because we take holidays to go over to this house. This is in holidays.

Charlie: That's important. That's important, yes.

* 1960s sitcom being re-run on Australian TV at the time of this study.

Pretending was often given as the reason for preferring other places as well. For example, Travis photographed a semicircular seating arrangement (Figure 11) and named it “the train.

We sit on the seat and then we go. I can drive”. He mentioned this train on a number of subsequent occasions. When I asked him if there was anything in the outdoor area that he thought should be changed, he told me an elaborate story about turning the train into a flying train that picked up and dropped off children all around the centre ... and the world.



Figure 11 **“The train”**

During the course of the research, the children constantly regaled me with imaginative tales. For these children, the outdoors provided many possibilities for imagining and pretending.

Places for Observing (the Near and the Far)

Children’s propensity for observation of their surroundings was very apparent in their photographs (Figure 12). They paid attention to close-up details, as well as those that were far away.



Figure 12 Thierry's photos of the near and the far

Many of the photographs were taken at very close range, to the point of being out of focus, even with an automatically-focusing camera (Figure 13). At first, I thought this was due to inexperience with the camera and I tried to give guidance:

- Jane: Sometimes when you are trying to take a photo you sometimes need to stand back from it.
- Travis: Maybe.

However, as Travis's demurral helped me realise, it was the children's intention to get in close—it was the detail they were interested in.

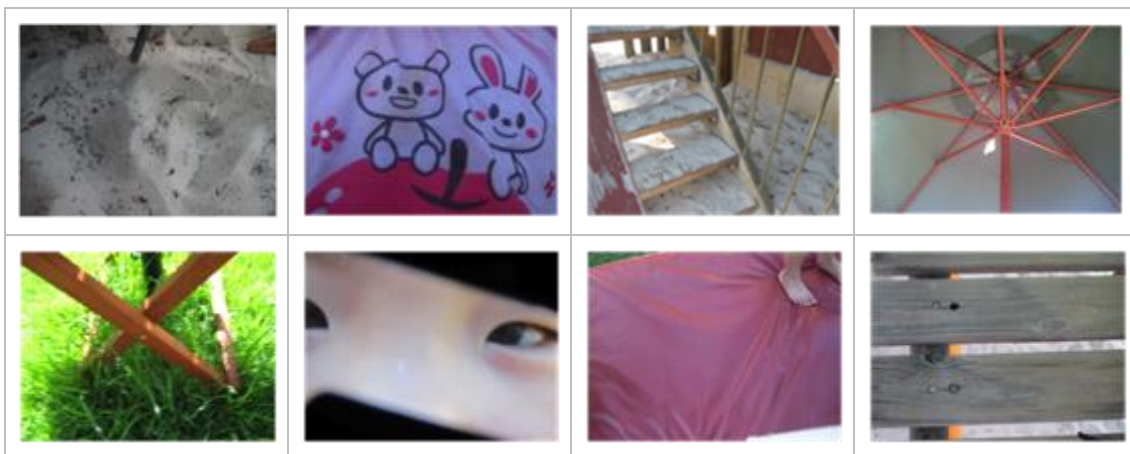


Figure 13 Examples of children's photos of detail

On the other hand, the importance of having a vista was repeatedly reiterated and, of the four most frequently photographed places (the bridge, the swings and the lighthouses), three provided an opportunity to watch the goings-on of the outside area (Figure 14). Many photos

were taken of the view from these vantage points, often through railings and past other obstacles. Tara said that the lighthouses were the best places to play at the centre:

Tara: I always play in them. We like it.
Jane: Why's that?
Tara: Because we can look out.

The bridge was also valued for its height and potential to watch the surroundings. Travis, who took a total of 87 photos, identified the bridge and the lighthouse as two of the three most special/interesting places. I asked him what he did on the bridge:

Travis: We just climb on it so people don't catch us. We look at people walking under the bridge.
Jane: So it's a good place for looking?
Travis: Yep, and this one [handing me a picture of lighthouse].

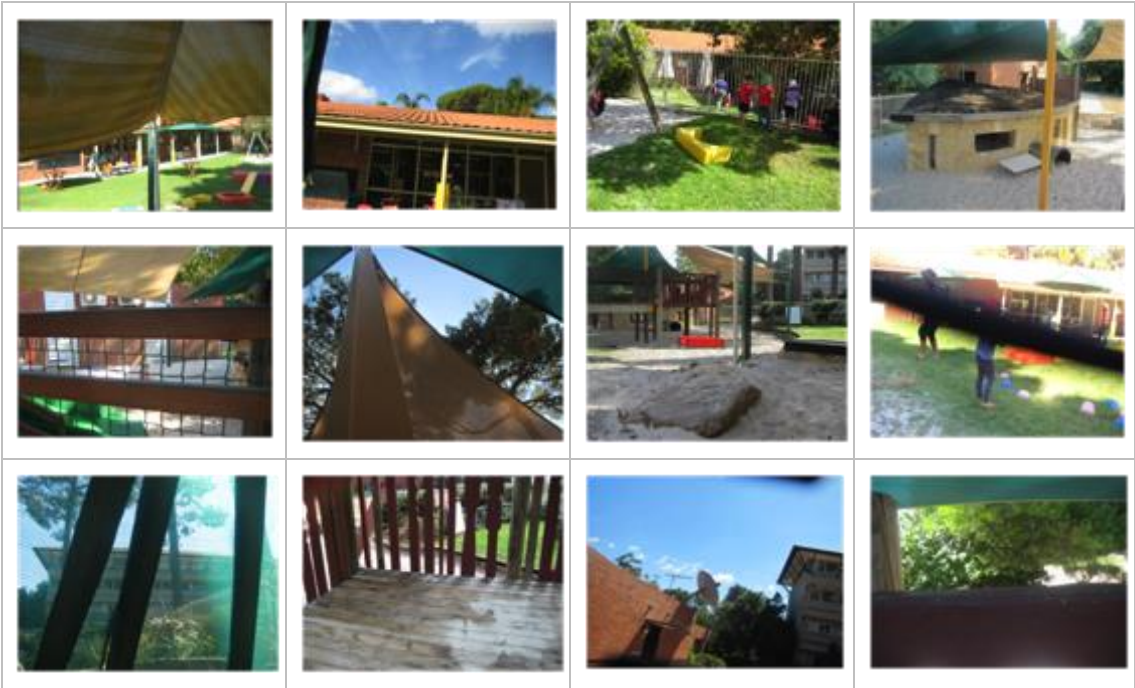


Figure 14 Examples of children's photos taken from vantage points

But it wasn't only the high places from which children surveyed the terrain. The swings provided this opportunity as well; on each visit I observed children using the swings as a vantage point. Ashlee, who I often observed on the swings, told me: "I look at the grass and the sandpit and I look at the grass". Although she did not specifically mention the people on the grass and in the sandpit, my observations suggested she was a very keen people-watcher from her position on the swings.

Places for Moving

“Moving” was another theme revealed by this study. It featured in all of my encounters with the children. They led the tours at a brisk pace, sometimes at a gallop, as we went across, into, up, down, in and through various locations in the outdoor area. On several occasions I had to ask them to wait for me as I caught up. Even the interviews were conducted on the move, either with me sitting still while the children moved about me, or while we both walked and climbed about the outdoor area. All of the children used words that described movement—both on the tours, and in subsequent conversations—words such as up, down, run(ning), jump(ing), ride(ing), swing(ing), slide(ing), came up repeatedly.

For example, in describing a drawing (Figure 15) showing important places outside, Levi said:

I like running around, playing chasey, hide and seek, going in the tunnel and going on the bridge. I like playing chasey with my friend Charlie. I like running on grass the best “cause I can run faster”.



Figure 15 Levi's drawing of important places outside

All eight children took a photo of the swings. This concurs with Holmes and Procaccino's (2009) study which found swings to be the most popular playground choice of girls, and the second most popular playground choice of boys. For some children the swings were a place for observing, as already discussed, but for others, swings were mentioned in association with other elements that involved movement:

Jane: The swings are the best place to go?

Thierry: Yep, I fly. And the slide.

Jane: Oh, and the slide? So, the swings and the slide?

Thierry: And the jumping mats.

The movement aspect was also articulated by Tara as she took a photo (Figure 16) of one of the jumping mats:

Tara: Jumpy, jumpy, jumpy, jumpy.



Figure 16 Tara's photo of the jumping mat

Discussion: The Outdoors is Important

It was clear the outdoors was important for these children. In fact, during a camera familiarisation session at the outset of the study when the children were invited to take photos of the important places *inside*, three of the children took photos through the door to the outside. Clark (2007b) had a similar experience in England when a four-year-old child also

took a photo of the outside through a door, so this is not an isolated event. This study has also found that the outdoors, in this setting at least, offers places for *socialising*, *pretending*, *observing* and *moving*, and these are much valued by the children. Other outdoor settings may not offer these possibilities. Nonetheless, the study has implications for those who are responsible for designing outdoor spaces and curriculum for young children and these will now be discussed.

Places for Socialising

In UK and Scandinavian studies that have examined young children's perspectives about the educational spaces they inhabit, places to be social have been identified as being important (Clark, 2005, 2007a; Clark & Moss, 2001; Einarsdottir, 2005). In these studies, many of the social spaces were outside. The importance of social spaces was also one of the major findings in research undertaken in Australia by Fleet and Britt (2011) in their investigation of children's memories of their first year of primary school, and, like the other studies, many of these social spaces were also outdoors. The study reported here only investigated outdoor spaces; therefore, it makes a further contribution through its finding that within an outdoor space, places to be social are highly valued by the children.

For educational institutions, this is an important finding. Vygotsky (1978, p. 88) states that "human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them". Bruner (1986) too has proposed that learning is not merely a solo pursuit, but is also a communal activity: "It is not just that the child must make his knowledge his own, but that he must make it his own in a community of those who share his sense of belonging to a culture" (p. 127).

Given that the outdoor spaces are integral to early childhood educational settings, it would therefore seem to be paramount that these environments enable the communal making of knowledge. Outdoor spaces in such settings are not just places to let off steam or relax, they are places for learning, so the need for these environments to facilitate learning is vital. In this study, places for being social were intimate and partially enclosed. Enclosure may not be the only way spaces can facilitate being social, but those responsible for designing outdoor spaces need to consider ways for children to be together in outdoor spaces. This is not just a matter of physical design but is also a consideration of curriculum, the provision of equipment and materials, and pedagogical approaches.

Places for Pretending

In his poem, *No Way. The Hundred is There*, Malaguzzi (as cited in Edwards et al., 2012, p. 3) laments that “the school and the culture ... tell the child that ... reality and fantasy ... do not belong together”. Malaguzzi would have been encouraged to see this was not the case at the site where this study was conducted. As Malaguzzi (1993, p. 12) states:

... we should not forget the relevant role of make-believe play. This type of symbolic play is pervasive in young children’s experience and has an important role in the social development of intelligence, development of skills needed for reciprocity among children, the potential for children to persist in activity and conversation together and the development of the ability to create symbols.

Paley (1990, 2004), who developed a teaching approach fostering play and children’s storytelling, also argues strongly for pretend play in early childhood educational settings. However, Paley (2004) notes that, in recent years, time available for pretend play has been reduced to make way for academic instruction. This is ultimately counterproductive as pretending plays a significant role in children’s construction of knowledge (1990, 1997, 2004b). As Paley (2004, p. 92) notes: “Pretending is the most open-ended of all activities, providing the opportunity to escape the limitations of established rituals. *Pretending* [original emphasis] enables us to ask ‘What if?’”

Providing places for children’s pretend play is a challenge for educators whether children are inside or outside (Rogers & Evans, 2007). Outdoor environments do not inherently provide places to pretend and have the potential to be just as limiting as those indoors. For example, Clark (2010a, pp. 74-75) describes a playground which consisted of a “sea of bark chippings with isolated play equipment” where the only place that had a story associated with it was a muddy pit at the edge of the space. On the other hand, in Moore and Wong’s (1997) 10-year study of the transformation of a school yard from barren asphalt to a lush, naturalised environment, imaginary play featured very strongly, particularly in the areas where natural elements were most prevalent and where the variety of small spaces and loose parts ensured “the possibilities were infinite” (p. 109).

Places for Observing

Children’s eye for detail has also been documented in studies of school-aged children in the outdoors (Hart, 1979; Moore & Wong, 1997; Titman, 1994). Moore and Wong (1997) documented the children’s use of “microsettings” (p. 10) such as benches and ledges, the tops

of fence posts and the forks of bushes and trees, in which the smallest of materials, even pollen, were used by the children. In studies of younger children, Clark and Moss (2005) noted a number of instances of children taking close-up photographs of toys, fixtures and items such as pebbles.

However, children observe the bigger picture too. The importance of places that provide opportunity to observe have been identified by studies of children's use of play environments (Hart, 1979; Moore & Wong, 1997). In these studies, lookouts were often hidden places where children could watch the surroundings without being seen: "Children liked to perch above their surroundings in such a way that they could survey the whole scene yet at the same time remain separate—having the ability to see while not being seen" (Moore & Wong, 1997, p. 73). The desirability of high places is also identified by children in Fleet and Britt's (2011) study of first grade primary school students. A wall at this site provided a valued place to watch from, as one of the children explained: "And we can see better on it. We like the wall because it's nice and warm ... and you can see better on it" (p. 155).

Children's penchant for taking photos of both the very near and the very far has also been recorded by Clark (2010a) who suggests that children's capacity to seek security in what is intimately known while also relishing the wide blue sky has been overlooked by designers of spaces for young children. This suggests that in designing outdoor spaces for children, consideration needs to be given to not only to enclosed spaces that encourage observation at close range, but also spaces that afford children the opportunity to observe their surroundings from a distance. At the site studied in this research, these spaces were often elevated; however, other spaces, such as the swings, were also favoured places from which to watch goings on both within and outside centre grounds.

Places for Moving

Early childhood settings have an important role to play in providing opportunities for children to be physically active, although seeing the outdoors as being purely for active play overlooks the vast number of other possibilities the outdoors offer (Maynard & Waters, 2007; Robertson, 2009). Nonetheless, the children in this study were constantly on the move and greatly valued the opportunities to be physically active that this particular space afforded them. This may not be the finding in other settings. Indeed, studies of US and European early learning settings have found levels of physical activity are typically very low, while levels of sedentary behaviour are typically high (Reilly, 2010). Simply having an outdoor space does not mean it facilitates children's desire to move. Rather, it is the policies, practices, attitudes and culture of

the setting that determine the amount of physical activity that children undertake (Emilsen & Koch, 2010; Moser & Martinsen, 2010; Pate, Pfeiffer, Trost, Ziegler, & Dowda, 2004). In addition, the physical features of the outdoor environment, such as the amount of space per child and the presence of vegetation, appear to be important influences on physical activity (Trost, Ward, & Senso, 2010). Furthermore, the addition of loose unstructured materials increases playfulness (Bundy et al., 2008), variety of activity (Moore & Wong, 1997), and activity levels (Bundy et al., 2009) among children in the early school years.

Interdependence of Themes

It is important to note that although the four themes of places to be social, pretend, observe and move have been isolated here for the purposes of discussion, in reality they nearly always coexisted. For example, moving involved pretending, pretending involved being social—and so on. This example from my notes while “on tour” illustrates this interdependence:

Travis: [said while running around the grassed area—me in pursuit]
When I was playing with Ryan and Layla we gotta some sprinkly things [plastic stepping “stones”] and the monsters would die. We’re getting sprinkly things [demonstrates]. Scuse me, Lucy [educator], we’re getting all the sprinkly things so we can kill all the monsters.

Travis is being social, pretending, observing and moving all at the same time. Each is dependent on the other, and speaking about each theme separately masks the complexity of the way that the children were experiencing the outdoor space.

It is also important to note that this study was a single case in which eight children’s perspectives were sought. The themes that emerged are not finite and may have been observed and interpreted differently by another researcher. Nonetheless, readers may be able to draw parallels with other early childhood contexts and thus the findings from this study may open a dialogue for possibilities in the outdoor spaces in other settings.

Conclusion

The *Early Years Learning Framework* (DEEWR, 2009) suggests outdoor environments are integral to young children’s learning environments; however, space can enhance *or* inhibit children’s competence by the way it stimulates their curiosity, skills, actions and communication (Rinaldi, 2006). As children are the actual users of outdoor space in

educational settings, understanding what children think is important in these spaces is vital if children's competencies are to be enhanced rather than limited. This study, by seeking to give voice to children's knowledge, insights and emotions regarding the outdoor space they encountered, revealed that in this particular setting, children value the opportunity to move, pretend, observe, and do these things in a social context. Such insights will be crucial to future decision making regarding outdoor provision and use at this particular site, but they also offer a provocation for those responsible for the design of curriculum and outdoor spaces at other learning settings for young children.

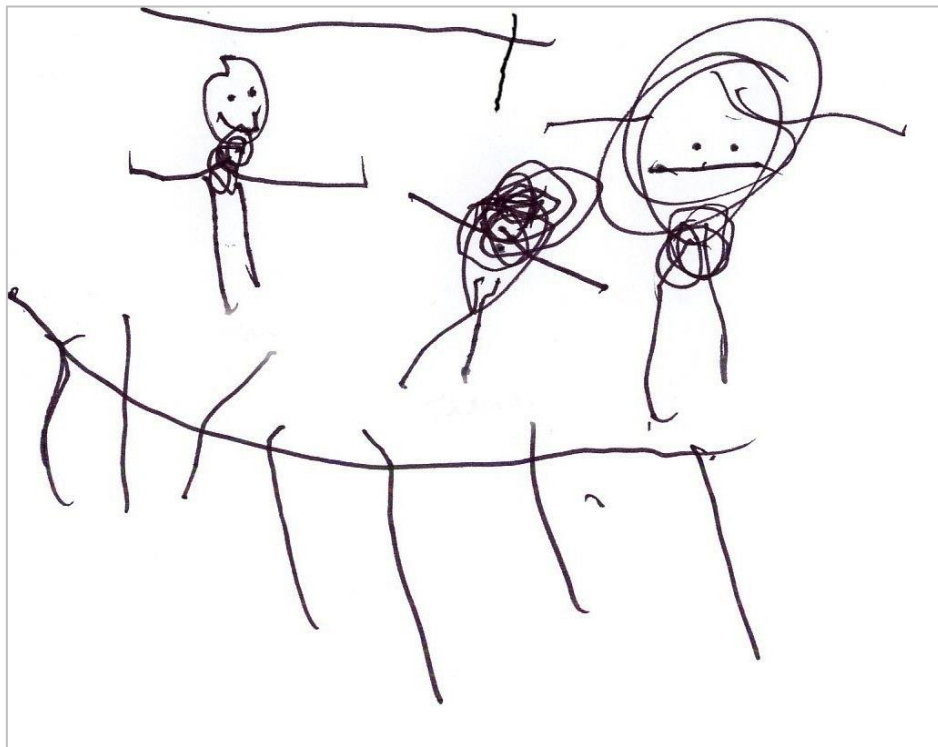


Figure 17 Drawing by Travis
"Travis, Thierry and Jane standing on the bridge"

INTERLUDE

Interlude:

“an intervening or interruptive period, space, or event”

(interlude, n.d.)

ASIDE: NOTES ON PUBLICATION 4

Environment: The Third Teacher

Having laid out my experimentations with the Mosaic approach methodology, it is now time for an “interlude”. The following paper, Publication 4 (Merewether, 2017a), marks a segue between two research sites, along with a shift between what might be called humanist and posthumanist ways of thinking. This second move is still in progress and its ongoingness is not one thing, so I can hardly lay it out with certainty here.

This publication was prepared for preservice teachers as a chapter in an edited textbook about sociological perspectives in education and therefore, to provide continuity with other chapters, needed to include to publisher-required structural elements such as “Ask Yourself” and “Theory in Action” sections. The chapter argues that the environment, or the surrounding context, is integral to curriculum. In some ways, this publication provides an overarching rationale for my thesis; that is, “how is the environment important in (early childhood) education?” Although, thinking with Deleuze and Guattari (1987), rather than searching for meaning I might now instead ask, “what does the environment *do* in (early childhood) education?”

Despite its publication date, like the previous papers in this thesis, the chapter was mostly written early in my candidature. It provides an overview, through the lens of the environment, of the educational project of Reggio Emilia, which informs the thesis throughout. In the chapter, I draw heavily on Giulio Ceppi and Michele Zini’s (1998) study which identified a series of 10 key characteristics of the environments in the municipal schools and infant-toddler centres in Reggio Emilia. As architects, Ceppi and Zini are more experienced in the ways of (nonhuman) matter—of things—than those of us in the humanities and social sciences who are trained to focus on the human. The chapter also draws on a wider body of literature about educational spaces.

At the time of writing this publication, I still believed thematic analysis was what I was required to do as a qualitative researcher, and if I am to be honest (remembering this is an aside) I accepted the invitation to contribute the chapter thinking that unpacking Ceppi and Zini’s characteristics of Reggio spaces would help me to find “themes” or “categories” for my study. In one desperate moment, I even fleetingly entertained the idea of using these categories in a case study that compared how Australian early learning centres “measured up” in relation to

these characteristics. However, while I was writing the chapter, I was also discovering new materialisms, so in terms of publications for my thesis, we see my first references to Barad's (2003, 2007) work, ideas which would provoke an epiphanic turning point.

Barad's (2007) notion of *agential realism*, which I have touched on already, attributes agency not only to humans but also to matter. This held great appeal for me as it "provides an understanding of the role of human and nonhuman, material and discursive, and natural and cultural factors in scientific and other social-material practices" (Barad, 2007, p. 26). The theory of agential realism sees matter as agentic and this agency has ramifications for human and nonhuman worlds. Matter, therefore, is not dead, passive or inert; it is alive. Barad's thinking is central to what have come to be known as "new materialisms" (Coole & Frost, 2010; Dolphijn & van der Tuin, 2012), or what Lenz Taguchi (2013b) refers to as *renewed materialisms*, which reactivate "ontologies and epistemologies that constitute the very foundations of qualitative interpretive inquiry" (p. 707).

