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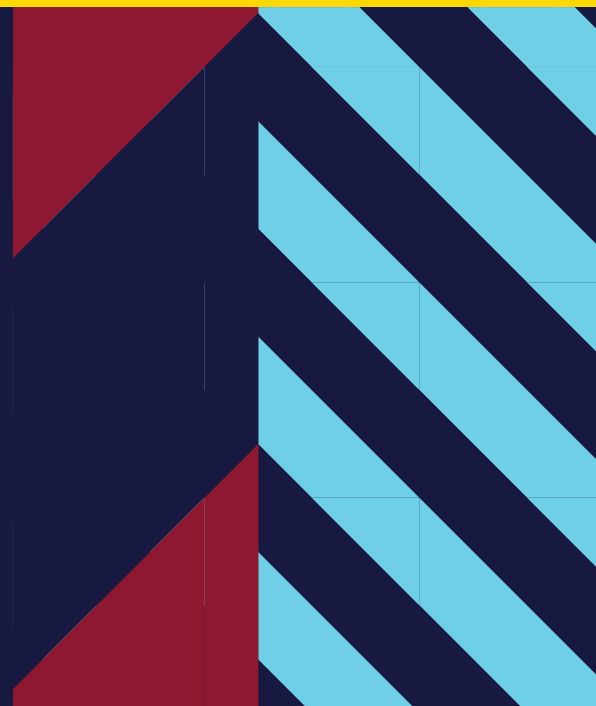
Aesthetic Explorations with recycled materials

Concepts, ideas and phenomena that matter

Nina Odegard

OsloMet Avhandling 2021 nr 1

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Nina Odegard

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SUMMARY

This thesis sets the concept of *Aesthetic Exploration* in motion in relation to empirical data by exploring young children's encounters with recycled materials in a Blackbox at a Remida. Through four published articles that focus on different parts of the research: methodologically, empirically, and theoretically, I explore how theorising recycling materials and Aesthetic Exploration contribute to the field of early childhood. I make use of posthumanist and new-materialist theories that underline the significance of non-human agency and materiality (Barad, 2007; Bennett, 2010; Hultman, 2011a; Lenz Taguchi, 2010), to extend understandings of what matters in early childhood education. With the use of these theories, different perspectives on matter and materiality have emerged through conceptualising and materialising different Aesthetic Explorations in the encounter in-between recycled materials, young children, space (the Blackbox), and tools. Conceptualising Aesthetic Exploration through this thesis is an on-going process that has no end; instead, it continues to take shape and transform as readers of this thesis encounter it. The thesis conveys some form of *threshold*, metaphorically, on its way in or out, formed by a need to a temporary standstill. From the in-between encounters and explorations, I have formulated the following insights;

Explorations with recycled materials, digital and analogue tools in a Blackbox co-created in-between spaces where aesthetic, rhythmic forces were sensed. These forces contributed to extending and opening out young children's play, learning, narrating, and imaginative explorations.

Vital affective forces arose in-between tools and recycled materials and activated agency and phenomena such as shadows, light, and colours, which became young children's companions and broadened and deepened their play and learning in unanticipated ways.

Aesthetic Exploration, as both concept and phenomenon, is complex, challenging, creative and mobilising. It makes a valuable contribution to thinking and research, as well as to practitioners' and young children's everyday encounters in the field of early childhood education by inviting a curiosity with what else gets produced through children's engagements with space and matter.

To be an aesthetic explorer moves the researcher in time and space where data is understood as much more than the empirical matter collected in the research space.

SAMMENDRAG (NORWEGIAN SUMMARY)

I denne avhandlingen settes begrepet *estetiske utforskning* i bevegelse gjennom møtet med empirisk materiale hentet fra barnehagebarns møte med gjenbruksmaterialer i en Remidas Blackbox. Fire publiserte artikler utforsker ulike deler av arbeidet, metodisk, analytisk og empirisk, og teoretiserer hvordan begrepene gjenbruksmaterialer og estetisk utforskning kan bidra til barnehagefeltet. Gjennom teorier og begreper innenfor det posthumane og nymaterialistiske vitenskapsfilosofiske feltet (Barad, 2007; Bennett, 2010; Hultman, 2011a; Lenz Taguchi, 2010), utforskes betydningen av ikke-menneskelig agentskap og materialitet (what matters) for barnehageutdanning og forskning. Gjennom bruk av disse teoriene, og i møte med barnehagebarn, personalet, rommet (Blackboxen), gjenbruksmaterialene og verktøy trer ulike perspektiver på materialitet og begrepet estetisk utforskning fram. Avhandlingens ide om å konseptualisere estetisk utforskning er i prosess og vil ikke kunne finne en endelig slutt, da begrepet kan formes og transformeres i møte med sine lesere. Her kan man bruke metaforen terskel, på vei inn i eller ut av noe, formet av et behov for å kunne sette et midlertidig punktum, for igjen å kunne gå videre. Fra disse møtene og utforskningene har jeg formulert følgende innsikter:

Å eksperimentere med gjenbruksmaterialer kombinert med digitale og analoge verktøy i en Blackbox samskapte mellomrom der estetiske, rytmiske krefter ble sansbare og bidro til barnahagebarns lek, læring, fortelling, forestillinger og mer.

Gjennom å svare på de vitale kreftene av affekt som oppsto imellom de ulike verktøyene og gjenbruksmaterialenes agentskap, ble fenomener som skygger, lys, lyd og farger barnas samarbeidspartnere. De ulike fenomenene bidro til å utvide og utdype deres lek og læring på overraskende måter.

Begrepet og fenomenet estetisk utforskning er et komplekst, utfordrende, kreativt og mobiliserende begrep som kan gi et verdifullt bidrag til tenkning og forskning i barnehagefeltet, samt til barnehagebarns og personalets hverdagsøyeblikk. I tillegg kan begrepet estetisk utforskning invitere til nysgjerrighet rundt *hva annet* som kan bli produsert gjennom barnas engasjement i sted og materialitet.

Å være en estetisk utforsker flytter forskeren i tid og sted hvor data er forstått som mye mer enn det empiriske materialet samlet inn under selve feltarbeidet.

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APPENDIX

List of original publications:

Article 1:

Odegard, N. and Rossholt, N. (2016). "In-Betweens Spaces". Tales from a Remida. Becoming Earth: A Post Human Turn in Educational Discourse Collapsing Nature/Culture Divides. A. B. Reinertsen. Rotterdam, SensePublishers: 53-63.

URL: <https://link.springer.com/book/10.1007%2F978-94-6300-429-9>

Article 2:

Odegard, N. (2019). Crows. Social, Material and Political Constructs of Arctic Childhoods: An Everyday Life Perspective. P. Rautio and E. Stenvall. Singapore, Springer: 119-137.

DOI: <https://doi.org/10.1007/978-981-13-3161-9>

Article 3:

Odegard, N. (2019). Imagine sustainable futures. Experimental encounters between young children and vibrant recycled matter. Nurturing Nature and the Environment with Young Children: Children, Elders, Earth. J. Kroeger, C. Y. Myers and K. Morgan. London, Routledge: 124-138. DOI: <https://doi.org/10.4324/9780429264672>

Article 4:

Odegard, N. (2019). Making a bricolage: An immanent process of experimentation. Contemporary Issues in Early Childhood 0(0): 1463949119859370.

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Images:

All images are from the research and are taken by the researcher (Figure 1-5, 7-8 and 12-13), except for one (fig.6)

Attachments: Information

NSD Authorisation

Informed consent form

Chapter 1: Introduction



Figure 1: *M for Matter -Matters-Matterings-Materiality-Materialities*¹

This thesis has been written at a time when governments in the global north have persistently applied pressure for very young children to perform within education programmes framed by a desire for normativity. The ‘normative child’ can be measured through mechanisms such as the OECD’s “baby PISA” (OECD, 2019) which reduce the child to a series of knowable developmental milestones. In neoliberal contexts, where markets and new public management govern education, including Early Childhood Education and Care (ECEC), all aspects of childhood are subject to regulation, control and measurement. It is also a time when educational research has been increasingly subjected to forces that seek to control and tame what counts as valid knowledge (Lather, 1993; Sandvik, 2015). In response to these developments in ECEC, a field of scholarship has emerged that directly challenges this idea

¹ More about use of different terms within *matter* and *materiality* at page 44

of the individual, normative child. Instead, it is argued that children can better be understood as actively contributing to the worlds in which they live, and crucially that it is through their entanglements with other humans, non-humans and matter/materials that other ways to conceive of the child are made available (Areljung, 2019; Hultman, 2011a; Hultman & Lenz Taguchi, 2010; Osgood & Scarlet, 2015; Rautio, 2013). This thesis is positioned within this emergent field of scholarship and seeks to work against dominant discourses of the “schoolification” of ECEC and the neoliberal pressure on childhood. Instead, this study contributes to an understanding of a world that is much more complex, contradictory, boundary-blurring, chaotic and ethically confronting (L. Jones, 2013; A. Taylor, Pacini-Ketchabaw, & Blaise, 2012). It is only by putting theories and concepts to work in educational research that the multiple, entangled, dynamic and plural nature of the processes of ECEC can be better understood. Bringing this framework to investigations in ECEC, and specifically to children’s Aesthetic Explorations, generates important new insights.

Over many years I have worked with materials (specifically recycled materials), and I have frequently watched and wondered how some materials (especially those that are natural, repurposed or recycled) appear to present endless possibilities and capture young children’s attention and so contribute to their capacities to narrate, build, play, and learn. This thesis provides an opportunity to closely examine how recycled materials *intra-relate*² with young children and other humans. Putting the concept of Aesthetic Explorations to work on the empirical matter itself, and also through my own practices as a *pedagogista*³ and researcher, extends ideas about the importance of materiality within a specific context (i.e. the Blackbox) and raises important questions about what else it makes possible in ECEC. Despite the specificity of the knowledge generated through this study, and presented in this thesis, it is nevertheless *translatable* to early childhood daily practices more generally.

Conceptualising Aesthetic Explorations, developing theorisations, and devising specific methods has emerged from an engagement with a range of philosophical and theoretical perspectives offered by Barad (2007, 2012a, 2014, 2016), Bennet (2004, 2010), Braidotti (2010, 2013, 2018), Deleuze and Guattari (1994, 2001; 1988/2004, 1994) and Haraway (1988, 2015, 2016b). Furthermore, this study builds upon the work of early childhood scholars that have put posthumanist philosophies to work as a means to extend

² Intra- in front of words, as in intra-activity, is more fully discussed on page 46.

³ Pedagogista is a pedagogical supervisor with a supplementary education in the Reggio Emilia approach. A pedagogista is educated in materials, spaces for children, pedagogical documentation, democratic values, project managing, and other important subjects within a Reggio Emilia approach. I was educated as a pedagogista at the Reggio Emilia Institute in Stockholm, Sweden, in 2005/2006.

ideas about childhood (e.g. Lenz Taguchi; Sandvik; Osgood among many others cited throughout this thesis). This study then is principally framed by feminist theory, posthumanism and new materialism and seeks to make a contribution to early childhood studies.

The thesis is further informed by personal experiences of working as a pedagogista within Reggio inspired early childhood centres (ECCs) and project managing a creative reuse centre (Kreativt gjenbrukssenter i Grenland). Hence, this study is in direct dialogue with the concepts, ideas, tools and pedagogical philosophy provided by Reggio Emilia, which partially accounts for my *situated* knowledges⁴. Therefore, this research is written with a deep respect for, and inspired by, the values in Reggio Emilia pedagogical philosophy. Bringing this in productive partnership with posthumanist approaches allows for ideas about what materialities can produce in ECEC contexts to be fully explored.

1.1 Introducing the study of Aesthetic Explorations

This thesis argues that non-human recycled materials and other materialities can be considered to actively participate in ECEC through intra-active encounters that recognise the agency, prepositions and contributions materialities make to young children's Aesthetic Explorations. The human participants included young children from ECCs, their teachers (barnehagelærere), an artist, an atelierista, and the researcher. Together, we explored the potential of the "Blackbox" to extend children's engagements within materialities in the different Remida centres⁵. The Blackbox is made from thick theatre curtains designed to muffle sound and ensure the space is completely dark. The artist at the Remida centre made this space for young children and pupils as a means for children to explore recycled materials with analogue and digital tools (which is further elaborated in Chapter 5). Analyses of research encounters with/in the Blackbox make a contribution to the educational field by setting the concept Aesthetic Exploration in motion as a means to study various encounters in-between young children, recycled materials and different technological tools.

This thesis contains four published articles which mobilise a set of concepts, methods and analytical tools to offer the reader various accounts of what Aesthetic Explorations produce. It is by focusing on young children's explorations; the in-between spaces that are generated; *events*⁶ of difference; matter as movement; and attention to materialities such as

⁴ The term situated knowledges is discussed on page 63

⁵ For more about Remida see page 66

⁶ For more about event see page 4 or article one

light, colour, shadow, darkness, sound and vibrations, that new ideas about children's relations to the world are produced. Setting the concept Aesthetic Explorations in motion this project contributes to the field of ECEC by taking matter seriously as a means to tell other stories about childhood in the Anthropocene. It is concerned to address how material entangles with bodies, affect, movement, space and sound to produce other ways to encounter the world. According to Barad (2007), phenomenon are always a part of the *apparatus*⁷ where it materialises and then transforms through its materialisation. Barad's agential realism requires the researcher to attune to the "phenomena instead of things" (Juelskjær & Schwennesen, 2012, p. 23) and use it as an objective referent. The apparatus that produces data and things also produces values and meanings. Working with Aesthetic Exploration as both concept and phenomenon, and contemplating the significance of recycled materials (as having agency and connections to time, space, and politics) this study attends to *worldings*⁸ and what they contribute to the field of early childhood.

This study is primarily concerned with the field of Pedagogy within early childhood although it connects with other ECEC subjects such as Arts and Crafts (through its use of aesthetics and materials) and also sustainability and ethics. These multiple concerns thread through all subjects in ECEC since it is inherently transdisciplinary because of the many subjects the field consists of. It is neither possible nor desirable to separate early childhood Pedagogy from Natural Science, History, Social Science, Arts and Crafts, Norwegian or Mathematics since they are interwoven and complementary (for more, see The Curriculum, Kunnskapsdepartementet, 2017). This study recognises this interconnectedness of ECEC but seeks to privilege attention to materiality because it is something that tends to get overlooked in its own right, or is narrowly defined in pedagogical terms as being inert, embedded or in some sense at the service of human learning (Osgood & Mohandas 2020, 2020; Osgood & Andersen, 2019; Osgood & Robinson, 2019a).

1.2 Formulating research questions

Recent research in 93 Norwegian ECCs concluded that children had minimal access to toys and materials (Bjørnstad & Os, 2018). This finding is accordant with other studies that conclude that Norwegian ECCs increasingly have fewer materials, and where there are

⁷ Apparatus: The term is derived from Barad (2008) and can be seen as a system that in itself is an active agent in the production of discursive knowledge.

⁸ Worlding is a concept both used by Barad and Haraway: Barad argues that different intra-activities produce different materializations of the world "it matters to the world how the world comes to matter" (2007, p. 380); meantime Haraway writes that "nature, culture, subjects and objects do not preexist their intertwined worldings" (2016, p.13).

materials, they are less available to children (Lorvik Waterhouse, 2013; Martinsen, 2008). The drive towards the ‘schoolification‘ of ECEC with a more pronounced focus on school-related subjects such as literacy, science and technology may account for the denigration and removal of toys and materials from ECC. For example, several studies show that there is a stronger focus in the syllabus on numeracy, literacy, and science, meantime arts in education have continued to be marginalised from early childhood and primary school curriculum in many countries (Dahlberg, 2016; Dahlberg & Moss, 2005; UN, 2013). As a result, opportunities for children to engage in the world from sensory-driven and aesthetic perspectives have become increasingly limited (Odegard & Penfold, 2019).

This denigration of art and materials in contemporary approaches to ECEC motivated this research into recycled materials, and specifically sought to identify the potential contribution to the field that materials can make. I argue that contemplating the ethical, philosophical, political and sustainable attributes that materials possess holds the potential to enhance the material richness in ECCs in the future (this is further explored in article one).

This research project also addresses the lack of research-based knowledge that currently exists regarding recycled materials and the contribution they make to the ECEC field. Even though I have researched with, and written about, recycled materials previously (Odegard, 2010, 2012) I wanted to explore it further in order to re-consider, expand, analyse and discuss the topic in greater depth. This motivation came from establishing a creative reuse centre: “Kreativt gjenbrukssenter i Grenland” (in Grenland). The centre provided the context from which on-going and multiple encounters between materials and children, as well as my own being and becoming with the materials, could be studied. After finishing a Master’s thesis, I authored “Gjenbruk som kreativ kraft” (*Reuse as a Creative Force*) (Odegard, 2015) which was partly based on the Master’s degree, and partly on experiences from ECCs that I have worked with, the art-based projects at the centre, and the creative reuse centre itself. It was a combination of various, complex, intense and creative intra-actions that I became especially attuned to when young children encountered recycled materials. It was these moments that cumulatively steered the direction of the study towards the concept: Aesthetic Explorations.

Aesthetic Explorations have been consistently foundational to the research focus, yet the main research question has been reformulated several times. While effective research questions are vital, the idea of conceptualising Aesthetic Exploration through this research only emerged halfway into this study and was prompted by questions from members of the ECEC academic community. The main research question provided the starting point for

inquiries in the Remida, and is therefore fundamental to the whole process, it asks:

In what ways can space and matter (i.e. a Blackbox, recycled materials and tools) contribute to young children's Aesthetic Explorations?

In addition to the main research question, a second question works in productive partnership across the four articles:

What insights can be drawn for early year's pedagogy by acknowledging recycled matter as agentic?

The term agentic (agency/agential) is from the Barad (2007) and her term agential realism which is presented in Chapter 3. But it is important to note at this juncture that agentic is considered an effect of a specific intra-action, the space or matter of possibilities, an enactment (Barad, 2012b). In this thesis, agentic is the potential that arises in these intra-actions in-between space, matter (especially recycled materials) and humans.

According to Grue (2019), raising questions is a way of marking out a course and will always have a normative function. Questions do not always have an answer, but the question itself creates opportunities for analyses and discussion. These questions provided the initial motivation for the project and created possibilities to go beyond merely posing the questions to contemplating the concepts that reside within them. Children's encounters with recycled materials were explored to consider how Aesthetic Explorations could generate a range of methods including audio-visual, after-talks and different ways of writing to contemplate these research questions more expansively.

Therefore, the research took on a new direction which was agitated by the realisation that it is more productive to formulate *problems* than seek to ask and answer *questions*, as such I arrived at *thinking-with* the idea/phenomena of Aesthetic Explorations rather than narrowly addressing the specific research questions. Massumi (2015, p. 204) suggests that "a 'good' problem is one that wears its inconclusiveness like a badge of merit". Further, he suggests that a good problem provides a jumping-off point from where a researcher can pursue their way along their own exploratory paths. This new direction opened out possibilities to be more exploratory and speculative in the approaches taken to the empirical fieldwork and each subsequent stage of the research process.

1.3 The main concepts of the thesis

This research rests upon two central concepts: *recycled materials* and *Aesthetic Explorations*. Whilst the two concepts are introduced here, they are returned to throughout the thesis. The literature reviewed in Chapter 2 reveals that there is limited research-based knowledge concerning these two concepts and as such, this research seeks to fill this particular gap by putting the concepts to work to extend ideas about the important contribution they can make to ECEC research and practice.

1.3.1 Recycled materials

A review of the literature (from p. 22) indicates that whilst there are various attempts to categorise recycled materials they appear to actively resist being named or coded (MacRae, 2011; Odegard, 2012). This is partly because such materials are used in different professions and different educational fields. Consequently, I use a deliberately open term that incorporates a wide range of materials and therefore opens up the concept to many potentials. ‘Recycled materials’ includes all materials that can be *reused* and includes materials that are not literally recycled or transformed. In this way, these objects come from industries and factories as “leftovers”, “surplus materials” such as “offcuts” and “faulty goods”. It might also include objects that could be *sorted by the kitchen sink* (Odegard, 2015) but also open-ended materials and waste materials. The term chosen: *recycled materials*, is open to debate, however, it is closely connected to ways in which such materials are referred to by Reggio Emilia practitioners (Gandini & Kaminsky, 2005), and it is also in common use in the Nordic countries. It is also a useful term for children, as stressed in “Reuse as a Creative Force” (Odegard, 2015) they find meaning in the term itself because recycling or reusing means the materials have the potential to be used several times.

1.3.2 The concept Aesthetic Explorations

To engage with a concept that immediately made sense and then discover that despite being widely used its full potential has not been realised, was exciting. Aesthetic Explorations as a concept has frequently been encountered in my ECEC practice, and research in Reggio inspired milieus, but I have never seen it specifically applied, discussed or explained. The lack of definition could lie in the fact that people find it intuitively explained through the two terms; aesthetics and exploration. To think with the concept of Aesthetic Exploration though draws upon different pedagogical and theoretical traditions, and agitates different pedagogical ideas, as stated within the articles that make up this thesis.

The term Aesthetics, its characteristics and meanings vary within different theoretical and pedagogical traditions and from different perspectives. In articles one and two, I write about Aesthetics from the origin of the term, as conceptualised by Baumgarten (1750: *Aesthetica*) as a theory of perception, beauty and art. However, like Knight (2018, p. 142), I still find the concept of Aesthetics hard to “articulate, classify or simplify” and ultimately define. However, what is certain is that as a concept Aesthetics produces affects⁹, sensations and intensities. Aesthetics resists being defined or categorised in simple terms, which makes it even more intriguing and also connects to recycled materials and their resistance to being defined or simplified (MacRae, 2008; Odegard, 2012). Philosophers have tried to explain Aesthetics by tracing it back to historical definitions, for example, essentialism, functionalism, or pluralism. These traditions have slightly different ways of viewing Aesthetics yet like art, Aesthetics presents an enormous philosophical challenge because it forces us to ask difficult questions about knowledge, space, time and reality (Kennick, 1958). Aesthetics then, can be understood as a multifaceted concept: as multi-sensory, beautiful, valuable, but it is also provocative, complex and challenging. Aesthetics is a reaction, a response and an affect, which directs attention to those who write about the concept in ways that acknowledge this.

Art is defined by Merriam-Webster (e.g. "Art", 2019, para 4) as the use of a skill or creative imagination to produce an aesthetic object, which I consider to be a gross simplification. Grosz’s view on art and aesthetics is helpful to get a more nuanced engagement with the concept when she states that the affective drive to create and respond to art:

“comes not from a uniquely human sensibility, nor reason, recognition, intelligence, nor from man’s higher accomplishments, but from something excessive, unpredictable, lowly and animal. Art comes from that excess in the world, in objects and living things, **which enables them to be more than they are**, to incite invention and production. Art is a consequence of that force that put life at risk for the sake of intensification for what can be magnified in the bodies interaction with the earth.”

(Grosz, 2008, p. 81, the bold is made by me).

Grosz’s discussion of what *art* can do resonated with debates around what Aesthetics do, specifically the tensions around how the concept is framed across different traditions and

⁹ The term affect is discussed more fully on p. 43

which in turn have shaped this research. Grosz stresses that the intensities, sensations and affects that are generated through art prompt further art production (Grosz, 2008 as cited in Knight, 2018, p. 142). This also resonates with the way in which Aesthetics work in this study where exploration, experimentation and uncertainty can be incredibly productive.

1.3.3 Play and learning in relation to aesthetics

Aesthetic Explorations are also frequently playful, unscripted and emergent. Pacini-Ketchabaw (2014) writes that play is regarded as something children feel compelled to do, play is the foundation for learning, and has long been depicted as a right of childhood. Play is regarded as a cultural phenomenon, in Norway (as elsewhere) play is widely recognised as an important part of a child's being and becoming. Play is intrinsically aesthetic since it is multi-sensory, and it is shaped by intensities, sensations and affects that are generated through bodily movement and on-going intra-actions. Therefore, play and Aesthetics can be understood as inextricably intertwined.

Within posthuman theories, perspectives in education recognise diversity among children and argue that the meanings within children's play cannot be fixed (Pacini-Ketchabaw, 2014, p. 67). By refusing a human-centred position, it is possible to open up to children's relations to the more-than-human world of animals, materials and ecologies where research can pay greater attention to the performative agency of different matter (Lenz Taguchi, 2014, p. 80/81). Taking such an approach recognises that exploring aesthetically is fundamental to children's engagements with the world and it implicitly acknowledges the performative agency of different matter and what that means for the ways in which early childhood encounters unfold. Other childhood studies researchers have also stressed the importance of non-human matter to the ways that children are enabled to explore and make sense of their worlds. Such research stresses that matter must be understood as both active and performative; and therefore, as ultimately productive in its connections with other matter and discourse. For example, the significance of matter in classrooms (Hultman, 2011a), whilst Macrae (2008b, 2012) attends to what junk materials and discarded dolls make possible in early childhood contexts. These and other examples (see Palmer, 2010b, 2011; Rossholt, 2010, 2012) have been influential in shaping the direction of this research.

Aesthetic Exploration can be conceptualised as 'learning by doing'. This notion can be traced back to American philosopher Dewey (1859–1952) who was captivated by children's interests and what can be learnt from their hands-on experiences. It is interesting that he regarded Aesthetics as a core element of experience, as he stated: "Scientific thought

and imagination are not separate mental operations but are different points within the complexity of human intelligence to work to build our knowing of the universe, as well as the identity and meaning of our lives” (Cooper, 2012, p. 299).

This view of aesthetics has been echoed more recently in the context of Reggio by Vecchi (2010). For Vecchi aesthetics is conceptualised as an attitude of care and heightened attention towards things: there is an imperative to dwell upon what we do with things, and how things work on us. This requires practitioners and researchers to exercise both curiosity and wonder and so make deep investments in taking matter seriously. Vecchi also writes of an aesthetic sense which rests upon the cultivation of intense relationships with things. By encountering matter in this way, we are freed from reducing different materials to pre-existing categories and instead are invited to be open to uncertainty, and to learning from and with intra-actions. These intra-actions elevate matter and underline that attention should be paid to what it makes possible through Aesthetic Explorations.

1.3.4 Explorations and Entanglements

Exploration is widely recognised in ECEC for the possibilities it presents to children (as well as practitioners and researchers) to investigate and to re-examine what at first might appear obvious. It is by turning over and being curious that new discoveries are created and that ventures into unknown territory are created. By bringing Aesthetics (as outlined above) together with the concept (and practice) of exploration, it becomes possible to imagine the active part that matter plays in ECEC. Through Aesthetic Exploration, materials are transformed from being understood as the inert subject of exploration, to being recognised as actively participating in moments when both matter and meaning are transformed.

Such moments are conceptualised as entanglements by Barad, she claims that “entanglements are highly specific configurations and it is very hard work building apparatuses to study them, in part because they change with each intra-action” (2007, p. 74). The entanglements continue to be endlessly produced within posthumanist approaches to research. At each stage of the research: from being in the field, to theorising the data, to reaching new insights about the importance of recycled materials, the practice of Aesthetic Exploration and specifically - the dynamic and unfolding nature of knowledge production - has been felt.

Exploration has been a constant feature that has shaped this research, again drawing on Barad: “the main purposes will be to explore the nature of entanglements and also the nature of this task of exploration” (2007, p. 74). The nature of the task of exploration has involved

the pursuit of building different apparatuses as a means to make sense of what has been unearthed through Aesthetic Explorations with recycled materials. Exploration has been exercised from the crafting of research questions, to an immersion in different literature, to the approaches taken to analyse data, and ultimately to determine how best to convey the messages of this research to the field of early childhood studies more generally. An exploratory approach to ECEC research framed by posthumanist theory then invites a sense of speculative uncertainty and a willingness to think-with and become-with the entanglements that have emerged through the different stages of the study.

1.4 Organisation of thesis

This article-based dissertation comprises four articles and an extended summary (Kappe) which provides the narrative metatext to set out the main concepts and perspectives in the articles. The four articles are woven together through a broader theoretical and methodological framework that illustrates how the empirical matter presented in the articles was collected, and how this contributes to the production knowledge. The thesis deliberately resists following a linear or hierarchical structure, rather it is written in a way that conveys the emergent and speculative nature of the research and attends to the false-starts and stutters that shape posthumanist approaches to research. These moments were generative and pushed the study in unanticipated directions which this Kappe seeks to convey.

Every chapter includes at least one image that has generated affect and intensities, both at the time it was captured and at each subsequent stage of the research process. These images do important work and form a part of a shifting doctoral apparatus which assists with the practice of Aesthetic Exploration. In addition to these images a series of quotes, poems, fabulations and open questions which also serve as waypoints: moments to stop, contemplate and reorient. They respond to recent calls for knowledge production to slow down (Ulmer, 2017). Weaving words and images in this way invites the reader to navigate a way through the thesis and so contemplate the material-discursive agency found in recycled materials through Aesthetic Exploration.

Following this introductory chapter which has outlined the content of the thesis by presenting the purpose, the main concepts and the structure of the Kappe, Chapter 2 then presents historical perspectives and a review of relevant literature concerning recycled materials. Chapter 3 outlines and discusses the theoretical framework by mapping the core influences shaping the study. This is done with special attention to posthumanist and new materialist theories within education, especially in the field of early childhood. Chapter 4

presents an account of the ethical considerations informing the research, including an engagement with posthumanist concerns of immanent ethics and ethico-onto-epistemological approaches to childhood studies. Chapter 5 then moves on to outline the methodology, which includes a critical account of the various methods employed, the tools for analysis and a discussion about validity. Chapter 6 introduces each of the four articles which provides a backdrop for a discussion of the perspectives that were mobilised from thinking-with recycled materials and the concept of Aesthetic Explorations. The chapter then concludes by focusing on the challenges, and productive stammers encountered throughout the study and looks ahead to suggest areas for further research. The thesis ends by outlining the insights and contribution this study makes to the field of early childhood education and care.