In following the educators from Reggio Emilia who portray the environment as a teacher, this article animates the physical world. This animation, liveliness and vitality of matter portends a thread that will find its way through the rest of this thesis.

PUBLICATION 4

Environment: The Third Teacher

Merewether, J. (2017). Environment: The third teacher. In B. Gobby & R. Walker (Eds.), *Powers of curriculum: Sociological perspectives on education* (pp. 395-420). Melbourne: Oxford University Press.

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Merewether, J. (2017). Environment: The third teacher. In B. Gobby & R. Walker (Eds.), *Powers of curriculum: Sociological perspectives on education* (pp. 395-420). Melbourne: Oxford University Press.

ACT III TROUBLE AND STICKING WITH IT

Making the Outdoors Visible in Pedagogical Documentation

Arrange whatever pieces come your way.

Virginia Woolf (1925-30/1980, p. 39)

My PhD research proposal indicated I intended to apply and expand at more sites what I had learned from my experience at the first site. My aim was to include in my final thesis at least three “case studies” (Merriam, 2009; Stake, 1995) that explored and built upon the Mosaic approach. Yet as I noted earlier, reading Barad’s (2007) *Meeting the Universe Halfway* sparked a turning point, a rupture, in my thinking. This was further compounded by my reading of Deleuze and Guattari’s (1987) *A Thousand Plateaus*. These two books made it clear that I could no longer see humans and nonhumans as separate. My view of humans, including children, as “exceptional” had begun to crumble. The idea that I might seek only children’s perspectives was floundering. Not only that, finding two or more suitable sites was proving much more difficult than I had imagined. While I was able to secure one more site reasonably easily, it seemed some gatekeepers were wary of my desire to make children’s perspectives visible¹.

This was indeed a crisis point in my candidature. Around the same time, I also read St Pierre’s (2011) scathing critique of “conventional humanist qualitative methodology” (p. 611) which further compounded my woes. I had completed the requisite research training modules and determined that I did not want to follow a “quantitative” research path. In an earlier career, I had been a research assistant working within an experimental science methodology and it had left me uneasy about the “truths” this kind of approach supports. Qualitative research seemed to allow for much more uncertainty and humility and I was drawn to this, especially for work with young children. But reading St Pierre’s critique led

¹ This aspect of the project may lead to another publication although it is difficult to write about for confidentiality reasons. I spent six months answering questions from one site’s “gatekeepers”. The questions became more and more obscure and focussed on legal points that other researchers I approached for advice had never encountered. I eventually gave up pursuing this site.

me to realise that qualitative research has fallen prey to the very things it was set up to contest and is much more rigid and positivist than I had thought.

I almost abandoned my doctoral studies at this point as the clichéd mountain I was climbing suddenly became so much more insurmountable. I had been following the qualitative research process that St. Pierre was so critical of, that is: “identify a research question, design a study, interview, observe, analyze data, and write it up” (St. Pierre, as cited in Guttorm, Hohti, & Paakkari, 2015, p. 16). Did this mean I needed to write another proposal, submit another ethics application ... start all over again? And would a “post qualitative” approach (whatever that was) measure up in terms of the academy? The spectre of needing to submit publications and a thesis to unknown scholars loomed.

It was Deleuze and Guattari (1987) who helped me find a way forward:

Lodge yourself on a stratum, experiment with the opportunities it offers, find an advantageous place on it, find potential movements of deterritorialization, possible lines of flight, experience them, produce flow conjunctions here and there, try out continuums of intensities segment by segment ... We are in a social formation; first see how it is stratified for us and in us and at the place where we are; then descend from the strata to the deeper assemblage within which we are held; gently tip the assemblage, making it pass over to the side of the plane of consistency [with its] continuum of intensities. You have constructed your own little machine, ready when needed to be plugged into other collective machines. (p. 161)

This passage in *A Thousand Plateaus* (Deleuze & Guattari, 1987) gave me permission to experiment, to tinker. No longer did I need to feel locked in. In a differently similar way, Derrida (1967/1997), in *Of Grammatology*, was also helpful when he asks “where do we begin?” and in replying to his own question, answers, “*wherever we are*: in a text where we already believe ourselves to be” (p. 162).

I could not start over, nor did I need to. In fact, I could only begin where I was, “lodged on a stratum”. As Deleuze, Guattari and Derrida helped me to see, this was my starting point; I now needed to “do’ the next thing” (St. Pierre, as cited in Guttorm et al., 2015, p. 16):

So I ask my students what they are already doing that they’re interested in thinking more about, in reading about, in studying. In effect, they’ve already begun. The first thing I want them to do is read, read, read and then “do” the next thing that makes sense and to keep doing the next things and then all that doing is a *methodology*—that is, if they still must cling to the idea of methodology.

I had done the “read, read, read” part, so for me, “do[ing] the next thing” meant going to the next site and finding my way. It meant I would not approach it armed with a predetermined schedule of strategies to launch, as I had done previously. Instead I would immerse myself in it and “do’ the next thing that makes sense” (p. 16). What made sense was to return to using the pedagogical documentation research approach (explained in the next paper, Publication 5 (Merewether, 2017b) of this thesis) that I had used as a teacher~researcher. Instead of arriving at the site with a regime of strategies to use one after the other, I would instead add these strategies to my metaphorical researcher’s backpack and pull them out if they seemed appropriate at the time. This approach fitted with St. Pierre’s suggestion to see participants not as objects of knowledge but as “*provocateurs*”, as lines of flight that take us elsewhere (St. Pierre, 2011, p. 620). It mobilised a kind of open and emergent listening (Davies, 2011) that allowed me to (begin to) see outdoor spaces intra-actively, rather than as places of child-environment interactions.

No longer was I climbing a rigid, immovable mountain; instead, like *Spinifex hirsutus*, I had become part of a shifting sand dune, moving with what had come before and what was to come.

A Word About Bricolage

In this next publication, I use the figuration of bricolage to describe my unfolding approach to my work at the second site. In drawing parallels between pedagogical documentation and bricolage, I remark, “[a]s well as offering methodological diversity, bricolage also offers the possibility of theoretical diversity” (Merewether, 2017b, p. 136). In trying to find a way between methodologies and theories, such diversity was an alluring possibility. Indeed, “bricolage” was originally included in my thesis project’s title, so I always intended to take a diverse and multidisciplinary approach. From the beginning, Joe Kincheloe and others’ (Kincheloe, 2001, 2005; Kincheloe & Berry, 2004; Kincheloe, McLaren, & Steinberg, 2011) theory of *the bricolage* provided a framework for bringing together an eclectic array of methodological and theoretical resources that I knew I wanted to use. I was especially drawn to the notion of an artisan using what is at hand to get the job done. In many ways this reflected my own teaching approach and philosophy: if sand was available, then sand became the medium through which children learned; if paper was on hand, we used it; if there was a sudden shower of rain, a local event, a visiting baby, they all became possibilities for the curriculum. As far as possible, I used what was available as the basis for the everyday teaching and learning experiences. Both *the bricolage* and the Mosaic approach were complementary metaphors for bringing multiple perspectives together.

Nonetheless, remembering that this aside is a conversation between you and me, if I were to start the project again, I may not use *the bricolage* quite so readily, as I have moved into a new space, a space where bodies are not separate. Bricolage conceptualises multi- and interdisciplinarity, but it does not conceptualise the connectedness of rhizome theory and intra-action of new materialisms. Mosaics are similar; pieces arranged together to form a “picture”. Having said that, it was the Mosaic approach methodology and bricolage theory that opened me up to being able to incorporate new materialisms, posthumanism and postqualitative perspectives into this project.

The Problem of “Data”

The next publication also alludes to the enormity of “data”. St. Pierre (2011) has written that data is far more than interview transcripts and field notes. In my study, I have reams of “interview” (let’s call them conversations) transcripts and field notes that I recorded in notebooks, on my computer and in the documentation book which shared my unfolding observations and thinking with children and adults at the Centre. But is that all that counts as “data”? What about the “brainwaves” that come to me with great clarity in the shower (there is something about the shower assemblage that helps me to think)? Is this data? Do I have to turn everything into words or lock it down in a photo before it can be “data”? I am afraid I didn’t “capture” Izze’s squeal on finding a millipede, or Hanna’s quiet sidling up to me, the smells of the trees on a hot day, or the sound of the rain as it plopped down from the trees. I didn’t know these could even be “data” at the time and they have only just come to me now, in this writing. What happens to data like this? And anyway, must everything be observable?

In conventional qualitative methodology, words are considered the “brute data”². But working with young children sensitises me to the limitations of words. How is it that a child’s repeated rock climbing, smells from the kitchen, or sounds of the wind blowing through the trees only become data when I put them into words? Herein lies a trouble (as opposed to *the* trouble, which suggests there is only one) with conventional humanist qualitative inquiry. Having tried the coding and categorising analysis for data from my first research site, I don’t want to do it again. But leaving the certainty of what can and can’t be counted as data is a jump into the void.

The next publication, then, is important in the context of this thesis as it reveals my attempts to move away from the qualitative analysis categorisation I thought was expected of

² St Pierre (2011, p. 621) defines brute data as “transparent, neutral, independent of theory, *waiting to be analysed*.”

me. Instead I work here with both humans and nonhumans as provocateurs and I also decide to work with “data” fragments rather than whole slabs. This article thus prefigures my subsequent use of diffractive analysis; what I would subsequently come to conceptualise as “murmurative diffraction” in Publication 7 (Merewether, 2018c). Amid the great assemblage of what might be called data, some small fragments seemed to leap out at me; they evoked in me an intensity, a sense of “wonder”. Part of my aim for this chapter was to explore “the capacity for wonder that resides and radiates in data, or rather, in the entangled relation of data-and-researcher” (MacLure, 2013c, p. 228). By taking just one small event, a child’s photograph of trees and sky, in the next publication I was hoping to illuminate just a skerrick of the infinite fragility and connectedness that exists within data, as Gannon (2016) helpfully explains:

Approaching data as “fragment”—rather than as “set”—suggests instability, singularity and an inclination to fall apart rather than to hold together, and the capacity to come together in different formations with other fragments. (Gannon, 2016, p, 130)

It was small fragments of data which led me to think differently about children’s animation of nonhuman and so-called “inert” things; it became a very important line of flight in my study. Of course, it is not only the children that provoked me—this different way of seeing “data” means that my engagements with Barad, Deleuze and Guattari, St Pierre and many others are provocateurs as well. This is now an experimental space where not only the humans are at work, as MacLure (2013c) suggests:

Perhaps we could think of engagements with data, then, as experiments with order and disorder, in which provisional and partial taxonomies are formed, but are always subject to metamorphosis, as new connections spark among words, bodies, objects, and ideas. (p. 229)

Like Malone (2016a), in the next publication I am hoping to show that this is not a neat, ‘safe’ way of approaching research; it is indeed messy and uncertain. And although at the time of writing Publication 5, I am still inching towards what it means to work within new materialist and posthumanist spaces, spaces which recognise my embeddedness in “... a web of complex interspecies interrelations [in which] humans are no longer the only agentic subject ... and ... [c]hildren as ‘human’ can no longer be exempt or exceptional” (Malone, 2016a), I am moving, nonetheless.

Animated Entanglements and Becomings

Finally, reflecting the increasing influence of new materialisms and posthumanism in my work, Publication 5 (Merewether, 2017b) marks some other significant shifts. It is the first time I use the tilde (~) in my publications, following, as I explained in the Prelude, Sellers (2015) who uses it to indicate co-implication. It is also the first time I write about children's animation, which is to become a constant refrain from hereon. And it is the first time I call into question the nature-culture divide, something I had previously taken for granted. Spinifex-thesis is moving with shifting sands.

PUBLICATION 5

Making the Outdoors Visible in Pedagogical Documentation

Merewether, J. (2017). Making the outdoors visible in pedagogical documentation. In A. Fleet, C. Patterson, & J. Robertson (Eds.), *Pedagogical documentation in early years practice: Seeing through multiple perspectives* (pp. 131-145). London: SAGE.

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Merewether, J. (2017). Making the outdoors visible in pedagogical documentation. In A. Fleet, C. Patterson, & J. Robertson (Eds.), *Pedagogical documentation in early years practice: Seeing through multiple perspectives* (pp. 131-145). London: SAGE.

ASIDE: NOTES ON PUBLICATION 6

Listening to Young Children Outdoors with Pedagogical Documentation

The next article, Publication 6 (Merewether, 2018a), continues some explorations I commenced in Publication 5 (Merewether, 2017b). Publication 6 focusses on using pedagogical documentation as an open-ended way to listen to children. It is an attempt to describe what I did in the “field”¹ at the second site, which in this thesis and the publications I call ‘the Centre’. In my ongoing shift away from thematic analysis, I emphasise the potential of this way of listening to create new knowledge, rather than trying to fit with what is already known. As with the previous publication, I again suggest it is a way to contest “truths” about children and the outdoors. I also try to show that this is a kind of listening that opens us up to listening not just to children, but to the nonhuman world as well.

Like earlier articles in this thesis, in a conventional qualitative research sense, this paper could perhaps be seen as a “methods” article. It might also be seen as “findings”, responding to my question, “*What research strategies are effective in working outdoors with young children as co-researchers in an early childhood educational setting?*” But, in postqualitative inquiry, “methods” and “findings” are undone (Guttorm et al., 2015; Lather, 2013; MacLure, 2013b; St. Pierre, 2017). Postqualitative inquiry deconstructs the pre-conceived and taken-for-granted methodology of conventional qualitative research, arguing that it is incommensurate with the poststructuralist theories said to inform it. Postqualitative authors contend that research informed by the likes of Foucault, Derrida, Deleuze and Guattari cannot begin with the “methodological enclosure” (St. Pierre, 2017, p. 2) of conventional qualitative research. Instead, it requires “a very lengthy preparation, yet no method, no rules, nor recipes” (Deleuze & Parnet, 1977/1987, p. 8). As Patti Lather tells us, “[i]n this methodology-to-come, we begin to do it differently wherever we are in our projects” (Lather, 2013, p. 635).

This article, then, reveals my emerging, possibly postqualitative, experimentations with new materialisms and what may also become to be known as posthumanism. I discuss the agentic nature of the pedagogical documentation; how it is not a passive bystander but a

¹ In the previous aside I noted my uncertainties about what constituted “data” and the problem of data being constrained to that which could be represented. This leads onto a problem with equating “the field” with a finite (data generation) site. For me, the field was much more than the site; the site is only one kind of field. The writing of pedagogical documentation, reading of theoretical and philosophical texts, writing of the publications and this thesis, walks on the beach, for example, are all generative spaces and therefore, “the field”.

player in the research process. I also discuss the way that the act of writing, which is central to the pedagogical documentation approach, puts things into motion. It too is a player, as St Pierre (2011, p. 621), referring to her own PhD study, says:

... writing became a field of play in which the study took place, a space (never just textual) as important as Essex County. *In the thinking that the writing produced* [original italics], the humanist subject was the first humanist concept/category to fail, but many others did as well.

But it is not just writing that puts things into motion. It is the whole pedagogical documentation assemblage—the photography, cameras, space, children, me ... the entire materialdiscursive entanglement.

As I look back, I can see my struggle to shed conventional humanist qualitative methodology—“seeking children’s perspectives”, as I have already confessed, began as a thoroughly humanist project. Decentering the human (child) remains an ongoing challenge and I can feel myself slipping backwards and forwards. It is uncertain territory and I have to keep reminding myself that this is experimentation, not certitude.

PUBLICATION 6

Listening to Young Children Outdoors with Pedagogical Documentation

Merewether, J. (2018). Listening to young children outdoors with pedagogical documentation. *International Journal of Early Years Education*. Advance online publication. <https://doi.org/10.1080/09669760.2017.1421525>

If children are to be heard in research and pedagogy, we need to find ways to listen to them. But how do we listen to young children when words are not their primary means of communication? Drawing on research investigating children's perspectives of outdoor spaces in pedagogical settings, this article discusses the use of pedagogical documentation as a way of listening to young children. This listening involves children and adults working together in a relationship of co-experimentation which requires suspension of judgment, openness and preparedness to be affected by the "other" (Davies, 2014a; Rinaldi, 2006). The article explores ways in which pedagogical documentation can not only lead to insights into children's thinking, but also to questioning of taken-for-granted assumptions about children, learning and the wider world. Furthermore, the article highlights the way in which the materiality of pedagogical documentation strategies are also active contributors to the research. The study's findings suggest that in thinking with pedagogical documentation, children, adults and nonhuman elements all work together in an interconnected and ever-changing assemblage which does not result in definitive conclusions but instead leads to more questions.

Keywords: Pedagogical documentation, children's perspectives, new materialism, outdoor pedagogy, Reggio Emilia

Introduction

This article explores the use of pedagogical documentation as an approach for teacher~researchers'¹ listening in outdoor pedagogical settings. The article reflects on some

¹ Following Sellers (2015), I use the tilde (~) to indicate a co-implicated understanding of "teacher" and "researcher"; what I say here applies to both teachers and researchers.

strategies of pedagogical documentation used at an early learning centre as part of a larger study exploring children's perspectives of outdoor spaces (Merewether, 2015b, 2017a; Merewether & Fleet, 2014). One of this study's key research questions forms the focus of this article: *What research strategies are effective in working outdoors with young children as co-researchers in an early childhood educational setting?*

I begin by introducing pedagogical documentation and reviewing literature where documentation has been deployed as a research strategy. Within this review, I discuss how pedagogical documentation can be a tool for listening to children outdoors, leading to new insights and possibilities for outdoor pedagogies. Then I review approaches used in my study and conclude by discussing implications for teacher~researchers in both pedagogical and academic contexts. Note that while the outdoors was the context for this particular study, the outdoors *per se* is not the focus here; instead, the focus is on listening to and with children through pedagogical documentation.

Pedagogical Documentation

The term “pedagogical documentation” was coined by Dahlberg, Moss and Pence (1999) to describe the “practice of reflection and democracy” (pp. 144-158) for listening to young children in the educational project of Reggio Emilia, Italy. In Reggio Emilia, this practice is simply known as “documentation”, but I follow Dahlberg et al. (1999) and use the term “pedagogical” documentation to distinguish it from other forms of record-keeping used in educational settings elsewhere. The observation and documentation of children's and teachers' conversations, work and encounters, recorded using, for example, notes, photographs, audio and video recordings, allows ongoing interpretation involving teachers, children, families and the wider community. This interpretation of the documentation is especially crucial; if documentation is simply a record or recount of what took place, it is not *pedagogical* documentation.

The Reggio approach takes the view that children are protagonists in their own growth and development and teachers use documentation as a means of exploring and making visible individual and group learning processes of both children and adults (Infant-toddler Centres and Preschools Istituzione of the Municipality of Reggio Emilia [ICPIMRE], 2010). Children's ideas are seen as worthy contributions to overall knowledge-building processes. Documentation, then, is a “public place” (ICPIMRE, 2010, p. 12), a democratic forum which creates the “possibility to discuss and dialogue everything with everyone” (Hoyuelos, 2004, p. 7).

In Reggio Emilia, educators deliberately move away from privileging reading and writing (Dahlberg & Moss, 2010) by using the metaphor of the “hundred languages of children” (Edwards et al., 2012; Filippini & Vecchi, 1996) to embrace “the different ways children (human beings) represent, communicate and express their thinking in different media and symbolic systems” (Vecchi, 2010, p. 9). This myriad of “languages” includes verbal languages, but also drawing, gesture, photography, music, dance, clay, and digital technology, to name a few. Being open to multiple means of representing thoughts and ideas is particularly pertinent when working with young children who do not use words as their primary mode of communication.

Dahlberg et al. (1999) argue that pedagogical documentation should not be confused with developmental psychology’s context-less child observation where children’s development is assessed in relation to predetermined categories. They instead contend that pedagogical documentation “is mainly about trying to see and understand what is going on in the pedagogical work and what the child is capable of without any predetermined framework of expectations and norms” (p. 146). Such a view positions pedagogical documentation within a poststructuralist framework, a position which rejects claims of objectivity, and “embodies the value of subjectivity—that there is no objective point of view that makes observation neutral” (Dahlberg, 2012, p. 225). This contrasts with modernist perspectives which assume that external objective “truths” can be recorded and represented. Poststructuralist perspectives, on the other hand, take the view that documentation can never exist separately from one’s own subjectivity; thus, as Dahlberg, Moss, and Pence (1999, p. 147) point out: “documentation can in no way exist apart from our own involvement in the process.”

Davies (2014a) refers to this approach as “emergent listening”, describing it as a way of listening that is “open to being affected by the other” (p. 32). Davies contrasts this with what she calls “listening-as-usual” (p. 25) where “we listen in order to fit what we hear into what we already know” (p. 21). Emergent listening may start out with what is known but it is open to evolving into new ways of knowing and being; it requires “courage to abandon yourself to the conviction that our being is just a small part of a broader knowledge” (Rinaldi, 2006, p. 114). Pedagogical documentation thus offers possibilities for new knowledge about outdoor pedagogy to emerge; “truths” about children and their environments can be questioned as teacher~researchers are made aware of taken-for-granted assumptions.

In Reggio Emilia, many well-known projects involve the outdoors. One of the earliest projects to come to the attention of those beyond that city, “An Amusement Park for Birds” (Forman & Gandini, 1994), documents children’s relationship with birds; another early

project, “Rain in the City” (Filippini & Vecchi, 1996) documents changes to the city and people during rain. Projects in Reggio Emilia have also investigated children’s relationship with shadows (Sturloni & Vecchi, 1999), light (Cavallini et al., 2011), and the city’s park (Cavallini et al., 2008). These projects make children’s thinking visible, but “refuse to codify children into prefabricated developmental categories, and ... transgress the idea of a lacking and needy child” (Dahlberg & Moss, 2005, p. 109). Instead, they present children as intelligent and creative and offer us new ways of thinking, not only about children and the outdoors, but life itself.