Chapter 2: Materials that matter/s/ed and “other ideas”



Figure 2: Matter as movements

A literature review is central to any study because it allows an orientation into a specific field and through extensive searching and wide reading a deep immersion exposes gaps and areas for further investigation. Attending to the various ways in which a given issue has been studied and theorised provides a framework for new research and highlights where new contributions can be made to advance knowledge in the field.

Since this study is concerned to investigate the contribution that recycled materials make to young children’s Aesthetic Explorations, the literature included for review was drawn from several overlapping disciplinary fields but were connected by a concern to identify how recycled materials, in the broadest sense, have been studied and written about. This involved an historical overview of various perspectives that have informed approaches to materials in ECEC. Following this was a broader search of a range of related research that reports on recycled materials and so makes an important contribution to the educational field.

However, searching for specifically relevant literature exposed very little. Despite this awareness of a lack of directly relevant literature, two comprehensive searches were undertaken (at the beginning of the study, in 2015, and again in 2018). The search revealed that the main emphasis in articles concerning recycled materials tends to come from research in Reggio Emilia, or Reggio Emilia inspired environments, or the Arts. Searching with key concepts and terms yielded few results. For example, searching in Oria, EBSCO and Google Scholar with the terms: “reuse”, “recycling” in combination with “early years”, “ECEC”, “preschool” and “kindergarten” generated very few articles. When “Remida materials” was added as a search term, more publications were generated, but few were peer-reviewed. Therefore, the following review relies upon a careful selection of chosen books, research articles and theses based on their direct relevance to this study which was generated through a snowball sampling technique (Newby, 2014) and through specific recommendations from key scholars in the fields of ECEC and posthumanism.

This dearth of directly relevant literature though signals the potential for this study to make an original contribution to an under-researched area of ECEC. Given the lack of extensive literature squarely related to recycled materials and Aesthetic Explorations, it was necessary to identify literature that was relevant, and in some sense connected, and which could, therefore provide a useful foundation to this research and make explicit that which is not currently known.

2.1 Recycled materials and other open-ended materials, in ECEC: historical perspectives

Pedagogically the use of open-ended materials in early childhood education can be traced back several hundred years. The value of materials in ECEC has been articulated by various theorists, pedagogues, and key childhood philosophers. For example, pioneers Fröbel, Montessori and Steiner each studied materials in relation to the bodily and sensorial engagements of young children. The significance of educational, open-ended and natural materials is apparent within the philosophies and pedagogies of each. A similar investment in, and enthusiasm for materials in ECEC is also evident in Reggio Emilia ECCs where pedagogical and philosophical approaches to materials are inspired by these pioneers and their shared and differing approaches, which are outlined below.

In 1840 Fröbel established the first kindergarten for children between 3 and 6 years; in the Nordic countries they were established 50 years later and introduced on a small scale (J.-E. Johansson, 2018). ECC’s are known as barnehage in Norway, and the Nordic ECC’s are

revered internationally for the firm focus placed on (outdoor) play, nature and exploring materials (Bae, 2010; J.-E. Johansson, 2018). Play in Froebellian terms promotes the centrality of educational materials, the importance of being outside in nature, and learning through playful exploration (Pound, 2011). This pedagogical emphasis constructs the child as an autonomous, free-thinking agent able to understand the world holistically, and in fine detail (J.-E. Johansson, 2018). Fröbel promoted the use of abstract materials which were introduced as geometric shapes made from various materials including wool, wood, clay; as well as everyday materials such as paper, straws and peas.

Froebellian pedagogy recommends that materials should be presented as gifts via three distinct ways of building: forms for life, forms of knowledge and forms of beauty (Pound, 2011). For example, wooden cubes were intended to encourage children to build different constructions with geometric forms, and furthermore inspire other children to find joy in building. Observation was central to Froebellian approaches as a means to derive meaning from children's actions and through playful exploration with the objects themselves (Wasmuth, 2020). Froebel was particularly captivated by ways in which children engaged in exploring the properties of the materials and the possibilities the materials offered to build without constructing something concrete.

Another exponent of the central importance of material exploration and experimentation in early childhood throughout the nineteenth century was Montessori. She was the first Italian female medical doctor and began studying Psychiatry with a specific interest in disadvantaged and disabled young children. After teaching in a medical-pedagogical Institute, she went on to become a teacher-educator (Montessori, 2009). These direct experiences with young children informed her philosophical approach, which rested upon a deep appreciation of the value of materials to children's engagements with the world (Isaacs, 2018). Didactic materials were embedded in her pedagogical approach. Montessori materials were aligned to a child's maturity, and learning spaces were arranged to enable children to be self-directed (Gustafsson, 2018). Special materials were developed to stimulate children's senses such as large geometric shapes of different kinds; fabrics; wooden trays of different weights; and wooden geometric shapes (Marshall, 2017). The Montessori method has a strong focus on multi-sensory learning through play with materials. For Montessori, it was important that the child could manage these tasks independently and could develop increasingly sophisticated approaches that allow for variation. Materials intended for the youngest children were designed to prepare them for learning to write, read and count (Lillard, 2013). The significance of materials from the Montessori tradition underlines the

importance that the pedagogy attached to detail, careful planning and structured environments (Penfold, 2019). Aesthetics remains central to Montessori pedagogy where creative and beautiful environments are claimed to support children through experiences in nature, and with light, shadow, fresh air, water, soil and sand (Montessori, 2009). Though Montessori has not written specifically about culture or sustainability, Gustafsson (2018) claims that Montessori's educational ideology transcends cultural factors and the didactic materials encourage children and teachers to take care of the environment in a sustainable way.

By the early twentieth century, Steiner developed a pedagogy that shared a number of characteristics with Froebel and Montessori regarding the significance of both materials and the environment to children's capacities to learn through Aesthetic Exploration (De Rijke, 2019). Steiner developed a holistic view of the human where things and nature are seen as a background for the senses (Petras, 2010). Aesthetics and natural materials in Steiner pedagogy were considered significant through specific encounters with humans. As Penfold (2019) asserts, art, science and spirituality were brought together in order to educate children as holistic beings. Whilst this pedagogy stresses that materials are significant and vital for the child, they are not conceptualised as intra-active, which is something that I go on to address through this research. Like Froebellian and Montessorian pedagogies, Steiner also stressed the importance of colours, various materials (specifically wood) and the environment of the early childhood centre as a milieu for imagination and play (Nicol & Taplin, 2017). Attention to these core elements is universal, and the basic ideas that stress the importance of materiality and space can be found in all Waldorf centres (Fröden & von Wright, 2018). Toys are always made from (often handmade) natural materials; and modern-day inventions such as plastic, robotic or electronic equipment are not permitted. The materials that tend to be privileged include stones, sticks, leaves, shells, wool, silk, cotton, and leather. Children are supported to collect such materials as a means to reinforce a connection to nature. Fröden & von Wright (2018) stress that these open-ended materials fill different purposes in children's play from carding, spinning and woodcarving to whatever else they choose. Through playful Aesthetic Explorations the teacher is focused on the processes involved through hands-on experimental learning which accounts for the project-based learning activities in Steiner ECCs (Penfold, 2019).

There are numerous connections across the philosophies and pedagogies of Fröbel, Montessori and Steiner regarding the centrality of materials, bodily engagements and (directed) Aesthetic Exploration. Much of this can also be detected in early childhood centres in Reggio Emilia, a municipality in Northern Italy which has gained recent infamy because of

the importance placed on child-initiated inquiry in early education (Dahlberg & Moss, 2005). This educational philosophy is often referred to simply as “Reggio” and in the past few decades has exerted significant influence over early childhood education internationally (Eckhoff & Spearman, 2009, p. 10). Unlike the philosophies and related pedagogies of Froebel, Montessori and Steiner, Reggio is not a method or prescribed curriculum but rather a politically motivated reaction to fascism following the Second World War. The idea was to build early childhood centres as places for democratic conversation, creative and critical thinking, and caring relations (Moss, 2019). Malaguzzi founded the first ECC in 1963, since then the centres have evolved to such an extent that the philosophical pedagogy underpinning them has become familiar to early childhood educators across the global ECEC community. Of specific interest to this research though, is the central place of recycled materials (Remida materials) and the role of the creative reuse centre (Remida) within the Reggio approach.

The open-ended materials are prominent in ECCs in Reggio partly because they are aligned to the overarching philosophy that prizes democracy and caring relations which is directly translated into the approaches taken in Remida to address excessive consumption and unnecessary waste. Remida work in partnership with local municipalities and organisations responsible for energy, waste and sustainability. Since 1996 Remida has handled more than 800 tons of discarded material which is a significant contribution to a reduction in waste disposal (Remida, 2018). Further to the environmental agenda driving Remida, they also satisfy an increasing need for a wider variety of materials for children and teachers in ECEC (Gandini & Kaminsky, 2005) – as outlined in the introductory chapter.

Each centre offers different materials, relying on a variety of industries and businesses in a local area. The materials are usually surplus materials, offcuts, or other objects that are regarded as worthless. Aligned with the philosophies and pedagogical framings of materials offered by Froebel, Montessori and Steiner, it is evident that Remida materials hold pedagogical potential to be open-ended, complex and to invite Aesthetic Exploration. However, in Remida, by their very nature materials have not been specifically designed or choreographed to achieve specific learning objectives. Remida materials are arguably more unpredictable and lively since they have lived another life, hold interesting histories, and have served other intended purposes. Recycled materials have backstories and can serve other potential purposes, but they are typically considered to be rubbish (e.g. buttons, spools, corks, coffee capsules). Before the Remida centre was established ECCs Reggio relied on recycled materials from homes, but materials gathered through the Remida were more varied and so offered greater creative possibilities (Gandini & Kaminsky, 2005) for Aesthetic Exploration.

Hence, systematically collecting, storing and exhibiting recycled materials in a creative reuse centre (i.e. the Remida) originated from Reggio Emilia and has now been taken up in other geopolitical contexts, including Norway.

Remida recycled materials are intended to offer a rich variety and thereby create a multi-sensory collection with surfaces that are smooth and rough, wet and dry, opaque, bright, translucent, and transparent. It is also intended that the collection of recycled materials should vary over a given period of time (flowers, sticks, moss, mushrooms) and have elements that remain unchanged (glass, steel) (Gandini, 2012, p. 325). While Fröbel, Montessori and Steiner share very specific ideas about the role and purpose of carefully selected, handcrafted and natural materials for the acquisition of specific skills and learning outcomes it appears that Reggio Emilia pedagogy approaches materials in a slightly different way. The choice and arrangement of recycled materials present an invitation to children to engage with them in speculative and open-ended ways, which is fundamental to the approach. Reggio and the Remida recycled materials invite children (and educators) to dwell upon the intrinsic value of the materials, and what they symbolise and to contemplate their worldly connections and their previous existence. This study engages with this particular framing of materials in ECEC to contemplate the political, historical and environmental stories that get agitated and (re)produced through children's Aesthetic Explorations. This research, with its focus on *recycled* materials, reaches beyond viewing materials in ECEC as objects that serve specific learning outcomes. Rather, it attempts to contemplate materials, matter and materialities as intra-active contributors and companions that hold the potential to generate other ways for children to encounter the world through open-ended Aesthetic Exploration.

2.1.1 "Worthless" materials: a Nordic phenomenon?

Working with recycled materials, or "worthless materials" as they were termed in the 1970s (Balke, 1976), appears to have been common in Nordic early childhood practice since before the 1920s. There appears to be very little written about the practice itself and or research into its legacy, purpose or effectiveness. Worthless materials in ECEC takes on something of a folklore quality since it appears to be a practice passed from one generation to the next. There is brief historical mention that indicates that in the 1930s early years teachers were encouraged to collect surplus materials from workshops and from children's homes to make toys (Balke, 1995). A further textbook mentions 'worthless materials' (Bye, 1978). Writing from Arts and Crafts, the author mentions worthless materials and the value attached to them in ECEC. Bye (1978) recognises the availability of gratis materials that can be easily

gathered; as well as the open-ended potential of waste materials, particularly where teachers resist the temptation to limit pupil creativity by being overly directive. Worthless materials are also mentioned as a means to raise children's awareness of the increasing disposability of materials (and the excessive packaging that goods come in) that shapes life in capitalist societies. Paying serious attention to worthless materials is also important to encourage young children to develop ecological awareness and to engage with ideas and practices in nature conservation. It is interesting to note that these publications predated the introduction of 'sustainability' as a common word and practice (Domniqués & Ekrem, 1978).

In Balke's book "Barnehagen" (Balke, 1976) worthless materials are mentioned as valuable pedagogical material, mainly because they cost nothing and ECC budgets were limited; and because teachers and parents could collect them with ease. Balke (1976) suggested designating a storage room for surplus materials to enrich the amounts and variety of materials in each ECC. Such practices persist today, and common knowledge in ECCs that underpin the ongoing collection of worthless/recycled materials continues to circulate. This is relevant to this research because it demonstrates that discarded, recycled, worthless materials have long been recognised for their valuable pedagogical properties. These historical accounts of worthless materials echo that which shapes the philosophy and practice of the Remida by stressing the potential they offer to children for creative, Aesthetic Exploration and for developing a sense of worldliness by reducing waste and reducing consumption.

More recently, and specifically over the past six years there have been increased publications in Norway and Sweden that make mention of recycled materials as valuable in ECCs and schools, most frequently from the field of Arts and Crafts (Aastvedt Halland & Vist, 2016; Bråten & Kvalbein, 2014; Fredriksen, 2013; Hansson, 2016; Lorvik Waterhouse, 2013). Several refer to early childhood centres in Reggio Emilia and the creative reuse centre, the Remida. This study seeks to extend debates and to acknowledge the perspectives and practices that exist about recycled materials as a means to pursue lines of enquiry that address the intrinsic value of the recycled materials themselves and what they (unintentionally) produce in early childhood contexts.

2.1.2 Current Research on recycled Materials in ECEC

Within the field of early childhood pedagogy, there are two notable books "*Pedagogical Environments in Thought and Action*" edited by Linder (2016) and "*Reuse as a Creative Force*" (Odegard, 2015) that directly address the qualities and potential of including recycled materials in pedagogical environments. Both books emphasise the variety and complexity of

the materials, for creativity, and work with ethical and sustainable perspectives to recognise the value of recycled materials for pedagogical-philosophical conversations. There is a small body of literature that touches upon the contribution and potential that recycled materials offer to ECEC practice. Four doctoral theses from the field of Arts and Crafts Education (both from early childhood and school) were identified. Carlsen (2015) and Häikiö (2007) elaborate briefly on materials as a part of studying atelierista culture from Reggio Emilia in Nordic ECC's, although Häikiö was less relevant to this particular study. However, Carlsen (2015) included interviews with Veà Vecchi, which was most thematically relevant, and is discussed in article three (Odegard, 2019b). Girak (2015) and MacRae (2008) conducted research that more explicitly dealt with the potential and qualities of recycled, junk, Remida materials. The different perspectives and contributions that this small body of literature has made to the field and specifically to this research is discussed thematically.

2.1.3 Multiple terms on recycled materials

Generating an overview of research on recycled materials reveals different terms to describe the same kind of materials. In earlier work, I used “*Same shit, new wrapping*” (Odegard, 2015) as a subheading to describe this diversity, because as implied in the title the materials described essentially amount to the same thing. There are, as the subheading indicates, a number of terms that describe recycled materials such as found objects (Duchamp), Remida materials, unusual, waste materials, rubbish, trash, salvage, upcycled, reused, repurposed, surplus, unfinished and finished objects, open-ended, junk, ready-mades, loose parts, and discarded materials (Girak, 2015; Guerra & Zuccoli, 2012, 2013; MacRae, 2008; Odegard, 2015). These various terms are gathered together through a review of this selected literature and attention is drawn to the multiple ways in which researchers write about the different use of terms. This mapping informed a decision to work with the term ‘recycled materials’ as explained in the previous chapter.

2.2 Recycled materials as lack of/loss of function

Writing with a concern for environmental education and coming from an Arts-based tradition, Guerra and Zuccoli make an important contribution to debates about materials in education. In the article “*Finished and Unfinished Objects: Supporting Children’s Creativity Through Materials*” Guerra and Zuccoli (2012) discuss objects and materials in Arts:

“Unfinished materials, especially recycled ones and industrial discards, are extremely interesting objects thanks to the creative possibilities which they offer to children,

since using them involves fewer traditional formal, structural and functional references. This, in turn, leads to unusual and original connections, which are not pre-definable, not only in terms of the actions of children exploring them but also in the thoughts, which accompany them and inspire reflection and discussion.”

(Guerra & Zuccoli, 2012, p. 726).

In this article the authors make explicit the possibilities that come from explorations with materials, especially recycled and discarded materials.

They elaborate further in the article “*Unusual Materials in Pre and Primary Schools: Presence and Actions*” (Guerra & Zuccoli, 2013) to illustrate the differences between various materials, especially unusual and unstructured materials, which is defined differently from recycled materials, the term that I use. Unusual materials are defined as materials that are unfinished and unrecognisable, like industrial discards, while unstructured materials are defined as materials with “greater freedom of action” (Guerra & Zuccoli, 2013, p. 1991) such as textiles and natural materials. The authors argue that these materials tend to overlap when it comes to meaning, significance, and teaching, but differ in design and the actions that are possible; “Recycled materials always start from the use for which the object was designed” (Guerra & Zuccoli, 2013, p. 1990). The researchers challenge my broad definition of recycled materials by writing that these materials are significantly different since I include surplus materials and all materials sorted by the kitchen sink in the term recycled materials. My previous research and experiences do not confirm this distinct difference, and I contest that humans could find the same potential in both types of materials. However, it is possible that I am not fully conversant with their definitions, or where they place the border between recycled and unusual materials. It is not entirely clear for whom these materials are unusual, as Guerra and Zuccoli write:

“With unusual materials, however, the potential is free and depends on the type of material, the gradation of colors, the consistency of sound, the strength of the shape. These elements can be in agreement or in disagreement with other materials (also from production surplus) which require the same necessary participation. The many possibilities require constant, unlimited experimentation because there is no real destination point. This does not lead to the recreation of some definite form, but rather the idea is to continue to experiment and re-experiment, paying attention to hypothesis and verification, trial and error”.

(Guerra & Zuccoli, 2013, p. 1990).

This quote could also describe recycled materials because the wide area of materials also includes (what these researchers term) unusual materials. Guerra and Zuccoli (2013) write that these materials have a *lack of function*. While I find most recycled materials to have *lost their function* (Odegard, 2012), it is possible to identify the material and recognise its new potential to be used in more free and creative ways. Guerra and Zuccoli (2013) seem to use the term *lack of function* for unusual materials because they comprise waste materials, leftovers (surplus), and materials from overproduction or production errors. They describe these materials as multi-poly-functional, without a purpose or name (Guerra & Zuccoli, 2013). I use *lost their function* to include a broader range of materials, and also include children's ability to see the potential of the materials whether their features are known to them or not. Either way, we seem to concur that these materials play different roles each time they are used (Guerra & Zuccoli, 2013) and that recycled materials (unusual materials) could open hidden pedagogical opportunities (Odegard, 2012).

Connecting these quotes from Guerra and Zuccoli with the four articles in this thesis generates some interesting point of departure for this study. In the article "*When matter comes to matter-working pedagogically with junk materials*" (Odegard, 2012) I argued that junk materials invited and encouraged "children to play and construct without the need to name, define or label the constructions" (p. 387). The argument was partly built on MacRae's (2008, 2011) work, which challenges the deep-rooted idea that everything created by children must represent something. MacRae worked with young children's installations and what she termed junk-materials, and junk-models. These models resisted definition, naming or categorisation, and with Deleuze's "lines of flight" and Foucault's "heterotopia", she found concepts to support this resistance which again opened up to something new and unpredictable. The two articles from Guerra and Zuccoli (2012, 2013) alongside MacRae's thesis (2008) confirm the creative potential in recycled materials resides in their lack of function and their way of resisting categorisation. These materials do not possess pre-definable possibilities, and there is no clear destination point (which differs markedly from the account of Froebel, Montessori and Steiner inspired approaches to the role and function of material in early childhood contexts). This research draws upon and extends the approaches taken by Guerra and Zuccoli, and Macrae in its attempts to explore and experiment with materials in order to deepen children's thoughts, reflection and discussions about what materials can do and produce.

2.3 Recycled materials for developing creative skills and problem-solving, abstract thought and imagination

Research from Turkey (Acer, 2015; Uyanik, Inal, Calisandemir, Can-Yasar, & Kandir, 2011) investigates the potential of recycled materials by focusing on the development of creativity skills, abstract thought, imagination, problem-solving, and comprehending concepts. Acer (2015) considered how Art has developed in Turkish kindergartens, while Uyanik et al. (2011) researched children's explorations with waste materials in ECEC.

Acer (2015, p. 5) writes about how waste materials were extensively used in the 1950s: "As for handicrafts, it appears that waste materials such as all kinds of wire, cotton, pulleys, rope, twine, cardboard, and so forth were turned into art through the creativity of children". Acer also refers to several articles that seem to claim that waste materials will develop children's artistic skills and creativity (Szekely, 2001, and Szyba, 1999 in Acer, 2015) and to "comprehend concepts such as weight, width, space, texture, shape, and balance" (Erdemir and Kandir 2002 in Acer, 2015, p. 5). This appraisal of the function of materials in ECEC indicates that materials are valued as educators which echoes Montessorian approaches, as outlined earlier in this chapter.

The article by Uyanik et al. (2011) is located in Art Education and argues that waste materials contribute to encouraging creativity in early childhood education. The authors present different theories within creativity to argue that "open-ended materials (waste materials) encourage problem-solving and creative thinking skills" (Lloyd and How, 2003 in Uyanik et al., 2011). The authors consolidate arguments for reasons children should interact with waste materials in the following quote:

"In other words, this process allows children to interact with many types of material and explore different features of these materials. Additionally, this activity contributes to the development of abstract thought and imagination because children attribute different meanings to items through the process of transforming waste materials into new forms".

(Acer, 2015 p. 5)

These articles are relevant to this study because a much broader definition is deployed than in the previous articles. The researchers focus on developing creativity skills, abstract thought, imagination and problem-solving from engaging with recycled materials. These two studies quote other studies and articles on waste, and articles focusing on open-ended

materials cite relevant research that is either in Turkish, or that has not been possible to locate. Engaging with research that shows recycled materials encourage creativity and problem-solving usefully informs this study by supporting arguments that Aesthetic Explorations with recycled materials hold the potential to generate much more than the narrow acquisition of ECEC learning objectives.

2.4 Recycled materials as sustainability and sensibility in environmental education

As elaborated earlier, this study addresses the contribution that recycled materials make to young children's Aesthetic Explorations. However, this also requires a more expansive approach when contemplating the recycled materials themselves and what else they make possible. Experiences from recycling centres that I have worked in, or been in contact with, reveal the enormous possibilities available to collect surplus, faulty goods and other materials that otherwise would be wasted. Such possibilities can be understood as a form of worlding (Haraway, 2016b). A quote from Hird (2012), used in article three, states the need to know our waste as a matter of national identity: *knowing our waste* is connected to life in the Anthropocene (the human-centred geological epoch) and the human destruction of the planet. This study argues that it is only by recognising our entangled place and our ethical responsibilities that recycled materials can be understood as more than mere learning objects and their full potential (to contribute to world-making possibilities) can be realised.

Several articles and texts reviewed directly address sustainability and environmental concerns by arguing that recycled materials and recyclability form part of environmental education and awareness (Girak, 2015; Guerra & Zuccoli, 2013; Iorio, Hamm, Parnell, & Quintero, 2017; Uyanik et al., 2011). These connections are also present in texts from Reggio where they believe that the Remida experience “opens up the possibility to understand the true value of respect for the environment through the creative process” and that this again can “foster an ethical behaviour that opposes the throwaway culture” (Gandini & Kaminsky, 2005, p. 9). Gandini and Kaminsky (2005, p. 6) argue that recycled materials can foster respect for the environment through creative reuse of discarded materials and so promote environmental awareness through prolonging the life of materials. Further, giving these materials new identities, understanding their true value through a creative process, enables relationships and dialogues with these materials (Gandini & Kaminsky, 2005).

The thesis “*Forget me not: an exhibition; and, Creative reuse: how rescued materials*

transformed my a/r/tographic practice: an exegesis” by Girak (2015) addresses sustainability through Art by studying the awareness that students and teachers have about environmental sustainability and what they do and think about it. Her thesis is described as a bricolage of methods that were undertaken in a primary school and in her artist studio. She writes from the perspective of an artist-researcher-teacher with the aim of examining the impact that making Art with discarded material has on raising environmental consciousness. Her study showed that: “the Visual Art program facilitated shifts in environmentally sustainable awareness among the students and in the students’ attitudes and behaviours” (Girak, 2015, p. 152). While the students participated in the artmaking process they reflected on Western values and questioned Australian lifestyles, and the role that consumerism plays in environmental degradation. The students also began to make small self-initiated behavioural shifts outside the classroom, which changed their environmentally sustainable awareness, attitudes and behaviours during the time they worked in the Remida.

Iorio et al. (2017, p. 129) deploy Latour’s ‘matters of concern’ as a theoretical framework to rethink engagement and relationality of teachers in different research contexts. The attention to ‘shiny fish’ in one context was of special interest to this study since it was in a Remida and focused on recycled materials. Similar to Girak, this project also made participants aware of ecological connections between place, multispecies, materials, children, teachers, and community, a transformation from throwaway society to taking greater care.

These articles are interesting and relevant to this study because of the contributions they make to debates about what else recycled materials themselves can contribute, and specifically the ecological connections that are set in motion from engaging with and getting to know your “waste”.

2.5 Chapter Summary

This review of a wide range of literature has highlighted the central place of materials in early childhood and how that has both persisted and shifted over time. Specifically, it has drawn into focus the creative potential in recycled materials that resides in their lack of function and their way of resisting categorisation. Besides the development of creativity skills, engaging with recycled materials can contribute to abstract thought, imagination and problem-solving. Furthermore, the connections made from engaging and working with recycled materials themselves underline the contribution they make to sustainability awareness. Most studies included in this review come from arts-based theoretical fields, however, the feminist new materialist approaches taken by MacRae (2008, 2011) and Iorio et

al. (2017) stress the potential to recognize what else materials make possible when they are approached from a more speculative and uncertain position that reconceptualizes the child and materials by attending to the importance of affect.

This review provides a map of the ways in which material in early childhood have conceptualized and researched previously, thereby providing an important contextual backdrop and an inspiration for this research. My research seeks to build upon and extend existing debates that have been outlined in this literature review, specifically how recycled materials contribute to deepening children's thoughts, reflections and discussions about what materials can do and produce. Further, it will attend to the vital affective forces that are produced from the intra-actions of children, materials and other tools and what this means for the way in which we view children. Attending to affective forces involves close attention to the potential in recycled materials themselves to produce knowledge about diversity and complexity. Furthermore, this knowledge contributes to political and scientific debates within the field of early childhood education that question the place of children and their active role in world-making. This study contributes to this growing field of enquiry.

Chapter 3: Feminist New Materialist philosophies and bricolage concepts

You know the feeling you have when something resonates within you, a vibrating string that responds to something you may not even realise... like a smell, a thing, a thought, a dream? That is Karen Barad's texts for me. When I first read her work, I was blown away, and then the string of resonance started to vibrate. Meaning and matter, space-time-matterings, agential realist ideas, intra-activity, entanglements, diffraction, performativity, material-discursive, ethico-onto-epistemology, the more I read, the more these concepts speak to me and feel familiar in some sensory way. I think it has to do with my already intra-active relationship with materials, my affection for recycled materials, the notion of their being beings of the world, beings that could matter, and this resonated with these ideas from Barad. She opened up new theoretical worlds where matter mattered.

(Writings while reading, Odegard 2018)



Figure 3: Movements and experimentation with transparent textiles

This third chapter of the thesis elaborates on the feminist new materialist orientation of this study. Partly inspired by Sandvik's (2015) writings on posthumanism, I concentrate on productive ideas, rather than focusing on problems, dilemmas, and paradoxes. However, as Sandvik also writes, this does not indicate that problems, dilemmas and paradoxes cease to

exist, but rather the task becomes to work generatively and creatively in the production of new knowledge.

As this chapter will demonstrate, several theorists, theories and concepts have been important to this research and for expanding my thinking. Different theories and methodologies draw attention to the variety of perspectives in early education research. I welcome this diversity in approaches since it helps to encourage curiosity, challenge sedimented ways of knowing, and instead pursue new ideas. The following quote by Lykke has been helpful; it has enabled me to find a way to navigate through the multiple perspectives and approaches and so arrive at a position that enables me to address the research objectives of this specific study. Lykke draws:

“special attention to scholarly endeavors to invent new embodied, affective, ethically sustainable and spatiotemporally located entrance points to the analysis of the intra-activity of the semiotic, the material and the affective, discourse, matter and affectivity (2018, p. 28).

Lykke (2018) goes on to cite the same four theorists that have provided the theoretical foundation to this research: Barad, Haraway, Bennett and Braidotti. As this thesis, and especially this chapter, highlights Barad’s (2007) agential realism and material-discursive intra-activity have contributed significantly to this study. Her insistence that researchers must recognise their ethico-onto-epistemological obligations through agential cuts provided a defining moment. Further, the importance Haraway (1988, 2016b) places on a researcher’s situated knowledges and her urge to ‘stay with the trouble’ in this challenging and chaotic world was also pivotal to the orientation that the study took. Bennett’s (2010) theories on matter as vibrant are pertinent and helpful to my concerns with how matter matters and materialises in early childhood contexts. Barad, Haraway and Bennet are extensively put to work in the articles. Further, I have found that drawing on the work of Braidotti (2010, 2013), especially her attention to research as nomadic and the urgent need to decentre the human from investigations, has helped to craft this *Kappe*.

These transdisciplinary theories push up against academic borders, which in a study such as this, is vital because it seeks to bricolage different theories, approaches, concepts, ideas and practices together in order to actualise the concept of Aesthetic Exploration. The concepts presented in the *Kappe* are addressed in the articles, but here I illuminate and deepen some terms and concepts to show how they operate within the bricolage. These terms include event, affect, matter, materiality, agential realism, material-discursive pedagogical practices, intra-activity, and vibrant matter. I also attend to a consideration of the Anthropocene,

naturecultures, biocentrism, and indigenous cosmologies. This chapter will focus on specific theorists and the ways in which I have put their ideas to work through this study. Firstly, I offer an introduction to posthumanism and how it has provided a useful means of orientation.

3.1 Posthumanism as a concept—Posthumanism as theory

Hayles (1999) notes that posthumanism was predicted almost 40 years ago. She turns to Hassan's "*Prometheus as Performer: Toward a Posthumanist Culture*" (1977); an essay comprising five scenes populated by poets, philosophers, scientists and mystics to ask important questions that propose a posthuman culture:

“What, then, are the roles of dream, play, imagination and aesthetic sensibility in scientific, mathematical, and artistic creation? ... What indeed do we mean by creativity? Do certain mental structures constitute the languages and methods of various disciplines?” (Hassan, 1977, p. 840).

According to Hayles (1999, p. 283), the term posthumanism can evoke fright and terror and might even produce a counterforce because it denotes that a time will come when humans cease to exist. This fear stems from a belief that humans might be taken over by intelligent machines, climate change and natural disasters, war, terror, and the invasion of more-than-human forces. Such dystopian fears seem warranted when we take a look around life in the Anthropocene. At the time of writing this thesis, there have been catastrophic fires in Australia, heavy drought and grasshopper swarms in East Africa causing hunger crises; massive camps housing refugees from Jemen and Syria, amongst other countries on the African continent. The Coronavirus continues to spread worldwide; at the last count it had taken four hundred-thousand lives and forced millions of people into quarantine, isolation and social distancing across the world. The virus has also directly impacted on education with the closure of ECECs, schools and universities across the globe. The rates of unemployment and domestic violence continue to grow, and a long and deep global economic recession is predicted (Fielding, 2020). As this pandemic virus wreaks havoc on human life, there is evidence of non-humans reclaiming a more equal place on planet earth. Reports of ‘rewilding’ have appeared, claiming that sheep, goats, cows, birds, bats have reclaimed streets and other open spaces; and some near-extinct species have made defiant reappearances (see, for example, The Telegraph, 2020; VG, 2020). This is made possible when human-induced damage to planet earth is halted, when humans are held captive in their homes, when flight traffic in Europe is reduced by 90 per cent - the planet is enabled to heal (For more, see

Brekke, 2020; Ebrahimji, 2020)

However, the concept posthuman is understood in various other ways too. According to Hayles (1999), the alternate side of the concept posthuman invites pleasure (and I would add possibilities) to break free from old ways of thinking about what being human means. The concept posthuman “does not really mean the end of humanity” (Hayles, 1999, p. 286), but instead signals the end of a certain conception of the human.

Posthumanism also signals how humanist core disciplines, such as Literature and Philosophy (and Early Childhood Education), are always already connected to science (Grue, 2019). Haraway’s use of ‘kin’ is a good example of these connections, in “*The Companion Species Manifesto*” (2016a) she is in pursuit of (queer) kinship and common worlds. For both Hayles and Haraway approaches that decentre the human in research are considered intrinsically ethical and political. Posthumanist approaches urge humans to take responsibility, to reconceptualise the human - away from superiority, power and wealth to a less human-centred position where our thoughts and actions make the world a more liveable place for all species. Or as Lykke (2018) stresses:

“becoming posthuman is definitely also involving a stepping down from the position of human exceptionalism, i.e., from the idea of the human as superior to animals.” (p.27).

3.2 Feminist new materialism

C. A. Taylor (2016) conceives of Posthumanism as an assemblage and claims that it encompasses a wide range of approaches and theoretical emphases from animal studies, affect theory, queer theory, actor-network theory, the non-human, new empiricism, object oriented ontology to decolonising (and indigenous) theories. New materialism then becomes one of Posthumanism’s *apparatuses* with material-discursive open-ended practices (Barad, 2007, p. 170). The term new materialism is first mentioned in works by DeLanda (1996) and later by Braidotti (2000).

Where theorists underscore the *feminist* approach taken in some forms of Posthumanist and new materialist enquiries it is important to recognize what it is that makes it distinctly feminist. *Feminist* new materialism calls for a fundamental shift in our attention, thinking and research practices, it is a way to enquire into, to understand and to produce action that can grasp the complexity of our time (Strom, Ringrose, Osgood, & Renold, 2019, p. 2) and pursue an unapologetically feminist political agenda (Osgood & Robinson, 2019a). Feminist research embraces the unknown and thrives on *xenophilia* according to Åsberg and Braidotti (2018, p. 17) who playfully use the Greek word *Xenos*, which means affection (or

love) for a stranger/unknown object or people. Making the familiar strange, and pursuing other ways to think, feel, be and produce knowledge is a political project for feminist researchers wanting to make a difference in the world. As previously mentioned this study is shaped by feminist new materialist thought; together Haraway, Barad and Braidotti have provided a critical and generative means to undertake research that produces ways to extend understandings about early childhood that attend to corporeal, material-discursive, intra-active processes of becoming (Osgood & Robinson, 2019b, p. 36).

Chapter 4 goes on to stress the connections that exist between feminist new materialist theory and practice, which are shaped by a concern with ethics and ethical response-ability (Barad, 2012b; Haraway, 2016b). My thoughts are aligned with Osgood and Robinson (2019a) who argue that ethical responsibilities displace “any claims to objectivity and detachment from that which we research” (p.5). Hence, by placing feminist ahead of Posthumanism and new materialism, an ethical stance is taken. This stance is taken together with a field of researchers who claim neither objectivity nor impartiality (see Strom et al. 2019).

Presented more thoroughly in Chapter 5, I recognise that research is situated, subjective and partial (e.g. *situated knowledges*) (Haraway, 1988; Osgood & Robinson, 2019b, p. 25). These approaches demand diverse research methodologies which understand the world as “multiple, complex, and shifting, where difference and diversity is not deficit or punitive, but a creative force” (Strom et al., 2019, p. 5). Feminist new materialism then, asks active questions, such as “How does it work? What can this concept or theory do?” (Colebrook, 2000: 8) Moreover, it asks: “What counts as data? What does data do? What do we do with what the data does?” (Osgood & Scarlet, 2015, p. 347). Such questions have been fundamental in guiding the direction of this research to take recycled materials and Aesthetic Explorations seriously; as a means to generate new knowledge, differently, in early childhood education.

As mentioned, a feminist new materialist researcher tries to think in terms of oneness, where nothing or no one assumes a privileged position. Barad (2007) claims that all matter, including subjects and objects, and the material and discursive exists in an interconnected, entangled state that denies any separate entity (i.e. material-discursive). This attention returns to how human and non-human must be understood as mutually implicated. By including the more-than-human, and showing how other species, nature and materiality have strong agency something is added to the narrative, something that might have been missed or previously overlooked (Lenz Taguchi, 2017). New materialist research methodologies are recognized as

being more sensitive to the vibrancy and vitality in matter, as Bennet (2004, 2010) highlights in her work and which I have sought to take up in this study.

Besides these feminist theorists and others already mentioned, there is extensive scholarship in the early years field framed by feminist posthumanities and new materialism. It is beyond the scope of this Kappe to provide an exhaustive overview, but it is important to acknowledge that the field is constantly growing. In what follows, I attempt to identify some key research that has made a direct impact on this study as it has developed. The following scholars have provided inspiration throughout the life of this study; it is through provocation and generative entanglements that this work has pursued various lines of inquiry and contemplated the promise of different concepts and methods.

3.3 Posthumanism and new materialism voices in Early Childhood Education and Care

Researchers working with Posthumanism and new materialism in early childhood education form a recognisable community; the work of this emergent field of scholarship is making a significant impact on other disciplinary fields. According to Somerville (2018), early childhood has long been a leader in the field of posthuman theorising in its application to educational thought and practice. This can be traced back to the earlier work of Lenz Taguchi (2004, 2010, 2014), a Swedish feminist scholar principally responsible for introducing new materialist theories to ECEC in the Nordic countries. Especially important for this study has been her development of methodologies that have mobilised the contribution of philosophers such as Deleuze and Guattari, especially their ontology of immanence, in combination with Barad's agential realism. This combination of concepts has been key to this study, which I go on to outline later. Lenz Taguchi's (2016, 2017) idea of concept as method has inspired the conceptualisation of Aesthetic Exploration that I have developed through a range of feminist new materialist methods. Reading and thinking with Lenz Taguchi started with attending her lectures, engaging with her articles and books on pedagogical documentation and feminist poststructuralism (1997, 2004) and listening pedagogy with Åberg (2006).

Lenz Taguchi's doctoral students: Hultman (2011a) and Palmer (de Freitas & Palmer, 2015; 2010a) have also contributed to the field by offering complex posthuman theorisations through their work in education. "The sand and the girl" by Hultman and Lenz Taguchi (2010), and shortly after Palmer's (2010) and Hultman's (2011) doctoral theses, made significant contributions to the field of early childhood education research and the take up of

posthumanist thought. Later, a co-authored article (de Freitas & Palmer, 2015) provided important insights into thinking-with concepts/theory which has been taken up in this research, and is explored in more detail later in this thesis. Hultman's (2011a) theorising with Barad's agential realism in early childhood contexts has been vital for my thinking about the agency of recycled materials. Together this body of scholarship has provided inspiration and deepened my engagement with feminist new materialism and Posthumanism.

Several other researchers in Sweden have made important contributions to new materialist approaches to the study of childhood. Olsson's (2009) work on the significance of movement and experimentation in young children's learning has been particularly informative. Her work is framed by Deleuze and Guattari's philosophy which enables her to offer fresh insights into practical examples from Swedish ECC's, to offer a direct challenge to the ongoing preoccupation with predetermined outcomes and fixed positions in ECE. It is Olsson's specific concern with movement, light and shadow that has informed this research. In addition, Westberg Bernemyrs' (2015) work with Barad's agential realism to study how sound is produced intra-actively in children's play and explorations through pedagogical documentation, was also significant to the development and focus of this research. Her study illuminated the potential to think-with sound as phenomena, as companions. This approach has been developed in this thesis to think with other phenomena such as light, shadow, darkness and vibrations. These previous studies provided innovative and exciting examples of what working with posthumanist theory, and attending to a close examination of material-semiotic-affective happenings in ECE, can make possible in research with very young children.

Bergstedt's (2017) edited volume on posthuman pedagogy (in Swedish) has also been important for expanding ideas about pedagogy where the human is no longer at the centre. Bergstedt (2017) describes the volume as rhizomatic, where every chapter provides an entrance to visit different places and create new realities. Further, he writes that from an immanent perspective, it is impossible to separate the ontological from the epistemological, or the learner from what is learned. The volume includes several chapters of direct relevance to this study. For example, Lenz Taguchi (2017) attends to the promise of an ultrasound image to reconfigure Posthumanism and so create creative and constructive transformative forms. Häikiö (2017) writes about pedagogy in light of documentation, images, and visual knowledge. Johansson's (2017) chapter expands on some aspects of her PhD by activating Deleuze and Guattari's philosophy to challenge humanism and its linear view of time. Meantime, Ceder (2017) undertakes multispecies research with dogs to understand

pedagogical relationality by putting posthuman theory to work. His chapter also builds upon earlier doctoral work, Ceder specifically works with Haraway and Barad to develop theories and methodologies that take matter (water) as something to continue to think with. His work is both philosophical and poetic and therefore encouraged me to think of the creative possibilities that exist when writing a thesis by publication.

Other Nordic researchers in early years research have also presented possibilities that arise from bringing Baradian approaches to matter and materiality/materialities together with Deleuzian and Guattari's concern with assemblages through experimentation. For example, Rautio (2017; 2017; 2015) works with child-animal relations; and with stones and snow in Finland. Winston (2013; 2013) also researching in the Finnish context, attends to intra-onto-epistemological play which provided important insights. My article on Crows was directly informed by these studies, especially Rautio's attunement with crows, and her approaches to thinking with human-animal relations. Hohti's (2016; 2019) childhood studies with things and technologies that matter, and especially her use of agential cuts to disturb linear thinking, was influential in the ways in which this study developed as I increasingly recognized the value of undertaking research in ways that unsettle ideas around matter and time and the place of technology in studies with children.

In Norway, at the Østfold University College, a group of researchers have influenced the development of poststructuralist, posthumanist and new materialist ideas in the field of early childhood education, with specific attention to children from birth to three years old (Sandvik, Larsen, Johannesen, & Ulla, 2019). For example, Nyhus (2010) combined Barad's concept of material-discursive with Deleuze's concept of lines of flight in young children's participation in early childhood. Sandvik (2011) has also used concepts from Deleuze to re-think participation through encounters between educational practices in toddler groups, philosophical concepts and visual art. Ulla (2015) worked with Foucauldian concepts to study kindergarten teachers professionalism with specific attention to forces and bodies. Larsen (2015) deployed Derrida's concepts to consider the productive potential of disruptions in pedagogical settings. Whilst Johannesen's (2016) study, framed by Levinas, attended to young children's expressions and teachers' thinking through texts. Collectively these early childhood researchers have shifted how research is done by taking ideas from pedagogical philosophy and marrying them with post-approaches. Also, based at Østfold University College, Reinertsen has contributed significantly to the field with a wide range of topics within pedagogical philosophy, such as academic writing and methodology, poeticalization and pathologies of sustainability (Reinertsen, 2016b, 2018, 2019; Reinertsen & Thomas,

2019). These examples of bringing theory and practice together were especially important to the development of this research. These studies underline a need to contemplate the ways in which theory is embedded in all aspects of a research study and the affordances that a theoretically rich study can make to researching in ways that foreground the importance of space, time and matter to reach other ideas about ECE.

Oslo Metropolitan University also provides a home to influential early childhood scholars. For example, Rossholt, with a background in Sociology, has pursued research that centres around feminism, gender and professionalism, and the youngest in our ECCs. She has published articles on bodies, tears, food as matter and materialities (2010, 2012, 2018). Otterstad has also contributed to this field of knowledge, together with a wide range of international researchers, on studies within poststructuralism, posthumanism and new materialism. Her main contributions include critique, methodological innovation, academic writing, early childhood pedagogy, and different forms of research experimentation (Otterstad, 2018; Otterstad & Nordbrønd, 2015). Otterstad has also published with colleagues based in the field of Aesthetics, including Lorvik-Waterhouse and Jensen (2016) to explore what artistic movements make possible in ECE. Otterstad and Lorvik-Waterhouse (2018) also offered digital-artistic-assemblages which, like this study, underlines the significance of movement, affect, digital technologies, exploration and experimentation. Other research at OsloMet includes Lafton's study into digital literacies which was underpinned by Latour's Actor Network Theory and Barad's agential cuts, which again shares a concern with my research to unearth the generative connections between materials, spaces and technologies in ECE. Similarly, Aslanian's (2019) study concerned to stretch the boundaries of care was theoretically driven to contemplate what a range of philosophers (Piaget, Foucault, Malabou and Barad) could contribute to the concept of care with policymakers and educators, and between children and things.

Fredriksen (2011) at University of South-Eastern Norway from the field of Art, focused on young children's aesthetic experiences through three-dimensional materials such as sand, clay, wood and wool. Her thesis built on the understandings of Dewey, Eisner and Efland about cognition as dependent on fantasy and bodily experiences. She has since explored new materialist theoretical perspectives by working with ecological sustainability and what she calls inter-species ethnography (Fredriksen, 2019). Also influential was a recent study by Moxnes (2019) which concerned sensing, thinking and doing reflection in early childhood teacher education. Working with feminist new materialism, notably Haraway and Barad, she attempted to reconfigure ECE teacher pedagogy by reconsidering dominant ideas

about reflection. She proposed diffractive pedagogy as a companion theory. Like others (e.g. Ceder) she experimented with creative modes of writing in her thesis and published outputs to push ideas about what counts as valid knowledge and how knowledge gets produced differently through a posthumanist approach. Such experimental approaches to academic writing have been influential to the decisions made throughout this research to push against normative modes of articulating ideas.

This body of Nordic scholarship provides a means to contemplate the many different ways in which feminist new materialist theory, concepts and methodologies can manifest in early childhood research. With the focus shifted away from a narrow concern with the human child to opening out investigations to include other agents (matter, senses, affects, bodies, spaces, places and the more-and-other-than human) how (different) knowledge is produced (differently) and how questions are generated becomes clearer. Hence the potential to approach research differently by thinking with theory (Jackson & Mazzei, 2012) is exposed. I consider my research to contribute to this growing field of early childhood research since it is directly influenced by, and in conversation with, their attempts to shift what research is and can be, and to underline the potential that feminist new materialist studies offer to shift the pedagogical philosophical landscape.

There have been key contributions from scholars outside of the Nordic context that also made a significant contribution to the development of this study. For example, Osgood (2006, 2009, 2017, 2019a, 2019b) writing from the UK context, has contributed to the field through her feminist new materialist work on ethics, politics, research practices and matter by offering ideas on how to reconfigure gender by putting posthumanist theory to work; and by exploring common materials as lively matter such as Lego, glitter and darkness. The insights from her highly theorized work have been helpful when contemplating the central importance of how a close attention to matter can produce different ideas about the child in early childhood contexts. Also from England, MacLure (2006, 2013b) has written about data and the baroque method which has been helpful to this study by showing how data has agency and how this, in turn, insists upon a different engagement with data, and a different approach to writing about what is generated from research encounters. Her collaborative work with others at MMU, including MacRae, Jones and Holmes (2011; 2010; 2010; 2012) provided a valuable foundation from which I have been able to reassess my thinking within ethics and politics in early childhood education.

The environmental perspective adopted in this research has been specifically informed by researchers from Oceania, for example, Malone (2018, 2019); Malone, Truong, and Gray

(2017) and Somerville's (2013, 2015; 2019) research on the Anthropocene, environmental questions and sustainability. Further, Duhn's (2012a, 2012b, 2015, 2016) research with children, place, agencies and time is directly relevant and has highlighted the need to attend to a close examination of children's explorations within specific contexts. Also, important has been Giugni/Scarlet's (2016) work on the imperative to pursue an anti-bias approach in ECE by recognising the importance of the agency of matter, space, place, things and children. Tesar and Arndt (2016) similarly attend to the vibrancy of things and what that means politically in the context of ECE. This is something Tesar has taken up elsewhere, specifically in an article with Koro-Ljungberg (2016) concerning monsters and philosophy as method. Towle's (2017) research concerning the agency of plastic has also informed my work in significant ways. Coming from a background in Art, Knight's (2018) perspectives on aesthetics have been helpful to inform my own conceptualisations of Aesthetic Exploration. Also from Arts, Boucher (2019) is in conversation with Reggio Emilia as a means to explore materials collectively and so cultivate an ecology of practice. Many of these researchers belong to the Common World Research Collective (see [Common World](#)) which is an international research community focused on children's relations with space, materials, and species, and that mobilise feminist common worlding methods. As a member of this collective, my work is in direct conversation with these scholars, and this study has benefited from published articles and micro-blogs that are available via the network.

The work of researchers working with or in Reggio Emilia inspired environments, especially those who also work with materials/matter in combination with new materialist theories, have made significant contributions to the shape and direction of this study. For example, Kind's (2014) research into material encounters; and more recently Pacini-Ketcabaw, Kocher and Kind's (2017) book concerning encounters with materials in early childhood education have been vital in providing ways in which to contemplate the significance of materials, and how to theorise the encounters and explorations that emerge from Reggio practice. Other Reggio-inspired studies working with posthumanist approaches have also been important to offer a way to navigate ways through this study. Notable is the work of Murriss (2016; 2018) on children's picture books; Nxumalo's (2016) examination of art-making and multispecies encounters; and Carlsen's (2015, 2018) and Girak's (2015) respective studies on atelierista work and cultures in a Remida. Land and Danis' (2016) explorations of how movement matters in ECEC have also usefully informed this research. Several of these authors are cited earlier (in Chapter 2) due to their specific work with recycled materials, sustainability and investments in environmental education. It is clear then

that this study has developed in dialogue with a wide range of related research from different geopolitical contexts that share a similar theoretical orientation and political motivation.

3.4 Bricolaging a thesis

The concept of bricolage, thoroughly described in article four, comes from various traditions (Altglas, 2014; Carstensen, 2011; Dezeuze, 2008; Handforth & Taylor, 2016; Johnson, 2012; Kincheloe, 2001; Real, 2008; Reilly, 2009; Rogers, 2012). By deploying the concept of bricolage, I attempt to make visible and readable how different traditions, theories, perspectives and concepts merge. The bricolage also illustrates how I have been working with much more than reading, thinking, analysing, discussing and writing as an aesthetic explorer and bricoleur. Examples of this ‘much more’ is visualised in the mind-maps on page 76, for example, pamphlets from exhibitions, inspirational images, provocative terms and arresting titles, materials that have hailed my attention and so on are brought together in a mangled and multilayered way. Bricolaging these parts together starts from the core of the project, with two main concepts, Aesthetic Exploration and recycled materials. While intra-acting, thinking and becoming with these concepts and phenomena, I use various materials available or at hand which again produces various paths in the bricolage: sideways, across, back and forth, and more. Where these paths cross, encounter or collide, different forces were released, produced or constructed knowledge, which again worked to build the arguments within the thesis.

3.5 Concepts in the bricolage

This chapter now moves on to illuminate and discuss concepts that make up the bricolage, from those that provided an initial foundation (those offered by Deleuze & Guattari and Barad) as well as those that emerged within the bricolage itself from thinking-with Aesthetic Exploration and recycled materials in the Anthropocene. This bricolaged section addresses concepts that are active in the articles and the bricolaged Kappe. I briefly address their origin, then move on to address how these concepts are made active in the production of the thesis.

3.5.1 Event

Throughout the published articles I deploy the concept *event*. In article one, I introduce *event* and *events of difference*, which is embedded in a Deleuzian philosophical perspective (Deleuze, 1994). Since event might also be taken to mean something that is happening here and now it is important to acknowledge the difference between event as occurrence and a

Deleuzian event. My use of event is aligned with reading different texts by Deleuze (1994, 2004), but also by reading others, such as MacLure (2013a) and Badiou (2007) who put the concept to work in their writing. Through these readings I was able to mobilise the concept in a way that is Deleuzian. Event then, is used in this thesis in a way that past and future are synthesised; the future has a dimension of the past, which could be a constant becoming. As stated in article one, MacLure (2013a) outlines that in the event, sense and event are the same, or the event is sense itself. Event is actualised in the multi-sensory affectivity of the concept of Aesthetic Exploration, where nothing in the event can be separated, neither senses nor time.

3.5.2 Affect

The second major concept shaping this study is affect, which is closely interwoven with the concept of event and senses. Affect features heavily throughout this thesis, specifically in relation to exploring the concept aesthetics (Deleuze, Guattari, & Massumi, 1988; Grosz, 2008), and as a way of describing the *affective forces* (Bogue, 2003; MacLure, 2013b; Manning & Massumi, 2014) in-between human, materials and matter. Working with the term affect is often done with attention to Deleuze and Guattari's insights (1988/2004), and their engagements with Spinoza's notion "affectus" which measures the material equation of an interaction. Deleuze and Guattari's work with sensation as affect and percept is central to understanding affect theory: affects are not to be understood as affections e.g feelings; neither are percepts the same as perceptions. Rather, affects "go beyond the strength of those who undergo them. And, percepts, "are independent of a state of those who experience them" (Deleuze & Guattari, 1994, p. 164). For example, Deleuze and Guattari stressed that artworks become-with us through the sensations within the artwork and where matter itself becomes expressive. In this thesis and the published articles matter and materialities become expressive, which is expressed as affect or being affected.

Hickey-Moody (2013, 2016) and Massumi (2015) develop the concept of affect as it is offered by Deleuze and Guattari (2004; 1988/2004, 1994) and a Spinozist notion of *affectus*. Hickey-Moody (2013) expresses affect as feeling, as a confused idea and something that moves us: "It's a hunch. A visceral prompt" (2013, p. 79). While Massumi (2015) suggests that affect feels out the world because it is inherently open for adventure, and

"Affect comes to determinate expression through actually occurring encounters, ... the intensity of the encounter, in turn, refers to an augmentation and powers of existence - capacities to feel, act and perceive - that occurs through the encounter" (p. 205).

Braidotti (2013) conceptualises affect as an affirmative expression of forming connections with other beings. By including her thinking, I turn away from human-centric notions of self and move towards affective and experiential natureculture connections which, as I have written earlier, directly connects to the aims of this research project. Usually affect is perceived as something that does something to you, as in affecting your feelings. However, in this thesis and as outlined here, affect is something more than affections. The concept affect in this thesis is central to the conceptualisation of Aesthetic Explorations and also to being an aesthetic explorer in the Remida. As an aesthetic explorer I opened up to the vital forces; the affective intensities that arise in the in-betweenness with young children, practitioners, tools, materials and phenomena of darkness, shadows, light and colour. Each of these vital forces and their capacities to act and be acted upon, to affect and be affected, pushed me towards movements and thought which left me overwhelmed by the connectedness of these worlds and how they are constantly intra-acting.

3.5.3 Mattering matter

To think and work with the word *matter* gives opportunities to play with the term which several feminist thinkers working with materiality have done, such as Barad's "the only thing that does not seem to matter is matter" (2008, p. 103) and Haraway's "It matters what matters we use to think other matters with..." (2016b, p. 12). Whilst these philosophers insist that playfulness is both necessary and fun it can also serve to confuse. Therefore, I seek to clarify my use of the different terms.

In article three, I write about matter as a noun, in a biological sense as a material substance that occupies space and has mass. This definition of matter is retrieved from Merriam-Webster, an online dictionary (e.g. "Matter", 2018, para 2.). Sometimes, when terms are used (some would say matter is overused) I find it helpful seek out a word's origin, its etymology. Matter has mass and occupies space and therefore it can be everything and in everything and everywhere. When Barad and Haraway play with the term matter, they also play with *matter* as a verb. When matter is used as a verb, it is something that has a meaning, which is of importance, or under consideration, such as in the quotes above. *Mattering* is a present participle of matter in a plural form and can be interpreted as matters that are important or affect what happens.

Materiality is from the noun *material* and describes the quality of being composed of matter, of being material. From Merriam-Webster it is defined as the elements, constituents, or substances of which something is composed or can be made and/or matter that has qualities

which give it individuality and by which it may be categorised (e.g. "Materiality", 2019, para 1.). *Materialities* is materiality in plural form. I also use the term *materials* as a part of the combined term, recycled materials, which in this case means objects or things, retrieved from industries or shops.

In this thesis, I use these terms interchangeably and playfully, such as the phenomena materiality/materialities of shadow, darkness and lights. The different materialities working together are more than a shadow, or a light, the materialities co-constitute each-other. Besides using many ways of thinking with theory and matter in this thesis by publication, I am also thinking with concepts from Barad's agential realism. Concepts such as materiality, material-discursive, and intra-activity are introduced in this chapter. Others, such as agential cuts are introduced in article four and expanded on in the methodology chapter.

As a feminist new materialist, Barad (2007) draws on how matter seems to matter or comes to matter as described above. Barad has a background in Physics, and so applies her knowledge of quantum physics to feminist's theory and social science, which she calls agential realism. In her book *Meeting the Universe Halfway* she writes (2007, p. 396) that "being alive to the possibilities of becoming, is an ethical call" and suggest that we "meet the universe halfway to acknowledge "the role that we play in the world's differential becoming". Through *the material turn*, Barad (2008) claims that language has gained excessive power in research and points out that materiality and meaning do not constitute separate elements, but are instead entwined and mutually dependent on each other. Barad (2008) argues that it is impossible to separate the object observed from the subject. Unfortunately, this turn has been misunderstood or exaggerated as a "dismissal of everything linguistic" by several researchers, according to Tuin (2018, p. 278). This was never Barad (2007) intention; she simply asked how language might have become more trustworthy than matter.

3.5.4 Material-discursive pedagogical practices education and practice

In my Masters thesis, I used Barad's material-discursive approach to "read" pedagogical documentation of children's encounters with recycled materials and pedagogue reflections within a pre-school context. The documentation brought hidden discourses to the surface, such as gender, power, and expectations. It also exposed how materiality works on/in all situations, including bodies, rooms, materials, microclimates and so on. This was revelatory and provoked thought that all practices are ongoing material-discursive processes.

The material-discursive expresses how discursive practices are already material, entangled, and enlighten that the spaces, materials and environments children are offered are

not insignificant, neither are the discourses that inform practice (Odegard, 2012). The concept material-discursive was a starting point for the doctoral research journey and served as a backdrop for this study.

3.5.5 Inter versus intra

Interaction is activity in-between different units, and researchers are in search of what they do to each-other when these units meet. When I use intra-active, intra-actions, intra-relations and intra-pedagogy, I refer to Barad's theories where intra-action is the activity where something specific is materialised. Barad's concept of "intra-action," also rules out the possibilities for humans to think themselves as removed from a multitude of material agencies. "The notion of intra-action marks an important shift in many foundational philosophical notions such as causality, agency, space, time, matter, meaning, knowing, being, responsibility, accountability, and justice" (Barad, 2012a, p. 77). The intra-relations in this study are, for example, the young children, the teachers, the recycled materials and matter with which they are engaged. What is, and what is becoming? What can these relations do? And how will this affect pedagogy? Expanding on the concept intra-activity Towle (2017) outlines that an intra-active pedagogy is concerned with how agency, meaning and potential transformations are produced through intra-actions. Further, Alaimo (2018, p. 52) suggests tracing intra-actions and entanglements enables the researcher to expand ethical and political approaches where humans are not separated from the material world.