Although listening to children using pedagogical documentation originated in Reggio Emilia, teacher~researchers in other parts of the world have also used it to “create a space where it is possible to attempt to overcome the techniques of normalization” (Dahlberg & Moss, 2005, p. 109). Moss (2014), for example, describes emergent listening through documentation in Sweden where young children’s keen interest in crows led to investigation of children’s own questions, such as “How do birds kiss? ... Do birds think? ... I wonder how they fly?” (Moss, 2014, pp. 145-148). Listening to children like this ultimately led the teacher~researchers to reimagine their image of preschool:

As a result of the experiences I shared with children and colleagues in the pedagogical documentation process, we abandoned our old way of looking at preschool as a vicarious home and started appreciating the preschool as a common ground for learning - as a democratic meeting place that celebrates diversity and listening. (Åberg, as cited in Moss, 2014, p. 144)

In another Swedish study, pedagogical documentation revealed the multiplicity of interconnections within learning experiences. In this study involving music and mathematical experiences, documentation enabled teacher~researchers to explore and make visible ways in which “the room, architecture, artefacts, instruments, the materiality of sound and music, light, temperature, dust, words, signs on paper, breath, discursive understandings of music, maths and yourself as a musically or mathematically embodied subject” (Lenz Taguchi, 2010, p. 137) were all inextricably intermingled and co-implicated in a continual process of mutual transformation. Documentation allowed teacher~researchers to identify what was happening in the events, to learn from them, and then “plan and arrange the pedagogical space in ways that were previously unimaginable” (2010, p. 138). Although this project took place indoors, it is easy to see how a similar investigation might happen outside.

A teacher~researcher who has used pedagogical documentation extensively outdoors, is Australian outdoor teacher, Janet Robertson (Fleet et al., 2006, 2012). In one project, Robertson

and a colleague document children's experimentations with unconventional materials including irrigation pipe, plastic plant pots and wooden discs (Schwartz & Robertson, 2012). This work highlights not only children's creativity and inventiveness, but also the potential of materials to "speak". These unconventional findings transgress a number of more common understandings such as those that position young children as needing commercial materials for their "education", and those which do not consider materials to have agency.

Robertson's work also underscores the ever-emerging and "nomadic" nature of pedagogical documentation. Unlike other forms of educational documentation and research which are seen as static, final or permanent, pedagogical documentation is instead an ever-unfolding process. Deleuze and Guattari (1987) help us to think about this nomadic research approach by asking us to imagine the difference between standing by a river and observing it flow by, or jumping into the river and allowing ourselves to go with its flow. As Deleuze and Guattari (1987) point out, it is not a case of which is the "better" approach to the river; they are simply different. Pedagogical documentation is more of a "go with the flow" approach allowing movement between places, concepts and ideas. Pedagogical documentation, then, is not the isolated or "one-off" kind of documentation that commonly exists in educational settings. Instead, it is much more amorphous in character, where the entire context is influential:

Everything plays a role here, the persons involved and their different thoughts, speech and actions, the material, the environment. What needs to be looked for and constructed in the pedagogical documentations, is how the entire culture surrounding the entering of a problematic field takes shape (Olsson, 2009, p. 118).

Olsson (2009) proposes the nomadic nature of pedagogical documentation not only "deconstructs codes and habits but actually connects them together in new and unexpected ways" (p. 26). Her documentation over a two-year period of 1½ to 2-year-old children's explorations with an overhead projector reveals how children's desires and experimentations sustained both children's and adults' ongoing investigations, and led to "new realities and new ways of thinking, talking and acting" (Olsson, 2009, p. 142). Similarly, Pacini-Ketchabaw and Nxumalo (2012) engage with pedagogical documentation in a "nomadic act" which opened a space for children and educators to explore racialisation in early childhood environments.

Pedagogical documentation is not without risks and challenges. The time that documentation takes has been noted by several authors (Alvestad & Sheridan, 2015; Lindgren, 2012); indeed, documentation calls teacher~researchers to inhabit different temporalities (Pacini-Ketchabaw, 2012; Pacini-Ketchabaw & Kummen, 2016). And while

empowerment is often at the heart of teacher~researcher~documenters' intentions, there is a risk that it becomes a form of surveillance used to normalise or exclude (Dahlberg, 2012; Fleet et al., 2012). Documenters, therefore, must be constantly alert to the impact documentation has on children as it may not be empowering them at all. As Dahlberg (2012, p. 229) reminds us: "...we must always pose questions concerning what right we have to interpret and document children's doings and what is ethically legitimate. We cannot assume that documentation automatically is a way to resist the power/knowledge nexus." Documentation which invites multiple perspectives helps guard against it being yet another strategy for exerting power over children. Multiple perspectives also guard against what is perhaps the greatest risk for documentation—that it simply repeats what is already known. Olsson (2009) explains:

When working with pedagogical documentation there is a great risk of just retelling and nailing down the story of the already obvious. There is a risk that we document that which we already know about children and learning and that by doing that we immobilize and close down the event. (p. 113)

Ensuring documentation is always a public space, a forum, where multiple perspectives are welcomed and shared enables constant questioning, and the possibility of finding new ways of working in early childhood services (Dahlberg, 2012; Hoyuelos, 2004; ICPIRE, 2010).

Documentation as Agentic

Whilst it is perhaps tempting to think of documentation only in terms of meaning (discourse), thinking with the "new material feminist" thinkers such as Barad (2007), Bennett (2010) and Lenz Taguchi (2010) sensitises us to also consider the "matter" of documentation, and its agential role. A new materialist ontology posits that meaning and matter are mutually constituted. Material feminists explore "interactions of culture, history, discourse, technology, biology, and the "environment," without privileging any one of these elements" (Alaimo & Hekman, 2008, p. 7). Documentation, then, is *materialdiscursive*; it is an infinitely interconnected assemblage of matter and meaning. Hence, the "apparatuses" (Barad, 2007) of documentation are not passive and inanimate; cameras, written words, pens, paper, photographs, for example, are all players in the "agentic assemblage" (Bennett, 2010, p. 21) of documentation and are active contributors to the teaching, learning and research processes (Lenz Taguchi, 2010; Olsson, 2009): "the photograph, sketch or written words of an observation will also put things in motion by means of its own agentic force and materiality" (Lenz Taguchi, 2010, p. 64). This is not to say the actions are intentional; nonetheless, the apparatuses of documentation should not be considered inert, passive elements of research.

Therefore, when working with pedagogical documentation, we need to be cognisant not only of the human forces at work, but also those of the nonhuman. The agential nature of documentation has been recognised in Reggio Emilia. For example, Ceppi and Zini (1998), who researched the environments in Reggio Emilia schools, describe documentation as a “skin” that is alive and energy giving: “The environment generates a sort of psychic skin, an energy-giving second skin made of writings, images, materials, objects, and colors, which reveals the presence of the children even in their absence” (p. 25). Conceptualising documentation as a skin positions it as an active part of an interconnected assemblage that includes both the human and the nonhuman.

Research Context

The study informing this article was conducted over a 12-month period at a metropolitan early learning centre (hereafter, “the Centre”) in Western Australia, which welcomes 35 two-to-four-year-old children. I visited the Centre at least one full day per week, and often on other occasions. The Centre was selected as it:

- valued and practised outdoor learning
- was open to making changes to its outdoor spaces, based on children’s suggestions
- was supportive of the collaborative research approach
- was conveniently located for frequent visits

A list of services meeting these criteria was compiled using recommendations from colleagues. I then requested a meeting with the director of the first centre on this list to explain the research aims and processes; she subsequently gave consent for the research to proceed. The selected Centre occupies a 1000 m² suburban block, with a fully enclosed outdoor area at the rear of the main building occupying around half of the block. Figure 28 shows a rough layout of the Centre; Figure 29 illustrates the area studied.

Children were not separated by age by the Centre; all were free to move between the indoor and outdoor areas, apart from rest, and most meeting and meal times, which happened inside. The research focused on 17 two-to-three-year-olds, but other children also contributed as part of the Centre’s milieu.

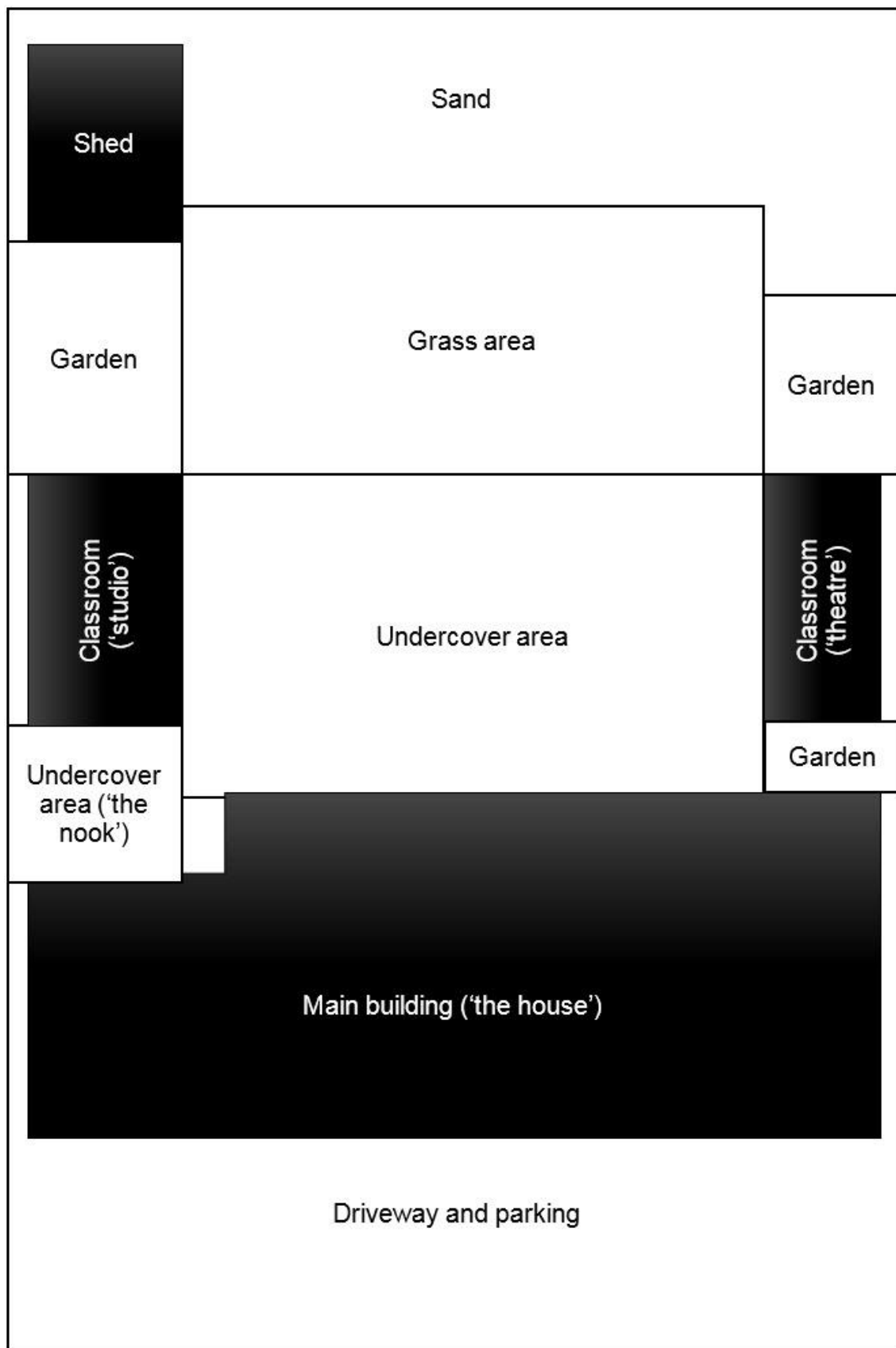


Figure 28 Plan of “the Centre”



Figure 29 Outdoor area of the Centre, looking from main building

Ethical Considerations

University ethics approval and written consent was obtained from the Centre's director, all staff, and all but two children's parents before data generation at the Centre commenced. For the project to proceed, it was important that I work with teachers and children as a "collaborative partner" (Merriam & Tisdell, 2016, p. 145) in research activities that were part of the educational program. Therefore, after gaining consent from the director, I visited the Centre on several occasions to build rapport with teachers and explain the project to them. When they understood the project's purpose and methods, they were keen to participate.

Once parental consent was received, prior to my commencement at the site, teachers read children a short picture book about the project that I prepared using an online photobook application (Figure 30 & Figure 31). This introduced children to the project's intent, the voluntary nature of participation, the intended audience and so on. It read as follows:

This is Jane. She is a researcher. A researcher is someone who finds things out.

Jane is finding out what children think is good outside at [the Centre]. You might like to find this out too.

You can be a researcher.

Jane will bring some things with her to help do the research - notebook and pen, camera, and voice recorders. You might get to use some of these things.

Jane might ask you to take photos of what you think is good outside at [the Centre].

She might ask you questions and write down what you say.

She might take photos or video-recordings of you doing things outside.

She might ask you to draw or make things.

You might look at photos with her.

Jane will put some of these things into a book for the children, teachers, and parents to look at so everyone can know what is being found out.

Jane would like to show what she finds out to adults you don't know, like teachers at other schools, and people she works with. These adults are interested to know what children think about being outside when they are at [the Centre].

When she does this, she can use your real name or she can use a pretend name instead—it's up to you and your parents.

If you would like to do this research with Jane you can tell her. But if you don't want to, it is fine; no one will mind.

Thank you for listening.

Figure 30 **Information Picture Book Script**

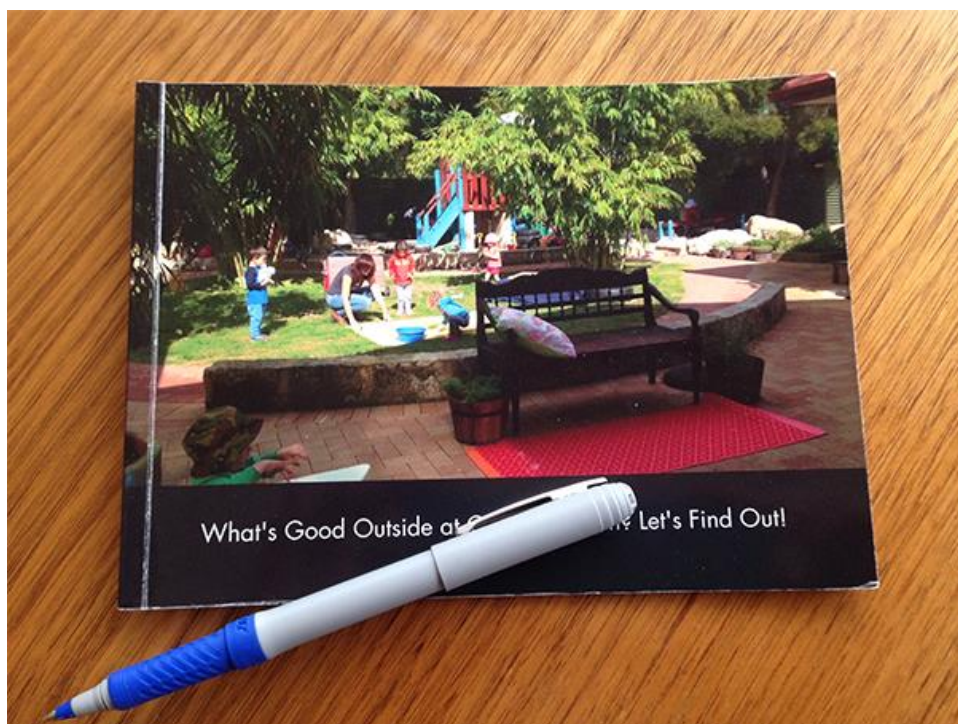


Figure 31 **Information Picture Book**

This book was an important factor in building trust early on. Teachers read it to the children and displayed it where families could see it; it was clear when I arrived at the Centre many had read it as both children and adults greeted me with enthusiasm and were keen to let me know what they knew about the research.

I did not seek written consent from children as this did not seem to be an authentic way of working with two-and-three-year olds. Instead, I sought ongoing oral assent: during all data-generation activities I reminded children that they did not have to participate. Although they quite often withdrew themselves for a variety of reasons—to eat, go to the bathroom, be with friends, or attend class meetings—usually, without prompting, they sought me out to take up where they left off. Throughout the project, I sensed children thought it very important I heard what they had to say; nonetheless, I was sensitive to any indications, verbal or otherwise, that they did not wish to continue participation.

In the case of the two children whose parents did not give consent, if children indicated they wanted to participate in research activities, teachers conducted them as part of the educational program. While this could be reported within the Centre, any data including these two children could not be published by me outside of the Centre.

Methods and Findings

In this part of the article, I describe and reflect on some strategies of pedagogical documentation used in the study. I will not dwell on the content of the pedagogical documentation; instead my focus is on the strategies of documentation used. In practice, these strategies were always entangled and I only separate them here for clarification. Rather than separating the methods and findings sections, I deliberately combine them here due to the emergent nature of the study. I did not commence the study armed with a range of predetermined methods for generating data; my intention was to make my inquiry known to children and invite them to work with me as co-researchers around the question, “what is good outside [at the Centre]?” As much as possible, I looked for opportunities within the daily program. These soon became apparent. For example, when I first began visiting the Centre, an educator was working with children around a story about a child who lived in the clouds but was blown to Earth in a storm. I joined the children and educator in discussions, play and storytelling as it was clear this project drew children’s attention to the outdoors, particularly the clouds and sky. The following strategies, then, describe the bricoleur’s² toolkit which made best use of whatever was at hand at the time.

Participant-Observation

Like the teacher~researchers in Reggio Emilia (Edwards et al., 2012; Rinaldi, 2006; Vecchi, 2010), the role of observation in contributing to my awareness of children’s perspectives cannot be overstated. Observations were a part of everything I did at the Centre. However, I do not claim to have been a “fly-on-the-wall” observer; on occasions when I tried to just sit and observe, I was invariably joined by children or adults who wanted to know what I was doing, so I would share my notes and invite their comments. Therefore, most of my observations took place when I joined children in their everyday activities, often at their behest, although also I requested permission to join children’s activities on some occasions. I sometimes just sat and chatted with children as they worked with things like paint, clay,

² Bricolage research, as conceptualised by Denzin and Lincoln (2000) and expanded by Kincheloe and Berry (2004), is inspired by the name of the French tradesperson, the “bricoleur”, a handyperson who uses whatever tools are at hand. A bricolage researcher, then, selects from whatever strategies are available in the context. This is particularly appropriate for research with young children as it provides a researcher with on-the-spot flexibility to choose or adapt strategies in response to the situation. In this study, the bricolage approach allowed me to choose from a range of research strategies rather than being locked into a predetermined research schedule. It meant I could respond at a moment’s notice to things such as children’s interests, behaviours or desires, teachers’ pedagogical decisions, changes in routines—even weather events like sudden gusts of wind or showers of rain. This enabled me to embrace opportunities as they arose; the leaf-collecting activity described in this paper is a good example of such an occasion.

waterplay, construction, gardening, but I frequently became a fellow participant. If children said or did something I thought relevant for the study, I asked if they minded if I photographed or wrote it down. Sometimes they used words, but they also pointed, showed, or used other gestures. My observations, therefore, were not limited to what I could see; they also included what I could hear, touch, feel, smell and sense. In undertaking this participant-observer role (Merriam & Tisdell, 2016), I was not trying to stay “detached” and observe from a distance; rather, my aim was to join with both children and adults in what Ingold (2011) describes as a “coupling of the movement of the observer’s attention with currents of activity in the environment” (Ingold, 2011). The following vignette from my journal illustrates an example of this entangled way of working:

I notice Lylah [2;11 years] collecting liquidamber leaves. She shows them to me: “Look these leaves. They my friends.”

“What are you going to do with them?”

“I don’t know.”

“I wonder if we can make something with your leaves; maybe something pretty?”

“Yes, yes!”

We find a place on the grass and Lylah begins to arrange the leaves according to their colour. I collect more leaves for her. As she works, a circle shape emerges, with the stems all pointing to the middle.

Lylah picks up a bamboo leaf and adds it to the middle. “Shall we keep these pointing to the middle too?” I suggest. Lylah seems happy with my suggestion and we continue in our work.

When we finish, she exclaims, “Leaf flower! I want take photo!” I hand her the camera. (Figure 32)

The photos she takes are close-ups of the leaves, not of the whole “leaf-flower” (Figure 33).



Figure 32 **Leaf Design**



Figure 33 **Lylah's Photo**

Conversations

Conversations with children in the early stages of verbal development are not dominated by children's words. Therefore, listening to them requires "listening not just with our ears, but with all our senses (sight, touch, smell, taste, orientation)" (Rinaldi, 2006, p. 65). Most of my conversations were informal and happened while children were going about their everyday activities. Sometimes I asked questions that came to me on the spot, but often, the process of writing up my field notes in my research journal (discussed below) generated questions that needed clarification, so I noted these and tried to find an appropriate time to ask them in the course of my everyday interactions with the children. I also employed some specific strategies for provoking conversations, such as the use of photography, as explained next. Children's contributions to conversations were frequently gestural—they nodded, shook their heads, smiled, frowned, pointed, looked away or towards, showed, etc. Audio-recorded transcripts of our conversations do not reveal this non-verbal communication, and while video-recording may have captured it, I felt it too intrusive. Therefore, although audio-recorders were used in some instances, I found jotting field notes and taking photos in situ, and then writing up a research journal each day to be the most effective way of keeping track of most conversations.