3.5.6 Spacetime matterings

In Barad's (2007, 2014) texts concerning time she underlines that time cannot be fixed, which connects to Deleuzian thinking that the future always has parts from the past, discussed earlier under the subheading 'events'. These positions both challenge and expand the possibilities for the researcher. In article four, I write about the ongoing data and therefore the becoming-researcher in the "materialisations of what was/is/to-come" (2014, p. 183). While in article three, I aesthetically explore images from the research where the events affected me and invited me to think-with them. These images moved in time and space, together with my own movements in time and space, and thinking, and hence became various matterings or what Barad calls "spacetime matterings" (2012b, p. 77). Encountering the images stressed that time and space and materiality are dynamic, becoming and intra-active, and insisted that I explore the possibilities of the entanglements of spacetime matterings in this research.

Time is also discussed in Braidotti's (2013) nomadic theory, where she describes a

dynamic vision of time, which “enlists the creative resources of the imagination to the task of reconnecting with the past” (p.165). While Haraway (2016b) describes how all critters are “entwined in myriad unfinished configurations of places, times, matters and meanings” (p.2). These time-space-matter-meaning entanglements are fundamental to thinking-with the idea and phenomena of Aesthetic Exploration, which expands each time spaces with recycled materials are encountered, or when I reconnect with the empirical matter from the research.

Bennett’s (2010) articulation of vibrant materiality, which she writes, runs alongside and inside humans, is to see “how analyses of political events might change if we gave the force of things more due” (p. viii). Agency is a kind of “lifeforce or a vibrancy that interconnects mind and matter in unpredictable and unknowledgeable ways” (Bennet, 2010 as in Duhn, 2015). Bennett’s emphasis on change is closely connected to other theories shaping this research, such as those of Barad and Haraway. Both Barad (agential intra-activity) and Haraway (mattering) work with and explore matter as agentic and delve into what material-discursive encounters generate. Bennett (2010) highlights how patterns of consumption could change if we encountered rubbish (or recycled materials) as an “accumulating pile of lively and potentially dangerous matter” (p. viii). Bennett’s (2010) ethical aim is to make us aware that non-humans and humans are in a dense network of relations, a knotted world of vibrant matter, and if one section of the web is harmed, we may very well harm our self. This echoes Haraway’s (2016) notion of *compost* (see more p. 47) and her calls to *stay with the trouble* and Barad’s (2014) notion of *not being able to turn the world back on its axis* (p.183).

3.5.7 Research in the Anthropocene

At the outset, I anticipated that I could pay exclusive attention towards the children, recycled materials and to conceptualising Aesthetic Explorations. However, working with feminist new materialist perspectives generated a raft of important ethical issues that I was forced to contemplate including a move from anthropocentric to biocentric approaches, a focus on the inseparability of naturecultures and the significance of indigenous cosmologies to making sense of our human place in this specific historical moment. I was required to think with these interwoven lenses in order to engage with the entanglements in the matter itself.

The term Anthropocene is a combination of *Anthropos* from Ancient Greek meaning ‘human’ and ‘cene’ meaning ‘new’ or ‘recent’. The Anthropocene is understood as a specific geological epoch characterised by human impact on the fate of planet earth (Somerville, 2013, 2015). It is a geological epoch generally recognized by scientists to have begun with the onset of the industrial revolution (late 18th century) when man sought to claim control of nature

with dire consequences in terms of the climate and ecosystems. The persistently growing influence of human impact on the planet such as changes to land use, destruction of ecosystems and challenges to biodiversity led to species extinction and global warming. The human-induced damage to planet earth is acknowledged to be substantial and increasing at an exponential rate (Ellis, 2018; MacCormack, 2020).

A concern with the Anthropocene is central to this study and is mobilized in all four articles, but especially in article three: “Imagine sustainable futures” to contemplate how else humans might contribute to life on planet earth. Somerville and Powell (2019) propose that it is not possible to know the full consequences of this geological period before children born in the twenty-first century are grown up: these children will know a different world than the one we know. Malone (2019) suggests that humans have come to understand themselves as separate from nature, and as a counter she offers the concept of childhoodnature as an extension of Haraway’s naturecultures to denote that humans are inextricably bound up in nature and culture. The posthuman and new materialist approaches such as those activated in this thesis are taking in human influence on all species, animate or inanimate through economics, industries, interventions in nature, consumption, pollution technology, science and more (Braidotti, 2013, Hekman, 2010).

In this research and my work with recycled materials more generally, reusing materials forms part of a longstanding ethical approach borne of deep concern for the environment. Through this thesis, I expand an earlier argument (Odegard, 2010, 2012, 2015) that by using reusable materials and discovering their complex and intriguing potential (by gathering, sorting, exhibiting, and offering Aesthetic Explorations and constructing with them) inevitably means that they are (re)used at least once more, which thereby extends the lifetime of each material. Thinking-with recycled materials also connects the age of Anthropocene more firmly to feminist new materialism by acknowledging the agency of matter and that materialities act, interact and intra-act within, through and around human bodies and practices (Alaimo, 2016, p. 1).

Focusing on differences produced in material-discursive relationships, in what matters, could force a move towards more biocentric ways of thinking and doing, which is inferred by the term itself: “the rights and needs of humans are not more important than those of other living things” (e.g., “Biocentric”, 2020, para 1). Biocentric does not view humans as decentered or detached, but it challenges the nature/culture binary to urge that humans are thought of as part of naturecultures. Humans are ephemeral, as all living beings are. We are entangled with others, humans and more-than-humans by relating, knowing, thinking,

worlding and telling stories, so are all other critters (Haraway, 2016b, p. 97). Haraway contests that we are compost and we inhabit the humities, not the humanities. She refutes being a posthuman, a term she says she does not like because it still has humanism in focus:

“Philosophically and materially, I am a compostist, not a posthumanist. Critters—human and not—become-with each other, compose and decompose each other, in every scale and register of time and stuff in sympoietic tangling, in ecological evolutionary developmental earthly worlding and unworlding” (2016b, p.97).

In Haraway’s compost thinking, we are all one, not humans and others, but one pile, with heat, energy and knowledge and capacities, that can do better, transform and cultivate response-ability. In working with sustainable futures through recycled matter there are elements of compost; ephemeral possibilities for doing better. By acknowledging the value of Aesthetic Exploration, entanglements are cultivated between humans and material, which again enables response-ability (response-ability is also addressed in Chapter 4: Ethics p. 53).

3.5.8 Indigenous cosmologies (cosmopolitics)

Holy Places

strange rocks trees
hollows high up on the mountain
as long as we are open we will receive messages
many messages
as long as we see we will learn
if birds, if animals
behave strangely then they
come to us
to tell us
and some places some plants
rocks mountains the bedrock
they let us know
(Valkeapää 2017, p. 315 as referenced in Gaski, 2019)

As compostists, posthumanists, and new materialists we seek to learn how to take care of our Earth, push the human out of the centre and challenge the divide between nature and culture. These entanglements appear always already present in indigenous cosmologies. Turning to the Sami people I am drawn to the verb *Guldalit* which has multiple meanings but the most basic is listen to and listen for messages from nature, from our fellow creatures, animals, birds, wind, sky, and the Earth—in other words: let the Land speak to you. This ability to *gullat*

(hear) has always been respected and regarded as a vital competence for ongoing survival, not only to Sámi but to human beings in general” (Gaski, 2019, p. 262). The poem by the Sami poet Valkeapää and the verb *Guldalit* describes the entanglements in-between more-than-human and humans, and the response-ability to *gullat* (listen) and to act.

In Maori, according to Jones and Hoskins (2016), culture and nature are never truly differentiated. Maori ontologies do not have a dualism in-between nature and culture. Living with nature and intra-active responding seem to be internalised in indigenous cosmologies such as in the Maori where they “talk about the river, a mountain, an entire tribe, or an ancestor that lived hundreds of years ago, as yourself: *ko au te awa, ko te awa ko au* (I am the river, the river is me) (A. Jones & Hoskins, 2016, p. 79). The indigenous ontological world affirms that objects, speak, act and affect independently of human thought and will.

In article three, I open the article by citing the Chicana poet, writer and feminist theorist Anzaldúa. She claims that Western culture has distanced itself from things, by objectifying them and thereby has lost touch with them. Similar to Anzaldúa’s thinking, the Maori, Awajun-Wampis describes the river as a brother, and this sibling relationality keeps them from polluting or throwing waste into it. “The kinship transforms rivers, plants, and animals into entities that financial capital, infrastructure, and contamination can kill rather than “merely” destroy or deplete” (de La Cadena, 2015). Furthermore, a Mapuche group called *Vaca Muerta* (in Argentina) declares that their territories are not resources, but lives that make the *Ixofijmogen* (Mapuche name for biodiversity) we all are a part of (de La Cadena, 2015).

De La Cadena makes a point about grammar; the way we speak shows how we see our own relations with nature. From an environmentalist perspective, you may look at the river, an ecosystem that you want to protect, but human subjects are still regarded as the protectors of the river which is regarded as an object. A kinship with river, where river-woman-land-plants-animals and so on emerge inherently together can be understood as an ecological entanglement, with each element reliant the other in ways that separating them would transform them into something else altogether (de La Cadena, 2015). Giving status to all, not just the human subject, would change our intra-relations. To reflect on the negotiation between worlds and these different ontologies, de La Cadena (2017) uses the concept *cosmopolitics*.

These ontologies are not weighed down by a natureculture dualism, and indigenous scholars struggle to allow them into their academic work, to create a new vocabulary where objects are allowed to express their agency and vitality (A. Jones & Hoskins, 2016). I find

that these different indigenous ontologies and cosmologies connect with the arguments I develop in the articles, especially article three, where I describe the recycled materials through visual writings to question and show how they became affective forces, and in a way expressed their vitality through Aesthetic Explorations of them.

3.6 Chapter summary

The first part of this chapter introduced the reader to the overarching theoretical framework shaping this study: i.e. posthumanism but then went on to map what feminist new materialism offers to the field of early childhood education and how that body of scholarship has shaped this study. Feminist new materialism comprises researchers who are in pursuit of similar goals to those of this study. That is, by focusing on materiality within politically motivated research ideas about methodology, ethics, aesthetics, and politics are recognized as inherently entangled and mutually dependent. From this perspective matter is seen as a performative agent that continuously demands that researchers take it seriously in order to ensure that the influence research can make in the Anthropocene is fully realized. Further, I have discussed central concepts that are frequently used and work across the articles, and in dialogue with recycled materials and the concept Aesthetic Exploration in different ways. The last part of the chapter addresses the eco-ethico-onto-epistemological (my phrasing) entanglements of the bricolaged thesis in the geological epoch of the Anthropocene.

Chapter 4: Ethics

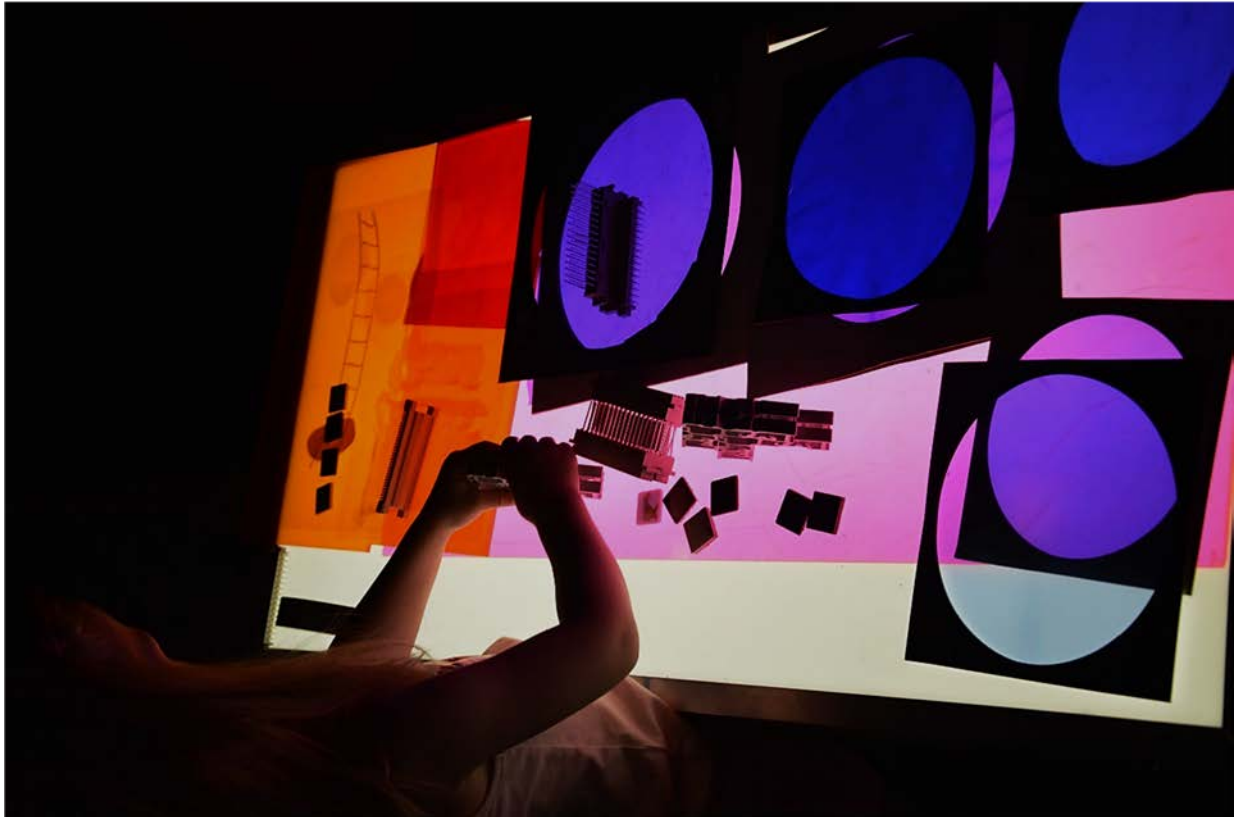


Figure 4: Imagining sustainable futures

The methodological outline of this thesis by publication is divided in two chapters: the ethical framework is addressed here, while the methods and analytical tools are addressed in Chapter 5. This chapter elaborates on the ethical framework of the thesis by firstly presenting the concept ethico-onto-epistemology, before introducing the concepts and ethical practices of responsibility, response-ability, and immanence. The chapter also addresses the various ethical formalities and considerations that were encountered throughout the study and the tensions that emerged from seeking to pursue a posthumanist inspired research study within the constraints of conventional, humanist ethics regulations.

4.1 Ethico-onto-epistemology

Barad (2007) brings together ethics, being and knowing with the introduction of the concept: ethico-onto-epistemology, which she argues is a direct invitation to consider the entanglements in-between the world, materiality and ethics; and what such entanglements produce and the transformative potential that lies within them. Dolphijn and Tuin (2012) describe this as the inseparability of ethics from the nature of becoming and from the theory

of knowing. Using this concept demands that closer attention is paid to the responsibilities that researchers must exercise: “not only for what I know ... but for what may come to be” (Barad, 2007, p. 364). Thus, an ethico-onto-epistemological approach was central to this research and shapes the major concerns presented throughout this thesis which address the world-making possibilities that are generated from Aesthetic Explorations with recycled materials.

This study is driven by a desire to think through new ontologies and ethics as a means to unwrap and open up the possibilities that lie within the concept of Aesthetic Exploration. The study thinks-with recycled materials to consider the contribution to knowledge they can make to the field of ECEC. By working within a new materialist framework, it is important to make known how working-with materials can be articulated methodologically. As Barad (2007) writes “practices of knowing and being are not isolable; they are mutually implicated. We don’t obtain knowledge by standing outside the world; we know because we are of the world. We are a part of the world in its differential becoming” (p.185).

Thinking-with recycled materials has brought to the fore the ethico-onto-epistemological nature of an enquiry that takes matter seriously and furthermore recognises that materiality and our entanglements with it are inherently political. In this way, researching-with materials (as I write in the third article) acknowledges materials as provocative and vibrant thereby inviting active Aesthetic Explorations and producing something new in the world. Furthermore, researching-with recycled materials makes visible the sheer volume of discarded stuff, which underlines the fact that consumption is out of control in the Anthropocene. This study responds to Hird’s (2012) call for humans to urgently take response-ability by getting to know our waste. This shows the paradoxical relations that humans encounter when getting to know and thinking-with recycled materials in an epoch of human-induced destruction of the planet.

4.2 Ethics as responsibility and response-ability

From a posthumanist framework ethics in research is understood as the obligation to take responsibility or to exercise the ability to respond (i.e. *response-ability*) in each moment. This practice of response-ability has been proposed by both Barad (2012b) and Haraway (2016b) who conceive of the world where nature, culture, technology, human, non-human are inextricably entangled, constantly materialising and endlessly reconfiguring. Barad (2007, p. 393) underlines that we are “always already responsible to whom or which we are entangled”

and underlines that this responsibility lies with all living beings. While Haraway (2016b) points to our entanglements with the world, a state she terms *worlding*:

“We are responsible to and for shaping conditions for multispecies flourishing in the face of the terrible stories and sometimes joyful stories too, but we are not all response-able in the same ways. The differences matter –in ecologies, economies, species and lives” (p. 29).

To be response-able then is to make oneself available for many forms of response, where everything is potentially in touch with everything else (e.g. haptic, see Juelskjær, 2019). I see the concept response-ability as the researcher’s acknowledgement of responsibility and attunement to given encounters, and a need to be open to act in the quest for ‘more liveable worlds’ (Haraway, 2016b).

Posthumanist approaches to research stress that responsibility can also be understood as respect for the *yet unknown* where researchers face dilemmas that do not have prescribed solutions. This space of uncertainty and indecision requires scholars to be present and open to other ways of knowing and doing. For example, Koro-Ljungberg (2010) argues that the overall responsibility for researchers is to conduct meaningful and trustworthy research that exceeds duty, mechanical approaches and pre-described solutions. Being open to relationships and reaching beyond pre-determined categories requires theories that support experimental and speculative approaches to research.

Throughout this study, I was called to exercise responsibility/response-ability at various moments where materiality, space, place, affect and human bodies became entangled to produce other ways to sense and contemplate what was being produced. This insisted that I dwell upon the in-betweens, moments that produced a stutter, a stammer, a pause for thought to contemplate what else, and how else, knowledge about recycled materials and childhoods in the Anthropocene was generated. Choices made throughout this research (from how, when and where to conduct the fieldwork, to the analytic approaches needed to generate new knowledge, differently) each insisted that I linger with the affective entanglements that were produced. By opening up the differences and potentials that lie in conceptualising Aesthetic Exploration in relation to recycled materials, the material relationships and entanglements between them came to fore. Hence, working with concepts can be seen as tools to think beyond experiences, to open up to something new.

4.3 An ontology of immanence and immanent ethics

I explore Deleuze’s concept of immanence, and other researchers use of the concept, as a part

of the theoretical and ethical framework for this project (Deleuze, 2001; Lenz Taguchi, 2010; Sandvik, 2010, 2015, 2016). In article four (Odegard, 2019c), I take Deleuze's concept of immanence to be the quality or state of being, or inherence. Inspired by Lenz Taguchi (2010), this philosophical perspective of immanence allows hierarchical structures between humans, materials and materialities to be challenged. As such, the concern shifts away from 'what is' to a concern with 'what might be' and 'what is coming into being' (St. Pierre, 2019).

Immanence shaped the design of this research project and directly influenced the research methodology. Further engagement with the potential that immanence offered to ethical dimensions of the study underscored the importance for tenderness and consideration to frame the methodological and analytical approaches taken. Tenderness infers a gentle and caring attitude towards everyone/thing involved in the research through the entire process. Jackson and Mazzei (2012) stress that working with the different elements of research in an immanent way acknowledges that immanence is:

“produced from the flows of life—the now that is not governed by a system of laws and relations. Immanence constantly re-opens thinking to the outside without allowing a fixed image of that outside. Immanence does not allow any experiences to be enslaved by a single image that would elevate itself above others” (p.89).

This orientation is nomadic according to Braidotti (2018), for her, posthuman critical theory must be understood as vitalmaterialist, embodied and embedded and immanent. Williams (in Braidotti & Hlavajova, 2018, p. 371) contributes to debates about immanence by arguing that it should be understood as process ontology rather than aligned with the philosophy of transcendence where existence is divided into different realms; where being is prior to becoming, and individual processes are prior to multiplicities of processes. Therefore, it is by moving thinking sideways that the idea of immanence entangles with process ontology and all events are understood to share the same realm.

It is possible to identify strong connections between Barad and Haraway's concept of *response-ability* and Deleuze's immanence. They both share a heightened concern with flattened ontologies that recognise the importance of decentring the human subject and working with a concern for the importance of materiality and affect. Additionally, exercising response-ability and working from immanent ethics stresses the significance of engagements with all that is involved in multiple processes of becoming. Aligned with other approaches to research ethics, an immanent approach concerns decisions made theoretically, methodologically and analytically. Hence, this ethical orientation can be understood to have

shaped all aspects of this research from initial design, to the generation of data, to the approaches taken to think-with materiality and articulate new knowledge in innovative ways.

4.3.1 Deleuzian immanence and Baradian agential realism

Barad claims that agential realism provides the central theoretical underpinning to her work, which, according to Hein (2016) indicates she is invested in realist thinking based on an ontology of identity and transcendence. Hein (2016, p. 137) goes on to argue that Deleuzian approaches rest upon a philosophy based on an ontology of difference and immanence.

As outlined above, Barad (2007) privileges an appreciation of intertwining ethics, knowing and being in her ethico-onto-epistemology where the material and the discursive are mutually implicated in processes of intra-action. Immanence is, as mentioned earlier, a process ontology, which rests on a flattened logic, where theories, concepts and doings sit side by side. Immanence is also an ontology that challenges dualisms such as man/woman, subject/object, nature/culture – all from a privileged human position (Otterstad, 2018, p. iv). For Hein (2016, p. 137), these two positions are very different and should not be emerged together because to do so risks simplifying the original work. Hein's position is challenged by many researchers, who drawn upon both Deleuzian and Baradian concepts/frameworks, and instead of reducing or simplifying them they demonstrate that both approaches can be brought into productive partnership to add something new and different to knowledge production and making a difference in the world (see, for example, Lenz Taguchi, 2010, 2013; Malone, 2018; Osgood & Scarlet, 2015; Otterstad & Waterhouse, 2018).

4.4 Ethical formalities

Aside from the important philosophical framings of ethics that have been outlined above, research ethics are more readily understood in narrow terms of following specific regulations and protocols in the interests of protecting research subjects from harm. Ethics in research are both necessary and imposed through NSD (Norwegian Social Science Service) and the European Commission (Pauwels, 2006/2007). In this research, *informed consent* must be obtained from all involved: children via their parents, ECC staff and artists. In addition, the *law on retention of personal data* stipulates specific rules about the storage of photos and videos from the project, including how the material can be used in the future.

There are several ethical considerations with each research process which are heightened when undertaking research with young children. The following section recounts the ethical choices available and how they become complicated by concerns for responsibility and immanence; as well as the challenges concerning relationships that form with

individuals and/or groups directly involved in research.

Given the endlessly changing ethical considerations of research (with children), it was necessary to continually reappraise the ethical challenges presented within multiple encounters during fieldwork. These ethical dilemmas continued beyond the generation and capture of various data (photographs, videos, notes, transcripts) and so it was imperative that ethical response-ability was exercised at all stages of the research process including the approach taken to analysing the data, presentation of results, and the articulation of the what the research might mean and for whom.

When researching with children, parental consent is required according to the Norwegian Social Science Data Service (NSD). As important as parental consent though, was the need I felt to inform the children in an appropriate way about precisely what they were consenting to, and ensuring they understood their right to withdraw at any stage during the research (Kennan, 2015). Despite a regard for flattened ontologies and the immanent ethical approach taken in this study, the relationship between the researcher and the children remains a concern since it is characterised by power asymmetries. It became apparent that consent would need to be processual, and therefore constantly renegotiated with the children throughout the life of the study (Albon & Rosen, 2013) because parental consent alone felt insufficient. In many countries, a permit is required from the children themselves, and in Norway, this is stated in research ethics guidelines for Social Studies, Humanities, Law and Theology. According to these guidelines, the researcher has to provide age-appropriate information about the project to the children, and the children must consent as long as they are old enough to express it (NESH, 2006).

Informed consent became an issue that had to be considered from first meeting the children. I planned to explain to the children what the research involved, and to ensure a level of understanding about what their participation entailed, and for them to grant consent on video. These intentions were not fully realised as it quickly became clear that participants, both children and practitioners, were very eager and enthusiastic to get started. In retrospect, it is unlikely that the young children in this particular setting would have refused to give their consent. The novelty of being invited to participate by a new-comer/stranger (me) and the established group dynamics in the settings contributed to a collective wave of enthusiasm which resulted in eager, confirming nods or affirmative “yes, I understand”, from every child in a short timeframe.

All the children in this project are in Reggio Emilia inspired ECC's. They are familiar with the presence of cameras and video cameras capturing their movement and interactions

thus, (pedagogical) documentation via cameras and videos is common practice. Even though the children were given outlines of what they might do in the Blackbox, it was impossible to anticipate what kind of experiences each child would have. Based on what was observed and sensed, the children did not appear to be uncomfortable with the presence of the researcher or the documenting equipment. Instead, I noted, they appeared calm, curious and concentrated, and also excited, energetic, powerful and explorative. These observations were confirmed by the educators who recounted that these children were used to being documented in many different contexts.

Notwithstanding the children's apparent ease with participating with recycled materials, their readiness to engage in Aesthetic Explorations, and their acceptance to be recorded doing so, I felt a strong urge to exercise an ethico-onto-epistemological response-ability towards the children. For example, there were moments when a child seemed to pull away from the camera or showed signs of being overwhelmed. I immediately took a step back. It was important for the children not to experience the research as an infringement, as described by Sandvik (2010). "Ethical conduct includes sensitivity to the participants' dignity and integrity" (Tangen, 2014, p. 688). According to Elwick, Bradley & Sumsion (2012), accounting for children's perspectives is something that is designed by adults, from what staff observe and interpret about children's expressions and behaviours. Further, they claim that there is always a risk that the researcher or the adult may misunderstand the situation, and unintentionally impose adult narratives and perspectives to make sense of the situation (Elwick et al., 2012). This research though was never about sense-making or discovering truths about children (i.e. how they learn, or what their creations and explorations represented). Rather it was about thinking-with materials and pursuing speculative lines of enquiry that might generate different knowledge about children's engagements with matter and what that might have to tell about living in the Anthropocene. The staff at the ECCs shared my sense that generally the children felt safe in the research situation, but we could never be certain. Therefore, enacting ethics of immanence and a heightened sensitivity within these minor research encounters was crucial to ensure that the research was both response-able and respectful.

Sensitivity towards the children became particularly important and had consequences beyond specific moments in the ECCs. All the data, including photographs and videos, have been anonymised to protect the identities of the individual children. The posthumanist framing of this study does not rely upon accounts of, or by, individualised human subjects. The goal is to generate knowledge about the significance of materiality and exploration to

contemplate how else childhoods can be conceptualised in the Anthropocene and so contribute to realising the potential of engaging differently with materials in ECE to worlding projects.

4.5 Writing from an immanent anti-bias approach

Through my writing, I attempt to create a space where materials, matter, and humans (child-adult) meet. Rather than viewing gender, ‘race’, social class, and so on as residing in the individual human subject, my concern was to recognise that these phenomena are produced within given contexts through material-discursive processes. Therefore, underlining the research with an anti-bias agenda insisted that how what unfolded in the ECC, and the Blackbox specifically, needed to be undertaken in a way that asked whether it is possible to reduce the importance of categorising and coding children through written accounts. Therefore, the study and the published articles pursued an anti-bias approach (see Scarlet, 2016). As Glover (2016) asserts: “Early childhood practitioners are in an excellent position to positively influence attitudes, to challenge bias ... Bias in any form – racism, sexism, ableism, ageism or homophobia.” (p. 13). I, therefore, experimented with omitting reference to a participant’s gender, age or cultural background. Writing to decentre the human subject and to actively resist known ways of fixing children to pre-existing categories was challenging but provided ways to mobilise an anti-bias commitment through the research.

Barad (2007) asserts: “Discourse is not what is said; it is that which constrains and enables what can be said” (p.146). As such, I resisted being trapped into dominant discourses by endeavouring to write in an anti-biased way. Building on Barad’s material-discursive practices, and specifically her concern with how material practices can contribute to the production of gendered (or other biased categories), I acknowledged how ‘object’ and ‘subject’ are co-produced (Barad, 2007, p. 167). An example: *A three-year-old boy running around in circles with a stick* could be an example of how objects and subjects co-produce through material-discursive practices. The three-year-old boy could easily be categorised as a child within a ‘typical’, ‘normal’ ‘behaviour’ or ‘doing’ discourses for a child of that particular age and/or gender. While a girl who did the same would likely be categorised as in some sense ‘ atypical’ or ‘abnormal’.

As a feminist scholar working in early childhood education, I am troubled by what binarised thinking about gender produces because, as Osgood and Robinson (2019b) contest, binarised ways of thinking can reinforce gender norms and stereotypes while also constructing a gender-neutral child. So, it was by electing to find anti-bias ways of writing

that I was enabled to push beyond fixed categories and begin to conceptualise childhood as intrinsically more-than-human, emergent and material-discursive. This way of writing invited different lines of thought and thereby allowed other parts of specific events to shine through rather than being contained and limited to normative ideas, e.g. about age or gender. An anti-bias approach challenged my writing because gender-neutral pronouns are not typical in either Norwegian or English. As such, gender-neutral names for the children participating in the research were devised, professional titles were used for the adults, and I consciously used ‘they’, ‘them’, ‘their’ or ‘themselves’ (English gender-neutral pronouns) throughout. As Barad (2016) stated in her Honorary doctorate speech at HDK, Gothenburg University:

“The idea is not to make certain kinds of terms off-limit or especially groovy words, but that certain ways of talking have trapped us into certain ways of thinking. How we can derail that, is to get underneath and ask a set of prior questions on what material-discursive practices we actually are producing.

I recognise that it is not always possible to think without categorising to some extent since experiences of the world are always embedded, affective and materially-discursively shaped by our situated knowledges (Haraway, 1988). However, pursuing ways of writing that allow for an idea to be followed, and then materialising it in the text provoked questions. This process opened up ways to consider what might happen to the material-discursive practices if biased words are left out.

4.6 Chapter summary

This chapter has presented several ethical positions and considerations. I aimed to be thorough and transparent by taking up an ethico-onto-epistemological positioning in the study. This position is non-anthropocentric and opened up possibilities to think-with Aesthetic Exploration and recycled materials. Together with immanent ethics, these two ethical positions generated and challenged hierarchical structures such as those between humans, matter and materialities, which influenced the whole study including how the empirical matter was generated and handled, how it was then analysed, and decisions about how to write. Further, this chapter provides an elaboration on the overarching ethical framework and the tensions this presented when negotiating ethical formalities and the implications of ethics concepts to the entire study.

Chapter 5: Research within a new materialistic framework



Figure 5: What else?

5.1 Methodological entrances

In this chapter, I describe the overall methodology, setting out the methods I have used as a means to reveal the ways that a Blackbox, tools and recycled materials contribute to young children's Aesthetic Explorations. The research design is framed by posthumanism and feminist new materialism (as outlined in chapter three). In this chapter I map how theory and method work together from this framework, specifically I elaborate on the use of sensory and visual ethnography (Pink, 2007, 2015) in combination with other relevant methodologies (Barad, 2014; Haraway, 1988; Richardson & St. Pierre, 2005) and underline how these methods work productively within the chosen theoretical framework. I also attend to the significance of Haraway's (1988) concept of situated knowledges and what this means for the way in which research takes shape and the claims that are made possible. I will also present the Remida's Blackbox and the participants, both human and non-human.

Next the chapter turns to the different methods used to collect the “data” including video recordings, photography, fieldnotes, after-talks and various modes of writing that I experimented with. I go on to elaborate upon how a wide variety of methods offer opportunities to engage with the entangled empirical matter in multi-sensory ways. Finally, I describe the main empirical matter and three analytical entrances that are put to work in three of the four articles: rhizomatic, hypermodality and bricolage. The chapter ends with critical methodological reflections.

5.2 Bricolage as Methodology

This study attempts to bricolage different traditions together through writing. This is challenging and met with criticism that ideas from different paradigms do not belong together. But I contest that it is important to pursue what bricolaging might make possible; it is by pursuing the endless meanings, ways of thinking, and ways in which knowledge is produced and valued that what counts as valid knowledge (Lather, 1993) can be rethought. By reclaiming and reconfiguring ideas from different traditions and putting them to work holds great potential to generate other ways of thinking and practising ECEC. Yet this is not an approach that is always welcome in the field. A criticism that is frequently rehearsed to me is the incongruity of bringing Reggio inspired perspectives together with new materialist or posthuman perspectives. I have been advised that they come from different traditions and that bringing them together will have serious implications. Such scepticism though has been helpful to my thinking and led me to surmise that neither of these traditions is static, rather they are dynamic, flexible, open to change, and focus on process ontologies and becomings. I am immersed in both traditions and therefore curious about the productive possibilities of bringing them together.

As outlined in the previous chapter, following Barad (2007) this research is ethic-onto-epistemologically driven to pursue political ambitions to make a difference in the world. Various perspectives shape my becoming and contribute to my situated knowledges (Haraway, 1988). Therefore, bricolaging them does not imply that the perspectives are the same or the opposite. However, I need both to work in productive partnership in this thesis, because they *make* each other (Duhn, 2017), with me as an entangled, embodied affective conduit. Referring to article four (Odegard, 2019c), the bricolage itself allows experimentation with a wide range of methods and theoretical perspectives which again builds different knowledge production pathways. Hence, bricolaging: bringing together theories and

methods as a means to innovate and produce new knowledge, differently, is fundamental to this study.

5.3 Background, participators, place, and methods

In previous chapters, I have stated the aims and scope of this study. In this section, I present the research design, or as described by Thomson (2017) the what, why, who, when, how many and how often, of this specific study. The overarching question the study sought to address is: In what ways can space and matter (i.e. a Blackbox, recycled materials and tools) contribute to young children's Aesthetic Explorations?

5.3.1 Fieldwork

The fieldwork took place in June 2015. I started fieldwork as a pilot study, as a small precursor to a much bigger study. However, the "data" generated were much more extensive than I had anticipated: there were hundreds of photos, hours of videos, pages of after-talk transcript, fieldnotes and other writings, described in detail in the following. However, more important than the quantity of data was the richness of the material gathered. When engaging and becoming with it by reading and thinking with theory (Jackson & Mazzei, 2012), several useful and interesting paths for how to proceed were unearthed. Core theoretical concepts became methodological strategies to defamiliarize the familiar.

It was especially interesting to choose a space where different humans, and non-human agencies could come to the fore and where all of "us" together formulated and reformulated questions for this particular research. Like Hultman (2011b) I also felt the events chosen for each article had agency, they did something to me and my thinking, and at the same time, I did something with them. In every encounter, there was a translation that changed and disrupted what was translated. Thus, the research design, with several different methods communicated with different perspectives and so provided a means to unpack the empirical matter.

5.3.2 Researcher's Situated Knowledges

Epistemologically this research is anchored in feminist epistemologies of situated knowledges (Haraway, 1991). *Situated knowledges* describe the knowledge produced in the interactions and intra-actions in-between the researcher, the object/s of the research and the collective knowledge processes the researcher is a part of. This provided an opportunity to think through and question of how knowledge is produced. In what ways am I emplaced and entangled?

According to Rose (1997, p. 307), “no feminist can produce knowledge that claims to be universally applicable to all women (or men)”. Rather, knowledge needs to be understood as nomadic and always moving cross borders (Rustad, 1998). Braidotti’s (2010) use of the concept nomadic invites the researcher to think through and move established categories and levels of experience. The knowledge is always under review, but will also lie still and be unchallenged for long periods (Rustad, 1998).

Haraway (1991) uses the plural form of the term *situated knowledges*, as she claims we cannot talk about only one type of knowledge. She states that all knowledges are located, that knowledge has a body, is gendered and political. Building on this, Barad (2007) states that location is not a fixed position, but fluid and becoming, she stresses specific connectivity and how body-minds intra-act with the world.

Situated research then is affectively charged and as Lykke (2018) argues, is driven by the commitment of the researcher to acknowledge the effects of situatedness, and the theories available. Such an approach positions the researcher in the research, thereby heightening the transparency and translucence of the data. Rose (1997) proposes a double reflexive appraisal of one’s research, which looks both at the researchers’ identity (inside), in relation to her own research (outside) and the world. Haraway (1991) is concerned with how the encounter itself takes shape, the encounter between what she calls the research subject and the research object, she argues that: “feminist objectivity is about limited objectivity and situational knowledge, not about transcendence and division of object and subject” (p. 190).

Rustad (1998) contends that positioning knowledge, background and the conditions in which knowledge is produced brings the research object to the field, as an important participant in the research process. Tracing the historical threads of situated knowledges reveals that the term remains relevant, especially concerning new materialist methodology which aims to complexify how matter is understood. This study is from a particular space and time but remains translatable to the field of early childhood education more generally. All the participators were part of a complex apparatus: the children and the teachers and other adults, the recycled materials, the furniture, the tools, and other materialities. Thus, human and more-than-human were interwoven and became/become situated knowledges that was/is produced.

5.3.3 Scientific role and the situated research-body

With reference to the previous paragraph, the researcher is part of the whole apparatus in different ways; thus, my situatedness in the text as a researcher is intentional. Following Juelskjær (2019, p. 145), this could also be seen as a pedagogical move to show how the

researcher herself is formed of, and with, the analytical movements. Barad (2007) claims that humans do not enter the apparatus as fully formed pre-existing subjects, but as subjects intra-actively co-constituted through the material-discursive practices that they actively participate in.

Being present but behind a camera, while being attuned to the initiative that the children took was an entirely different role for me. I wanted to be part of what was happening, but I also wanted to avoid influencing the stories and events that the children, the artists, and the teachers were producing. In previous research, it became evident that children often respond to adult expectations, whether they are unspoken customs, actively verbalized or silently gestured (Odegard, 2010). To challenge these expectations, in an ontologically immanent way, I exercised an ethical responsibility/response-ability towards the children to create conditions where, as Lenz Taguchi (2010) writes, children can feel that they are allowed to think freely and not in true or correct ways.

As outlined in the previous chapter, children and their parents had been informed about the nature of the study and their involvement, as such, the children appeared well prepared. All the adults in the room, including the researcher, were relaxed, which was signalled by reclined bodies and calm attitudes. Adult contributions were limited to answering specific questions or providing guidance when children needed help to solve material or human challenges. The adult input was intentionally open, where the teacher struck a balance between being present when needed and retreating when it felt appropriate. Sandvik's (2015) attention to the ways that bodies, affects, moods and energies are agentic in co-creating processes prompted us to consciously recline our bodies, which is an example of expressing an immanent ethics in research encounters.

As addressed fully in Chapter 4, immanent ethics in a research process challenges dominant thinking embedded in Western research. To dissolve or challenge the traditional anthropocentric position can shift the focus to other methods, and other ways of analysing, presenting and discussing the results within research. With immanent ethics, these perspectives move. The landscape changes when bodies and senses are forced out of their habitual path, which opens up new ways of thinking and being that contributes to new knowledge in the field of ECEC.

5.3.4 The Remida and its Blackbox with analogue and digital tools

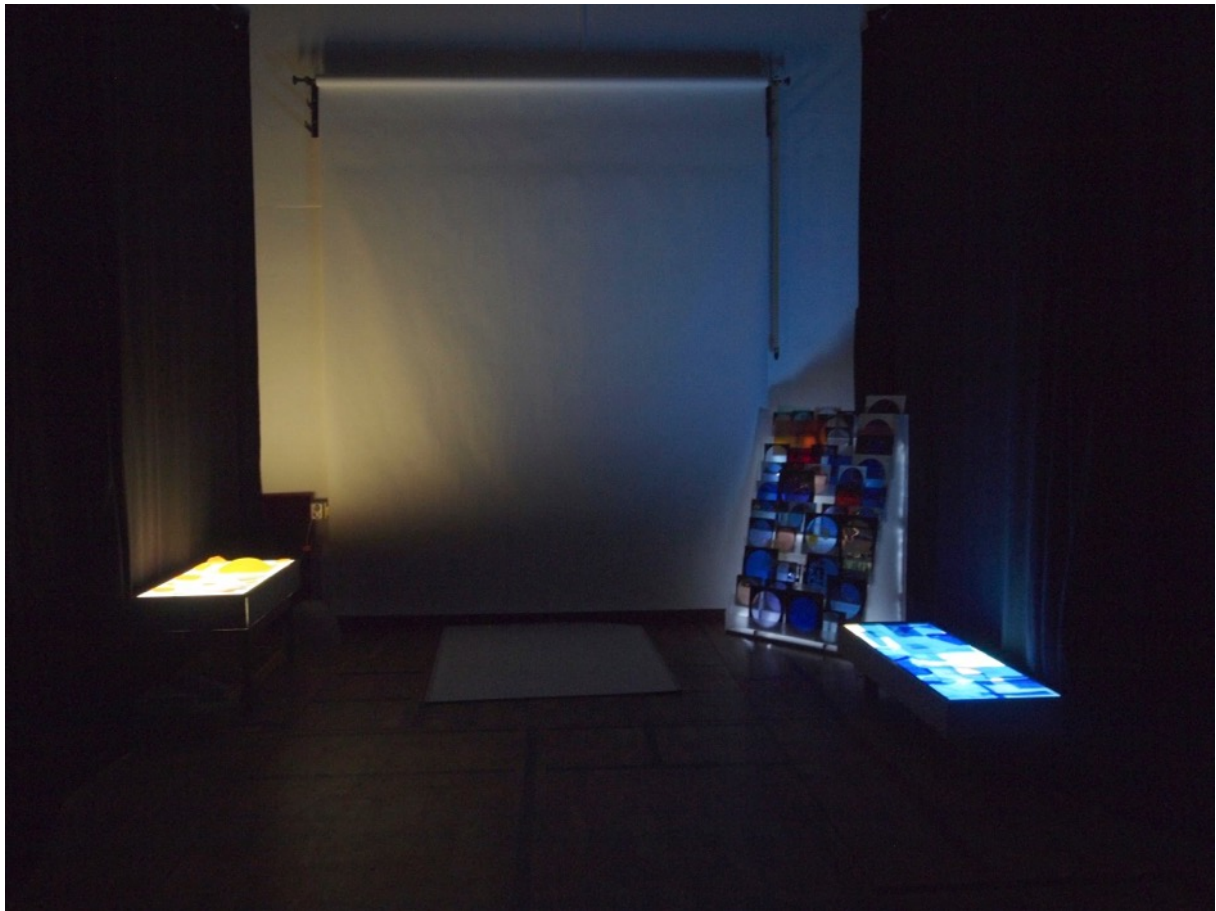


Figure 6: The Blackbox

Image credit: Pål Bøyesen

The fieldwork took place in a creative reuse centre, a Remida. This Remida had existed for several years and had a network of ECC's which could be invited to join the study. There are many creative reuse centres established in the Nordic countries, but only a few are certified¹⁰ Remidas, as I wrote in article three. This particular Remida also had a Blackbox, which is a dark space made for music, theatre and dance rehearsals or performances. The stage or floor in a Blackbox is often surrounded by thick black fabric (Molton curtains) that keep light out and muffle sound. I decided to undertake the research in this specific Remida because of the large amount of different recycled materials that were available. The Blackbox, with its digital and analogue tools, was also a key aspect of the research site. At the outset I was unaware of how central this particular space would be, but the Blackbox provoked my interest from the

¹⁰ The Remida centre in Reggio Emilia started a certifying process some years ago. The creative reuse centre sends an application to the Remida, and if they find the centre suited, you and until 10 of your colleagues (preferable both staff working at the centre, but also local authorities and people who work with disposal) are invited to a week course at the Remida in Reggio Emilia. Now and then the staff from the Remida should be invited to the local Remida conference to lecture and follow up the Remida.

start. This shielded space made for young children seemed in many ways ideal for exploring and later discussing the space, tools and materials that contributed to young children's Aesthetic Explorations.

The Blackbox was constructed and made by the artist who was working at this Remida and so this is not a place that every ECC has access to. However, several ECC's, especially those inspired by Reggio Emilia pedagogy and philosophy, construct spaces with a resemblance.

The darkness of the room presented some challenges. For example, neither the video recorder nor camera had the light sensitivity needed at times. Under the following conditions, such as with a special colour of light or with no spotlight on the screen, the ability to see details in the children's (and adults) facial expressions were lost. Darkness resulted in unintended sharpening of other senses in the Blackbox, and visual attunement was the most immediate sense to be weakened. In the darkness or near dark conditions, facial expressions and gestures retreated and faded into the shadows, and voices, movements, vibrations and sounds (stamps, rumbling, claps) came into being. Subsequently, we were all bodies and sounds affected through encounters with the space and materialities. These different materialities also affected how the adults placed their bodies in the room, and how our senses seemed to sharpen, as noted by Sandvik (2015) and earlier Lenz Taguchi (2013). The materialities of darkness, light, shadows, and vibrations were thus agentic co-creators in the process, together with bodies and materials. The darkness and the different light sceneries in the Blackbox produced different conditions and affective flows and forces, as described in the four articles, which again produced different events.

This particular Blackbox had various tools, carefully selected by the artist; digital and analogue light equipment such as light tables, overhead and video projectors, sound equipment, magnifying glasses, flashlights and a digital microscope. The tools were made available so that young children could use them and experience and explore different materials in a creative, aesthetic and detailed manner.

The Remida was filled with abundant recycled materials made from wood, metal, plastic, fabric and so on from various industries. Such materials held the potential to be inspiring and intriguing, inviting and overwhelming. Each material had its own properties and potentials, with differing colours, sizes, forms, textures, and surfaces.

5.3.5 Human participators (young children and adults)



Figure 7: Exploring transparency, colour and light

Through the manager/artist at this Remida centre, I made appointments with different groups of children from different ECC's to visit the Blackbox and participate in the study. Groups from early childhood centres and schools were already visiting the Blackbox with its materials and tools, so the research project engaged with an already ongoing process. However, I asked if the ECC's could bring between three and five children to ensure that the young children were given sufficient space and opportunity for detailed explorations. I also requested groups of children that had visited the centre before, and with one exception, all the groups had. I was working on the presumption that children would use the tools and the materials more rapidly if they were not encountering them for the first time. Six small groups of young children (between three and five children per group, except for one larger group) from five different ECC's attended. Each group visited the Blackbox for between 50 minutes and two hours.

Each group of children came to the centre with one or two ECC-teachers, and sometimes an assistant. In every session, the artist (the leader of the centre) was present. An

atelierista was present in three of the sessions. The artist welcomed the groups, organized all the sessions, and planned the materials and tools. They also provided the main support to the children during their time in the Blackbox. After each session, the artist and I discussed how the choice of materials worked and reflected on whether other materials should be introduced instead. In the first session, the artist began by introducing various pieces of metal, then in the next session introduced different transparent fabrics, plastic tubes, light filters and also a lot of different recycled materials that the children gathered themselves. The children were free to explore materials inside the Blackbox or exit through the black curtains to find other materials. Each session started with a limited set of materials to let the children familiarize themselves without being overwhelmed by the vast quantity of material available in the centre. The Blackbox, with its thick curtains, made such an introduction possible.

5.4 Visual and sensory ethnography: video recording and photographing



Figure 8: Entangled with movements as matter, fabric and light in photomatter. *“I want to know light ... I want to reach inside light and find its heart, touch its soul, take some in my hands whatever it turns out to be, and bring it back...”* (Pynchon, 2012, p. 1016)

The images and videos from this study were studied intensely and repeatedly, I exercised what MacLure (2013b) terms the capacity to wonder at selected sequences and events of the empirical matter and to dwell upon that which hailed my attention. These snippets are not

representational but rather work to provoke and agitate a different engagement with children's Aesthetic Explorations with recycled materials. Early in the process of designing this research, I decided to bring a video camera into the Blackbox and to be open to what might be captured. I had some experiences with videos, but not in a research context. I anticipated that videos might generate more and other data than photos alone. I also used the video to gather an overview of the different events unfolding at the same time. For example, the video recorder on the tripod filmed the middle of the Blackbox meantime I sometimes, simultaneously followed children to capture closeup shots which enabled access to different events and different perspectives of each event.

When working with video, it is crucial for ethnographers that a video should not be seen as looking back at that time, space or locality (Pink, 2007). With this as a backdrop, the filmed sequences were used to examine the unarticulated, to help me remember and experience again (or in new ways) what I had been a part of earlier which assisted in the analyses and theorisations of what unfolded in the events. The audio-visual method provided access to something more than the linguistic but excluded senses like smell, taste, and touch. I came to look upon the video, not as innocent channels of communication (Lather, 2007) but as intertwined in a disorganized way which interfered with what was investigated (Pink, 2009 and Butler, 2010 as used in Staunæs & Kofoed, 2015, p. 1230).

Since the focus of the study is recycled materials and other matters contributing to young children's Aesthetic Explorations, engagements with the video recordings mostly attended to the in-betweens, as well as what was said or acted when it seemed to communicate Aesthetic Explorations. Pink's visual and sensory ethnography (2007, 2015) is usefully extended in this study, because it is through decentering the human and focusing on materials and matter that something else is generated.

I encountered the videos in different ways. First, I played each video sequence as a movie from beginning to end several times. Then I encountered the videos more creatively and intuitively and stopped where I found passages that were in some sense intriguing, that agitated a sense of curiosity or sent off affective flows and forces. They were encountered differently, each time. I played these sequences back and forth while taking notes. I shut my eyes and listened, and then took more notes. I stopped the video often to notice movements in-between bodies, hands, material, and materialities. Like Towle (2017, p. ii) I found that through these different encounters, affective forces in-between things, people, and places, in-between matter and materialities, is made to matter. I also found, inspired by Hultman and Lenz Taguchi (2010), that the video enabled anthropocentric perspectives to be decentred and

so allow for observations of how children intra-act with the non-human matter and vice versa. Each time the video was encountered, something new was generated.

5.4.1 Images

Photography has been a hobby for as long as I can remember, thus photographing what unfolded in and around the Blackbox, came instinctively. The camera allowed for a closer focus of what was happening to be captured than would have been possible with the video recorder. The photos captured greater detail where materials, materialities, and bodies encountered each other, and I was able to direct attention towards human and non-human worldings.

I had to use a long shutter on the camera because the Blackbox was much darker than I anticipated. The prolonged exposure sometimes captured rays of light that followed the children's movements (which is expressed in many of the images in the thesis). These materialities of movement, light, and shadow became empirical matter and essential in further developing the concept of Aesthetic Explorations.

When organizing, making connections across and analysing the photos, I became interested in what was happening in-between the different matter, and the human and this led to photos that became more than (empirical) matter. I related, not only to the images as they appeared, but also how memories were provoked and how I was transported in space and time. These movements are discussed in article two (Odegard, 2019b), where I describe how data was renewed and became alive while encountering the images at a later time and in another space, which again produced new entanglements of inquiry.

5.5 After-talks

The Reggio Emilia approach often has documentation as a starting point (e.g. texts, photos and installations), and the after-talks are connected and inspired by pedagogical documentation. All the adult participants: the ECC teachers, the atelierista and the artist, were asked in advance to join the researcher for a talk immediately after each session, which I called an after-talk. In this talk, we shared experiences from the fieldwork. With the just-finished session as a background, the session itself was our starting point. Together we embraced the idea of opening up to spontaneous thoughts, emotions, affects, and entanglements that each session awakened. As researcher, I participated in the discussions with the other participants, but I was mindful not to direct the discussions or impose an agenda. Aligned with the discussion presented in chapter four, I was careful to exercise a

heightened ethical response-ability and to reflect upon my partial perspectives and situated knowledges (Haraway, 1988) and what that does to research encounters. Each session was recorded and transcribed with the express permission of all participants.

This way of working differs from interviews and focus groups since there were no predefined questions or interview guides to structure the discussion; it was merely the research question that provided a backdrop. It also took place just after the session, which connected to the embodied experiences, the materialities, and affects. The participants and researcher were open to allowing the discussion to flow; with few parameters, thoughts and reactions were recognized, verbalized and shared in an open-ended way.

The after-talks had a wide range of themes such as materials and their materialities, the children's ways of participating, the children's different narratives, the feelings of being objectified, excited and/or scared. Some sentences from the different after-talks are woven into the articles as agential cuts or added to underline the narratives. The various perspectives recognized the complexity of the research. Each talk was qualitatively different yet shared common themes due to the overarching research questions.

Spontaneity and a willingness to be open characterized the discussions. I did not have prior relationships with the participants at the ECC's, so I did not challenge their thoughts, ideas, and knowledge in a quest to ensure they felt comfortable and free to share without judgment. However, I followed up their reflections in the discussions, as a moderator. There were issues to arise that warranted challenge and further questioning, but I took an ethical decision of not wishing to judge the participants or place them in an awkward position. I also believe that this made the after-talks more interesting as a method. The climate in the after-talks was friendly, and the challenges came from what we felt we had been a part of, not from a climate that challenged each other.

5.6 Writing as a method of inquiry

As mentioned, this research has a visual and sensory ethnographic orientation with the use of data such as video, photos, fieldnotes, after-talk transcripts, different writings, and various objects as empirical material. In this section, inspired by Richardson and St. Pierre (2005), I emphasize how what I wrote also became one of the methods. The general writing was done during the fieldwork, in relation to encounters with the empirical matter, and the writing I still do constitutes empirical matter. Multiple ways of writing create openings for other understandings because in a sense writing is thinking, and analysis becomes an entangled method of discovery.

I also wrote limited fieldnotes during the hours in the Blackbox because I was generally too captivated by what was happening. Instead, I often wrote afterwards as a means to recall events, moments and questions that I found captivating, confronting or complex. In the first article, I term them related notes. In article three, I used images as “aesthetic provocations” to produce ‘visual writings’ with reference to Ulmer and Koro-Ljungberg (2015). These images were used to substantiate recycled material as *objectiles* and *vibrant matter*. In article four, however, I worked with more spontaneous and intuitive writing, which I called jottings. Being an aesthetic explorer, these different kinds of writings; field-notes and related notes, scriblings, and visual writings were all part of using different writing as an analytic method of inquiry.

The “writing” passages in article three “visual writings”; and article four “jottings” are leaning towards a post qualitative approach where writing is seen as a method of inquiry (Richardson & St. Pierre, 2005). Post qualitative inquiry invites a sense that writing is an emergent process. By thinking with theory (Jackson & Mazzei, 2012) and then reading theory through data requires a researcher is open to surprises and is willing to see the productive possibilities presented by dead-ends in our thinking. Such emergent writing sets in motion questions, and further pause for thought. As outlined in Chapter four, post-humanist and post-qualitative inquiries use an ontology of immanence which puts “methodology aside, and instead reading widely across philosophy, social theories, and the history of science and social science to find concepts that reorient thinking” (St. Pierre, 2019, p. 3). It is clear that there is a methodology of sorts set out in this thesis, but ‘putting aside methodology’ is an interesting proposition because it raises questions about what happens to matter if we attempt to do so. Maybe there are possibilities that help to reorient thinking, such as fiction literature, ethics, and aesthetics. Through this research, I have found elements of post qualitative inquiry, such as immanent ontology and writing as a method of inquiry valuable to create the elasticity needed to create spaces for ideas, new thoughts and Aesthetic Explorations.

5.6.1 To write, to not to be able to write and to dictate a thesis by publication
I had three months left of the PhD scholarship. The finish line was in sight, and I was writing intensely. Before I knew what was happening, I developed tendonitis in both elbows, which forced me to take a break. I am glad I did not know at that time that this condition would be with me for a prolonged time and throw into question the possibility of ever writing that intensely again. For months my arms refused to cooperate with the demands of a PhD thesis. The final months of writing have been made possible by technology. Writing by dictation has

been a very different experience. I always thought my brain worked in connection with the tips of my fingers, now other ways to generate thoughts into words have to be found. I faced a demand to talk my writing.

Dictation is very slow, confronting and frustrating. The programmes do not know the theories, concepts and terms used in the theoretical framework, and they do not seem to understand my accent. They have to learn. However, some of them refuse to learn, such as dictation in the Office program. I have been shouting and arguing with these different programmes.

Then I met the Dragon. The Dragon learns my accent. Together we become a writing assemblage, Dragon writes because I talk, and it learns to recognize how I use my voice. The Dragon can also learn new words, concepts and theoretical frameworks, if I teach it. It takes time to feed the Dragon, but it seems worth it if this is the only way a thesis gets written. Through dictating with this program, the Dragon and I became a cyborg (see Haraway, 1991), through our constant communication.

So why do I feel the need to underline the difference to this way of writing? As a reader, the inner machinations required to get the thesis written is probably not apparent. The thinker behind the text remains the same, but how the writing manifests is notably different. The articles are typed, while most of the Kappe is dictated (and then subsequently redrafted several times through typing). This has slowed down the process, which again has brought words like patience and acceptance to mind (which I am still struggling with). However, it has not been altogether negative. Slowing down has given time for entanglements and deepening of thoughts, ideas, phenomena, time for formulating, time for listening and time for becoming with the thesis.

5.7 Methodological discussions

I regard some of the methods used to generate empirical matter to be quite conventional. Other methods, such as the different modes of writing and the after-talks could be considered more experimental. Each article explores the main questions posed by this research from different perspectives, and three out of four are exploring methods, analysing entrances, tools and methodology as in articles one, two, and four. The articles also reveal how I have been grappling with, and challenged by, concepts of data and empirical matter. This grappling has insisted that I explore these concepts in different ways. A summary of each article is presented in Chapter 6 and each full article is in the appendix.

5.7.1 Data/empirical matter

Kaufmann (2011) indicates that almost everything is empirical matter; “any actual or virtual object, event, or intensity that can be read” (p.149). I use the terms data and empirical matter interchangeably in this study because data is empirical matter, based on experiences, Aesthetic Explorations, and events, rather than by logic or reason. Both empirical matter and data could seem all-encompassing, and not generally problematized conceptually. However, within new materialist ontologies, discourse and matter are mutually implicated, which allows for an exploration of what data/empirical matter is or can become. Empiricism is usually looked upon as a theory that originates from the premise that knowledge comes from experience, and “analysing empirical matter is about constructing meaning” (Kaufmann, 2011, p. 148). It is this conceptualization of empirical matter that I put to work in this study.

As data emerged from the matter and the events, I attempted to stay open to matter that glowed and exercised a curiosity towards that which was trying to make itself known (MacLure, 2013a). Sometimes I was captivated intensely by an event, staying with it for a long time. There were other occasions when I floated with and in-between several events to explore their entanglements. At other times the matter appeared chaotically, which was both frustrating and intriguing. Working in sometimes systematic and at other times intuitive, which meant that the empirical matter created disorder. In line with Andersen (2015), I found these affective forces and flows insisted that I engage with that I did not understand or was struggling to relate to. Why these events, and not others? What made them so intriguing? Sometimes events seemed to choose me, magnetically pulling, refusing to let go, and hanging around during and after an event.