Photography

The study used both adults' and children's photography. Photos formed part of my field notes as a camera enabled me to quickly record details of the environment and events whilst participating in activities with children. I used the photos to prompt my memory when I was writing in my research journal.

From the outset, children showed great interest in the camera so I suggested they too might like to use it. This was greeted with much enthusiasm, so I invited pairs of children to take me on "tours" (Clark & Moss, 2011) around the outdoor space at the Centre and to photograph what they thought "good". During these tours, children wore audio-recorders suspended on lanyards around their necks; recordings were later transcribed. I learned much from children on the tours, in which they participated with gusto. I printed photos from each child's tour and later invited them to look at them and place stickers on three photos showing things that were "really good" (Figure 34). This was another chance for conversation, although not all children were interested in reviewing their photos; for some, it seemed the mere act of photography had been sufficient.



Figure 34 **Looking at Photos**

At this point I feel it is necessary to discuss my increasing awareness of the *agency* of my documentation apparatuses, as it was the work with cameras that drew my attention to this aspect of the study. Firstly, the cameras seemed to propel children into action as soon as they were holding them. I soon discovered that when giving instructions for each tour (for example, inviting children to show me and photograph what was “good”; how to use the camera) I needed to hold the camera myself; if I gave it to the children they immediately moved off, regardless of where I was in the instruction sequence. The camera put children into motion: the “tours” were conducted at a very fast pace, with children darting rapidly from one part of the yard to another. When children handed the camera back, their behaviour changed.

The camera also directed children’s gaze. It made them focus on some things and ignore others. This also happened to me when I used the camera. I also found at times it came between me and the children; at others it caused me to lose sight of the “bigger picture”. Cameras also changed behaviours of people they were directed toward; for example, children and adults assumed statue-like poses, made gestures, or froze their movements (Figure 35).



Figure 35 **Posing for the Camera**

Writing

Writing is at the heart of pedagogical documentation; its importance cannot be overstated as it is in itself a method of inquiry: “writing *is* thinking, writing *is* analysis, writing is indeed a seductive and tangled *method* of discovery” (Richardson & St. Pierre, 2005, p. 967). In this study, writing took various forms that not only provided ways to record observations but also allowed me to see more clearly relationships amongst people and materials. My writing began well before my work at the Centre. Beforehand, I wrote, for example, short recollections of being outside as a child and a teacher, and accounts of everyday outdoor experiences, such as gardening. I also wrote reflections in response to my reading. I consider all of this writing as data in my study, and, as Elizabeth St Pierre (Richardson & St. Pierre, 2005) says, “these data might have escaped entirely if I had not *written*; they were collected only *in the writing*” (original emphasis, p. 970). Although I continued these seemingly random writing projects throughout the study, my writing while I was at the Centre included field notes, a research journal and a documentation book, which I shall now introduce.

Field notes

Handwritten field notes were an essential element of my study. At the Centre, I chose to write in hard-covered spiral-bound A5-sized notebooks. These were easy to carry, and the hard cover provided a firm surface to write on, no matter where I was. Spiral binding meant

I could tear pages out and it was also a handy place to store my pens. I wrote on the right-hand page, which was always dated. I used the left-hand page to note any subsequent ideas or connections. Nonetheless, as essential as a notebook was, I often found it took me away from the activity at hand, so as already discussed, I took photos as a quick way of recording observations. Thus my “field notes” were a camera-notebook assemblage. Again, it was the bricoleur at work, using what was at hand.

As with the camera, I became increasingly aware of the “agency” of my notebook and other graphic materials. Children frequently asked me what I was writing in my notebook or instructed me what to write in it: “Write we like swinging” [Amber, 3;8 years]; “I like it when we take photos. Write that” [Izze, 3;8 years]. Younger children often sidled up to me as I wrote. Then, having captured my attention they would insist I watch as they appeared to perform for the notebook. “Should I write that down?” I would enquire, invariably to an affirmative response. Not only did the presence of a notepad and pen put in motion certain behaviours and events, but also the graphic materials affected how and what I documented. Some materials—for example, thin lined paper and particular pens—seemed to cause me to take truncated, “rough” notes. It was as if they *inhibited* my thinking. The graphic materials were not passive players in the documentation assemblage; rather, they put in motion ways of thinking and actions I had not anticipated. Thus, they were participants in the research. Towards the end of my time at the Centre, as I became more aware of the agency of my documentation materials, I began using a notebook with unlined drawing-quality paper, finding it evoked from me more poetic and expressive notes. Consequently, one of the things I learned from this research is that a teacher~researcher’s notebook is not simply a container to be filled, rather, it is an active player in the research assemblage.

Research Journal

My research journal was another key form of writing. Each night, I typed up my field notes into my research journal on my computer. This journal was a key thinking tool, but was only for my eyes, so writing style and presentation were not important. As well as daily field notes, I added reflections, questions, photos and other images, along with plans for the emerging study. Notes on readings were kept elsewhere; but I used the journal to make links to readings. I found the “comment” function in Word useful for adding subsequent thoughts as I made further connections.

Documentation Book

Each week, in a handwritten journal, I made the research project visible to children, teachers and families via a documentation book of curated snippets of conversations, photographs, and my own interpretations and wonderings. I used an A4-spiral-bound artists' sketchpad; paper quality was important. I wrote with pencil so I could erase mistakes. I found I needed to compile this book physically, rather than digitally; there is something to be said for the physicality of cutting out photos and writing with a pencil on paper. It helped me think. The documentation book was displayed on a prominent shelf at the Centre where staff, children and families could read it. Children enjoyed reviewing this book with me and it provided valuable conversation prompts: "Washing!" said Rosie [2;8 years] pointing to a photo she had taken on a tour. "Is that good?" I enquire. She gives me a look that suggests I have asked an obvious question, "Towels get clean."

I also scanned the pages and uploaded them to a password-protected section for parents on the Centre's website. I cannot be sure who read the documentation book, although several teachers and parents clearly read it closely, making comments either directly to me, or adding sticky notes which they added to the book. There were times, however, when I wondered if anyone was reading it and if the effort I was putting into its compilation was worth it. But on reflection, even if no one had read it, the act of creating this book immersed me in the data; thinking happened within the compilation.

Concluding Discussion

I return now to my research question: What research strategies are effective in working outdoors with young children as co-researchers in an early childhood educational setting? As in the previous section, I combine the more conventional discussion and conclusion sections here to highlight the impermanence of conclusions; they are always moving and in the process of discussion. Pedagogical documentation is as much processes as it is products (Dahlberg et al., 1999; Giamminuti, 2013). The "doing" of documentation is materialised in, for example, observations, notes, photos, words, children's work. Therefore, documentation is never a single "thing"; it is an assemblage where all elements, including the strategies and teacher~researcher, are in an ever-unfolding relationship with each other. In assemblages, Deleuze (2007) writes, "you find states of things, bodies, various combinations of bodies, hodgepodes; but you also find utterances, modes of expression, and whole regimes of signs" (p. 177). Thus, in the pedagogical documentation assemblage, we find both the material and the discursive are infinitely interconnected and affecting each other. It is this

materialdiscursive entanglement which distinguishes pedagogical documentation from other more linear approaches to research. When listening to children outdoors in this study, no one strategy, person or material stood in isolation. Although individual strategies may have had varying suitability for working with young children, it was the materialdiscursive entanglement of pedagogical documentation which set in motion listening to and with the children. The various strategies congregated to direct attention to children—cameras drew the eye, field notes focused attention on the children, telling stories and sharing them with children and adults invited multiple perspectives, which in turn offered possibilities for finding new ways of listening to children in this outdoor setting.

As the study highlights, the materials of pedagogical documentation are themselves agential and are active players in the research. A camera, for example, affects the movement, posture and gazes of both child and adult photographers; the presence of a notepad and pen affects—puts into motion—humans’ actions and thinking. This is not to suggest that all agents in the pedagogical documentation assemblage are equal: “The relations are asymmetric, such that matter as well as other agents sometimes exerts more and sometimes less agency” (Änggård, 2013, p. 2).

Pedagogical documentation is research which originated in pedagogical practice, not universities; educators in Reggio Emilia have used it as a way of listening to children in pedagogical settings for decades. Listening like this does not seek to be “empirical data”; rather, it gives us an entry point to the questions we are exploring (Davies, 2010). Pedagogical documentation’s multiple, emergent and entangled strategies supported my listening to children outdoors in educational settings (and in other contexts), enabling questioning of assumptions about children and the outdoors (Merewether, 2017a). It required me to take a plunge into the unknown; I didn’t know what I would find. Learning to listen in this way is not an easy undertaking: “you have to open yourself to others ... Competent listening creates a deep opening and predisposition toward change” (Rinaldi, 2006, p. 114). It needs us to give up preconceived ideas and listen with openness, as Davies (2014) describes:

Listening is about being open to being affected. It is about being open to difference and, in particular, to difference in all its multiplicity as it emerges in each moment in between oneself and another. Listening is about not being bound by what you already know (p. 1).

This article has outlined the use of pedagogical documentation as a research approach for listening outdoors. Pedagogical documentation is not simply a linear array of separate strategies leading to a fixed endpoint. Instead, it is an intermingled assemblage of human and nonhuman

elements that are in a constant state of becoming. In the article, I have reiterated the importance of interconnectedness of children, adults, environment, strategies, and documentation as a whole. Nothing exists in isolation. While pedagogical documentation has great potential to contribute significantly to development of new ways of thinking with outdoor learning environments and pedagogies, teacher~researchers need to be alert to how documentation can also perpetuate the status quo. Multiple perspectives, multiple strategies and continually asking questions of what emerges helps counter taken-for-granted assumptions and “move beyond pre-conceived expectations about what children can do and learn” (DEEWR, 2009, p. 9). It is a struggle to work in the space between the known and the unknown, but finding new ways of working outdoors with children compels us to work in the void.

Acknowledgements

I extend my sincere thanks to the children, teachers and families of the Centre for their ongoing commitment to this research. I am also grateful to several colleagues and the anonymous reviewers for their thoughtful feedback which has challenged and extended my thinking.

New Materialisms and Children's Outdoor Environments

Direct discourse is a detached fragment of a mass and is born of the dismemberment of the collective assemblage; but the collective assemblage is always like the murmur from which I take my proper name, the constellation of voices, concordant or not, from which I draw my voice.

Deleuze and Guattari (1987, p. 84)

In Publication 5 (Merewether, 2017b), I discussed how the pedagogical documentation approach I was using allowed me to realise that dominant “regime[s] of truth” (Foucault, as cited in Rabinow, 1991, p. 73) were framing my views of children’s animism. I experienced a “transgressive jolt” (MacLure, 2006, p. 229) which opened me up to new ways of looking at children’s attribution of liveliness to plants, objects and natural phenomena. In Publication 6 (Merewether, 2018a), I described some of the entangled ways of working that helped to open up my thinking. In the next article, Publication 7 (Merewether, 2018c) in this thesis, I reveal how my study was thrown into disarray when I realised children were seeing the world less anthropocentrically than I was. Although I had noticed this at the first site, I didn’t know what to do with these observations and pushed them to one side, thinking they were beyond the scope of my study. Influenced by new materialisms, my less striated approach at the second site allowed me to listen to children and their environment in new ways. Publication 7 (Merewether, 2018c) documents my move away from coding and thematic categorisation through my “murmurative diffraction” approach to data. As I explain in the article, a murmuration is “the act of murmuring, but it also describes a swirling, shifting mass of birds which moves in pulses of expansion and diminution; a dancing cloud of density one minute, diffuseness the next” (Merewether, 2018c, p. 1).

The inspiration for the murmuration metaphor came from my low-rise home city where there is a single multi-storey building. This building generates a wind aberration that surprises unsuspecting passers-by by lifting their hair, skirts, and belongings. I was one such passer-by when I was carrying an open-topped box full of papers to a presentation in the building. The

top layer of papers was 70 single-page handouts. In an instant, the wind snatched the handouts taking them swirling high above my head, where they danced, as if one, far beyond my reach. I watched them hopelessly as they twisted and turned in an apparently choreographed movement down the street. Eventually, the wind put them down, and with the help of onlookers, I was able to retrieve most of them, but they were crumpled, damp, smudged, and quite different from the papers I had arrived with. Had these papers been birds, or even bees, they could have been called a murmuration—a fitting metaphor for my data which leapt unexpectedly from the container which held them, swirling and soaring as one confederation. It was this event that helped me to visualise the possibilities of diffraction.

Diffraction

In conceptualising “murmurative diffraction” in the next article, I explain how Haraway (1992) and Barad (2007) critique the commonly advocated analysis approach of “reflection”, arguing that reflection, and its related term “reflexivity”, is simply a mirroring back of what is already there¹. They propose using a diffractive approach instead because diffraction results in something new. Until I was challenged by Haraway and Barad, I had been an enthusiastic proponent of reflection and reflexivity—the idea that teacher~researchers think critically about their experience was an important aspect of my teaching~researching history. Too many times I witnessed what appeared to be blind adherence to ideas and practice and an uncritical implementation of research and pedagogical approaches; pre Haraway-Barad, I thought it was reflective practice or reflexivity that was missing in these cases.

Reflective practice is certainly widely promoted for educators (for example, Australian Children’s Education & Care Quality Authority (ACECQA), 2016; Lindon, 2012; Paige-Smith & Craft, 2008; Pollard, 2014; Zeichner & Liston, 1996). These texts frequently draw

¹ The terms “reflection” and reflexivity are much contested. Invariably, however, a human-centred stance is taken-for-granted; there is no agency on the part of nonhuman participants. Schön (1983, 1987), for example, describes two types of reflection: “reflection *in* action” which takes place during practice and “reflection *on* action” which is undertaken after the practice has been completed. Similarly, MacNaughton, Rolfe, and Siraj-Blatchford (2010, p. 368) define reflexivity as “responsiveness to the evidence gathered in the field.” Grieshaber (2010, p. 186) notes that: “self-reflexivity involves deconstructing the ways in which our desires shape the texts we produce. It also necessitates deconstructing the relations of difference—of “race”, class, gender, and so on—that have been instrumental in the design of the research process.” These views assume the reflection and reflexivity involves an agential human. However, in Schwant’s (2007) definition of reflexivity we can see more a Deleuzo-Guattarian interpretation where what is *done*, rather than what *is*, is key: “reflexivity refers to the fact that all accounts (in speech and writing) are essentially not just about something but are also doing something. Written and spoken accounts do not simply represent some aspect of the world but are in some way involved in that world” (p. 260). Schwant’s definition here opens up a possibility for nonhuman actants paving the way, perhaps, for reflexivity to involve more than just humans.

on the ideas of philosopher and educational reformer John Dewey (1910, p. 6) who maintained that “[a]ctive, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends [original italics], constitutes reflective thought.” This has always seemed reasonable to me, as has the Deweyian idea that to reflect “is to look back over what has been done so as to extract the net meanings which are the capital stock of intelligent dealing with further experiences” (Dewey, 1938, p. 87).

Researchers too are often encouraged to employ reflexivity (for example, MacNaughton et al., 2010; Merriam, 2009). But, as Davies and Gannon (2012) discovered, “When we tried to capture the reflexive act ... we found a hall of mirrors in which the “original” endlessly receded from us” (p. 369). The danger of reflection, then, is that it simply repeats the known. Endlessly. Nonetheless, in proposing a diffractive approach, I am not advocating doing away with reflection and reflexivity, or suggesting diffraction is better; such a dichotomous standpoint would only serve to reiterate the binaries I am striving to overcome. However, as a metaphor, reflection has its limitations for me now, or as Barad (2007) argues, “Reflection is insufficient; intervention is the key (p. 50).

Haraway first introduces diffraction when critiquing so-called scientific objectivity in *The Promises of Monsters* (1992), where she says “[d]iffraction is a mapping of interference, not of replication, reflection, or reproduction” (p. 300). Five years later, in her critique of technoscience in *Modest_Witness@Second_Millennium* (1997), Haraway develops the notion of diffraction further, describing it as an “optical metaphor” (p. 16) that is superior to reflexivity, which “like reflection, only displaces the same elsewhere” (p. 16). Barad (2007) then elaborates on Haraway’s ideas, explaining that in physics, diffraction “has to do with the way waves combine when they overlap and the apparent bending and spreading out of waves when they encounter an obstruction” (Barad, 2007, p. 28).

Diffraction is a phenomenon I observe on my beach walks where I can always see new wave patterns that emerge when waves encounter obstacles such as rocks or other waves. It is also easily observed when two pebbles are tossed into a glassy sea: “The waves are said to interfere with each other, and the pattern created is called an interference or diffraction pattern” (Barad, 2007, p. 77). Water makes it easy to see how reflection simply mirrors back, and how diffraction, or interference, results in new wave patterns. While diffraction is used to describe the behaviour of waves such as those formed by water, light and sound, Barad (2007) extends this thinking arguing that:

a diffractive methodology is respectful of the entanglement of ideas and other materials in ways that reflexive methodologies are not. In particular, what is needed is a method attuned to the entanglement of the apparatuses of production, one that enables genealogical analyses of how boundaries are produced rather than presuming sets of well-worn binaries in advance. (Barad, 2007, pp. 29-30)

Murmurative diffraction, then, allows me to include not only observational data from the research site but also my own and others' theories and ideas. It allows me, as I say in the next article, to "fly" within the murmuration, with the data murmurs, as part of the data. As noted in Aside 4 and its companion Publication 5 (Merewether, 2017b), the problem of what were or were not "data" loomed large in this project. In revisiting my work at the first site, I can see that restricting the material I could consider to what was "collected" in the "field", assumed that data are discrete pieces that are separate from me and each other, which can be sorted and categorised as some kind of finite body. Such a view negated the possibility of considering the intra-active nature of world, an ontoepistemology that sees us as not being *in* the world but *of* it (Barad, 2007). This troubling of what counts as data played a big part in the "fright" that launched the murmuration² that I was part of. Taking a diffractive approach enabled "reading insights through one another in ways that help illuminate differences as they emerge" (Barad, 2007, p. 30).

This is not to say, however, that like Latour (2005) I consider "everything is data" (p. 133), nor that everything is connected to everything. While it is fair to argue that in the end everything is connected, I agree with Thom van Dooren (2014) who writes, "While we may all ultimately be connected to one another, *the specificity and proximity of connections matters* [emphasis added]—who we are bound up with and in what ways" (p. 60). Specificity and proximity matter. Therefore, as I explain in the article, I take an "abductive" approach to data which allows me to think of data as any materials that help me to think through things that mystify or cause a breakdown in my understanding (Brinkmann, 2014). It allows, as I have explained in Publication 5 (Merewether, 2017b), to home in on data that make me "stumble" (Brinkmann, 2014, p. 724). In this study, children's animation of what I had always thought to be inert matter was a source of my stumbling.

² As I explain in the next article, bird murmurations are often launched when the birds are startled

Animism

In taking the murmurative diffraction approach, Publication 7 (Merewether, 2018c), the penultimate publication in this spinifex-thesis, marks a more confident move into what may be regarded as a posthumanist space. As I have said, the work of Karen Barad and Donna Haraway is key, but I was also helped by Jane Bennett (2001, 2010) whose ideas around “thing-power”, “vibrant matter”, “vital materialism” and “enchantment” proved to be very useful in rethinking my previously modernist-informed ideas about animism. I am also assisted by multispecies ethnographers and ecophilosophers (Plumwood, 2009; Taylor & Pacini-Ketchabaw, 2017; Tsing, 2015; van Dooren, Kirksey, & Münster, 2016), who ascribe liveliness to both biotic and abiotic matter and emphasise the world’s infinite connectedness and ongoing becoming. These are increasingly recurring themes in my work, and I will return to them in the final thesis article, Publication 8 (Merewether, 2018b). But for now, it is time for Publication 7 to take its place on stage in this (closet) adventure drama.

PUBLICATION 7

New Materialisms and Children's Outdoor Environments: Murmurative Diffractions

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This article draws on new materialisms to highlight children's sensitivity to the agency of nonhuman materials. Working with data fragments from an ongoing project investigating children's relationship with their outdoor environments, the article uses the figure of murmuration in a diffractive analysis approach to reveal materialdiscursive intra-actions. In doing so, the article highlights an ingrained tendency to focus on the human whilst overlooking the material. Attentiveness to the agency of all matter, human and nonhuman, has significant implications for early childhood geographies, research and pedagogy as it shines a light on the intra-active nature of the world. This offers new possibilities but also calls attention to the relations of responsibilities inherent in a world where all matter is vibrant and agential.

Keywords: new materialisms; intra-action; outdoors; diffractive analysis; murmurative diffraction

Introduction

In the following article, I think with young children who led me to thinking with new materialisms¹ (for example, Coole & Frost, 2010; Dolphijn & van der Tuin, 2012)—with matter, things and nonhuman species. I experiment with a diffractive approach (Barad, 2007; Haraway, 1992) to reveal adults' (or my own, at least) habitual human-centric ways of seeing. At the same time I show how young children's animation of a puddle and their "arts of attentiveness" (van Dooren et al., 2016) are valuable multispecies stories which have "potential to draw others into new relationships and accountabilities" (p. 16). I propose that

¹ For now, following Coole and Frost (2010) amongst others, I use the term "new materialisms", as its plurality speaks of multiplicity and the possibility of more to come.

children's multispecies² stories should be valued, not because they humour a nostalgia for "childish" ways of thinking, but because they offer possibilities for "becoming with" (Haraway, 2008)³ the Earth in precarious times.

Data⁴ discussed here are part of a larger project involving two sites investigating children's relationships with outdoor environments at their early learning centres. This article focuses on data fragments⁵ or "murmurs" from the second site where children's ways of seeing and approaching the world launched what I call a data "murmuration". A murmuration is the act of murmuring, but it also describes a swirling, shifting mass of birds which moves in pulses of expansion and diminution; a dancing cloud of density one minute, diffuseness the next. The murmur of each bird's wings is a bit-player in the murmuration. A murmuration is often initiated when the birds are startled; such a murmuration launched from my data set when I realised children were not privileging humans as a default perspective—they were "making kin" (Haraway, 2016) with both humans and nonhumans. Time and time again, children showed me that materials like puddles, leaves and sand are not simply inanimate things to be manipulated, shaped, used; instead, materials "'act back' and continually affect and/or effect us" (Horton & Kraftl, 2006, p. 73). While these materials might be "oddkin" (Haraway, 2016, p. 4), as I worked with these children over the course of a year, I began to see that their decentring of humans in this provided another way of approaching my data; another way of working with children; in fact, another way of approaching the world.

Finding new ways to approach the world is imperative in an epoch that some are calling "the Anthropocene" (Crutzen & Stoermer, 2000), due to immutable human-caused changes that are now evident in the Earth's geological and ecological processes. These troubled times need us to rethink assumptions of human exceptionalism; they have ultimately led to this situation in the first place. Averting our eyes from the advancing catastrophe is not an option, but as Haraway (2016) asserts, nor is taking a "game over" position or hoping technology or

² In using the word "species" (and "multispecies") I am not limiting myself only to bio-species such as plants and animals. Instead, as discussed by van Dooren et al. (2016), I include abiotic liveliness of so-called inorganic matter.

³ I use Haraway's term "becoming with" to emphasise the infinite interconnectedness of a world in a constant state of change: "becoming is always becoming *with*" (Haraway, 2008, pp. 244, original emphasis).

⁴ I take what Brinkman (2014) describes as an "abductive approach" to data where "data" is not only limited to observations, interviews, and field notes, but also includes any material which helps me to think about "astonishment, mystery, and breakdowns in one's understanding" (p. 722).

⁵ Here, I follow Gannon (2016, p. 130) who says: "Approaching data as "fragment"—rather than as "set"—suggests instability, singularity and an inclination to fall apart rather than to hold together, and the capacity to come together in different formations with other fragments."

God will rescue us. Instead, we must find ways to move with the times and “stay with the trouble” (Haraway, 2016).

This article contends, then, that young children’s nuanced and sensitive listening to their multispecies surroundings has potential to alert the humanist-trained adults who work with them to materialdiscursive⁶ phenomenon that might otherwise be “hidden-in-plain-sight” (Horton & Kraftl, 2017, p. 1). Because young children are less habituated into developmentalist, anthropocentric approaches, they may be offering alternative ways of becoming with matter. In turn, because they are less human-centric, young children’s ways of seeing may be multispecies stories for “staying with the trouble” (Haraway, 2016). In sharing a glimpse of such a story here, I explore the potential of an ethico-onto-epistemology⁷ (Barad, 2007) which is open to both listening to young children and the “liveliness” or “vitality” of matter (Bennett, 2010) in the hope that in (re)learning to see the material, adults can (re)learn to see the child *and* the material, as early childhood environments are much more than children.

New Materialisms

The larger project was originally conceived and framed to seek children’s perspectives about the outdoors within a predominantly sociocultural and poststructural framework (Merewether, 2015b; Merewether & Fleet, 2014). However, as research proceeded at the second site, these human-centric perspectives did not adequately help me to work with children’s refusal to see things and objects as inanimate, and their repeated blurring of nonhuman and human elements. It triggered a quest to find another way to look at my data (Merewether, 2017b). I was drawn to the “material turn”; the work of physicist Karen Barad (2007), political theorist Jane Bennett (2010), “compostist”⁸ Donna Haraway (2016), and new materialisms early childhood researcher, Hillevi Lenz Taguchi (2010), among others. In particular, new materialisms have drawn attention to the way all matter, human and

⁶ As (Barad, 2007, p. 3) points out, “Matter and meaning are not separate elements”. Instead, she explains:

“The relationship between the material and the discursive is one of mutual entailment. Neither discursive practices nor material phenomena are ontologically or epistemologically prior. Neither can be explained in terms of the other. Neither is reducible to the other. Neither has privileged status in determining the other. Neither is articulated or articulable in the absence of the other; matter and meaning are mutually articulated.” (Barad, 2007, p. 152)

⁷ Barad (2007) uses the term “ethico-onto-epistemology” to refer to the indivisible relationship between ethics, theories of being (ontology) and theories of knowledge (epistemology).

⁸ Haraway (2016) draws us away from anthropocentric exceptionalism by eschewing the term “posthuman,” electing instead to call herself a “compostist”: “we are compost, not posthuman; we inhabit the humusities, not the humanities. Philosophically and materially, I am a compostist, not a posthumanist” (97).

nonhuman, is agential. Rather than understanding matter as inert and as having distinct boundaries, new materialisms assume all matter is intermingled and in a constant “intra-active” (Barad, 2007) relationship. For the purposes of this study, new materialisms afford the possibility of rethinking outdoor spaces in pedagogical settings. Instead of thinking of an individual child responding to and acting on inanimate things in outdoor environments, new materialisms bring recognition of the interdependent and mutual relationship of all entities, agencies, and events. With this in mind, I begin this article with a discussion of ways where new materialisms have been mobilised in early childhood contexts. Then I introduce my study’s context, before using the murmuration figuration in a diffractive approach which “opens an onto-epistemological space of encounter” (Davies, 2014b, p. 734). Finally, I discuss some implications of noticing such multispecies encounters for early childhood research, geographies and pedagogy—and for ways of staying with the trouble.

Children and Materials

Thinking of materials as agential may be challenging for adults, but those who work with young children will be familiar with their acceptance of nonhuman agency. Children constantly merge human and nonhuman elements: “the absurd and the playful fuse with the serious, the material with the abstract, the children with adults and the humans with walls and machines” (Rautio & Winston, 2015, p. 19). So children and dogs are interdependent (Malone, 2016c), teddybears speak (Nieuwenhuys, 2011), and trees and sky are social beings (Merewether, 2017b). However, children’s animation of the nonhuman world is often seen as problematic; Piaget (1929), whose work continues to be very influential in contemporary education, asserts that “animism is not the result of a structure built up by reflection but results from the primitive property of mind” (p. 231). Piaget sees animism as faulty reasoning arising from children’s egocentricity which in turn impedes objectivity: “to arrive at such an objective view of things the mind must free itself from subjectivity and abandon its innate egocentricity” (p. 230). Piaget believes adults’ use of animistic language (for example, “the sun is trying to peek through the clouds”) serves to foster children’s animism, advising that “... only a qualitative development of the child’s mind can lead it to abandon animism” (p. 238). Western educational systems, steeped in Piagetian and other modernist theory, continue to remain keen for young children to move on from their animistic ways. This is particularly evident in the Science learning area, where differentiating “living” from “nonliving” is almost ubiquitous in early childhood curriculum materials. However, such an approach is not supported by “new animist” perspectives (Bird-David, 1999; Descola, 2009; Ingold, 2011), which instead contend animism

as a way of “producing and reproducing sharing relationships with surrounding beings, humans and others” (Bird-David, 1999, p. S73).

Elsewhere (Merewether, 2017b), I have argued that children’s animism is an example of their “common worlding” (Latour, 2004; Taylor, 2013; Taylor & Giugni, 2012), which understands the human and nonhuman world as mutually entangled, rather than separated. Common worlding does not divide children and nature, or nature and culture, but instead proposes “mixed up worlds in which all manner of things co-exist—including the manufactured and the organic, the living and the inert, entities and forces, and humans young and old” (Taylor, 2013, p. 80). Early childhood educational environments, then, are common worlds which abound with nonhuman materials: sand, paints, clay, bricks, paper, toys. Yet, the materiality of early childhood environments has been neglected (Horton & Kraftl, 2006; Lenz Taguchi, 2010; Prout, 2005). Prout (2011) argues this is because in childhood studies, social constructionist perspectives of childhood predominate and “always privilege discourse” (p. 7). He goes on to add that these perspectives “are simply silent about the material components of social life ... At best there is an equivocal and uneasy evasiveness about materiality, whether this is thought of as nature, bodies, technologies, artefacts or architectures” (p. 7). Even when material components are considered, they are seen as passive, inert and from a human-centric perspective. Gibson’s (1979) “affordance theory” has offered some early childhood researchers a means of analysing the material aspects of environments (Broberg, Kytä, & Fagerholm, 2013; Kytä, 2002; Storli & Hagen, 2010), but as Änggård (2016, p. 78) argues, this still has a humanist perspective: “affordances are there for humans and animals to use or not to use.”

The difficulty, however, of breaking entrenched anthropocentric and taken-for-granted ways of seeing is brought into sharp focus by Hultman and Lenz Taguchi (2010) who invite readers to examine photos taken in a preschool playground. As they demonstrate, habitual ways of seeing lead us to focus on the children in the photos; it is a struggle not to see the children in preference to, and as separate from, the surroundings. This object/subject way of seeing blinds us to the emergent transformations within the whole assemblage. On the other hand, as Hultman and Lenz Taguchi (2010) argue, decentering the child allows us to “go beyond the human/non-human divide and acknowledge our co-existence with the rest of the world” (p. 538), revealing previously unseen agents at play.

Despite the difficulty of seeing a world where humans and nonhumans are mutually entailed, an increasing number of early childhood scholars working in pedagogical settings have put new materialisms to work in their research. Änggård (2013), for example, uses new materialisms to illustrate the agential role of digital cameras used by children during walks

with the researcher. Änggård describes how cameras acted as a third party intra-acting with the child photographers and the children being photographed; thus, cameras were performative agents in the research. Another early childhood researcher, Giugni (2011), draws attention to child-clay intra-actions to illuminate the multiple performative agents in pedagogical encounters. Giugni describes children's discussion about an image of Michelangelo's *Pietà*, made in white marble, and how they go on to make their own versions of the *Pietà* using brown clay. This provokes a conversation about race and skin colour; Giugni (2011, p. 23) speculates that the rich assemblage of the material elements *and* the discursive "... opened up spaces to talk about 'race' in ways that stemmed from what the children were thinking and producing." In another pedagogical setting for young children, Lafton (2015) deploys actor network theory and Foucauldian understandings of discourse to explore the intertwining agencies of digital technologies, pedagogical moments and humans. Like Giugni (2011), Lafton (2015) shows how pedagogical events depend on nonhuman and human agency; learning is not simply a matter of children connecting to an adult, "learning rather relates to how non-humans make the participants act and engage in the processes, and what forces are evoked in the event" (p. 150).

Despite these inroads, experimenting with thinking with nonhuman others in childhood settings is still not comfortable or easy; it is often "murky, massy, out-of-sight, elusive and in-process" (Horton & Kraftl, 2017, p. 4). Nonetheless, acknowledged or not, unpleasanties are part of children's geographies. Moreover, thinking with nonhuman others is risky as it can cause dominant and taken-for-granted images of children to crumble. For example, as some early childhood multispecies ethnographers have found, it can bring to light complex and often contradictory child-animal relations that disrupt the often "innocent" and "cute" dominant discourses that exist around young children and animals (Malone, 2016c; Nxumalo & Pacini-Ketchabaw, 2017; Taylor & Pacini-Ketchabaw, 2017). In turn, this work can generate an "extremely awkward logic of ethics and response" (Taylor & Pacini-Ketchabaw, 2017, p. 137), therefore this work, despite its imperative, is not for the faint-hearted. Even so, this article aims to further add to the ethico-onto-epistemological explorations provoked by new materialisms in early childhood settings by drawing attention to the multitude of agencies, human and nonhuman, that are always present but are frequently ignored or taken-for-granted.

Responsibility and Response-ability

The context for the study at hand was outdoors, but in a co-implicated world which undoes dichotomies such as indoor/outdoor, this is of little consequence. Awareness of the

vibrancy and intra-active entanglement of *all* matter—indoor/outdoor, human/nonhuman, biotic/abiotic, and so on—is the issue here. This brings with it significant ethical and political implications for early childhood research and pedagogy as it highlights the interconnectedness of all human and nonhuman bodies within them and points to the mutually entangled responsibilities that exist, as Barad (2010, pp. 264-265) explains:

only in this ongoing responsibility of the entangled other, without dismissal (without “enough already!”), is there the possibility of justice-to-come. Entanglements are not intertwinings of separate entities, but rather irreducible relations of responsibility. There is no fixed dividing line between “self” and “other,” “past” and “present” and “future,” “here” and “now,” “cause” and “effect.” Quantum discontinuity is no ordinary disjunction. Cartesian cuts are undone.

Haraway (2016) argues we must cultivate “response-ability”; the ability to take responsibility, to respond. To do so, however, “requires the risk of being for some worlds rather than others and helping to compose those worlds with others” (p. 178). As Davies (2018) notes, ethical practice, or response-ability, never comes down to an individual following a set of rules; rather it “requires thinking beyond the already known, being open in the moment of the encounter, pausing at thresholds and crossing over” (121). In a world in which all matter is entangled, lively and agential, even the smallest movements matter. This behoves us, then, not only to listen to other humans, but also to listen and to consider our relationship with all matter, human and nonhuman, as it is all threaded together; every move constitutes another.

Locating the Study

The larger project aimed to explore children’s relationship with the outdoor environments at two sites. Data discussed here emerged during a 12-month data-generation period at the second site, a suburban early childhood setting in Western Australia (hereafter, “the Centre”) for 35 two-to-four-year-olds. The Centre is a converted house on approximately 1000 m² of land. University ethics approval and written parental consent were obtained. Data generation was informed by the pedagogical documentation strategies of the educational project of Reggio Emilia (Edwards et al., 2012; Giudici et al., 2001; Rinaldi, 2006); therefore, the project was conceived as a co-constructed investigation involving children, teachers and me exploring “what is good outside at [the Centre]” whereby children were offered the possibility to take photos, draw, talk, and show what they thought was “good” outside. As it emerged, this material was collated into a book that “mapped” the project for children, teachers, families and me:

“[mapping] fosters connections between fields...[it] is open and connectable in all of its dimensions; it is detachable, reversible, susceptible to constant modification” (Deleuze & Guattari, 1987, p. 12).

Working Diffractively

Spending a year entangled with an early learning setting generated a very large and enmeshed assemblage⁹ of data. This assemblage resisted thematic coding, partly due to its sheer size, but also because coding did not embrace the intensities, complexities, or nuances of the assemblage. Moreover, a coding approach “requires that researchers pull back from the data in a move that concerns itself with the macro, produce broad categories and themes that are plucked from the data to disassemble and reassemble the narrative to adhere to these categories” (Mazzei, 2014, p. 743). Therefore, to avoid these pitfalls, I deploy a “diffractive analysis” which emerges from the work of Haraway (1992) and Barad (2007) who take inspiration from the way waves diffract when they encounter another wave, obstacle, or narrow opening. Barad explains that “diffraction has to do with the way waves combine when they overlap, and the apparent bending and spreading of waves that occurs when waves encounter an obstruction” (2007, p. 74). When waves diffract, they interfere with each other, they intra-act, creating new patterns. From a methodological perspective, diffraction offers an alternative to reflection, which simply reproduces what is already there. In diffraction, something new is produced: “A diffraction pattern does not map where differences appear, but rather, maps where the effects of difference appear” (Haraway, 1992, p. 300). Using a diffractive approach here enables me to hone in on and “plug in” (Jackson & Mazzei, 2013) data “... hot-spots, experienced by [me] as intensities of body as well as mind—a kind of glow that, if [I was] lucky, would continue to develop” (MacLure, 2013a, p. 173).

In the diffractive experiment that follows, I take data fragments, or “murmurs”—a photo (taken by me), fieldnotes including my own thoughts and observations, children’s words and actions, methodology, theory snippets—and “fly” them with one another, each like the murmuring wings in a murmuration of birds, to see what intra-actions emerge as they mingle. I use the murmuring figuration to highlight the haziness, imperceptibility, polysemousness of each of the encounters. Murmurs are partial, fragmentary, but are part of a larger whole, a murmuration that is always on the move. Murmurs are heard by attentive listeners who lean in and notice with curiosity and careful awareness. Murmurs can emanate from humans, but

⁹ Here, I follow a Deleuzian perspective of assemblage: “In assemblages ... you find states of things, bodies, various combinations of bodies, hodgepodes; but you also find utterances, modes of expression, and whole regimes of signs” (Deleuze, 2007, p. 177).

they also come from insects, birds, trees and wind. Humans and nonhumans murmur. I install myself in the murmurings and move with them as they intra-act and interfere with one another. The data, theory, you, I; we all change in our ongoing murmuring-becomings. In taking this approach I am attempting to move away from “passively gazing on something as a neutral spectator” (Hultman & Lenz Taguchi, 2010, p. 535) and move towards “a way of understanding the world from within and as part of it” (Barad, 2007, p. 88).



Figure 36 The Puddle

Puddle Murmur(s)

Leila and Hanna are looking in the drain in the undercover area (Figure 36). It begins to rain and Leila calls Hanna’s attention to a puddle of water slowly moving towards the drain across previously dry paving bricks. “She wants to go in [the drain]! She’s coming! She’s coming!” They both watch the water intently for several minutes. When the water reaches the drain, and begins to flow in, the children cheer excitedly. They continue to watch, then after a minute or so, stand up and splash in the water, ignoring calls to come inside until one of the teachers insists.

Fledgling Murmur(s)

In this early stage of the study I am an onlooker, an observer, and I think with theory that sees children as constructors of knowledge, maybe social constructors of knowledge, and perhaps even as recipients of knowledge transmitted by other humans.

So I ask:

What does all this mean in terms of children and their relationship with outdoor spaces? What are the children interested in? What knowledge do they bring to this situation? What are they learning? Is this learning appropriate for them? How do teachers and families support this learning (or not)?

I draw on sociocultural and Foucauldian theory to discuss the children's relationship to each other and their teachers.

I wonder:

Why didn't the children respond to the adults' call to come inside? What power relations are at play here?

I note the children's animism of the puddle and consider it in the light of Piagetian theory (Piaget, 1929) which asserts it is typical of young children, though not of those capable of abstract reasoning.

I consider the nonhuman elements in terms of the children:

How does the environment allow for their learning, support relationships, (or not)?

I find it hard to ignore discourses that dichotomise "nature" and "culture" or natural and "man-made".

But there was something about this moment that gave me a "transgressive jolt" which led me to "think again, and more slowly about what is taken for granted" (MacLure, 2006, p. 229). I had a sense that the children were relating to the water differently from me. They were somehow "with" the water; connected to it in a way that I was not.

Anthropocentric Murmur(s)

For those with years of training and practice as early childhood teachers and researchers, our eye is drawn inexorably to the children. In the end, we are trained to observe children. It

is a taken-for-granted anthropocentric gaze, a gaze that sees an active subject (the children) with a passive object (the water). At the time of taking the photo, the children are my primary focus, and later when I am studying the image, it is the children to whom I am instantly drawn. Hultman and Lenz Taguchi (2010) notice something similar when examining photos from their study:

The children in the images seemed to have a magnetic power over our gazes: they stood out from the background and seemed to rise above the material environment ... all other non-human matter visible in the photographs seemed inactive, and in our eyes, merely the backdrop for these children's actions and competences. (Hultman & Lenz Taguchi, 2010, p. 525)

Is children's "magnetic power" over my gaze a problem?

Material Murmur(s)

What am I missing when I only focus on the children?

A hydrologist studying this scene might focus on the water; an engineer the drain casting; a brickmaker the bricks; a biologist the moss in the cracks between the bricks.

Could my relentless attentiveness to the children be blinding me? What if I deliberately focus on the nonhuman?

I might notice how the forces of gravity are pulling the puddle of water (of nearly fixed thickness) across the dry paving bricks towards the drain. I might see how the bricks' incline is facilitating the water's journey to the drain and the cohesive forces of surface tension are holding the puddle together, slowing its acceleration. Perhaps I would see the surface of the water is reflecting an image of bamboo that is not directly overhead, but some 10 metres away. I may notice that as the water moves, some of it adheres to the bricks, leaving them wet in its wake. And I may even see the tiny specks of dust as they fall into the water causing a diffraction pattern on its surface. And, and, and... this is not the end of the matter; I could notice the nonhuman encounters ad infinitum ...

Diffraction Murmur(s)

Barad (2007) argues there is a good deal of evidence that suggests that "edges" of bodies are quite indeterminate. What is more, this is not just a matter of a few errant molecules straying from each body. Using an example of a hand holding a coffee cup, Barad (2007) explains: "When it comes to the 'interface' between a coffee mug and a hand, it is not that there are x

number of atoms that belong to a hand and y number of atoms that belong to the coffee mug” (156). As Barad (2007) goes on to argue, edges of bodies are not clearly defined and that it is “a well-recognized fact of physical optics that if one looks closely at an “edge”, what one sees is not a sharp boundary between light and dark but rather a series of light and dark bands—that is, a diffraction pattern” (156). While the human eye has learned to see clearly defined edges, the argument that bodies actually end where we perceive them to is contestable.

Now, my world is flattened. No longer are human/nonhuman boundaries clear. Where once the boundaries of the children, the puddle, the bricks, the drain, me, appeared to be well defined and incontrovertible—the children end at their skin; the puddle at its surface, the bricks at their edges—now, we are not separated as clearly as I first thought. Instead, the human and nonhuman bodies are in a relational field (Olsson, 2009) in which the forces and flows are connected and overlapping and where all elements have agency and are shaping each other. What I don’t see, or not at first, is the assemblage of forces and flows that emerge within and between the different components: bricks, water, drain, children, smells, sounds. A new materialist reading of this data moves me away from my habitual anthropocentric ways of seeing, towards including the material. Such a perspective allows me to conceive of agency as not just being with the human in the photo, but also with the nonhuman elements: that is, the materials are in an intra-active relationship and are shaping one another.