Inspired by Duhn (2017), I ask “What is our role with/out data? How to move towards an imaginary of data as that which is not known, as that which is not always visible, tangible, senseable?” (p.13). Taking such an approach, I tried to move towards data as potentials, as entanglements, as explorations, as experiments, as playfulness and humour, curiosity and imagination. Through becoming with data, I explored these different entrances, to give data and myself the space and affection needed to make each other.

Researching in a new materialist landscape challenges the idea of humans as the only participants with independent and limited willpower and intentions. Acknowledging that I could not or would not predict the outcomes or identify what came first; human and non-human forces became affectively entangled through movements of bodies, objects, lights, shadows and more.

5.7.2 Data/empirical matter – and its processes

I have watched and re-watched hours of video recordings and pored over the many hundreds of images. Each time I watched I saw something new. Each group visiting the Blackbox involved the completion of a simple form as a means to structure the empirical matter and provide an overview, six in total. The forms were designed to make it easier to revisit the events, the columns helped the data to be reviewed according to different affects and matter that emerged from intra-acting with the data. It was only by dwelling, staying, relating and becoming with/in the data that different events became visible.

The after-talks were recorded and then transcribed. Selected images were organized with each event. Field-notes and related notes, scribbings or visual writings were added to the form. To become immersed with the material required time to relate to it, think and become with it. Each case was based on an event from the empirical matter that was actualized within us and invited us in (MacLure, 2013b; Manning & Massumi, 2014; Odegard & Rossholt, 2016).

The micro-moments used in the articles are taken from a much larger dataset of material. The data in the four articles are drawn from different events, which took place on two different days. The possibilities presented by the data far exceed four articles, but for the purposes of this PhD, it was necessary to impose an arbitrary stopping point. It raises the question: why this data? While I was relating to the data in different ways as described above, by watching, listening, reading, mind-mapping, allowing myself to be affected, the data included in the articles were those which vibrated, from moments, events and materialisations - that provoked my attention. The liveliness of these events agitated and provoked and continue to generate something else.

I was advised that a matrix would assist in organizing and making sense of this unruly data. I was initially horrified at the suggestion that I should in some sense quantify and codify the material. This was fundamentally at odds with the philosophical underpinnings of this study; how could such an approach do justice to the rich, various, multi-layered, dynamic, lively and complex data that had been generated through entanglements with the Blackbox and recycled materials? What made the data significant and interesting for me was the time spent working with it, from watching the videos again and again, from relating to hundreds of photos as matter, to finding ways to structure the material (videodata), from just listening to the videos, from listening and making transcripts of the after-talks and new scribbings, from making a mind-map and from including other “objects”. However, by “summing up” the data via the matrix new possibilities to relate to it, as an interwoven mass, became apparent. This

also made the affective intensities of the data work differently. The data aided conceptualizations of Aesthetic Explorations and thinking-with recycled materials, which involved engagement with all the different matter. My deep investments with recycled materials over the years, and during this study meant that the data had become my companions (Rautio & Vladimirova, 2017, p. 24)

I had no intention of interpreting, categorizing or framing what I think young children, recycled materials and other humans/non-humans are doing, or what it might mean in this research since this is neither the goal, nor possible in post-humanist research. Rather, I attempted to become-with data by attending to what it produced, by narrating, writing and theorizing the events and recognizing their valuable contributions to my thinking and knowledge production. However, there are occasions when it feels impossible *not* to interpret or frame to some extent. I am, as I write in article three, articulating this text because I have a language to describe it. At the same time, I am challenging the human position, the human sovereignty, to inquire about what happens with our thinking, our ontology, if we all exist on the same immanent level.

Besides working with the concept of Aesthetic Explorations, I became an aesthetic explorer. This notion became apparent while working with the data, and it also became a common thread through the articles. While I have been studying empirical matter, I have been intra-acting with the various components in the study and aesthetically exploring through methods, data, analyzing tools, and with photos, videos, objects, writings and more.

5.8 Mind-map

In addition to the relatively systematic approach taken with forms, I also made a mind-maps that gave me a better visual and material overview of the whole project in terms of concepts and use of theory. These were made with pieces of paper, images, quotes, and art posters so that the various elements could be moved around. The mind-maps grew and changed continually. Made and remade several times, drawn to new images, informed by concepts, further reading, more writing, and on-going thinking.

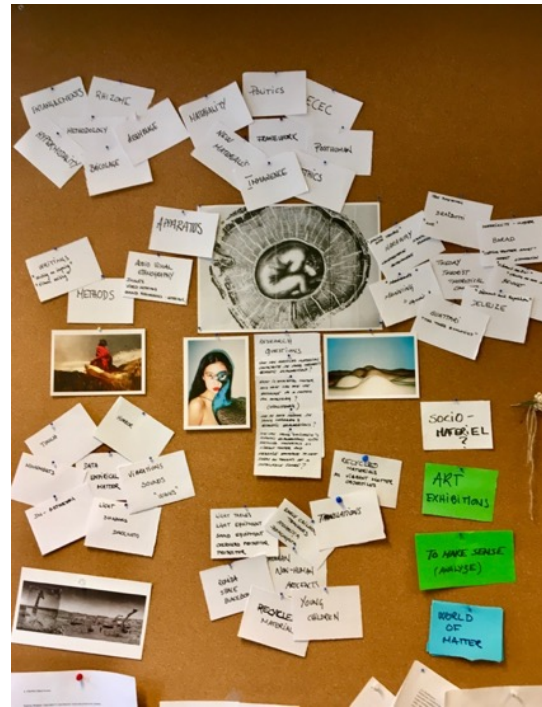


Figure 10: Mind-maps in motion

As stated by (MacLure, 2013a): “Different theories have found different words for this non-hierarchical organization: assemblage, entanglement, missing, manifold, actor-network ...” (p.660). Working with mind-maps connects with assemblage theory, the ontological framework offered by Deleuze and Guattari (1988). In this assemblage, components of vibrant matter of all sorts are grouped in an ad hoc fashion to emphasize fluidity and exchangeability. The presence of energies from the different concepts, images, experiences, quotes, and questions agitated and entangled through each-other. The components were neither stable nor fixed. Some components struggled with each-other, which made regrouping necessary or even total removal. Each element of the assemblage gave off differing degrees of vital materialism (Bennett, 2010) with some exuding very little. The mind-maps as a whole also had an agency that insisted it was changed depending on a new influence, new thinking, new experience or new data. The mind-map assemblage was not a static block but functioned as an “open-ended collective, a non-totalizable sum” (Bennett, 2010, p. 23/24).

The empirical matter I was diving into was complex, multimodal and multi-sensory. The combination of video, photos, after-talks transcripts and scribbles required sensitivity and creativity. The empirical matter was not just “mediator” of the material and the materialities but seemed to affect all its participators in different ways.

5.9 Qualitative research without preprogrammed analytical tool

For many qualitative researchers, posthuman and new-materialist approaches represent a challenge to established ways of undertaking research because the idea of the human subject as a starting point for research is called into question. New materialism makes additional demands on the researcher, especially when crafting academic texts as a way to capture and convey the research processes. Springgay and Rotas (2014) suggest that if research is to challenge its orientation towards humanity, it must also detach itself from pre-programmed methods, and evaluate techniques that are more faithful to their research design.

As an aesthetic explorer, I used different analytical concepts and tools for each article. This helped to develop thoughts and knowledge about young children's Aesthetic Explorations and recycled materials without using pre-programmed methods on how to evaluate them. By exercising different analytical tools, I tried to dissolve hierarchies and recognize 'everything' that could affect the situation or experience, which made the research endlessly fascinating but at times overwhelming. For example, one child's encounter with recycled materials was affected by other children, practitioners, materials, spaces, microclimates, discourses, materialities and expectations. Soon, I realized that a total consideration was impossible.

In the first article, I used a rhizomatic approach, in the second a hypermodal approach and the fourth article, I work as a bricoleur. What united these approaches though was the dynamic and uncertain processes involved and a willingness to reappraise what is being unearthed, as stressed by Sandvik (2012):

“being aware of the possibility that some of the thoughts turn out to have little or no relevance in the analysis and have to be rejected, does not seem to reduce the productivity of thinking. Moreover, it seems to make the production of thoughts easier; whenever a thought creates itself, there is always more to be created” (p.37).

The different analytical approaches presented spaces for new thoughts and new possibilities for creation. Constrained by the article format I had to limit the scope, but as stated by Sandvik in the quote above, there was always more to be created.

5.9.1 Assemblages (mind-mapping, rhizome, bricolage, hypermodality)

The assemblages, the wide range of methods, and analytical tools activated a deepened sensory engagement and insisted that several factors (that were not necessarily visible or easy to articulate) be addressed. Through these human and non-human assemblages, “matter and meaning are mutually articulated” (Barad, 2003, p. 829). The lively agencies from the

vibrancy of the materials and the materialities of light, shadow and sound became important contributions to the research. This further developed the concept of Aesthetic Explorations in connection with young children and the researcher/research.

Three of the articles grapple with data movements in space and time and use different analytical lenses to think with the variety of data to show how the concept data presents a challenge. All articles stress the deep involvement of the researcher in each process from encountering the data in the moment to reencountering it later in time and space. This raises questions about how it is possible to categorize data since data is moving and shifting through space and time, which requires different lenses and theoretical perspectives.

Different perspectives, affects, and matter emerge when specific concepts and analytical tools are mobilized. The data evolved with different entrances; the emerging data provoked new questions, different questions, and outcomes. These encounters challenged normative ways of encountering data so that it matters which eyes, entrances, and matter are used to read your material.

I worked with the empirical matter, the analysing entrances and discussions through a new materialist approach which challenged what research can be and become through opening up to philosophical constructs of wonder and exploration. I also use constructs that disturbed and expanded ideas and mindsets. Aligned with Springgay and Rotas (2014), I did not use these methods to find generalized truths or to validate, but to be open to new and creative concepts. I wanted to generate data materially and to analyse without returning the research to coded results and representationalism.

In this study, the research question determined the methods, and which collaborators and agencies participated. Young children's Aesthetic Explorations and how recycled materials contribute to knowledge production shaped the nature of the research entanglements. As stressed by Lenz Taguchi (2017), the challenge in empirical research is that the research problem will be formulated, and maybe also be reformulated (such as in this study), together with the different agencies from human and non-human, and ultimately the text that is written.

5.10 Is validity a good thing to think with?

In line with Ulla (2014), I find quality in research to be about how chosen methods allow research questions to be addressed, and in turn how the material is ordered and problematized to achieve validity. This view of research quality or validity directly relates to the analytic and theoretical perspectives chosen, so it concerns the overall coherence and transparency of a

study.

Research from posthumanism and feminist new materialism raises additional questions about the concept of validity. According to (Kaufmann, 2011, p. 153), post-structuralist and posthuman approaches have the capacity to open up the concept of validity. Lather (2007) and Koro-Ljungberg (2010) collectively argue that validity can be defined in numerous ways and can function differently based on epistemological and theoretical variations. Koro-Ljungberg (2010) stresses that the concept of validity in qualitative research can "...encompass such terms as *authenticity, credibility, conformability, internal coherence, transferability, reliability, and significance*" (p.603).

As Lather indicates, and as I have chosen to adapt as a subheading, validity as a concept may be a good thing to think with, to structure one's material and to rethink validity issues (Lather in Koro-Ljungberg, 2010, p. 604). My immediate reaction to exploring validity may have to do with the paradigm from which the concept of validity first appeared, and not to the possibilities within the concept itself. If validity is securing research quality, there are numerous ways of doing this. Thinking with Koro-Ljungberg (2010, p. 604), I am open to what can be gained by exploring non-present possibilities and embracing the complexities inherent within the concept of validity.

With this study, I have tried to think outside of the grand narrative of validity. Hence, a trust-worthy contribution depends upon and is connected to the feminist new materialist theoretical framework this text is written into. This methodology chapter provides a detailed account of the ways in this study has been conducted and demonstrates a commitment to transparency and openness. My situatedness as a researcher is informed by and aligned with Haraway's (1988) situated knowledges, as previously discussed, which builds upon the accounts of response-ability and immanent ethics outlined in chapter four. At the outset, taking matter seriously provided the foundation for this investigation, and it has been possible to pursue this by goal by undertaking research that attends to what (else) unfolds through intra-actions between text, images, videos, artefacts, humans, and materialities. By focusing attention on material-semiotic-affective entanglements that I found myself challenged by, material which had consequences for the way I read it and wrote about it. I have endeavoured to lay bare the messy, uncertain intra-actions that shaped this study and how this demands different analytical approaches to contribute to existing debates about the importance of matter in ECE. The different analytical gazes have generated different ways to intra-act with the empirical matter, which has generated new knowledge, differently. However, the insights

and knowledge generated through this study do not (seek to) produce universal or objective truths about recycled materials, or the concept and phenomenon Aesthetic Exploration.

By reading and writing the empirical matter in different ways, intra-acting with it and using different optical lenses, the analyses and discussions demonstrate how these insights are entangled with what is already known and what we may want to know more about, differently. Transparency is a commitment to openness where I want to invite the reader to intra-act and become-with the empirical matter in this study. This thinking is entangled with what I write in article four (Odegard, 2019c), where the idea of the ongoing data, and the becoming-researcher processes, together with what readers may produce themselves, can produce new ways of thinking about recycled materials and Aesthetic Explorations which reaches far beyond this study.

5.11 Chapter summary

This chapter presents and discusses how I worked as a researcher and bricoleur when researching within a feminist new materialist framework. To make this research process transparent, I have provided detailed accounts of the methodological entrances, the false starts and hesitations, as well as a critical methodological discussion and how this informed the approaches to analysis. The research process has been done in line with flat ontology and immanent ethics so that humans, materials and materialities were given the same attention which helped to conceptualize recycled materials as agential matter, together with other materialities that came to fore in the Blackbox. Working and thinking with data, using mind-mapping and bricolaging included much more than the empirical matter from the Blackbox and released other and different forces where matter and meaning were mutually constituted. The vibrancy of the materials and the materialities of light, shadow and sound became important contributions in this research and led to the articulation of the concept of Aesthetic Explorations.

Chapter 6: (In)-conclusion

6.1 Introduction

“Something was running through my mind, but I couldn’t grasp what it was. One thought would link to another, which in turn would link to still another thought. That chain was bizarre somehow, though I couldn’t say exactly why. It was as if I had been swallowed by the act of thinking, if that makes sense.

The pit was thinking too, I could tell. It was alive - I could feel it breathing. My thoughts and those of the pit were like trees grown together: our roots joined in the dark, our sap intermingled. In this condition, self and other blended like the paints on my palette, their borders ever more indistinct.”

(Murakami, 2018, p. 378/379).

This quote from Murakami came to me during a critical stage of my writing. At the time, my head felt overloaded; thoughts were in all directions: I was lost in my own translations of them. I could not grip what my mind was trying to articulate. The thoughts were hovering over me. Far “up” there, somewhere in the not-yet-known that this study had set in motion. I was anxious that thoughts might fail to materialize into an articulable account before the scholarship expired. As a way to mobilize and jostle thinking I went back to the empirical matter to connect with the study’s ‘pit’: that is, the Blackbox, the recycled materials and all the human, non-human, and more-than-human participants.



Figure 12: Flashlights in motion

As stated, this thesis contains four published articles and the Kappe. The next section presents a summary of each article to establish the precise contribution each makes to address the research questions (set out in Chapter 1, on p. 8). I map the ways in which the research questions are entangled within the articles and subsequently re-emerge as productive entanglements throughout the Kappe. The aim here is to outline how the articles work together with the Kappe to present a coherent body of research that extends ideas about early childhood education and the significance of recycled materials and Aesthetic Explorations to (re-)imagine ECEC as connected in a worldly sense. After a brief introduction to the articles, I discuss what arose from working with space and matter, recycled materials and Aesthetic Explorations in direct relation to the research questions. I also attend to the significance of feminist new materialist research perspectives and approaches to generating different knowledge differently and underline the implications of this for the field of early childhood education more broadly.

6.2 The Articles

Odegard, N. and Rossholt, N (2016). “In-Betweens Spaces”. Tales from a Remida. Becoming Earth: A Post Human Turn in Educational Discourse Collapsing Nature/Culture Divides. A. B. Reinertsen. Rotterdam, SensePublishers: 53-63.

The article forms part of an edited volume where authors working from post-qualitative, feminist poststructuralist and post-humanist perspectives “write and tell stories in a way that allows us to collaborate and be stewards and partners of the (natural) world – our earth – rather than dominators of it” (From the book's presentation online, Reinertsen, 2016a).

In this chapter, we (Odegard & Rossholt, 2016), explore the possibilities and potential in children’s encounters with different matter: reusable materials, digital and analogue tools. We also explore the multiple agencies of recycled materials and how these can offer different perspectives on young children’s Aesthetic Explorations. The chapter is situated within a post-humanist framework and directly activates the concept of flattened ontologies and a commitment to de-centre the human subject from investigations.

In order to create links in-between different empirical matter, we draw on creative intuition and rhizomatic connections. Kaufmann (2011) was especially important to our argument since she stresses that rhizomatic connections help researchers to avoid empirically grouping matter into predetermined categories, and doing this can, according to Kaufmann, create new relations and ways of being. Although we argue that research inevitably involves categorization to some extent, following Kaufmann, we invest in more creative ways of

looking into empirical matter as a means to resist this intrinsic urge to categorize. Instead, we were mindful to draw on intuition rather than trying to quell or tame it. Consequently, a rhizomatic approach emerged that promotes thinking, or thought in the act, by experimenting and creating new links between the pieces of matter in order to contemplate new relations and other ways of being.

Having already established the need for a multi-sensory approach into the study of children's Aesthetic Explorations (Odegard, 2010) the possibilities opened up by rhizomatic connections were an important development to the approach taken in this doctoral research. It was through rhizomatic connections that I came to acknowledge a need to involve my body, mind, and senses more fully in the research. Researching and considering the events, energies and flows, the seen and the unseen, the heard and the unheard; were recognized as rhizomatic connections. I made these rhizomatic connections visible through digital drawing in the chapter by offering an illustration of empirical matter and how relationships, theories, and materialities worked together to generate affect and other ways to sense what exploring materials can produce.

The article was inspired by a specific event which describes the words and movements of three young children and their intra-actions with an orange sheet of plexiglass. From this, we explored how to disentangle this data through the two concepts "in-between spaces" (Sand, 2008) and "events of difference" (Deleuze, 1994). Reading the specific event through these concepts, our attention was drawn to how the Blackbox, together with human and non-human agencies co-created in-between spaces where aesthetic, rhythmic forces were generated. From these events, Aesthetic Exploration emerged as an intra-active concept, where it is impossible to separate sense and event, and instead, they must be understood as inextricably interwoven.

Odegard, N. (2019). Crows. Young Nordic Children's Aesthetic Explorations of Crows. Social, Material and Political Constructs of Arctic Childhoods: An Everyday Life Perspective. P. Rautio and E. Stenvall. Singapore, Springer: 119-137.

The second article was published in an edited collection of socio-materialist, post-humanist and post-anthropocentric research on childhood. The edited volume addresses the geopolitical notion of the 'Arctic' through children's everyday experiences. The editors, Rautio & Stenvall (2019), contest that within the book Arctic is explored as various materialisations that matter, condition and define childhoods in Nordic countries.

My contribution to this collection explores thinking-with young children's Aesthetic Explorations of crows, which reaches beyond only thinking-with data from specific fieldwork encounters. The chapter draws on an event that emerged during the empirical fieldwork where young children were engaged in different encounters with crows. Drawing on new materialist theory and theoretical perspectives on aesthetics (as outlined in chapter 2 & 3), together with acknowledging that recycled materials are vibrant, agential and intra-active co-creators, became central to this chapter because they opened up lines of enquiry and enabled articulations that reach beyond normative ideas about children's relations to matter.

Layering the empirical matter (such as photos, matter and texts) proved a challenging exercise because the ambition was to illustrate that much more happened to the data than was immediately perceptible. It was important that the more-than, i.e. that which is sensed and felt could be offered to the reader in ways that could invite an engagement with the layering experiment. In order to pursue this ambition, I used a hyper-modal approach which acknowledges connections in-between audio-visual-text-material. Through this lens it became possible to unpack sensory texts while exploring material relations, through photos, videos, and sound recordings of young children's Aesthetic Explorations of crows.

Thinking-with young children's Aesthetic Explorations of crows emerged by engaging with the empirical matter through a hyper-modality lens and specifically by putting to work the concepts *movements* (Manning, 2013; Manning & Massumi, 2014) and *photo as matter*. This resulted in the creation of a YouTube film (<https://youtu.be/zG6Hxa7n47gA>) that made the ongoing entanglements visible, sensory and audible and directly correspond with the chapter. The photos and the sounds in this audio-visual film mobilised and energised provocations to think differently about data and to enable humans, "to see, feel, touch, hear and otherwise sense phenomena with the mind's eye" (Barad, 2007, p. 388), as cited in the article. Hence, the hyper-modal lens was used so that data (such as photos and audio-visual materials) could be encountered differently, as well as to investigate how the data could be layered to register its vibrancy, and to move with/in space and time.

The children featured in this chapter made their Aesthetic Explorations intelligible through movement, sounds, mimicking and crafting crow, which in turn saw them re-materialising as crows. These Aesthetic Explorations, together with the images from the crow session, produced affective forces and flows which provoked new experiences of crows beyond the research encounters themselves. Through these entanglements, the chapter discusses 'photo as matter,' and 'matter as movements and translations,' and explores young

children's companionship in more-than-human worldings with crows, shadows and recycled materials.

Odegard, N. (2019). Imagine sustainable futures. Experimental encounters between young children and vibrant recycled matter. Nurturing Nature and the Environment with Young Children: Children, Elders, Earth. J. Kroeger, C. Y. Myers and K. Morgan. London, Routledge: 124-138.

The third article is included in an edited volume (Kroeger, Myers & Morgan, 2019), which considers how practitioners, theorists, and teachers can support children in doing and caring about environmental issues differently. Working with the ideas offered by several feminist new materialists, this article argues that recycled materials possess potential beyond being mere commodities that humans consume and (almost immediately) discard. By taking such an approach, this article theoretically explores how to unpack recycled materials through two concepts, Bennet's (2010) *vibrant matter*, and Manning's (2013) *objectiles*. These two concepts enable an exploration of the Aesthetic Encounters in-between human, recycled materials, and materialities. By putting these concepts to work in relation to recycled materials, I was able to explore and discuss the agency, vitality and capacity of materials to make things happen.

This article was inspired by young children's narratives and Aesthetic Explorations with recycled materials while standing near a light table. The narrative is visualised through several images, fieldnotes, and visual writings. The text itself is directly motivated by more than a decade of working with recycled materials and my on-going curiosity and interest with them.

The paper introduces the reader to Remida's creative reuse centres, specifically in Nordic countries, and to different ideas about recycled materials (as outlined in chapter 2 of this *Kappe*). The article challenges and discusses human-centric accounts of the world and goes on to address the implications of the Anthropocene as set out by Haraway (2016b), as a call to 'stay with the trouble'. By mobilising concepts such as agency and response-ability, the paper underlines the importance of recycled materials to expand methodological events through young children's Aesthetic Explorations. I explore whether this could enable and encourage new imaginings, thoughts and ideas about sustainable futures. I argue that involving children, encouraging their ideas and imaginative thinking about working towards sustainable futures, can be productive. Further, that an openness to children's multi-sensory ways of responding to vibrancy and registering materials as objectiles could offer new

possibilities for learning and change; and underline that recycled materials are, and should be, valued as matter that matters; and that can make a difference in the world.

Odegard, N. (2019). “Making a bricolage: An immanent process of experimentation.” Contemporary Issues in Early Childhood 0(0): 1463949119859370.

The fourth article was inspired by mapping the different methods used in this research and the empirical matter through each other and embracing not knowing what they might produce. The methodological approach focuses on the different methods, matter, materialities, and matterings from the fieldwork and considers how working them together set forth different narratives. In the article, I question how bricolaging could be used as a non-hierarchical approach when considering the intra-actions between humans and non-humans, artefacts and materialities. Further, I consider if and how bricolaging different matter can disrupt dominant discourses in ECEC policy and curriculum frameworks by presenting an alternative perspective that embraces complexity.

As a bricoleur, I worked with data in a bricolage to provide an illustration of how entangled data matters differently. Working as a bricoleur has a long tradition in several disciplinary fields (see chapter 3 & 5) and so the basic elements of working as a bricoleur informed what I did. However, a post-humanist framing demanded that agential cuts with data were made to open out the enquiry in a speculative and generative move to produce knowledge in different ways. Through processes of layering the data, stories, bodies, materials, and materialities became entangled, and then working with rhizomatic connections activated an intuitive approach so that bricolaging underscored the materiality of the data. The shapes, colours and forces of the myriad elements did not readily connect or complement each other but puzzling them together released different forces and new relations. By acknowledging the vibrancy of materiality, artefacts, space and different materialities, I argue that light, shadow and vibrations were active participants and became companions in young children’s play and learning. Further, this new knowledge provides a challenge to sedimented ideas and dominant discourses in ECEC. Shifting away from the preoccupation with normative developmental milestones, i.e. what the child should know and do, towards seeing the expansive possibilities that lie in children’s intra-actions with materials and materialities highlights what adults can learn about worldly connections and response-abilities to make a difference in the world.

Aside from the different forces and new relations that were generated from the bricolage, the article attempts to think-with data and underlines the importance of staying with

data and dwelling on processes, rather than seeking results or outputs. By including this written article as part of the empirical matter, and as part of the bricolage, it holds potential to agitate new relations, in different contexts, with different readers which will inevitably produce new thoughts and different knowledge. The bricolage reaches beyond the article itself, since time is an element of the non-hierarchical material relationships in the bricolage its affects live on and continue to produce something new with each intra-action. Taking matter seriously and contemplating how it lives on can extend an appreciation of recycled materials, and the contribution they make to conceptualisations of children and encounters with them in childhood contexts.

6.2.1 What the articles do methodologically and theoretically

The first article was written towards the beginning of the project before I had fully articulated the visual ethnography (Pink, 2007) which I go on to use in article two, and further expand to visual and sensory ethnography (Pink, 2007, 2015) which is deployed in the third and fourth articles. The first article leans towards a more Deleuzian inspired approach than the three subsequent publications. It is through the concepts “events of difference” and “in-between spaces” as well as the rhizomatic analytic gaze that this publication offers Deleuzian framed discussions. However, all chapters and articles have the Deleuzian concepts ‘events’, ‘immanent ethics’ and ‘flattened ontologies’ in common, although they are described in slightly different ways.

Theoretically, all four articles are framed by posthumanism and specifically a feminist new materialist approach. These four articles form the thesis and are fundamental to this overarching exegesis. Different theoretical concepts and analytical tools from feminist new materialist methodology were used in each article. The theoretical orientation of the study (as outlined in chapter 3) insisted upon actively de-familiarising the work in creative reuse centres and making use of my situated knowledges. This approach to making the familiar strange (Osgood, 2017) presented new ways to contemplate what recycled materials and children’s Aesthetic Explorations can produce. By focusing intensely on micro-moments in the articles, it was possible to provide a closer inquiry into encounters in-between space, matter, recycled matter and humans. This study has built upon an enduring curiosity about recycled materials and young children’s engagements with them and has taken lines of inquiry into unanticipated places, as the discussion that follows outlines.

6.3 The concept and phenomena of Aesthetic Exploration

In this study, the concept Aesthetic Exploration emerged, although at the outset I could not pin it down, truly understand its potential or the contribution it might make to approaching ECE in different ways. However, after two years and multiple, varied entanglements with the empirical matter, theory, thoughts, ideas, reading, and writing, Aesthetic Exploration came to matter in ways that insisted I take it seriously. The concept and phenomena flourished through these entanglements and expanded with acknowledging its existence and what it made possible.

Through this study I have learnt, and I am still learning, from and with the concept Aesthetic Exploration. This investigation has reconfigured events, the problem and the concept itself (Lenz Taguchi, 2016). Lenz Taguchi's (2017) idea of working with concept as method and considering how this can reactivate our connection to philosophy has been foundational to this study. As such, the concept Aesthetic Exploration was mobilised through feminist new materialist philosophy to explore how, as concept and practice, it might intra-act. By tracing the concept's "history" (Deleuze & Guattari, 1994, p. 18) and considering how it might become together with feminist posthumanism, I have explored how this concept and practice can "link up with each other, support one another, coordinate their contours, articulate their respective problems" (Deleuze & Guattari, 1994, p. 18). By tracing the concept and idea of Aesthetic Exploration through practice fieldwork and theory, the concept materialized through empirical matter. Aesthetic Explorations involve active processes of working, playing and exploring with all the senses. These processes happened inside and outside the Blackbox and have included intense moments of joy, frustration, concentration, movement and problem-solving. Aesthetic Exploration is an affectively charged, bodily practice and concept, and therefore has insisted upon multi-sensory approaches to space, matter and materialities to underline that early childhood practice and research requires a depth of engagement that reaches beyond what is seen, to what is sensed.

The empirical matter showed that Aesthetic Explorations involve being drawn in because your attention has been arrested, the affective forces of vital, vibrant matter invite practitioners and researchers to contemplate what is unfolding in different ways. Thinking with power from matter and engaging with the vitality of vibrant matter insists upon aesthetic engagements or what Bennett (2010) terms the theory of vibrant matter. In article three, I argue that vibrant matter and Manning's (2013) objectiles work productively together in Aesthetic Explorations precisely because attention is directed away from what an object is to what an object does, i.e. the capacity to make something happen.