Thing-power Murmur(s)

“Thing-Power: the curious ability of inanimate things to animate, to act, to produce effects dramatic and subtle” (Bennett, 2010, p. 6).

*Things have power? People have power, discourse has power, animals too,
and perhaps plants ... but things? What are the effects, dramatic and subtle,
of this puddle?*

Bennett (2010) suggests our tendency to separate the world into “dull matter (it, things) and vibrant life (us, beings)” (p. vii) causes us to overlook the way that matter can “command[.] attention in its own right” (p. 4). In her seminal book, *Vibrant Matter: A Political Ecology of Things*, Bennett (2010) argues that human and nonhuman “things” are lively, vibrant and can act with a force: “[w]orms, or electricity, or various gadgets, or fats, or metals, or stem cells are actants ... that, when in the right confederation with other physical and physiological bodies, can make big things happen” (2010, p. 94). In proposing matter as “vibrant,” Bennett is not suggesting we abandon a concern with humans; rather, she rejects

the life/matter binary and invites us instead to recognise the agentic assemblages in which neither humans or nonhumans act alone.

The children, puddle, bricks, smells, teacher's voice, curriculum, drain, air currents, sound, and me, to name but a few, are all actants in a heterogeneous, nonlinear assemblage. None of us is acting alone; we are all in concert with one another.

Enchantment Murmur(s)

Bennett (2010) defines enchantment as: “to be struck and shaken by the extraordinary that lives amid the familiar and everyday ... enchantment entails a state of wonder ... A momentarily immobilizing encounter; it is to be transfixed, spellbound” (2010, p. 5). In the puddle scenario, the children are completely captivated—enchanted—by the water; they are almost oblivious to everything else that is going on around them. The puddle is practically calling to them, “Watch me, see what I do, see where I go!” The children are wondering-with-the-world in a state of delight and exquisite attentiveness.

Could enchantment with the materials that surround us, lead to caring for them?

Children's Murmur(s)

I show the children the photos I have taken of the event and ask them what was happening.

“She go[es to] her mother,” Hanna says.

“In the drain,” adds Leila

“The puddle is going to her mother? The water in the drain is the puddle's mother?” I ask.

The girls nod.

A puddle has a mother? What happens if you see a puddle as alive, and as having kin?

Anthropomorphic Murmur(s)

Thinking about inanimate things this way is not easy, at least for those of us who have lived a life where boundaries between living and nonliving, alive and dead, have been clear. Whilst acknowledging that foregrounding matter's vitality is difficult and controversial, Bennett (2010) suggests “a careful course of anthropomorphization” will help to reveal the

vitality of things” (p. 122). Anthropomorphism is a way of connecting humans and things, which, strangely, counters anthropocentrism as it places humans in a “with” relationship with things rather than one which is above or outside. Anthropomorphism undoes absolute distinctions between living and dead.

The children have anthropomorphised the puddle. Could anthropomorphising the puddle allow me to see it in a different way? Or is anthropomorphism simply more anthropocentrism?

Materialdiscursive Murmur(s)

I remain interested in the discursive—“since phenomena are material-discursive, no priority is given to either materiality or discursivity; neither one stands outside the other” (Barad, 2007, p. 177). Thus, I do not discount the human; however, in a materialdiscursive reading, I do not privilege the human.

What if I immerse myself in the assemblage and think with the water (Chen, MacLeod, & Neimanis, 2013) or, think like bricks (Bennett, 2016)? What if I think with the children and the water and bricks? Could it be that the children have adopted “an attitude of humility and curiosity towards water” and are “knowing-with and knowing-alongside” (Neimanis, 2013, p. 37) water?

Thinking with and alongside the puddle like this opens me up to seeing the connectedness of water—this puddle joins the water in the drain which joins the water in the river which joins the water in the sea, and so on. I now also see that the water (and the bricks and other materials) offer possibilities for the children, but also, the children offer possibilities for the water—they are all in an intra-active relationship and are simultaneously transforming one another.

Water Murmur(s)

I look again at the photo of the children and the puddle, and this time they are not separated as clearly as I first thought. I recall the smell of the water and even though I did not touch the puddle directly, I remember the moisture-laden air. I am reminded that, like the puddle, “we are all bodies of water” (Neimanis, 2013, p. 24). We are not so separate after all. The puddle is kin; oddkin, yes, but kin all the same.

What I come to see is the assemblage of forces and flows that emerge within and between the different components in the photo: the bricks, the water, the drain, the children. Perhaps

the children were better at seeing this than me. A materialdiscursive reading of this data event helped move me away from my habitual anthropocentric ways of seeing, towards including the material. Thinking with the children and water has allowed me to conceive of agency as not just being with the humans in the photo, but also with the nonhuman elements—all the materials are in an intra-active relationship and are shaping one another.

Ongoing Murmuration(s)

The murmurs keep murmuring and mingling. The murmurations keep swirling. I do not propose any conclusions here; only tentative and ever-becoming “noticings”. Anna Tsing (2015), through her multispecies ethnography of matsutake mushrooms, shows how we can hone our “arts of noticing” in order to find ways to look differently at the world. Similarly, van Dooren et al. (2016) invite us to engage in “passionate immersion” (p. 1) suggesting that cultivation of “arts of attentiveness ... should be the basis for crafting better possibilities for shared life” (p. 17). In my work as a Reggio-informed early childhood teacher-researcher, I call this noticing-attentiveness “listening” (Merewether, 2018a), following Rinaldi (2006) who urges “listening not just with our ears, but with all our senses (sight, touch, smell, taste, orientation)” (p. 65). Previously, my listening has centred on children, but diffracting my listening with very young children through new materialisms has opened me up to listening not just to children, but to nonhuman species as well. It has, among other things, provoked new ways of seeing animism and anthropomorphism. Although young children’s animism and anthropomorphism is widely acknowledged, as noted earlier, it is not valued by educational systems which overtly work to undo it. Embracing animism and anthropomorphism is risky, as ecophilosopher Val Plumwood (2009) points out, a “charge of anthropomorphism ... has [as] its major function now, to bully people out of ‘thinking differently’” (p. 127). But in times of trouble, doing the same thing only leads to more trouble; we must think differently. As can be seen from the small story of multispecies listening told here, children’s anthropomorphism enables them to make kin with nonhuman entities such as water. Children’s positioning of a puddle as the “child” of a larger “mother” puddle undoes the alive/dead, life/matter binaries that are so omnipresent in adults’ lives; it requires us to think differently about water. Given the fundamental role that water plays in the Earth’s processes, this would seem to be imperative.

And So ...

Thinking diffractively with young children and new materialisms opens up new spaces for seeing outdoor environments as offering multiple possibilities to be human and nonhuman—as places of wonder, creativity, invention, transformation, subjectivity and

intra-activity. It opens up a space to stay with the trouble and cultivate response-ability. Rather than understanding outdoor spaces simply as, for example, somewhere to let off steam or “connect with nature”, they may instead be seen for their unlimited everyday potential—a seemingly banal puddle assemblage offers extraordinary curriculum opportunities. It is an opportunity to wonder, experiment, and respond. As Horton and Kraftl (2006, p. 72) state, “‘the everyday’ (or ‘everydayness’) is too-often misunderstood or effaced in accounts of children’s lives.” It would have been easy to overlook or underestimate the complex intra-actions in the moments captured in the small puddle story narrated here. Yet moments such as this are occurring continuously in even the most mundane outdoor environments. Listening through children and new materialisms offers “... the possibilities to be affectively engaged with and moved by that which seems to enchant and move the children” (Hultman & Lenz Taguchi, 2010, p. 540). Indeed, recognising the shared materiality of all things in an environment places children and adults in a better position to acknowledge our coexistence with the world. The danger of seeing the material world as separate from humans is exactly that; it separates the material and humans and places humans in a relationship of dominion over their surroundings. The repercussions of this are significant, as Bennett (2010, p. ix) suggests:

[M]y hunch ... is that the image of dead or thoroughly instrumentalized matter feeds human hubris and our earth-destroying fantasies of conquest and consumption. It does so by preventing us from detecting ... a fuller range of non-human powers ... which can aid or destroy, enrich or disable, ennoble or degrade us, [but] in any case call for our attentiveness, or even “respect”.

This is not to suggest that attentiveness to the agential forces of nonhuman matter is an antidote for human exploitation or oppression, but it may engender a greater appreciation for the inextricably entangled nature of all matter, human and nonhuman. A keen interest in the intra-actions of matter may lead us to live differently in the world:

If humans have no separate existence, if we are completely entangled with the world, if we are no longer masters of the universe, then we are completely responsible to and for the world and all our relations of becoming with it. We cannot ignore matter (e.g., our planet) as if it is inert, passive, and dead. It is completely alive, becoming with us, whether we destroy or protect it. (St. Pierre, Jackson, & Mazzei, 2016, p. 3)

Finally

In working in spaces of childhood, children's perspectives are an important part of the assemblage; indeed, it was listening to children that launched the murmuration discussed in this article. As Barad (2007) reminds us, the material *and* the discursive are important, although adults' habitual ways of seeing may preclude us from being attentive to the agentic capacity of the material. Rather than dismissing, ignoring or trying to reshape them, adults can join with and learn from young children's everyday multispecies kin-making with bodies such as puddles. In "disturbing times, mixed-up times, troubling and turbid times" (Haraway, 2016, p. 1), children's sensitivity to the agential power of the nonhuman bodies in outdoor environments—surfaces, buildings, plants, soil, weather—offer infinitely rich possibilities for new ways of working. Attentiveness to and telling children's multispecies stories can contribute to moving discourse that often characterises children's outdoor participation only in humanist terms: that is, what the outdoors can do for children, or how it benefits them. Children's multispecies stories are important, thus, for reconceptualising what "matters" as "curriculum" in such spaces. In recognising the interdependent and inseparable becoming of all matter, we are forced to consider our collective responsibilities and response-abilities, whether we seek to destroy, protect or ignore them. After all, the materials will move with us, regardless.

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Listening Outdoors with Young Children: Enchanted animism of Trees, Rocks, Clouds (and Other Things)

And so, we have come to the last paper in this spinifex-thesis adventure drama. But as I said at the outset, it is not the end of the performance; spinifex is always on the move, it is always becoming—becoming with entangled others. This final article, however, brings together many lines of flight that I have pursued along the way, and although the thesis has wandered adventitiously in many directions, as Deleuze and Guattari (1987) remind us, “These lines always tie back to one another” (p. 9). In proposing “enchanted animism” in this article I am tying back together, among other things, multimodal research approaches, children’s perspectives, outdoor environments, animism, new materialisms, diffractive analysis, and multispecies ethnography, therefore, it was important that this article was included in the thesis. My work with these ideas and approaches will of course continue, but as well as drawing lines together, this article acts as a staging post, a place where I might pause and gather my thoughts before I set out again on my wanderings.

In this final publication, Publication 8 (Merewether, 2018b), I am taken elsewhere by two key lines of flight: animism and enchantment. I have already discussed animism in several previous articles. Like almost all the young children I have ever worked with, the children in this project animated the so-called inanimate world; they attributed liveliness to things such as trees, rocks, and clouds. But in the course of undertaking this research, as I say in an earlier publication (Merewether, 2017b), I experienced “transgressive jolt ... that force[d me to] think again, and more slowly about what is taken for granted” (MacLure, 2006, pp. 229-230). I began to think again about my taken-for-granted view of children’s animism which was steeped in Piagetian theory that, in short, purports animism is associated with a particular stage of children’s development; something they will grow out of. In becoming aware of my own thinking, I began to wonder if I could see animism differently, and what the ramifications of that might be. In listening to the children, I began to notice that their animism fuelled their curiosity and finely tuned attentiveness to the world around them. Because my research was centred on listening to children’s perspectives, I tried very hard to listen with a preparedness to be “open to being affected by the other” (Davies, 2014a, p. 32). The emergent strategies of pedagogical documentation were key to this. They helped me to see how these young children who had only just begun to encounter the inanimate/animate

story which is told in Western cultures, and is supported by Piagetian theory in educational settings, were seeing the world differently. As I note in this final publication, Haraway (2016, p. 101) insists that “[i]t matters which stories tell stories, which concepts think concepts.” The children led me to think about the implications of the Piagetian story and how embracing animist storying and concepts might present a different way for all humans, not just children, to encounter the world. Having been imbued in Piagetian theories for all of my teaching career, I needed to find other ways of thinking about animism. The work of scholars such as Graham Harvey (2006, 2013b), Tim Ingold (2006, 2011) and Val Plumwood (2007, 2009) was particularly helpful in this regard. And once again, Donna Haraway’s work pushed my thinking. Although her writing about companion species (Haraway, 2003, 2008) tends to focus on biotic species, she leaves the door open to include the abiotic and I found this a very useful line of thought to build upon.

In the previous article, Publication 7 (Merewether, 2018c), I put Jane Bennett’s (2001, 2004, 2010) ideas about “thing-power” and “enchantment” to work in my analysis of a brief encounter with children at the second site. In continuing to think with new materialist scholars, Bennett’s (2004) contention that objects have “thing-power ... the curious ability of inanimate things to animate, to act, to produce effects dramatic and subtle” (p. 351) at first seemed shocking to me, but the more I encountered children’s delight, wonder and surprise in the world, the more the idea that things could enchant made sense. Furthermore, children’s delight and wonder rubbed off on me, enlivening and sensitising me to my surroundings. “Enchantment,” says Bennett, “is a feeling of being connected in an affirmative way to existence; it is to be under the momentary impression that the natural and cultural worlds *offer gifts* [original emphasis], and in so doing, reminds us that it is good to be alive” (Bennett, 2001, p. 156). Enchantment, then, offers the possibility of an alternative ethical narrative, as it calls us to notice not only the human but also the nonhuman.

By bringing together animism and enchantment in “enchanted animism”, this final publication in the thesis is a call to encourage children’s stories of liveliness rather than ignoring or shutting them down. It argues that enchanted animism cultivates children’s and adults’ “arts of noticing” (Tsing, 2015) and “arts of attentiveness” (van Dooren et al., 2016) and offers another story to tell stories with, another concept to think with. This in turn opens us all to seeing humans’ entangled place in the Earth’s ongoing becoming.

Entangled Becomings: A Little Note ...

Before we go on, I do need to make another note, lest you think I have abandoned my murmurative diffraction approach of Publication 7. Publication 7's publication process was lengthy. Review took many months and resulted in being asked to do a full rewrite. The reviewers, however, gave me very encouraging, extensive and extremely helpful feedback. It was during the rewriting process that "murmurative diffraction" came to me. I tentatively re-submitted, not sure if I had responded in the way reviewers wanted. While the subsequent re-reviewing process was underway, I wrote and submitted Publication 8, calling my data fragments "traces" rather than "murmurs". This publication was accepted quickly with only minor revisions, before I had the outcome for Publication 7. Although I like the idea of data as traces, if I were to re-write Publication 8, I would call the data fragments "murmurs" which conveys an even more ephemeral, partial and sonorous note, and for me at least, affords an image of endless intermingling intra-activity.

PUBLICATION 8

Listening Outdoors with Young Children: Enchanted Animism of Trees, Rocks, Clouds (and Other Things)

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This article introduces the notion of *enchanted animism*, contending that an enchanted re-animation of the world may be necessary for learning to live on a damaged planet. The paper draws on a project with young children which invited them to share what they thought was “good” in the outdoor spaces at their early learning centre. These encounters revealed children’s relationship with *nonhuman* elements which seemed to be calling in and enchanting children. In particular, children’s playful animation of so-called inanimate things—trees, rocks, clouds—allowed an egalitarian view of the world in which both humans and nonhumans were seen to be engaged in intentional projects. The paper argues that enchanted animism kindles children’s sensitivity to Earthly processes, enabling them to listen to the Earth more attentively, with the awareness and responsiveness that a planetary crisis demands.

Keywords: enchanted animism; enchantment; animism; listening with children; early childhood;

Introduction

In an age of rationalism, hard data and evidence, ideas around animism, anthropomorphism, vitalism, and enchantment hold little sway in many academic circles. Yet children who have not yet been schooled in rationalistic ways are oblivious to such mores and engage in forms of vitalism with abandon. This article suggests that rather than viewing children’s propensity for vitalism in a negative light, as evidence of egocentrism and a particular stage of development, it might instead be seen as key to wonder and enchantment with the world. It introduces the notion of *enchanted animism* as a way embracing and encouraging children’s animated thinking, contending that a re-animation of the world may be necessary for learning to live on a damaged planet.

This article arose out of my encounters with a group of two and three-year old children who I invited to share what they thought was “good” in the outdoor spaces at their early learning centre (hereafter, “the Centre”) in Perth, Western Australia¹. These children thought humans were good, especially their peers, but what surprised me, and what I want to concentrate on here, was their relationship with *nonhumans* which appeared to have a power to draw children to them; to *enchant* them. Children seemed to be in love with the world in a way that was energy-giving and interconnected.

Seeking to further explore this, I lean first on Jane Bennett’s “vital materialism” (Bennett, 2001, 2004, 2010)—her thinking around the vitality and liveliness of matter and its ability to enchant humans. I take particular inspiration from Bennett’s (2010) proposition that children may in fact be the original vital materialists. I also lean on Tim Ingold (2007b, 2011), Graham Harvey (2006, 2013b) and ecophilosopher Val Plumwood (2002, 2007, 2009), who all open my eyes to alternative ways of thinking about animism. Donna Haraway’s (2003, 2008) contention that humans are but one “companion species” among others is another key influence. For Haraway, “no species ... acts alone” (Haraway, 2016, p. 100); each co-constitutes the other. Haraway has also helped me to understand the infinite connectedness of becoming through her notion of “becoming with”: “If we appreciate the foolishness of human exceptionalism, then we know that becoming is always becoming *with* [original emphasis]—in a *contact zone* [emphasis added] where the outcome, where who is in the world, is at stake” (Haraway, 2008, p. 244). These are just some of the thinkers who I have become with but as I will show, I have also become with children, with trees, rocks and clouds ... and other things.

The subtitle of this article is taken from Carson McCullers’ (1951/2005) short story, *A Tree, A Rock, A Cloud* in which a man describes how he learns to love by studying nonhumans: a tree, a rock, a cloud. Trees, rocks and clouds featured prominently in children’s engagements in the outdoor spaces in the Centre, therefore I could not overlook the coincidence. Indeed, as will be seen, children saw themselves as intimately connected with and part of elements such as trees, rocks and clouds. This is at odds with those who claim children need to reconnect with nature, as if they are somehow not already nature (for example, Louv, 2008). This article, then, explores how children’s animation of, and enchantment with, the nonhuman world forms an “ontoepistemological framework” (Barad, 2007, p. 43) that brings nonhumans and humans together. By presenting excerpts from my year-long encounters with children in this study, I argue that children’s enchanted and

¹ This research is conducted with ethics approval from Macquarie University, Sydney, NSW.

animated ways of seeing work to foster a way of living with the Earth that needs to be supported, not belittled or dismissed.

I begin with a discussion about enchantment and the particular slant that I take on this notion. I then move on to discuss animism before bringing enchantment and animism together in the neologism *enchanted animism*. I follow this with vignettes from the study, which I discuss in the light of scholarly thought. Finally, I conclude with some reflections on the importance of taking seriously children's enchanted animism and the potential it offers for living and dying in a rapidly transforming planet.

Enchantment

Enchantment:

- : a feeling of being attracted by something interesting, pretty, etc.
- : the state of being enchanted
- : a quality that attracts and holds your attention by being interesting, pretty, etc.
- : a magic spell

(*enchantment, n.d.*)

In relation to this study, enchantment was a word that crept up on me unexpectedly and slowly. In fact, it did not come to mind until more than a year after working with the children at the Centre. I resisted the word at first, because it seemed “romantic”, “unscientific” ... “unscholarly”. But as I tried to make sense of my encounters with these children—as I pored over my research notes and reflections—I noticed my repeated use of words like “fascination”, “curiosity”, “appreciation”, “delight”, “wonder”, “surprise”, “excitement”, “fun”, “imagination” and “joy”. “Enchantment” seemed to hold these ideas together. Importantly, it also embraced the children's whimsical and playful approach that was always evident in the encounters I documented. My quest to conceptualise enchantment brought me to the work of Jane Bennett (2001, 2010), who, in *The Enchantment of Modern Life* (2001), defines enchantment as: “to be struck and shaken by the extraordinary that lives amid the familiar and everyday (p. 4) ... enchantment entails a state of wonder ... a momentarily immobilizing encounter; it is to be transfixed, spellbound” (p. 5). Enchantment, in this conceptualisation, is not just about being full of wonder; it is also accompanied by an uncanny feeling of “being disrupted or torn out of one's default sensory-psychic-intellectual disposition” (p. 5). This combination of delight and disruption seemed to fit well with my observations of children; they were at once drawn to and astonished by the world around them.

Before proceeding, it is important to note that Bennett (2010) sees enchantment as emanating from the materiality, not as a separate force which enters and animates a body: “material vibrancy is not a spiritual supplement or ‘life force’ added to the matter said to house it.” (p. xiii). And, while not dismissing unicorns, monsters, fairies, magic, and other sources of childhood enchantment, the kind of enchantment I am discussing here is not limited to the divine, the occult, or the imaginary; rather, it concerns the vital materiality of everyday human and nonhuman matter, including things usually seen as inanimate.

Thing-power—or the Force of Things

Central to Bennett’s theory of enchantment is an understanding of matter as active and agential, rather than inactive and inert. This liveliness does not refer to molecular motion, nor, as previously noted, occupation of a transcendent spirit. Matter is alive because of its ability to effect interconnected and continuous transformation. Things, then, have “thing-power”, with capacity “to animate, to act, to produce effects dramatic and subtle” (Bennett, 2010, p. 6). Nonhuman things, like trees, rocks and clouds are alive because of their capacity to have effects in the interrelated assemblage in which they are a part. Trees, rocks and clouds are all “actants”: “something that acts or to which activity is granted by others. It implies no special motivation of human individual actors, nor of humans in general” (Latour, 1996, p. 373). Thus, humans are not the only agents in the world but instead are inextricably enmeshed in an interconnected web of human and nonhuman actants, all of which can make a difference and make things happen.