Aesthetic Exploration is multi-sensory and includes touching, feeling, sensing, acting or responding to recycled materials or other matter. In the events, children were drawn to the recycled material, the recycled materials hailed their attention, and it is through working with these materials, in this space, with these tools, that Aesthetic Explorations were made possible. In article three, I address this call through visual writings and explore how staying with the materials recognizes their potential and infers a value. Somerville and Powell (2019) describe a similar encounter in their research with children and sticks. They describe connections between children and matter as strong and immediate, where neither stick nor child is separate, instead, the children become attached to the sticks through an intra-action that changed both the children and the sticks. This research has also attuned to mutual intra-actions between child and matter, that tangibly alter those involved. Aesthetic Explorations is an intra-active concept, where it is impossible to separate senses from the event, bodies from objects, matter from matter; rather, they become intertwined.

6.3.1 Entanglements of recycled materials and young children

This section discusses different perspectives on playing with recycled materials and the contributions this can make to reconceptualizing childhoods in the Anthropocene. As outlined in Chapter 2 prevailing ideas about recycled materials claim that they can be understood as in some sense sustainable, ethical, open, and make contributions to material richness and creative thought (Guerra & Zuccoli, 2012, 2013; MacRae, 2008, 2011; Odegard, 2010). This research has built on these claims to explore the capacities materials have to be companions, provoke questions, wonderings, imaginings, and contribute to movement and bodily doings. As the articles stress, recycled materials agitate encounters and engagements, and work as powerful agents in children's play and learning. Aligned with Boucher (2019) this research demonstrates that materials move with children in myriad ways. By provoking, agitating and insisting upon making material attachments recycled materials and Aesthetic Encounters underline the ways in which matter matters.

This research has argued that recycled materials matter and that understanding matter as agentic has much to offer the field of early childhood. The four articles present narratives and events where young children encounter recycled materials in multiple ways. These intra-active encounters between recycled materials and children are made possible by Aesthetic Explorations which bring about movement, sensing, experimenting, transforming, mimicking, sounding, building and more. The goal then has been to resist extracting the material from these explorations by recognizing its relational co-constitution and what it makes possible as

its intra-acts with human and more-than-human participants.

The narratives and specific events also invite the reader to think with forces other than human, to think with matter and engage aesthetically, and to explore the potential for materials to generate surprises in how early childhood education plays out. Attending to recycled materials as distinct within the entanglements of children's Aesthetic Explorations was impossible because, as feminist new materialism so clearly argues (see Chapter 3), such entanglements are always already intricately and intrinsically interwoven and endlessly becoming. The goal is never to disaggregate but to approach research as an immersive and emergent form of speculative enquiry (Osgood, 2019a).

For example, in article one, as data emerged from the recycled material and the events, interest in these "in-between spaces" by Sand (2008) and "events of difference" by Deleuze (1994) were awakened. These in-between spaces, and events of difference, were co-created in the Blackbox itself, together with the human and more-than-human. Children's play and learning, the aesthetic rhythmic forces, were described as a *dance of attention* (Manning & Massumi, 2014). The children paid attention to the more-than-human when they experimented with different recycled materials, which transformed materials and bodies into new becomings (Jones in Odegard & Rossholt, 2016). Also, in article two, the children were paying attention to the more-than-human; on this occasion, the inspiration came from outside in the form of a shared interest in crows. These children engaged with recycled materials through processes of re-materialising as crows and by crafting a crow. The invitation to build a crow was initially daunting because of the complexity of the task, in response, the children mobilised themselves in multiple movements, and through mimicking, sounding and building. The processes involved in becoming-crow were bodily, affective, intuitive and uncertain but the significance of the recycled materials – both what they were, as well as what they made possible – was central to the experiment.

As further explored in article three, children appeared to be drawn to the vibrancy of the recycled materials and acted on forces from objects by holding them in their hands and aesthetically exploring them. This generated valuable connections between the young children and recycled materials – the object's call for vibrancy, and the invitation to reconnect with materials generated knowledge and led to theorising with two concepts, *objectiles* and *vibrant matter*. Article four explores a specific event from the Blackbox that I termed 'spooky narratives'. In this event, three children were aesthetically exploring different objects and installations, and by combining earlier explorations of a new installation, stories, bodies, materials, and materialities became entangled and sparked new narratives.

In all four articles, the young children, space and matter intra-act so that children seem to acknowledge and respond to the agentic forces in a particular space and with particular matter - especially the recycled materials. Contemplating the importance of spacetime-matterings (Barad, 2007) in early childhood contexts holds the potential to contribute to shifting how we think, plan and build spaces for children, and underlines the importance of varied, complex open materials in environments intended for young children.

6.3.2 Eco-ethical entanglements from intra-acting with recycled materials

As outlined in Chapter 5, posthuman theorists are in search of an alternative logic that can dismantle and unsettle the humanist stranglehold on all aspects of life in the Anthropocene from economics, industry, intervention in nature, consumption, pollution technology to science in the broadest sense (Braidotti, 2013; Hekman, 2010). This study makes a small contribution to this field of enquiry by taking matter seriously and contemplating what reusing (using recycled materials again) can contribute to this bigger onto-ethical-epistemological project. This way of thinking about matter holds the potential to extend an appreciation of recycled materials in early childhood education and to ask what they can do for conceptualisations of, and encounters with, children (Odegard, 2019c, p. 11). Taking matter seriously and theorizing what it makes possible through children's Aesthetic Exploration holds the possibility to recognize worlds as entangled and hence focus on our ethical response-abilities through material play. This research has demonstrated that the potentials of recycled materials are only made visible through actively intra-acting with them by gathering, sorting, creating and constructing. Such intra-actions also prolong their lives and help us to appreciate their value. Similar to Otterstad & Waterhouse (2018, p. 114) I argue that reusing and recreating with materials is a response-ability towards nature and culture. I agree with their assertion that choosing sustainability and bringing new life into abandoned objects makes the almost invisible visible again.

Based upon experiences in ECCs and recycling centres over many years I have frequently questioned whether children who have recycled materials in their everyday lives are more inclined to recycle; in "Reuse as a Creative Force" (Odegard, 2015) I optimistically argue that children will be more environmentally conscious. However, while I appreciate the educational and sustainable value of working with recycled materials, this thesis has extended my concern from what humans will do with recycled materials to a focus on the value in and of the recycled materials themselves. Including how recycled materials in educational practice could contribute to raising awareness about sustainable futures, although this is only part of

the story. As this study has sought to make clear, taking such an approach overlooks the myriad other potentials that recycled materials make possible in early childhood. Thinking with and through these materials and their relations with humans has broadened the ways I think about pedagogy and pedagogical practices when it comes to the capacities and possibilities in and of recycled materials.

As this research has shown, the concept of Aesthetic Explorations and working with recycled materials includes both ethics and aesthetics. In chapter 5, I presented an account of the transition from an Anthropocentric to a more biocentric orientation in order to think Pedagogy differently. I am in search of a paradigm shift where young children's Aesthetic Explorations with recycled materials, and thereby contributions to sustainable futures, are encouraged and valued. Thinking with this research has underlined the vital materiality of recycled materials, and the importance of acknowledging eco-ethical considerations as inter/intra-twined with aesthetics. The two concepts relationally co-constitute each other and are equally important in relation to young children's Aesthetic Explorations with recycled materials.

6.3.3 Spaces that matter

As stressed in the methodology Chapter 5 (page 62), working from a feminist new materialist approach meant that it was especially important for the research to be undertaken in a space where different agents, humans, more-than-humans, and non-humans such as artefacts and different tools could come to the fore, in a place where all of "us" together formulated and reformulated the research questions. As this research has shown, space, materials, and materialities have strong agency and became affective driving forces for how bodies move and what kinds of stories (knowledge production) are generated. The Blackbox offered something more than being a dark space with digital and analogue tools; it was a safe space, an intriguing space, a space full of potential, a creative space and a scary place, depending on the different narratives that emerged. The particular Blackbox where most of the empirical matter was gathered, functioned as a *cabinet of curiosities*, both as concrete and conceptual space. Cabinets of curiosities were actual rooms full of strange and wondrous things during the Baroque era (Staunæs & Kofoed, 2015), but they also used as a metaphor to describe the need for "strange spaces for difference, wonder and otherness to emerge" (Maclure, 2006, p. 729). In this research, the Blackbox was this and more; it was a space that offered possibilities for the concept and phenomena Aesthetic Explorations to find expression.

The Blackbox, digital and analogue tools along with stage lighting, light tables,

overhead projector, sound equipment, and more, offered space where children could become with light, darkness, shadows and different recycled materials in a non-hierarchical way. The light tables made it possible to flood light from underneath or through objects on the light table or to create shadows on walls or floor with an overhead or digital projector. In the Reggio experience, this way of lighting comes from a deep understanding of how light calls on our attention and changes with colour to form a motion. The lighting appears from a variety of sources and also in a way that it creates shadows (Edwards, Gandini, & Forman, 2012, p. 374). A phenomenon, following Barad (2007, p. 56), is produced in the process of entangled material agencies were theorising and experimenting intra-act from within. Where the children started, and the matter and phenomena continued, became blurred and uncertain, they all mattered with different movements, and Aesthetic Explorations, as written in article three. In response to Braidotti (2011), I thought through and moved across established categories which enabled borders in-between the object and the subject to become blurred. As children encountered recycled materials, materiality of the shadows became evident, and the body-shadow-colour-recycled material entanglements affected the materialisation of children's movements and their ongoing narratives.

Through different and rich technology, such as that found in a dark room or a Blackbox, sight or seeing is not privileged in relation to other senses and impressions. In this space, it was about touch, vibration, sounds, smells, tastes and more. Knight (2018, p. 133), writes that contemporary ECC's "inhabit a world that is intensively visual". Further, she writes that digital technologies are ubiquitous in young children's everyday lives. This research contributes to the more-than-seeing argument put forward by Knight. The multi-sensory approaches that were enabled in the Blackbox paid close attention to the vibrancy of different matter. Bennet (2010) writes that technologies, such as digital and analogue tools used in this project, appear to strengthen the vibrancy in the matter. Materials and materialities became lively and actively invited the engagement of children. This research builds upon and extends earlier research by (Olsson, 2009), Hultman (2011a) Hultman and Lenz Taguchi (2010) and Westberg Bernemyr (2015) by firstly acknowledging the importance of material intra-actions and then going on to expand from the materialities to phenomena. Intra-actions between the materials and phenomena such as lights, shadows and vibrations exposed the possibilities for non-human companionship. The ways in which children related and encountered shadow and light, for example, made them into something more, as matter, materialities and companions (Odegard, 2019a).

For early childhood education and care viewing materialities as companions could

encourage ECE teachers to pay multi-sensory attentiveness to non-human forces, such as those coming from space, matter and materialities. A general openness to these invitations to companionship could be a way of directing pedagogical attention to how they might make things happen, narrate stories and communicate ideas, and contribute to young children's Aesthetic Explorations.

6.3.4 Aesthetic Explorations as a counterforce to neoliberalism in ECEC

As outlined in chapter 1, several researchers (Dahlberg & Moss, 2005; Duhn, 2012a) have challenged the rise of neoliberalism in ECE which is expressed in practices that focus on standardisation, normativity, measurability, and regulation. Neoliberalism is often effectuated by the use of the language of economic rationality and models such as new public management, public choice and human capital (Dahlberg, 2016, p. 1). This human-capital focused policy tends to rest upon narrow formulations of what and how children in ECE should learn, and it rests upon developmentalist logic that sees ECE as preparation for the next stage, i.e. school-readiness (Duhn, 2012a; Moss, 2007). In Norway, Holten (2016) studied white papers in ECEC to highlight that there is an increased focus on standardising knowledge and basic skills. She goes on to stress that in the face of this, there is an imperative to cherish moments, complexity, and children's being in the world with other humans and things.

There was an intense debate in Norway following the release of a government White Paper: "Time for play and learning" (Education], 2015) which excluded the importance of play in ECEC. As addressed in chapter 1, the Norwegian early year's curriculum has always been play-based, and a counterforce grew amongst early year's practitioners and scholars to prevent an increase in the neoliberalisation of ECE. This White Paper was intended to provide the basis for a new curriculum focused on systematic learning and school-related subjects. Of greatest concern in connection to this research though was the threat to the Norwegian tradition of play-based approaches and a recognition of the intrinsic value of early childhood as a life stage in its own right, not as a precursor or preparation for school. Educators and practitioners protested in newspaper articles, across social media, and a petition was submitted to the Department of Education to prevent the legislation of the proposal.

As mentioned in Chapter 1, PISA is amongst a growing body of influential international actors to have promoted the schoolification of ECEC. Instead of working with values such as respect, solidarity, equality and democracy that are stated in the Norwegian curriculum (Kunnskapsdepartementet, 2017), there tends to be an increased focus on testing

and standardising quality. Dahlberg (2016) warns that this focus on quantifying practices and outcomes in ECEC sends an important message that informs and constitutes what is seen to be important in everyday practices with children. This raises important questions that this research has sought to address regarding the marginalisation of activities that defy measurability. Opportunities for open-ended, creative, Aesthetic Explorations of materials would not find a place in the neoliberal ambitions for ECEC. Learning to sort rubbish, to buy things that last, take care of them and repair them if they get destroyed does/will not have a value in this neoliberal context.

The tension in debates about play-based learning lies in the difficulty of standardising what learning is and imposing this on early childhood education. Resistance is based upon different understandings of the concept of learning, and different views on education, and early childhood. ECEC tends to emphasize hands-on learning, i.e. that which is happening here and now and within emergent processes is difficult to categorise, measure or test. This research has demonstrated that ECE involves both *playing* and *learning*, but there is much more than only these two concepts working together. The concept of Aesthetic Exploration holds the potential to open up, broaden and add something to the concepts play and learning within the early childhood curriculum. This *something* is recognizing space, matter and materials as important companions in young children's everyday lives. As argued in article one (2016, p. 55), children comprehend and build new knowledge through different experiences with their body. Aesthetic Explorations happen all the time in early childhood contexts and cross borders in time and space so that play and learning become inseparable, and much more expansive than typically acknowledged through research that does not take into account materiality, affect, space and time.

6.3.5 Being an aesthetic explorer

Each chapter includes image/images that produced affective charges in the research; these images mattered throughout the doctoral apparatus and continue to agitate further thought. By capturing movements in-between the children and the materials, the viewer is invited sense movements and shadows and to be moved by and with light, as written in article one. These images register the intra-actions between objects, bodies, light, colour, shadow, vibrations, affects, ongoing transformations, where outcomes were neither anticipated nor searched for. Rather, these images provoked different questions to think with, and demanded that data be revisited again and again. "The images invited me in, affected me and compelled me to think with them", as I write in article two (Odegard, 2019a, p. 133). Both the images and I moved

in space and time, each re-visitation differentiated spacetime-matterings (Barad, 2007).

Various forms of writings from jottings, visual writings, fieldnotes, poetry and fabulation occur across the articles. These writings were intuitive, spontaneous and creative but also included more conventional fieldnotes. These writings follow the whole process, from the beginning through the articles, and now in the *Kappe*. Writings are words materialised by encountering the data used to illustrate events, to matter writing, to show how different matter draws attention to and emphasises how new experiences were produced by aesthetic provocations. I am aware that I am articulating the events through writing about them in different ways, as written in article three – I am the storyteller which gives me considerable power. I write together with non-human forces, but I have power to articulate intra-actions in-between young children, recycled materials, lights, shadows, colour in ways that heighten attention to specific qualities and not others.

As a bricoleur the whole research process and role of researcher came together (as discussed in article four). The myriad objects collected, alongside sensations, words, concepts, objects, narratives and images became matter that mattered, and I used them to think other matters with, quoting Haraway in article four. I embraced Braidotti's (2013) 'posthuman predicament' and allowed myself to be moved, disturbed, and affected by the data and experimented with how matter became entangled both literally and through my senses. Through thinking with the idea, concept and phenomena of Aesthetic Explorations habitual thoughts, experiences, and discourses have been challenged. Aesthetic Exploration has expanded beyond what it was through micro-moments shaped by material-semiotic-bodily intra-actions. Taking up a position as a bricoleur and aesthetic explorer enabled a deep immersion with the affordances that Aesthetic Explorations have to offer the field of ECE.

6.4 And finally, What Matters: generative insights from this study

In this final section of the *Kappe*, I elaborate on the main contribution to the early childhood field that this study makes. I present perspectives that run across the articles, in conversation with the research questions. These perspectives could be understood as research "findings", but my preference is to think of them as generative insights. The use of the term insights is inspired by Lafton (2015), who writes that insights are discussions that are constantly moving and function as becomings. These insights concern new knowledge, theorising concepts and methodological choices. However, before the insights, I present some of the limitations of this study, and also present ideas for further research.

6.4.1 Limitations

As outlined in chapter 1, the term aesthetics is part of an extensive field of enquiry. Working with the concept and phenomena of Aesthetic Exploration is likely to attract questions about how the concept relates to aesthetic learning, aesthetic experiences, aesthetic attention and other approaches to the study of aesthetics. Coming from the field of early childhood pedagogy though means that I have taken a specific position from which to conceptualise Aesthetic Explorations in a way that advances knowledge in that specific field. As outlined earlier in this Kappe (page 11), this study is in conversation with others who have researched aesthetics in (early) childhood, but it is the specific focus on working with matter (recycled materials), space (the Blackbox) and tools (digital and analogue) from a feminist new materialist perspective that insights from this research can generate new and specific conversations about aesthetics in childhood contexts. Despite this specificity, I anticipate knowledge generated from this research can be translated and expanded into the field of ECEC more broadly since it raises questions about how children are conceptualized in relation to matter, space and discourse and what this, in turn, means for life on a damaged planet.

6.4.2 Further research

The research has shown that there is more that could be researched within the early childhood education field in relation to the significance of materials. The scarcity of materials is a matter of concern, especially when this research shows the contribution that rich, open-ended materials, such as recycled materials, have to make in young children's Aesthetic Explorations. This study raises a set of other questions that should be explored in future research about the marginalisation and invisibilisation of materials in ECEC contexts and what that means for play and learning in ECEC. Further research into the intra-actions in-between recycled materials and young children in ECC's could usefully extend knowledge about the ways in which ECEC could provide and pursue eco-ethical sustainable futures through pedagogical practices and action-research projects.

6.4.3 Generative insights

The main objective of this study has been to move Aesthetic Explorations from an idea to a concept and phenomena, and in doing so, consider the ways that matter and space fundamentally contribute to this conceptualization. This study and all the generative entanglements to have emerged have insisted that research is not a solo human pursuit, rather

it is produced together with other humans, space, recycled materials, digital and analogue tools and, and, and...



In direct response to the research questions, four key insights have emerged from this study:
In what ways can space and matter (i.e. a Blackbox, recycled materials and tools) contribute to young children's Aesthetic Explorations?

What insights can be drawn for early year's pedagogy by acknowledging recycled matter as agentic?

The first insight seeks to answer the main research question and highlights that space, matter and materialities co-create an articulation of what Aesthetic Exploration can be and become in intra-action with young children:

*Aesthetic Explorations with recycled materials, digital and analogue tools in a Blackbox
co-created in-between spaces where aesthetic, rhythmic forces were sensed.
These forces contributed to extending and opening out young children's play,
learning, narrating and imaginative explorations.*

The second insight seeks to answer the second question and underlines that vibrant matter and affective forces arise from space, matter and materialities. Spacetime matterings have the potential to become children's companions:

*The vital affective forces that arose in-between tools and recycled materials activated agency
and phenomena such as shadows, light and colours
which became young children's companions
and broadened and deepened their play and learning
in unanticipated ways.*

The third insight addresses the concept and phenomena Aesthetic Exploration itself, and its contribution to the field early childhood, to knowledge production and to further research:

*Aesthetic Exploration, as both concept and phenomenon,
is complex, challenging, creative and mobilising.
It makes a valuable contribution to thinking and research,
as well as to practitioners' and young children's everyday encounters
in the early childhood educational field
by inviting a curiosity with what else gets produced through children's engagements with
space and matter.*

The fourth insight outlines the extended researcher role that came from intra-acting with the empirical matter in different ways, and the researcher and the empirical matter transitions:

*To be an aesthetic explorer moves the researcher in time and space where data is understood
as much more than the empirical matter
collected in the research space.*

Each of these four insights hold the potential to make valuable contributions to the field of early childhood education and care; and for the ways that children do play, learn, explore and contribute to world-making practices; and the ways in which teachers can be open to what else is unfolding in early childhood contexts and what that might mean for sustainable futures. This study crucially urges a recognition that space and matter matters in early childhood contexts in ways that were previously not entertained. Further, these insights serve as invitations to intra-act, think and expand the possibilities and potentials in space, matter and especially recycled materials, and in the concept and phenomena Aesthetic Explorations.

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8. APPENDIX

8.1 Attachments: Information

8.1.1 NSD Authorization (Norwegian social science data services)

8.1.2 Informed consent form



Nina Odegard
Høgskolen i Oslo og Akershus
Postboks 4 St. Olavs plass
0130 OSLO

Vår dato: 24.04.2015

Vår ref: 42779 / 3 / AMS

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 13.03.2015. Meldingen gjelder prosjektet:

<i>42779</i>	<i>Estetisk utforskning med gjenbruksmaterialer - i lys av materialitet</i>
<i>Behandlingsansvarlig</i>	<i>Høgskolen i Oslo og Akershus, ved institusjonens øverste leder</i>
<i>Daglig ansvarlig</i>	<i>Nina Odegard</i>

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, <http://www.nsd.uib.no/personvern/meldeplikt/skjema.html>. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://pvo.nsd.no/prosjekt>.

Personvernombudet vil ved prosjektets avslutning, 31.12.2018, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Vigdis Namtvedt Kvalheim

Anne-Mette Somby

Kontaktperson: Anne-Mette Somby tlf: 55 58 24 10

Vedlegg: Prosjektvurdering

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Avdelingskontorer / District Offices:

OSLO: NSD, Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no

TRONDHEIM: NSD, Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19 07. kyrre.svarva@svt.ntnu.no

TROMSØ: NSD, SVF, Universitetet i Tromsø, 9037 Tromsø. Tel: +47-77 64 43 36. nsdmaa@sv.uit.no



INFORMASJON OG SAMTYKKE

Utvalget, ansatte og foresatte i barnehagen, informeres skriftlig om prosjektet og samtykker til deltakelse. Informasjonsskrivet er godt utformet men det bør komme tydelig fram at datamaterialet ikke skal slettes etter prosjektslutt.

- Vi ber om at informasjonsskrivet endres med tanke på at det må informeres eksplisitt om videre lagring av foto/video, og at revidert informasjonsskriv sendes til personvernombudet@nsd.uib.no.

Merk at når barn skal delta aktivt, er deltagelsen alltid frivillig for barnet, selv om de foresatte samtykker. Barnet bør få alderstilpasset informasjon om prosjektet, og det må sørges for at de forstår at deltakelse er frivillig og at de når som helst kan trekke seg dersom de ønsker det.

INFORMASJONSSIKKERHET

Personvernombudet legger til grunn at forsker etterfølger Høgskolen i Oslo og Akershus sine interne rutiner for datasikkerhet. Dersom personopplysninger skal lagres på mobile enheter, bør opplysningene krypteres tilstrekkelig.

PUBLISERING

Det oppgis at personopplysninger skal publiseres. Personvernombudet legger til grunn at det foreligger eksplisitt samtykke fra den enkelte til dette. Vi anbefaler at deltakerne gis anledning til å se foto/filmopptak og godkjenne disse før publisering.

PROSJEKTSLUTT OG VIDERE LAGRING

Forventet prosjektslutt er 31.12.2018. Ifølge prosjektmeldingen skal innsamlede opplysninger da oppbevares med personidentifikasjon for undervisningsformål, ved egen institusjon, på ubestemt tid. Personvernombudet legger til grunn at deltakerne gis informasjon og samtykker til dette.

Forespørsel om deltakelse i forskningsprosjektet

” Estetisk utforskning av gjenbruksmaterialer – i lys av materialitet”

Bakgrunn og formål

Jeg er doktorgradsstudent og skal jobbe videre med å undersøke barns utforskning av og med gjenbruksmaterialer. Dette jobbet jeg også med i masteroppgaven, men da gjennom personalets pedagogiske dokumentasjoner. Tillegget i dette prosjektet er at jeg ønsker å gå tettere på og være tilstede når barn utforsker med ulike verktøy i Blackbox ved ReMida senteret.

Problemstilling: Hvordan kan gjenbruksmaterialer bidra i barns estetiske utforskning?

Forskningsspørsmål: Hvordan kan personalet bruke gjenbruksmaterialer til å skape inspirerende rom for utforskning og eksperimentering i barnehagen?

Hensikten å se nærmere på barns møter med gjenbruksmaterialer i forhold til improvisasjon og kreativitet, og hvordan personalet bidrar til utforskning, og eksperimentering, eller forstyrrer/kompliserer barnas møter med materialene.

Barna vil komme til gjenbruksenteret i Trondheim, ReMida, der det er laget en blackbox med mange ulike verktøy som barna kan benytte i sin utforskning og eksperimentering med gjenbruksmaterialene: lysbord, lydutstyr, foto, digitalt mikroskop med mere...

Utvalg

Barna kommer fra ulike barnehager i Trondheim. Utvalget blir gjort av ReMidasenteret, og skal være et tilfeldig utvalg, men forutsetningen er at barna har arbeidet med gjenbruksmaterialer tidligere. Utvalget, ansatte og foresatte i barnehagen informeres skriftlig om prosjektet og samtykker til deltakelse.

Hva innebærer deltakelse i studien?

Jeg skal filme både barn og personalets utforskning av gjenbruksmaterialene, med fokus på det som gjøres under barnehagens besøk på ReMida senteret. Barna får tilbud om å være på ReMida senteret i to timer. Forskerens data blir filmopptak, fotografier og lydopptak fra aktiviteten. Jeg vil ikke gå inn i aktiviteten, men være tilstede for å filme, ta fotografier og lydopptak.

Hva skjer med informasjonen om deg?

Alle personopplysninger vil bli behandlet konfidensielt. Det er kun forskeren og hennes veiledere som vil ha tilgang til data (les: foto/film/lyd). Opptakene og fotografiene vil ivareta konfidensialitet.

Deltakerne vil indirekte kunne gjenkjennes i publikasjonen.
Prosjektet skal etter planen avsluttes 31.12.18.

Merk: Datamaterialet vil ikke slettes, men oppbevares forsvarlig på ubestemt tid da forskeren ønsker tilgang til materialet i forhold til publisering, forskerkonferanser og disputas etter prosjektets sluttdato.

Frivillig deltakelse

Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil alle opplysninger om deg bli anonymisert.

Dersom du ønsker å delta eller har spørsmål til studien, ta kontakt med Nina Odegard på telefon 97152852 eller på epost nina.odegard@hioa.no. Min veileder i doktorgradsprosjektet er Nina Rossholt, og hun kan nås på epost: nina.rossholt@hioa.no.

Studien er meldt og godkjent av Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste AS.

Samtykke til deltakelse i studien (personalet)

Jeg har mottatt informasjon om studien, og er villig til å delta (gjelder personalet). Jeg samtykker i at materialet ikke slettes ved prosjektets slutt og at foto/filmopptak kan vises i forbindelse med presentasjon av forskningsresultater (forskningskonferanser), publisering og disputas. Du gis anledning til å se foto/filmopptak for å godkjenne før publisering.

(Signert av prosjektdeltaker, dato)

Samtykke til deltakelse i studien (barnas foresatte)

Når barn deltar aktivt er deltakelsen alltid frivillig fra barnet, selv om foresatte samtykker. Barnet skal få alderstilpasset informasjon om prosjektet, og gis informasjon slik at man sørger for at de forstår at deltakelse er frivillig og at de når som helst kan trekke seg dersom de ønsker det.

Jeg har mottatt informasjon om studien, og er villig til å la min datter/sønn (gjelder foresatte) delta i prosjektet. Jeg samtykker i at materialet ikke slettes ved prosjektets slutt og at foto/filmopptak kan vises i forbindelse med presentasjon av forskningsresultater (forskningskonferanser), publisering og disputas. Du/dere gis anledning til å se foto/filmopptak for å godkjenne før publisering.

Dato

Navn på barnet

Underskrift av foresatt/foresatte

Article 1:

Odegard, N. and Rossholt, N (2016). “In-Betweens Spaces”. Tales from a Remida. Becoming Earth: A Post Human Turn in Educational Discourse Collapsing Nature/Culture Divides. A. B. Reinertsen. Rotterdam, SensePublishers: 53-63.
URL: <https://link.springer.com/book/10.1007%2F978-94-6300-429-9>
[Chapter not attached due to copyright]

Article 2:

Odegard, N. (2019). Crows. Social, Material and Political Constructs of Arctic Childhoods: An Everyday Life Perspective. P. Rautio and E. Stenvall. Singapore, Springer: 119-137. DOI: <https://doi.org/10.1007/978-981-13-3161-9>
[Chapter not attached due to copyright]

Article 3

Odegard, N. (2019). Imagine sustainable futures. Experimental encounters between young children and vibrant recycled matter. Nurturing Nature and the Environment with Young Children: Children, Elders, Earth. J. Kroeger, C. Y. Myers and K. Morgan. London, Routledge: 124-138. DOI: <https://doi.org/10.4324/9780429264672>
[Chapter not attached due to copyright]

Article 4

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Making a bricolage: An immanent process of experimentation

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Abstract

This article draws on a new materialist paradigm to explore bricolaging data from an early childhood research project through an immanent ethical lens. This lens enables the researcher to stretch towards non-hierarchical relationships in between subjects and objects, thinking and doing. A bricoleur explores and builds different knowledge-production pathways, allowing experimentation with a wide range of methods and theoretical perspectives. The argument presented here is that bricolaging data could be a non-hierarchical tool through which the researcher considers materiality and artefacts as intra-active participators. Empirical matter – such as videos, photographs, dialogue transcripts, scribbles, sounds, vibrations, bodies and recycled materials – becomes visible through several reviews and rereadings. Here, the bricoleur explores how various data can be read by bricolaging it together, resulting in several narratives that may disrupt and challenge dominant discourses and present alternative perspectives in early childhood pedagogy.