Animism

As well as needing a way to describe the children’s delight and astonishment, I also needed a way to describe their propensity to ascribe liveliness to all manner of things that mattered to them in the environment. I found myself using terms like “animism” and “anthropomorphism” in my notes. This was not a surprise; for those of us who work with young children, animism and anthropomorphism are indeed very familiar. Sometimes, the life that children ascribe to plants, animals, objects, phenomena, landforms, and so on, is anthropomorphic; that is, it approximates human tendencies. At other times, children’s life-giving assumes characteristics which are not at all human. We might call this animism, although whether the liveliness can be equated with that of animals is contestable; for example, children in my study talked about clouds transforming themselves in ways no animal can.

However, using the words “animism” and “anthropomorphism” induced a sense of unease in me; a feeling that I needed to put them under erasure—after all, as ecophilosopher Val Plumwood (2009) has pointed out, a charge of anthropomorphism is used “to bully people out of ‘thinking differently’” (p. 127). Animism is also a problematic notion for Western scholars. As theoretical physicist Karen Barad notes:

The inanimate-animate distinction is perhaps one of the most persistent dualisms in Western philosophy and its critiques; even some of the most hardhitting critiques of the nature-culture dichotomy leave the animate-inanimate distinction in place. It takes a radical rethinking of agency to appreciate how lively even “dead matter” can be. (Barad, 2007, p. 419)

According to Harvey (2006) the Western abnegation of animism has its origins in 19th century anthropology which sought to demonstrate how human cultures could be either “primitive” or “cultured”. Animism was associated with “primitive” cultures; part of “a nest of insulting approaches to indigenous peoples and the earliest putatively religious humans” (p. xiii). In line with his times, developmental psychologist, Jean Piaget (1929), also associated animism with young children’s “primitive thought”, claiming they remain animists until they reach a more advanced and rational stage of development. Inspired by Piaget’s thinking, in the 1950s and 1960s scholars who investigated children’s animism on the whole came to similar conclusions as Piaget (for reviews of this work, see Carey, 1985; Hatano & Inagaki, 1997; Looft & Bartz, 1969).

Despite the deficit light in which it is often still cast, an increasing number of Western scholars are undertaking a rethinking of animism, pointing to its potential to open a door to an ethic of living more responsively with nonhuman others (see for example, Bird-David, 1999; Descola, 2013; Harvey, 2006, 2013b; Ingold, 2011). This “new animism” recognises that, as Graham Harvey (2006) puts it, “the world is full of persons, only some of whom are human, and that life is always lived in relationship with others” (p. xi). This animism looks for “animism ‘in between’, in the relating together of persons (often of different species), rather than “within”, in the possession of or by ‘spirits’” (Harvey, 2013a, p. 3). In doing so, these scholars are drawing attention to the interrelationships and obligations of all matter, human and nonhuman. As Harvey argues, openness to animism might help us “learn better ways to be human, better ways to live in the world” (Harvey, 2013a, p. 9). Rejecting animism places humans and the rest of the world into a dichotomous relationship which ultimately has not stood the Earth in good stead.

Making Kin with Companion Species

Another way to draw attention to the world's interconnectedness is the figure of “companion species” that Haraway (2003, 2008) uses to describe the plethora of species, biotic and abiotic, that accompany and continually affect, and are affected by, humans wherever they go. Haraway does not limit companion species to what might otherwise be known as “pets”; as she says, “the category “companion species” ... is less a category than a pointer to an ongoing *“becoming with”* [emphasis added]” (Haraway, 2008, p. 16). Companion species are not separate from humans but are instead part of them; humans and their companion species “become with” each other. Haraway (2016) suggests that if we are to find new ways of living on a damaged planet, then we need to “make kin” beyond those with whom we have ancestral and genealogical links: “Kin making is making persons, not necessarily as individuals or as humans” (p. 103). Plumwood makes a similar call, asking us to recognise “earth others as fellow agents and narrative subjects is crucial for all ethical, collaborative, communicative and mutualistic projects, as well as for place sensitivity” (2002, p. 175).

The ideas of Haraway and Plumwood, among others, inform the emerging interdisciplinary field of environmental humanities (see, for example, Heise, Christensen, & Niemann, 2017; Rose et al., 2012) and multispecies² ethnography (Kirksey & Helmreich, 2010; Ogden, Hall, & Tanita, 2013). In turn, early childhood “common world pedagogies” (Taylor, 2017; Taylor & Pacini-Ketchabaw, 2015) scholars are thinking with these concepts in their explorations of the entangled multispecies kin-making relations between children and a wide variety of biotic species not usually associated with children, for example, street dogs (Malone, 2016c), ants and earthworms (Taylor & Pacini-Ketchabaw, 2015), raccoons and wild kangaroos (Taylor & Pacini-Ketchabaw, 2017), stick-insects (Nxumalo & Pacini-Ketchabaw, 2017) and bark and wasps (Blaise, Hamm, & Iorio, 2017). This work is attempting to move away from the human-centric practices of traditional early childhood education which focus on child observation, towards more inclusive approaches that call children and the nonhuman world into connection (Blaise et al., 2017).

Making kin with nonhumans is not a new idea; it is central to many cultures, including, for example, the world's oldest living cultures, Aboriginal Australians, whose kinship relations extend beyond humans and animals to include, for example, the sea, vines and mountains (Rose, 1996). Rose (2013, p. 137) explains that these multispecies kin relations “generate a system of

² As discussed by van Dooren et al. (2016), the term “multispecies” has been broadened by multispecies ethnographers to include both biotic and abiotic matter.

looped, entangled and enduring moral bonds of care, responsibility, accountability and exchange.” Similar kin relationship understandings can also be seen among other indigenous groups, including Māori (Henare, 2001; Whitt, Roberts, Waerte, & Grieves) and North American peoples (Detwiler, 1992; Hallowell, 1960). Kin relations among these peoples are not limited to “domesticated” animals; instead they embrace possibilities which draw attention to the symbiotic multispecies assemblages in which all humans dwell.

Enchanted Animism

Enchanted animism, then, seeks to build on this work, bringing together the lure, excitement and delight of enchantment with the vitality and liveliness of animism, opening a space for making kin with companion species—in, on, and with the Earth. Enchanted animism is a responsive and playful noticing which fosters children’s curiosity, wonder and immersion in and of the world. It is attentiveness not only to biotic matter such as humans, animals, plants, bacteria, but also to abiotic matter such as wind, rocks and clouds. In embracing the neologism “enchanted animism”, I am, however, acutely aware of Derrida’s (1967/1997) warnings about the dangers of signifiers; how words can both bind and separate. I also heed St. Pierre (2011, p. 616) who cautions that: “any concept/category is a structure attempting to contain and close off meaning and, at the same time, that that concept/category is available to rupture and rethinking.” Thus, enchanted animism is a permeable membrane with porous and mutable boundaries through which new ideas and discussion can pass. Ultimately, however, regardless of what it is named, my intention here is to show how children’s intimate and sensuous attention to the liveliness of matter brings them into a close relationship with the world.

This now takes us to my encounters with the children at the Centre. I begin the next part of the paper by briefly introducing the study’s context. I then share some glimpses from the project; these should be seen not so much “evidence” or “data” but more as events or moments to move through and think with. Finally, I conclude the paper by reflecting on the importance of children’s playful attentiveness to the liveliness of their surroundings.

The Study

The purpose of this paper is not to describe methods, which are explained more fully elsewhere (Merewether, 2017b, 2018a). Nonetheless, I will briefly sketch out my research approach which drew heavily on pedagogical documentation, the everyday practitioner inquiry used by educators in the Italian city of Reggio Emilia (Dahlberg et al., 1999; Fleet et

al., 2017; Giamminuti, 2013). Pedagogical documentation deploys an array of participatory and multimodal strategies (such as notetaking, photographs, videos, children's work) which both record and propel the unfolding research. It involves an "active attitude of listening between adults, children, and the environment" (Infant-toddler Centres and Preschools Istituzione of the Municipality of Reggio Emilia [ICPIMRE], 2010, p. 11). It is within this slow approach to inquiry (Millei & Rautio, 2017; Ulmer, 2016), with its openness to be affected by the other (Davies, 2014a, pp. 21-33), a space was created for children's enchanted animism to make itself known.

Over the course of a year, I spent at least a day a week at the Centre, a privately-owned early learning centre in Perth, Western Australia, that welcomes 35 two-to-four-year olds each day. Children were made aware of the research intent and were invited to contribute as and how they wanted. Over time, children became more involved and the project moved from being *my* research to *our* research. Although I instigated the study, as it progressed, it came to be a co-constructed inquiry incorporated into the everyday pedagogical program. In keeping with the pedagogical documentation approach, I tried to make the story of the emerging research a "public space" (ICPIMRE, 2010, p. 12) through a "documentation book" which was shared with children, staff and families. However, as Carla Rinaldi (2006) points out, documentation is always partial; what we record is a mere *trace* of what we encounter.

Traces

What follows are glimpses of incidents, events, observations—traces—drawn from my research journal that bring to light children's enchanted animism. I confine these selective traces (in italics, below) to collections around those that involve trees, rocks and clouds as they featured repeatedly in children's representations, but this by no means suggests children's enchanted animism was restricted to trees, rocks and clouds. I follow each set of traces with a short discussion that brings in some theoretical perspectives pertinent to the specific collection, before proceeding to a more general discussion about this notion I am calling enchanted animism.

Encountering Trees



Figure 37 **Encountering Trees**

The first collection of traces relates to trees, a distinctive feature of the Centre’s outdoor spaces. When I asked children to show me what was good outside, these trees were regularly involved. Often children related to the trees in enchanted animist ways.

Tree Trace 1

I ask Lylah if she would like to draw what is good outside; es! she replies with much enthusiasm, so I find her some paper and she draws with gusto.

“A tree... a tree... and another tree ... and another one... and leaves ... and a leaf. And here’s Rosie ...a face ... and here’s you ...and a tree ... I might do orange now ... a orange tree ... and a triangle ... leaf ... and leaves...”

Tree Trace 2 (Merewether, 2017b, p. 139)

I ask Eloise about a photo she has taken of trees and sky:

“The trees are talking to the sky. The trees are having a picnic. They have gooey worms and lemonade for their picnic.”

Xavier arrives and looks at the photo.

"I think they [the trees] are saying "Hello" to each other."

Nearby, Rachel and Amber are playing in the sandpit. They attract my attention and tell me they are preparing a picnic.

"We are making jam and bread. It's a picnic for us," Amber tells me. Then she looks up to the trees overhead and says, "The trees are having a picnic at the swings. But they don't have jam and bread for their picnic, they have worms and gooey stuff."

Tree Trace 3

A gnarled mandarin tree is a particularly favourite tree [Figure 37]. It is rarely without at least one child inhabitant, often more. Children are inexorably drawn to it. I have come to realise that they see themselves as being in a social relationship with this tree:

Thomas: [to me] The bees love the tree. It likes the bees. It likes the children.

Spencer: And it likes me climbing up it.

On another occasion, children ponder what the mandarin tree might like for Christmas:

Saxon: We could tell the tree we will never hang on it again. [Why, doesn't it like children hanging on it?] No, because they might break it.

Spencer: It would like to have someone sitting in it. It would like to be with its friends. I'm its friend.

Lylah: I think it would like a big party dress and some shoes.

Niah: It would like a handbag. The tree would put rain in its handbag. It would like ears and some earrings. It would like to be able to hop. It would like a family. It would like some eyes. I like climbing the tree.

Mateo: It would like a box of leaves.

Leila: It would like some shoes and a jacket and it would stomp down the street in its shoes! It would like some flowers!

Ivy: It would like some birds and butterflies.

Amber: It would like some decorations ... real flowers, all over it!

Encountering Trees: Discussion

These traces suggest children at the Centre see the trees as sentient beings, as companions, and as having projects and desires of their own. As Hall (2013) points out, 20th century Western scholars would have dismissed these ways of thinking as childish, unscientific, and as representing “primitive” ways of knowing. Contemporary plant ontologies, however, are increasingly depicting plants in terms of their communicative and cognitive abilities (Hall, 2013). These ontologies, often informed by indigenous thinking, frequently position plants as other-than-human “persons” with whom humans have a kin relationship (Hall, 2013; Rose, 2011). In these conceptions, plants are active participants in their environment and are seen as “sensory organisms with a detailed, and active, awareness of their environments” (Hall, 2013, p. 391), where, for example, forests think (Kohn, 2013) and mushrooms are social (Tsing, 2014). This thinking puts humans into a very close relationship with plants. Rose (2011) explains that for the Australian Aboriginal people she worked with, vulnerable and dying plants (and animals) were experienced as “vulnerable and dying members of the family” (p. 4). This is very different from typical Western thinking, which frequently overlooks plants altogether. Wandersee and Schussler (1999) describe this failure to notice plants as “plant blindness” which is characterised by:

- a) the inability to see or notice the plants in one's environment; (b) the inability to recognize the importance of plants in the biosphere and in human affairs; (c) the inability to appreciate the aesthetic and unique biological features of the life forms that belong to the Plant Kingdom; and (d) the misguided anthropocentric ranking of plants as inferior to animals and thus, as unworthy of consideration. (Wandersee & Schussler, 1999, p. 84)

The children at the Centre, however, were not plant blind, yet it seems that in a few short years they will be. Could it be that dismissing, ignoring or redirecting children’s enchanted animism diminishes their ability to see plants? These children’s enchanted animation of trees is an act of togetherness that allows them to think about trees from the trees’ perspective. It helps them to listen to the “voices” and “language” of trees—their leaves, roots, bark, and entire lifeways—that both trees and children are part of. It brings the children into relationship with trees and the possibility of recognising their interconnectedness, inseparability, and the ways that each co-constitutes the other.

Encountering Rocks



Figure 38 **Encountering Rocks**



Figure 39 **Encountering Rocks**

My time at the Centre saw children repeatedly attracted to a variety of rocks and stones brought to the site as a part of the landscaping. Some of these rocks were almost two metres

in diameter; some were pea-sized pebbles. Rocks seemed to spontaneously attract—enchant—children, sometimes in groups, but often only one child was involved. Repetition was a feature of the encounters I noticed: children *repeatedly* climbed over, onto, jumped off, or placed things on particular rocks. They repeatedly collected or rearranged particular stones. It was as if these rocks were speaking to the children in a language that I could not hear. These rock-child events were difficult to document, but I have selected a few to share here:

Rock Trace 1

Niah repeatedly jumps off the “rock cave’s”³ roof. I count her doing this, on her own, at least nine times. Sarah climbs up the rock and watches Niah. She does not jump but climbs back down, slowly and deliberately on her hands and knees. [Figure 38]

Rock Trace 2

Ivy walks across a group of rocks which form a boundary for the sandpit. Backwards and forwards she goes, seemingly oblivious to all that is going on around her. It looks like it is hard for her, but she persists with her rocky encounters for around ten minutes.

Rock Trace 3

Lylah collects an array of autumn-coloured leaves. She sorts them into three piles, red, orange and yellow. She then carefully arranges them around the edge of a large boulder, saying,

“I am decorating the rock. It likes that.” [Figure 39]

Rock Trace 4

The vegetable garden is being dug over for a new planting. As they dig the soil, Amber and Eloise find small smooth stones among the dirt which they collect and line up along the edge of the garden.

“What are you doing?” I ask.

“We are finding stones and lining them up.”

³ The “rock cave” is a slab of rock supported by two rocks. Its roof is about a metre off the ground. The rock cave is a popular “hang out” for the children who snuggle into the one-child-sized cavity underneath, or use the roof as a platform to sit on, or leap off.

Encountering Rocks: Discussion

As an onlooker, it was tempting at first to see these rocky encounters as purposeless. I found myself resisting the urge to think climbing or walking repeatedly on a rock was pointless. Then, I saw the rocks in terms of what they afforded children—what they could do with rocks. But over time, I began to see children's repeated and deliberate encounters with the rocks differently. I came to see that for the children, rocks were not “dumb brute” nor were they merely a backdrop for their actions. Instead, rocks were something with which children could be in an intimate relationship, something to get to know - their affordances, their touch, their qualities, their ability to act back. In exploring the rocks and stones in the outdoor environment, children were exploring the rocks' endless variability in response to light, moisture, position, and so on; they were coming to know “rockness” or “stoniness”. As Ingold (2007b) points out, rocks' properties are not determined either by the rock or the observer but rather are the result of their co-implicated histories:

Stoniness, then, is not in the stone's “nature”, in its materiality. Nor is it merely in the mind of the observer or practitioner. Rather, it emerges through the stone's involvement in its total surroundings—including you, the observer—and from the manifold ways in which it is engaged in the currents of the lifeworld. The properties of materials, in short, are not attributes but histories. (Ingold, 2007b, p. 15)

Ecophilosopher Val Plumwood (2007), who herself built a house made of found stones, writes that Western (adult) culture relegates rock to inert, anonymous and purely utilitarian roles; to honour or attribute the vitality of stones and rocks is unthinkable. But as Plumwood suggests, other cultures place rocks in a much more important position. For example, she quotes American Indian philosopher, Vine Deloria who says the universe is experienced as:

... alive and not as dead or inert. Thus Indians knew that stones were the most perfect beings because they were self-contained entities that had resolved their social relationships and possessed great knowledge about how every other entity should live. (Deloria, as cited in Plumwood, 2007, p. 21)

Plumwood (2007) goes on to suggest:

One place to start expanding our sensitivity to stone is with the sort of radical openness to Other we tend to associate with the unreality of magic, together with the naivety and primitiveness of childhood story, where stones speak and give advice. That we confine this wonder to fairy stories

speaks volumes about the instrumental reductionism we have normalised as adult life. (p. 22)

Looking at children's encounters with stones only in terms of passive and inert overlooks understandings around connectedness and responsibility. Rock is, after all, central to planetary and interplanetary processes. There is much that rocks can tell us; "... stones can speak of the 'big themes', of life and weather, time and transience" (Plumwood, 2007, p. 24). Enchanted animism opens a space for getting to know rocks as fellow Earthly travellers.

Encountering Clouds



Figure 40 **Encountering Clouds**

Clouds were another source of the children's attentiveness. During the year I was there, the Centre engaged a theatre artist who worked each week with the children around a story about a child who lived in the clouds but was blown to Earth in a storm. This story sensitised children to clouds and there were many occasions where children moved with—became with—clouds. Sometimes the clouds were imagined; sometimes they responded to clouds they could see, but as the following traces show, enchanted animism abounded.

Cloud Trace 1

*The children and I are sharing afternoon tea at a table in the outdoor area.
[Figure 40]*

Luca: Look! That cloud is moving!
Me: Where could it be moving to?
Sarah: To be with its friends.
Pascoe: Maybe they go to the other clouds to get filled up with rain. There's like a pipe in the sky where they go to get filled up
Xavier: If they get really close it might rain on [the Centre].
Milly: They are going home to sleep.
Me: Where is their home?
Milly: In the world ... in Australia.
Luca: It's going over to that house (pointing).
Rosie: They've gone home. They will come back when they have had a sleep.
Sarah: The birds are the clouds' friends.
Rosie: And other clouds.
Luca: The birds draw the clouds.
Pascoe: The clouds can't see us when we are under the roof.

Cloud Trace 2

The children are splashing in a newly-formed puddle. One says, "there's plants in the puddle!" Drew looks dubious and pauses to investigate. "Yes! I can see the trees and clouds in there!" He then notices his own reflection and adds "And me!" He looks around and exclaims triumphantly, "We're all in the puddle!"

Cloud Trace 3

It is a hot day. Teachers give children pots of water and encourage them to paint on the paving around the Centre. "That cloud is going away," says Sarah in response to the quickly evaporating mark she has made.

Cloud Trace 4

The theatre artist asks the children to imagine themselves being, or being with, clouds. The children immediately begin swirling, drifting, heaving, churning and wafting with one another, seemingly not as separate objects confined to the sky, but moving through the sky, forests, sea, and buildings. These child-clouds move with their families and friends as part of the Earth, continually transforming. Few children's cloudy representations are words, but when they are, they have a poetic quality which reminds me

of Pulitzer-prize-winning poet Mark Strand's epic poem, *89 Clouds* (Mark & Strand, 1999):

Clouds don't have bones (Sarah)

Clouds are decorations for the sky (Spencer)

Clouds smell like rain (Milly)

Clouds like playing with the wind (Rosie)

The sun keeps the clouds warm (Pascoe)

Encountering Clouds: Discussion

As far as I am aware, these young children had never been exposed to Strand's poem and their poignant and playful words are masterful metaphors, not only for human experience, but for the Earth itself. Clouds are an omnipresent part of the human experience and even though they cover two thirds of the Earth's surface, understanding them is not easy. Children's enchanted animism opens a door to knowing clouds, not as discrete objects in the sky, but as part of the interconnected and ever-transforming Earthly processes (Ingold, 2007a). Clouds' ambiguity and ongoing transformability captured children's attention and set forth their innate ability to speculate and wonder. Clouds are ephemeral and are constantly changing in a way that is observable to children. They thus make visible what would be otherwise invisible, providing an endlessly-mutable journal of the Earth's weather and climate. In times of unprecedented changes in weather, becoming with clouds is critical.