Keywords

bricolage, data, early childhood, immanent ethics

The neo-liberalist logic underpinning western societies places acute pressure on the individual preschool child through education programmes that feature standardized tests in pursuit of predetermined outcomes (Dahlberg and Moss, 2005; Dahlberg et al., 2002; Pettersson, 2017). This ‘schoolification’ of early childhood education and care means that children find themselves increasingly measured against normalizing standards that act to regulate all aspects of childhood by situating children’s learning in a developmentalist perspective (Osgood and Red Ruby Scarlet, 2015: 355). I position this article against this dominant ‘schoolification’ discourse by presenting an alternative perspective on early childhood pedagogy based on the understanding that young children are growing up in a world that is ‘increasingly complex, boundary-blurring, heterogeneous, interdependent and ethically confronting’ (Taylor et al., 2012: 81).

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Drawing on new materialist research and methodology, I experiment with how bricolage can produce alternate early years entanglements that offer a shift to different ways of thinking, being and becoming. The term ‘new materialism’ refers to a wide range of ‘contemporary theories that redefine the relationship between matter and meaning’ (De Freitas and Palmer, 2015: 1202). Objects are viewed as intra-active participants in the more-than-human world and not as ‘simply responding to the interactions of the human’ (Malone, 2018: 48; see also Barad, 2007). By bricolaging data from visual and other sensory ethnography (Pink, 2007, 2015), I examine young children’s aesthetic explorations with recycled materials, different matter and materialities. I also consider if and how bricolaging different matter can disrupt dominant discourses in early childhood developmental theory frameworks and policies (Taylor et al., 2012: 81).

In the next section, I introduce the concept of bricolage. Then, I present the research context, including both the human and non-human entities shaping it. This context produces the immanent ethical framework from which the bricolage process emerges. Immanent ethics is developed from the conceptualization of immanence offered by the French philosopher Gilles Deleuze. In *Pure Immanence*, he writes how

life is everywhere, in all the moments that a given living subject goes through and that are measured by given lived objects: an immanent life carrying with it the events or singularities that are merely actualized in subjects and objects. (Deleuze, 2001: 29)

Immanent ethics is a philosophical perspective aimed at moving beyond the framework of established truths and discourses, and attempting to challenge and dissolve hierarchical structures in between human, non-human and the material world (Lenz Taguchi, 2010). Working with immanent ethics allows the researcher to analyse the potentiality of different material relationships which involves and evolves through the project (De Freitas and Palmer, 2015). The different methods include audiovisual processes, multiple ways of writing, and after-talks that proceeded from the children’s material play activities. In the final section, I feature the bricoleurs playing with the ongoing bricolage through different emerging narratives, and explore how these may be of educational interest.

Exploring the concept of bricolage

Bricolage is a concept that is used across various disciplines, including the arts (Del Real, 2008; Dezeuze, 2008; Selkrig, 2014), political science (Carstensen, 2011), and post-structural education research methods (Denzin and Lincoln, 2011; Kaufmann, 2011). The origins of bricolage can be traced to the work of Lévi-Strauss (1966), who introduced the term to the social sciences and situated it as ‘an analogy to depict how ... cultures generate new myths and religious systems’ (Altglas, 2014: 474). Lévi-Strauss’s bricolage could be seen as a way of reusing materials, where researchers ‘[p]ick up the pieces of what is left, paste them together’ (Kincheloe, 2001: 681) and use them to solve new problems. A bricoleur will use ‘whatever knowledge tool at-hand in the repertoire, and whatever artefacts that are available in the given context to meet diverse knowledge-production tasks’ (Rogers, 2012: 3).

Bricoleurs work with multi-perspectival methods because they have recognized the limitations of one single method or one disciplinary approach (Kincheloe, 2001: 681). Bricolaging allows researchers to be dynamic and heterogeneous in using disciplines, methodologies and theoretical perspectives (Denzin and Lincoln, 2011) to investigate the ‘complexity of meaning-making processes and contradictions of the lived world’ (Rogers, 2012: 4). According to Rogers (2012: 3),

Lévi-Strauss describes the meaning-making bricoleur as one who does not ‘approach knowledge-production activities with concrete plans, methods, tools, or checklists of criterion. Rather, their processes are much more flexible, fluid, and open-ended’.

Kaufmann (2011) describes the bricoleur as one who collects different *objects* (data) for an installation or a construction (bricolage). A bricoleur assembles objects into entanglements through an improvised and intuitive process, including the use of images, sounds, vibrations, bodies, texts and artefacts (Denzin and Lincoln, 2011). Bricolaging is also a process of collecting diverse elements from various places and times, involving different people (Sandvik, 2011). The verb ‘bricolaging’ refers to unpredictable and creative processes, allowing researchers to draw on various tools and materials to produce new knowledge (Rogers, 2012; Sandvik, 2011).

As the bricoleur in this research and the writer of this article, I am acknowledging Lévi-Strauss’s (1966) and Kincheloe’s (2001) use of the term ‘bricolage’ and building on knowledge by Kaufmann (2011), Denzin and Lincoln (2011), Rogers (2012) and Sandvik (2011). However, I am expanding the concept a bit further to explore in what ways bricolage can offer a more non-hierarchical approach to analyse data differently. Subsequently, can bricolaging acknowledge different ways of producing knowledge with young children? Through different audiovisual and transcribed empirical matter, together with other data, I investigate the potential of bricolaging.

Methodological approaches in the bricolage

I draw on different data from my ongoing doctoral project – *Aesthetic explorations with recycled materials: In the light of materiality* – in a Remida centre.¹ International Remida centres have the common function of promoting the idea that waste materials (e.g. offcuts or discarded and unworthy items) can be meaningful resources (Remida, 2018; Vecchi, 2010, 2012). Reinventing their use and meaning can extend the materials’ lifespan – a proactive approach to environmentalism and change. Remida centres are all closely connected, developed and inspired by the pedagogy in the early childhood centres in the Reggio Emilia municipality in northern Italy (Remida, 2018). In the Nordic countries, several early childhood centres are influenced and inspired by the Reggio Emilia approach, and there are several Remida centres and also creative-reuse centres.

The Remida centre where the research was undertaken had a black box. Created for children from early childhood centres and schools, this space offered different digital and analogue tools – such as light tables, an overhead projector, torches, light equipment (e.g. coloured spotlights on the ceiling), and audio and recording equipment (e.g. microphones and loops) – to explore materials and materialities. The entire study took place within the confines of this black box, where six small groups of young children encountered recycled materials and different tools. These encounters were video-recorded and photographed. Besides the children, there were early childhood centre teachers and teaching assistants (practitioners), an artist and an *atelierista*.² The artist worked in the Remida centre and supervised the sessions. The *atelierista* worked as a Reggio Emilia-inspired studio/atelier teacher in the early childhood centre. All of the adult participants, including myself, had worked for several years with values, principles, ideas, materials and tools inspired by the pedagogy of Reggio Emilia.

I have chosen a combination of data collection and creation methods in my doctoral research, where several senses and forms of mediation work together. Bricolaging data from various methods has allowed me to think about research from different perspectives and acknowledge the data’s complexities. The encounters in between the children, the recycled materials and tools were photographed and video-recorded. When photographing, I chose moments that affected me, where I registered the occurrence of something doing (Stewart, 2007); the camera generated photographs



Figure 1. Spooky story.

that froze moments in time and further attracted my attention. These callings were situations where colours, shadows or movements invited the exploration of the young children (see Figure 1).

By using video recordings, I added one more image-based technology to the study as a way to create living images. These living images did not necessarily add ‘significantly more’ than words but could offer insights into complex matter that might emphasize, in different ways, what researchers think they see and write through mere observations (Staunæs and Kofoed, 2015: 1230). Subsequently, the still images and living images had different foci and angles, and contributed to the bricolage in different ways. The audiovisual methods, such as capturing video footage and photographs, enabled me to decentralize the anthropocentric (human-centred) perspective, to physically move the lenses and try to capture these intra-actions between humans, non-humans and artefacts. These different audiovisual methods may not be innocent communication channels in the world but somewhat intertwined and mingled in a disorganized way with the world (Staunæs and Kofoed, 2015: 1230).

The research includes field notes written both during the session and afterwards. In advance, I invited all of the adult participants to join me for a talk (e.g. after-talk). Following up immediately after the session connected us more closely with the embodied experiences, materialities and affects. Within the Reggio Emilia approach, documentation is often used as a starting point for developing pedagogical documentation (e.g. texts, photographs or installations).

Some of the data took the form of jottings during my fieldwork at the Remida centre, including notes on a napkin (in a local café) and field notes while listening to the after-talks or rewatching the video sessions. The different entangled matter made me explore the written text, as part of the ongoing apparatus, through different approaches, including personal narratives from my encounters with the research matter. Writing with full attention to all materialities, as well as challenging the rules and structures of writing, made sense in a new materialistic framework. The immanent

ethical approach makes it possible to bricolage the different data at hand and let thoughts happen in writing (Handforth and Taylor, 2016).

The bricoleur ‘cuts together-apart’

Before being aware of the concept of bricolage, I collected objects. Throughout the research process, I collected pamphlets, postcards and posters from exhibitions, as well as popular-science articles from newspapers. I also collected sensations, words, concepts, objects, narratives and images that resonated with the project, and put them on a physical mind map (installation), similar to Kaufmann’s (2011) idea of a bricolage. I collected this matter (e.g. postcards, concepts and images) because it felt like it mattered what matter I used to think other matters with (Haraway, 2016: 12).

Bricolaging some of the objects on a physical mind map made me question and further explore if the bricolage opened up different and complex ways of sense-making where I let myself be affected by the data. The notion of being moved or disturbed by the data lies in the concept of affect. A new materialist researcher is challenged by how to understand and consider the agency and affects that may be produced in data collection and analyses (Lenz Taguchi, 2014).

As a bricoleur, I experimented with how matter became entangled, literally, on the physical mind map (through bricolaging data) and in my senses. The concept of bricolage resonates with me. While bricolaging it together, I studied how different matter – bodies, materials and materialities – became entangled, exploring what these entanglements might offer. Narratives and ideas seemed to emerge with and in the different matter of the bricolage.

Experimenting with the bricolage

This bricolage process comprises several stages. The first consists of collecting and arranging hundreds of photographs, hours of video footage, video transcripts, the pages of transcripts of the after-talks, the mind map, various artefacts and jottings. My analysis starts with relating to the matter by seeing, touching, listening to, feeling and sensing the different material relationships that entangled and developed the bricolage.

In the second stage, I make a selection and execute the agential cuts for the bricolage. I adopted a playful attitude as a bricoleur of different data, inspired by Barad’s (2014) weaving of different texts (from different thinkers) in her article ‘Diffracting diffraction: Cutting together-apart’. The following fragments are ‘agential cuts’ (Barad, 2007) of several images, video transcripts and different writings (e.g. field notes and jottings). These cuts are ‘[d]ifferent powerful parts of a larger apparatus that produced different events, depending on who and what they met’ (Westberg Bernemyr, 2015: 79; my translation). Different matter mattered in the different events by exploring agential cuts where various material conditions made something occur (Lenz Taguchi, 2010). With these agential cuts, different fragments, connectedness and togetherness with the larger apparatus is acknowledged. I am, as Kinchloe (2001: 686) writes, ‘[c]arefully exploring the relationships connecting the object of inquiry to the contexts in which it exists’, in order to construct the most useful bricolage that my wide knowledge of research strategies can provide.

These agential cuts form different matter that produces something in the encounter with other matter, human or non-human; the different agential cuts produce different phenomena (Barad, 2007: 175). Entanglements of matter and meaning emerge from concentrating on each sentence, which is illustrated by the images (Figures 1 and 2) and texts in different styles. Instead of just thinking about them, I try to encounter them by relating viscerally with them as ‘a movement from the abstract and the linguistic to the specific and the material’ (Blaise, 2016: 624). In this

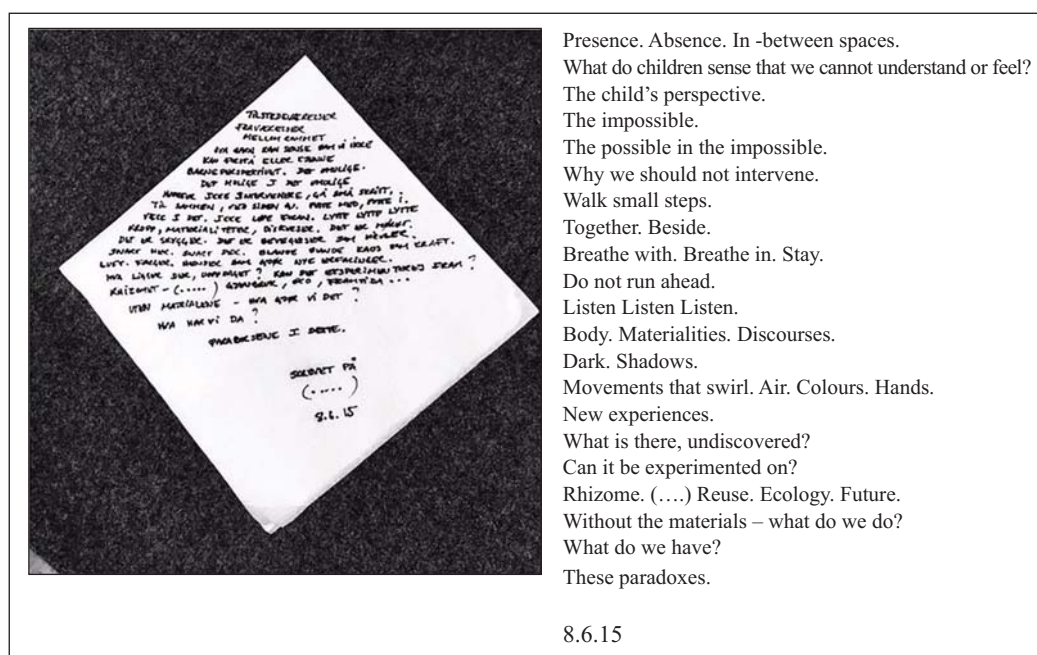


Figure 2. Jottings on a napkin.

way, research becomes an ongoing process, where different affects are continually working within and on each other. Dividing the different sentences and bricolaging them together disturbs linear thinking. 'In a way similar to poetry, it [becomes] possible for the reader to halt, move back and jump forward and go beyond the linear reading habits through a zigzagging movement' (Hohti, 2016: 1153).

The collected matter (e.g. on the mind map, various artefacts and jottings) also entangles with and connects to my thinking and writing, doing and being, and the research idea. I am in a state of being in which I choose to live, writing through locality, materiality and artisan craft (Ulmer, 2017: 201). The idea of being a bricoleur makes me more responsive to the data. The bricolage's materialities draw my full attention, including the matter echoing with the research. The research stories are layered in the bricolage, and I attempt to prevent the predominance of authorial voices (Handforth and Taylor, 2016).

Spooky narratives

Three children are working together with different recycled materials in the Remida centre's black box. They aesthetically explore the different objects and installations. An artist, an early childhood teacher and an *atelierista* are also present; they remain mostly silent but support the children if needed. I am settled in a corner with a digital video recorder and camera.

Spooky story

One child, Be, explores an industrial metal object with a torch [picture in the bricolage part] (Figure 1). A large shadow appears on the wall. Be says: 'Now, it is spooky'. The *atelierista* asks: 'You think it is spooky?'³ Be moves the pinkie finger up and down the object's 'mouth' and watches the shadow attentively.

For the researcher, it looks like a dragon or a beast with a large mouth turned to the sky. The beast seems to open and shuts its mouth, created by Be's finger movements. In the background, one of the other children (Le) says 'Now it is night' and lies down. (Transcript, video recording)

The spooky story had moments of exploring the material that could initiate subsequent events. During the event and immediately afterwards, these moments attracted my attention, starting with Be exploring the metal piece. This particular moment began a chain reaction that manifested itself through human and non-human entities and the different materialities. Here, I use italic and bold text to help readers follow the different agential cuts of the data.

Be jumps up and follows Le, who is walking around with heavy steps. Both of them with torches in one hand and lifting their feet high and stepping hard onto the floor [a kind of marching?]. 'This is how a spooky story goes,' Be says. (Transcript, video recording)

There are feet on the wooden floor. I can see it. How the children use their feet, how they wander, dance, walk and run. I can hear it. Their socks swish, tap, shriek and slide, on the floor, with the floor. (Field notes)

Pedagogue: There is a strange atmosphere here, as being part of the strange theatre where you do not know when you will be caught up onstage, hmm (laughter from the two others). Is it my turn now? [more laughter]

Atelierista: They used us like objects.

Researcher: Hmm.

Pedagogue: Yes.

Atelierista: It is like there wasn't only objects [matter], but we were part of the objects.

Pedagogue: It was a strange feeling.

Atelierista: Yes, he-he, it was, to be reduced to an object. (Transcript, after-talk)

They walk around and pass Ad's work, and they are more attentive than last time, tiptoeing around and between it. The atelierista says: 'What a sound; it is kind of a spooky sound' [Referring to the marching steps they take up again after tiptoeing]. Le says: 'It is the horror monster'. 'Oh, this is the sound of the horror monster ... yes?' the atelierista asks. The stepping of the two children gets even more firm and loud (and now you can feel the vibrations through the floor as well). 'The ground shakes,' the atelierista confirms. (Transcript, video recording)

I can also feel it. Small vibrations through my body, starts in my own feet, as a light tickling against the sole, and as it passes through, it manifests itself through my legs and whole body and centres around the stomach, heart and lungs, as strong vibration materialities. The children's explorations entangle with me, not only as what I see or hear, but also through their movements. We all connect through vibrations. (Field notes)

Pedagogue: It was like we were not there, all four of us [Referring to the adults], or we were there, but as materialities.

Atelierista: Yes, really.

...

Pedagogue: We have really lost control, our role as adults, our authority.

Atelierista: True.

...

Pedagogue: It was like waves, it was like waves in the room.

...

Atelierista: It was like, like, what do you call it, several sensations [multi-sensory] at the same time, sound, movements, light ... it was very powerful.

...

Atelierista: One could feel the wind gust as they passed (laughter and common yes, yes).

Pedagogue: Yes, that was strange.

...

Researcher: So much power in their small bodies (confirmed by yes from the two others). The ground trembled. Thus, the entire floor. (Transcript, after-talk)

I listen. I listen to the voices as they talk about the events. I listen to their laughter, their struggling with words, their pauses, their repetitions, their hmms and yeses and even more laughter. I listen to my own voice, my eagerness, my questions, my interruptions, my repetitions of words, my hmms, yeses and laughter. I listen again. I listen to the sounds in the back. Children. Children from the fieldwork are still here [where I was] and still there, and they are exploring their surroundings. Experimenting with loud sounds, and laughter. I laugh with them in their excitement. I listen. Words, concepts and meaning-making, questions, reflection and understanding a bit more, or struggling with/in the constant uncertainty. I listen, layers of sounds, tones, laughter and silence connecting with me now and me then, and the sense of revisiting the whole event. (Jottings after listening to and transcribing the after-talk)

Next, I explore what the different empirical matter does by experimenting with the bricolage in an immanent ethical methodology.

Mapping aesthetic explorations and their becomings

Different materialities (e.g. light, shadow, darkness, sound and vibrations) entangled and blended with bodies, words and artefacts (e.g. recycled materials and torches), and discourses on how we, the adults, perceived children and how we were perceived. Words and concepts that were (dis)connected came to light, sparking potential narratives for the participants, the observers and myself (the researcher) – micro-moments of horror and humour. Multiple ways to read appeared out of the hodgepodge of texts, objects and images in the bricolage.

First, the spooky and horror-monster stories were narrated by the children, who seemed inspired by the shadow of the horror monster on the wall (Figure 1) or the beast as an archetype and the different entangled materialities. The spooky story materialized through intra-actions with the materialities of the darkness, the shadows, the torches and the vibrations on the floor – “This is how a spooky story goes,” Be says’. Through the black box’s different tools, materials and materialities, we were all drawn into different spooky narratives and separate tales about the horror monster. Horror was also present in the children’s ongoing narrative when exploring spooky shadows on the wall and feeling the vibrations on the floor, encouraged by each other’s marching in a circle (the spooky story itself) – ‘One could feel the wind gust as they passed’, the *atelierista* remarks. The spooky story and the horror monster made us feel anxious, and both entertained and frightened us.

Second, as adults, we expressed our fear of objectification (observing and being observed) when we felt reduced to objects or props, losing our sense of authority and control. We articulated our powerlessness: ‘It was like we were not there, all four of us [referring to the adults], or we were there, but as materialities’; ‘They used us like objects’; ‘We have really lost control, our role as

adults, our authority'. However, embedded in the ongoing spooky story, we had to deal and stay with this trouble, stuck behind the curtains in the dark space.

In our reflections on these two entangled narratives, we discussed our sensations, such as the gust of wind when the children passed and the vibrations we felt through the floor as the marching altered its form: 'It was like waves, it was like waves in the room'; 'It was like, like, what do you call it, several sensations [multi-sensory] at the same time, sound, movements, light ... it was very powerful'. We expressed our shared concern at losing authority and being objectified. We also discussed our concern about when to stop if the children could not stop themselves, referring to other situations where children could get hurt or matters got out of hand.

My jottings showed how involved I felt with the occurrence in the black box, as well as my worries about being unable to create the conditions for the encounters between the children and the materialities. I was also concerned that we (adults) would run ahead of what was happening:

Together. Beside.

Breathe with. Breathe in. Stay.

Do not run ahead.

Listen Listen Listen.

Body. Materialities. Discourses. (Figure 2)

However, the children's use of us (adults) as props, showing their capability to be inspired by the various materials, tools and materialities in the black box, contradicted my worries. The children were creative, curious, strong, interdependent and aesthetically exploring. By using us as props in the room, they challenged the notion of the divide between humans and things (subjects/objects); humans became objects and objects and materialities became companions. They responded to the calls from the materials and intra-acted with the materialities from the materials, lights, shadows and vibrations. Such intra-action can also be viewed as a paradox of objectification in the Anthropocene, where everything other than the human seems to be of lesser value (Haraway, 2016).

Finally, there was horror, simultaneously with a lot of humour and laughter, as described in the transcripts of the after-talk and jottings. Laughter or humour could be perceived as a dichotomy to horror, and could also be claimed as necessary in troubling times. In the session, horror and humour became inseparable, closely connected to, drawn to and drawing from each other, perhaps as a sort of survival mechanism or a 'co-presence of good and bad, cute and creepy, hospitality and hostility, war and peace, friend and enemy' (Tesar and Koro-Ljungberg, 2016: 696). For both the children and adults, humour seemed to be an approach to remain strong, cope and find ways of staying with the trouble (Haraway, 2016), despite the embodied fear felt.

Working with immanent ethics as a conceptual framing and as a part of the bricolage urged me to understand learning processes as interdependent intra-actions that could involve concepts, materials and the environment (Lenz Taguchi, 2010). These immanent ethical processes communicated not only through encounters with matter from the fieldwork and the different objects collected along the way, but also with the installation itself (the bricolage) and the movements in time, through memories, perspectives and understandings. By mapping them in the bricolage, the exteriority of the objects connected to whatever forces and directions seemed potentially related to them. Since the bricolage seemed open and connectable in all of its entanglements, it had multiple entryways.

I recognize immanent ethics in this research by considering what transpired in both the data-gathering process and the surrounding spaces; what was added and what just occurred could be significant in the research context. I tried to avoid privileging someone/something in favour of others in the bricolage. In this project, humans, non-humans and matter (e.g. field notes, jottings and other objects) became entangled in a non-hierarchical bricolage.

Bricolaging as a non-hierarchical approach

In this article, I started by asking if bricolaging data could be used as a non-hierarchical approach when considering the intra-actions between humans and non-humans, artefacts and materialities. Subsequently, what could be of educational interest in these materials? What could be important for research in early childhood?

In opening up to entangled data, methods and analysis tools, I was trying to avoid a linear research design and being fixed in a scientific tradition. By staying with the data for a certain period, inspired by Kaufmann (2011) and Koro-Ljungberg (2016), my experience was that some data seemed to emerge from the matter; the data sometimes appeared to be alive, take control, and change me and the bricolage.

Writing and thinking about the data has worked on me as a continuously becoming-researcher undergoing processes with the empirical matter. Relating to Kaufmann's (2011: 150) argument, the method of analysis does not follow a logical search for meaning, but is 'a creative play, imaginatively weaving and juxtaposition fragments of the above-mentioned empirical matter, constructing a text where each piece of empirical matter may be read through the other'. The research is, then, rhizomatic, a doing (Rhedding-Jones, 2005). As becoming-research coalesces with materiality, and then with the immanent ethics within the bricolage, what counts as data is called into question.

In the spooky story, bodies, materials and materialities become entangled and spark the narratives. These human relations with more-than-humans offer opportunities to acknowledge materiality, artefacts, space and different materialities in new relations. Light, shadows and vibrations are active participants and companions in young children's play and learning. 'When the human is decentered from the investigations and attention is turned to the events that cause us to stumble or wonder, new knowledge is generated' (Moxnes and Osgood, 2018: 298). New knowledge can challenge sedimented ideas and dominant discourses, and present alternative perspectives. This inquiry presents ways to view the child differently and, further, it offers a hopeful shift away from the schoolification framing that acts to limit, regulate and contain how early childhood education and care is conceptualized, practised and researched. Subsequently, this article's bricolaged data presents an invitation to practitioners and researchers to consider children and childhood afresh, and thereby create possibilities to register the generative significance of children's intra-actions with materials and materialities in early childhood pedagogy.

From bricolaging matter, I find bodies (humans) and materialities (non-humans) that resonate with and respond to horror, which is ignited by a complex exploration of/with recycled materials. 'Things can shape how we use our hands and bodies and determine or affect where we focus our attention and thoughts and how we play and learn; children manage artefacts but are also managed by artefacts' (Hultman, 2016: 17; my translation). When thinking in non-anthropocentric terms and with immanent ethics, artefacts and humans are mutually entangled in intra-action. Granting authority to children, or even to things, can be horrific, especially for adults, as experienced in the spooky story. As authority figures, adults are used to being superior to children and having control. Humans are so accustomed to being superior to all things that we cannot imagine being extensions of them (Hultman, 2016). Nonetheless, in our encounters with materials, all of us have sometimes

felt as if our hands have a will of their own, ‘as a very strong desire to hold, feel, turn and twist, pull closer to the eyes and look, try and explore’ (Hultman, 2016: 13; my translation).

Do we need horror (monsters) in our lives?

By opening up to what data might be, time unfolds. I emphasize the importance of time to stay with the data, focusing on processes rather than results. In the empirical matter (data/objects), humans, non-humans and objects made themselves visible, sensible and audible, emerging from the empirical material itself as entangled words, concepts and objects. We, the participants, could hear the horror (monster) through the children stomping on the floor; we could sense it through the vibrations on the floor and the gust of wind as the strong bodies passed by. The practitioners could feel it by losing their authority over things, materiality and the children, and perceive it in the encounter between the hand and the object. Not one sensation but myriad sensations existed. Not one but several horror narratives belonged to separate people or things, which crossed, disturbed, challenged and entangled with one another.

Using a bricolage as an analytical tool, I tried to avoid falling into long-established research practices and habits, such as taken-for-granted ideas about children or notions from child development theories. At the same time, I risked letting go of certainty and human exceptionalism (Blaise, 2016: 618). Several parallel horror narratives arose from the intra-actions among the materialities of light, shadow, darkness, vibrations, metal objects and bodies. The children’s spooky story and horror monsters, the adults’ fear of being objectified, my horror at being an observer and the horror-humour survival concept are all perspectives of the immanent ethical approach as none-more-important-than-the-other narratives rising to the surface through bricolaging.

With these points in mind, could this article itself be the empirical matter? The text could be the data, part of the bricolage, read by different readers or perhaps even used in different settings, and it could be becoming-research in relation to my text and its readers. If this article resonates and engages readers, they contribute to the bricolage through rereadings, their thoughts and the generation of new knowledge. Subsequently, the bricolage goes beyond this article, where the non-hierarchical material relationship in immanent ethics also includes time. The one I was, myself and becoming-me are intertwined with my earlier experiences from early childhood centres, creative-recycling centres and previous fieldwork.

[T]ime can’t be fixed. The past is never closed, never finished once and for all, but there is no taking it back, setting time aright, putting the world back on its axis. There is no erasure finally. The trace of all reconfigurings is written into the enfolded materializations of what was/is/to-come. (Barad, 2014: 183)

This idea of constantly ongoing data, the becoming-researcher processes, together with what readers produce from the article itself, can produce new understandings and ways of thinking, and processes of experimentation that can extend our appreciation of recycled materials in early childhood contexts and what they do for our conceptualizations of and encounters with children.

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Notes

1. This study was approved by the Norwegian Social Science Data Services. I obtained informed consent from all of the participants involved: the children with their parents, the teachers from the early childhood centre, the artist and the *atelierista*. In addition, I have followed the law on the retention of personal data, which stipulates specific rules for how I should store the photographs and videos from the project, including how the material can be used in the future.
2. An *atelierista* is an early childhood teacher or teacher who often also has a background in the arts. A Reggio Emilia early childhood centre has a studio teacher in an atelier with many different open-ended and explorative materials and tools, such as paint, clay, and recycled or natural materials. An *atelierista* performs a complex role with many diverse tasks, including supporting children and teachers in their encounters with materials and the many languages of expression. *Atelieristas* are often responsible for creating or following up on various projects, introducing new concepts to children, and sparking their curiosity, creativity and aesthetic explorations.
3. Children's names used in the article are pseudonyms.

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