Enchanted Animism: Becoming with a Damaged World

Haraway (2016, p. 101) reminds us that "[i]t matters which stories tell stories, which concepts think concepts." And, as she also writes, the stories of Western philosophy, economics and science are not offering a way out of the world's precarious situation: "None of the parties in crisis can call on Providence, History, Science, Progress, or any other god trick outside the common fray to resolve the troubles" (Haraway, 2016, p. 40). Thus, if we are to survive the current assault on the Earth's processes, we need to rapidly find ways to think differently, very differently. The animate/inanimate story has been embraced as "truth" by much of the modern Western world but it is a story which blinds humans to processes that work with or against the Earth:

the image of dead or thoroughly instrumentalized matter feeds human hubris and our earth-destroying fantasies of conquest and consumption. It does so by preventing us from detecting ... a fuller range of non-human powers ... which can aid or destroy, enrich or disable, ennoble or degrade us. (Bennett, 2010, p. xi)

Re-animating the world offers another story to tell stories with; another concept to think with. Enchanted animism, the vitality that children playfully and seriously attribute to nonhumans, therefore deserves not only to be listened to, but to be nurtured and cultivated as it puts children into a relationship with their surroundings, enabling them to be more attentive to nonhumans. Young children's whimsical and lively attentiveness to the material world opens a space for them to make kin with their biotic and abiotic companion species and to notice that, as Rose (2011, p. 11) puts it, "humanity is an interspecies collaborative project; we become who we are in the company of other beings; we are not alone." Seeing trees, rocks and clouds as companion species, as persons, as kin, allows young children to inhabit a multispecies landscape in which humans are not the only ones with a point of view. Furthermore, enchanted animism keeps children in touch with Earth's infinite interconnectedness, its intra-activity⁴, where everything is in an ongoing co-emergent relationship.

Maintaining children's enchanted animism, though, needs adults to take it seriously and deliberately cultivate it. Nurturing young children's sensitivity to the mysterious, intra-active and multispecies world in which they live requires adults to encourage children to wonder about the Earth: "to give greater expression to the sense of play ... [and] hone sensory receptivity to the marvelous specificity of things" (Bennett, 2001, p. 4). Teachers are ideally situated to hone children's innate attentiveness to the "wonder of minor experiences" (Bennett, 2001, p. 3). Instead of intentionally dismissing, suppressing or reshaping children's enchanted animism, teachers can meet it with curiosity and enthusiasm: What does a tree feel when it is climbed? What can a rock tell? Where do clouds go on sunny days? The possibilities are endless. Working with children in this way requires a shift from learning *about* things such as clouds rocks and trees, to learning, thinking and becoming *with* them. Furthermore, teachers are in an ideal position to document and share children's stories (Fleet et al., 2017; Giamminuti, 2013), and these stories have the potential to engage others in thinking with the nonhuman world.

Staying with the Trouble

For the children in this study, enchanted animism provided a context for listening to the world which enabled them to connect to and be with the Earth in a way that more "rational" ways would not. Enchanted animism, however, is not just for children, it is a strategy for all of us to live in the present on a planet facing unprecedented challenges. As Haraway (2016)

⁴ Barad (2007) introduces the term "intra-active," distinguishing it from the more commonly used "interactive" which is predicated on an assumption of separate bodies which take turns to affect one another. Intra-activity, in contrast, draws from physics and understands entities (human and nonhuman) as not having distinct boundaries but as being in entangled and co-emerging relationships, each affecting the other.

notes, both hope and despair are understandable yet unhelpful responses in times of trouble: hoping technology or god will somehow drag us out of the mire is simply “comic faith” (p. 3), while despair is immobilising. What is needed are ways to reconnect and reimagine in the present, to “stay with the trouble.” Enchanted animism reminds us that the world is full of wonders and that it is good to be alive. It thus offers a possibility of moving from merely aspiring to ethical principles to actually practising them. While many care about the Earth’s wellbeing, it is hard to know what to do; indeed, “without enchantment, you might lack the impetus to act against the very injustices that you critically discern” (Bennett, 2001, p. 128). An enchanted and lively world is one in which astonishment is part of everyday experience; a lively world which tells us what we care about, what is happening and what can be done.

To Conclude

I now want to circle back to Carson McCullers’ (1951/2005) short story, *A Cloud, A Rock, A Tree*. This well-known story can be read in a number of ways; one is to read it as suggesting that to learn to love, one must first learn to love nonhumans. In times of unprecedented changes to the Earth, loving only humans is what brought us to the trouble in the first place. On the other hand, learning to love the Earth and all of its lively interconnectedness, both human and nonhuman, offers a way to “stay with the trouble” (Haraway, 2016). Building relationships with—learning to love—clouds, rocks and trees (and other things), is therefore imperative. Val Plumwood makes this imperative ominously clear:

If our species does not survive the ecological crisis, it will probably be due to our failure ... to work out new ways to live with the earth, to rework ourselves ... We will go onwards in a different mode of humanity, or not at all. (Plumwood, 2007, p. 1)

Ignoring, perhaps even dismissing, children’s enchanted animism suppresses a wellspring of possibilities for becoming with the Earth and has proven to be a perilous path. It is time to let go of an image of the world as one in which humans are separate from and superior to everything else. It is time to embrace the possibilities that emerge from listening to children’s enchanted animism with the awareness and responsiveness that a planetary crisis demands.

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EPILOGUE: POSSIBILITIES AND POTENTIALITIES ... SO FAR

Always, always, the last chapter slips out of my hands. One gets bored. One whips oneself up. I still hope for a fresh wind and don't very much bother, except that I miss the fun that was so tremendously lively all October, November, and December.

Virginia Woolf (1925-30/1980, p. 121),
on finishing the last chapter of *Orlando*

I would never dare put myself in Virginia Woolf's league, but I am very much reassured to know that even great writers have difficulties with last chapters. I too await a fresh wind. One advantage I have, however, which may have eluded Virginia Woolf, is that this spinifex-thesis is a story of entangled becomings, an exploring rhizome with no ending, or, as Deleuze and Guattari (1987) say, "It has neither beginning nor end, but always a middle (*milieu*) from which it grows and which it overspills" (p. 21). Thus, I am buoyed by the knowledge that I do not need to wrap this adventure drama up once and for all as there is more to come: a paper on early childhood centres as places of welcome is partly written, as is another which explores children's relationship with a single tree. A paper inspired by Lenz Taguchi's (2010, pp. 160-179) "ethics of immanence and potentialities" yearns within me. I am very much encouraged, therefore, that scholars like Elizabeth St. Pierre are still drawing on their PhDs some 20 years down the track! Spinifex-thesis will remain on the move. Regardless, I cannot just abandon you here; for one thing, I am bound by my institution to include "a concluding section that synthesises the material as a whole" (Macquarie University, 2017, Schedule 1), but more importantly, it would be unsatisfying to leave you, dear reader, having come all this way with me, without some kind of pulling together of the project's threads, *so far*¹.

So, let me return to my overarching research questions:

- *How do children encounter the outdoor environment at their early learning setting?*
- *What research strategies are effective in working outdoors with young children as co-researchers in an early childhood educational setting?*

¹ "So far" is amongst a number of "oddkin" terms that Donna Haraway (2013) holds together with the acronym "SF": "science fiction, speculative fabulation, string figures, speculative feminism, science fact, *so far* [added emphasis]" (Haraway, 2016, p. 2). "SF", Haraway writes, "must also mean 'so far', opening up what is yet-to-come in protean entangled times' pasts, presents, and futures" (Haraway, 2013, para 13).

These are entirely humanist questions, grounded in my frustration that young children's opinions and outdoor spaces in educational settings were not taken seriously. When I devised these questions, I had never heard of posthumanism or new materialisms. Although I thought I was "well read", all of my reading at that point had fallen largely into what might be considered sociocultural, constructivist and poststructuralist paradigms. In conceiving my research questions, I rather naively hoped they might lead me to some possibly grand, previously unknown findings. I anticipated I would be able to claim my studies with children led me to believe that particular things were important to them in the outdoor spaces they inhabited, and that interested parties might be able to draw parallels between my findings and other settings. Similarly, I thought I would be able to say particular strategies were the ones to use when seeking young children's perspectives. Perhaps I can make some small claims to these ends, but there is a much larger story which has emerged from my small, situated studies. By immersing myself in these early learning spaces with a bricoleur's preparedness to use whatever is at hand, along with an openness to being affected, at a personal level I have learned to be much more attuned to the world and my place in it. The multiperspectival and multimodal strategies of the Mosaic approach (Clark, 2017; Clark & Moss, 2001) and pedagogical documentation (Davies, 2014a; Fleet et al., 2006, 2012, 2017; Giamminuti, 2013; Giudici et al., 2001; Pacini-Ketchabaw et al., 2015) opened me up to listening to children, who opened me up to listening to the nonhuman world, who opened me up to being led astray. Some may say this was a "bad thing" as they would have wanted me to stay on a predetermined path, but by now I hope you agree that it was not a mistake to wander from my proposed course. In any case, I did not leave the path entirely; in an entangled world there is neither one path or another, nor paths separately intertwined. Each is part of the other, thus the linear thesis-by-publication path haunts the path(s) this thesis takes and has taken.

Several key thinkers have pushed me along the way: Deleuze and Guattari (1987) and their notions of "becoming," "rhizomes" and "assemblage", Karen Barad's (2007) "agential realism"; Jane Bennett's (2010) "vital materialism" and Hillevi Lenz Taguchi's (2011) "relational materialism", not to mention Donna Haraway, who has pushed me every which way. I have also been pushed all the while by my learned PhD supervisors who, along with the whole Macquarie University doctoral process, very much supported my forays in new directions. If they hadn't, I may well have been stuck on paths previously trodden. But I have been pushed furthest by the children. It was they who showed me how to think *with*, not *about*, the nonhuman world. It was they who showed me that they, and I, are *of* the world, not *in* it (Barad, 2007). Hence, this spinifex-thesis has mapped my entangled *becoming with* humanist and posthumanist theories. I am careful not to say I have moved *from* one theory to

the other, remembering, as I note in the prelude, that Deleuze and Guattari (1987) say, “[a] becoming is neither one nor two, nor the relation of the two; it is the in-between, the border or line of flight or descent running perpendicular to both” (p. 293). Humanist and posthumanist theories, along with many others, are always enfolded and enfolding (Barad, 2007). So although I set out to privilege children’s perspectives, an entirely humanist intention, in doing so they cultivated my “arts of noticing” (Tsing, 2015) and “arts of attentiveness” (van Dooren et al., 2016) and sensitised me to another way of being in and of the world. I learned that focussing primarily on the human blinds me to my entangled becoming with the nonhuman world.

This has had far-reaching implications for me personally; I am now much more open to listening to the nonhuman world in which I am immersed, though I am not suggesting this is easy. Many years of immersion in socioculturalism and social constructivism mean I still need to make a conscious effort to be alert to the ways that other humans and I are constituted by the material world. The theories of Barad (2007) and Bennett (2001, 2010) have enabled me to see the environment as vibrant and alive; an active participant. The “third educator” (Gandini, 2012a) is now more than a metaphor.

Which brings us back to my research questions. As I said in Act I, as I began to wander from my proposed path, these questions became “possibilities” rather than “cages” for my study; nonetheless, they were part of the assemblage that provoked my wanderings. So I didn’t abandon them entirely. I begin with my first question:

- *How do children encounter the outdoor environment at their early learning setting?*

In devising this question at the study’s outset, as I mentioned in Publication 1 (Merewether, 2015a) of this thesis, I was motivated by a sense that children were not getting outside enough and were therefore missing out on valuable learning experiences. I was also motivated by my observations as a teacher that children often wanted to be outdoors but adults ignored this desire, perhaps believing that adults know what is “best” for children. Thus I set out to find out what children valued outdoors. I imagined that this might be useful for those interested in designing outdoor learning programs and spaces. Indeed, at my first site, using the thematic analysis that is so often taken for granted in conventional humanist qualitative research, I found children valued places to pretend, move, observe and be social (Merewether, 2015b). The educators at this site were able to take these findings into account when they subsequently redesigned its outdoor space, so this could be said to be a useful finding. The papers I have written have been downloaded many times and have even been cited by others,

so I might dare to assume these findings have been useful beyond this setting. Yet I did not repeat the thematic analytic process at the second site; by then, as I have explained, a nagging uneasiness about this approach led me to seek other ways to look at my research. Nonetheless, I suspect had I deployed thematic analysis again, I would have reached a similar conclusion for the second site too.

But as you have seen, I have taken another path and different stories have emerged: *murmurative diffraction* (Merewether, 2018c) and *enchanted animism* (Merewether, 2018b) among them. Remembering that Haraway (2016, p. 12) reminds us, “it matters what stories we tell to tell other stories with”, a story that has come to light in my research is one which tells us that young children are already in touch with what theoretical physicists tell us, that is:

[W]e are ... an integral part of the world that we perceive; we are not external observers. We are situated within it. Our view is from within its midst. We are made up of the same atoms and the same light signals as are exchanged between the pine trees in the mountains and the stars in the galaxies. As our knowledge has grown, we have learned that our being is only part of the universe and a small part at that. (Rovelli, 2016, pp. 66-67)

We are not outside observers of the world. Neither are we simply located at particular places in the world; rather we are part of the world in its ongoing intra-activity. (Barad, 2007, p. 184)

My work with young children in this research has led me to believe that they encounter the outdoor environment as *part* of it, not as outside observers. Children in my study were acutely aware of the aliveness of the world—human and nonhuman, biotic and abiotic. As I write in the final publication in this thesis (Merewether, 2018b), children’s *enchanted animism* of their surroundings is a story that deserves to be cultivated, not shut down, for it is a story that has the potential to *open humans to their worldly embeddedness*. I will discuss this more a moment, but for now I want to return to my second research question:

- *What research strategies are effective in working outdoors with young children as co-researchers in an early childhood educational setting?*

The framing of this question reveals my “conventional humanist qualitative” (St. Pierre, 2011, p. 611) methodological beginnings. As a novice researcher in academia, informed by a range of qualitative research methodological literature (for example, Denzin & Lincoln, 2011b; Glaser & Strauss, 1967; Johnson & Christensen, 2013; Kincheloe & Berry, 2004; Merriam, 1998; Stake, 1995; Yin, 2009), I followed well-documented protocols for formulating questions to guide my study. But as I note in the Prelude of this thesis, for two

decades my work as a teacher~researcher has been influenced by the educational project of Reggio Emilia. Central to the Reggio approach is a “culture of research” (Rinaldi, 2006, p. 101). In using the word “research,” educators from Reggio Emilia are not referring to research of the “objective” type that is confined to universities and conforms with established methodologies. Rather, they are referring to everyday shared inquiry which involves children and adults working together in educational settings:

Shared research between adults and children is a priority practice of everyday life, an existential and ethical approach necessary for interpreting the complexity of the world, of phenomena, of systems of co-existence, and is a powerful instrument of renewal in education. (Infant-toddler Centres and Preschools Istituzione of the Municipality of Reggio Emilia [ICPIMRE], 2010, pp. 11-12)

This particular form of everyday inquiry, which enables both children’s and adults’ participation, does not begin with grand questions. Instead, it starts with children’s questions such as, “‘Why are we born?’ and ‘Why do we die?’” (Rinaldi, 2012, p. 245). Rinaldi proposes research is defined as:

... an attitude and an approach in everyday living—not only in schools but also outside of them—as a way of thinking for ourselves and thinking jointly with others, a way of relating with other people, with the world around us, and with life. (Rinaldi, 2012, p. 245)

This research, which is made visible in Reggio Emilia through the innovative strategies of pedagogical documentation, allows children and adults to collectively discover and create new knowledge and views of reality in everyday settings. Yet when I embarked on my thesis adventure I was concerned this approach would not “measure up” in the eyes of academia; it does not, for example, begin with “a problem statement which essentially lays out the logic of the study, [and] can be compared to a funnel shape—broad at the top and narrow at the bottom” (Merriam & Tisdell, 2016, p. 76). Pedagogical documentation, in contrast, is grounded in what Davies (2011) describes as “open listening”; listening which does not set out to find a solution to a problem, but instead is “open to the ongoing creative evolution of life” (p. 131). In negotiating my way among these different approaches to research, I found the Mosaic approach (Clark, 2017; Clark & Moss, 2001, 2011) allowed me to move between conventional qualitative approaches and the more rhizomic approaches of pedagogical documentation. The Mosaic approach, then, worked as “a middle (milieu) from which [the thesis] grows and which it overflows” (Deleuze & Guattari, 1987, p. 21). From this middle, borrowing Malaguzzi’s (2001) words, I could move beyond “the wall of the so-called finite ... the wall of habit, of custom, of

the normal, of the non-surprise, of assumed security” (p. 6), with confidence to experiment with pedagogical documentation as a way of working in an “academic” context. Moving beyond walls was acknowledged in the name of first international exhibition of work from the educational project of Reggio Emilia “L’occhio se salta il muro”, which translated means “when the eye jumps over the wall” (Malaguzzi, 2001, p. 6). It seems to me there is much in common with eyes jumping over walls and Deleuze-Guattarian notions such as nomadic and rhizomic thinking, lines of flight and assemblage (Deleuze & Guattari, 1987). So although I began my research within the confines of humanist research, at the second site my approach was more rhizomic and allowed my eye to jump over the wall and to follow “lines of flight” (Deleuze & Guattari, 1987). It was an approach to research (and pedagogy) that was always experimental, always moving. It was informed by the work of Deleuze and Guattari, Barad, Bennett, Donna Haraway, and Lenz Taguchi, among many others. Susanne Gannon suggests, “A posthuman perspective requires me to keep the data (and myself) moving rather than fixing meaning or pinning down sense” (Gannon, 2016, p. 146). Perhaps, then, my approach could be called posthuman; but I am not sure. I am leery of such a label for fear that it might enclose the very movement and experimentation I am arguing for. But if posthumanist research involves rhizomic strategies, listens to nonhuman and human worlds, and challenges assumptions of human exceptionalism, then the research strategies I have used may well be called “posthuman”. But for now, I will leave that for others to decide.

So...

Now, as promised, I return to stories that have potential to *open humans to their worldly embeddedness*. In the final paper in this thesis (Merewether, 2018b), I argue that going with children’s enchanted animism rather than resisting it allows other stories to come to light. These are stories for opening humans to their worldly embeddedness. As I have discussed, letting go of the tried-and-tested approach to qualitative research was a jump into the void, but so too was “resisting the force field of child-centredness” (Pacini-Ketchabaw, Taylor, & Blaise, 2016, p. 150) that is so ubiquitous in early childhood education. Decentring the human requires decentring the child which flies in the face of deeply embedded sociocultural understandings I held dear for so long. Hence decentring the child needed my conscious effort to be *of the world*, not just with the child; nonetheless, being with the child has opened me to the possibility of the sociality of nonhumans.

All along, however, this has been in plain view. My long-standing engagement with the Reggio Approach should have alerted me to children’s ability to welcome nonhumans. Although the Reggio Approach is frequently characterised as being underpinned by sociocultural (Edwards, 2003; New, 2007), and social-constructivist (Edwards et al., 2012)

theories, nonhuman perspectives often feature in the work that is shared by educators from Reggio Emilia. Could it be that it is a materialdiscursive approach to education? As I have discussed in Publication 2 of this thesis (Merewether, 2017a), in Reggio Emilia the environment, materials and places are conceived as active pedagogues (Ceppi & Zini, 1998; Vecchi, Filippini, & Giudici, 2008). This view of the material brings forth work with children that prioritises listening to nonhuman perspectives, for example: “To Make a Portrait of a Lion” (Filippini & Vecchi, 1996, pp. 54-60), “The City in the Rain” (Filippini & Vecchi, 1996, pp. 80-87), “The Amusement Park for Birds” (Filippini & Vecchi, 1996, pp. 130-141), “The Black Rubber Column” (Mennino, 2009), “Stories of Air” (Vecchi & Filippini, 2009). These, and many other projects from Reggio Emilia, reveal what I have called “[e]nchanted animism, the vitality that children playfully and seriously attribute to nonhumans” (Merewether, 2018b, p. 14). I have argued in this thesis that enchanted animism is a story of children’s embeddedness in the world; it is a story of entangled becoming(s) with the world. It is a story we ignore at our peril, as St. Pierre et al. (2016) point out:

If humans have no separate existence, if we are completely entangled with the world, if we are no longer masters of the universe, then we are completely responsible to and for the world and all our relations of becoming with it. We cannot ignore matter (e.g., our planet) as if it is inert, passive, and dead. It is completely alive, becoming with us, whether we destroy or protect it. (p. 3)

The challenge is not to abandon the human but to be open to the ways that the human is constituted, not just with other humans but also with nonhumans, including the abiotic. When we accept the world is an entangled, intra-active assemblage and that humans are not omnipotent, we are forced to reassess notions of human dominance of and separation from the rest of the world. The young children in my study seemed to know this, but as we grow older, in Western cultures at least, many of us lose sight of the agency of the nonhuman world.

The imperative for researchers and teachers in educational settings, then, is to ensure children’s enchanted animism is kept at the forefront; not ignored, shuffled into a dark corner or snuffed out entirely. This needs us to plan for and be alert not only to the intra-actions that may occur, but also to children’s sensitivity to the materiality around them. As adults, we must be prepared to move from our plans, keeping uppermost in our minds that our teaching~researching is always being affected and is affected by the materiality that surrounds us. We must remember, as Ingold (2007b) reminds us that “human beings do not exist on the ‘other side’ of materiality but swim in an ocean of materials” (p. 7). Thus, in our teaching~researching~learning with young children it is unwise to perpetuate ideas of human exceptionalism, dominance and separateness. Instead, as Malone (2016b, p. 53) states, these

new ways of working offer “spaces for interrogating further child/body/species/place relations as assemblages, associations and relationships that could be useful when considering the complexity of core concepts in sustainability education like interdependency and multiple ecologies.” Perhaps then, like our colleagues in Reggio Emilia, we might embrace young children’s perspectives and welcome them as beginnings from which we too can return to an openness to the materiality around us.

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