

BALLADS FOR RE-MEMBERING

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Abstract

Ballads for Re-Membering is an examination of themes of consciousness such as time, space and emergence, set against the precarity of the climate crisis. Using an arts-and-Zen-practice-based methodology of research-creation, and a theoretical framework of New Materialism and Post-Humanism (“K(now)n Materialism”), this feminist response to the climate crisis manifests an otherwise-possible that is already-right-here, taking cues from the emergent playful worlds of childhood studies and music, with interbeing as the net holding all.

The dissertation is important because the climate crisis is one of (if not the most) pressing and crucial challenges of the present, and we must keep finding ways to address it using our imaginations. Because my work uses a research-creation process, the methodology provides a unique opportunity to look at a complex set of issues in a nuanced and artistic way. The form also belies the function: These creative and academic outputs fold and knead together conceptual spaces; playful and engaging imaginings that slip through our habitual systematic thinking in linear time, space, and forward progress.

In the form of three Ballads, I look at time, space, and emergence (Ballad 1), offer a critical analysis of the New Nature Movement, look at childhood and time, and music (Ballad 2), and perform an audio story called Finding Solace (Ballad 3). This young adult story takes the research to the speculative: What if there was a world (mostly) without humans, where Artificial Intelligence was so intelligent, it went on “living” without humanity?

The key results of this work include making new forms of knowledge as ways of understanding our precarity; innovative research methods like song, story, and letters to my daughter; engaging and accessible research outcomes, and contributions to the field of New Materialism, Research-Creation, and artistic responses to climate change. It is my hope that this work encourages other researchers to explore interdisciplinary approaches, allows for engagement due to its accessibility, and contributes to a greater understanding of our interbeing.

Dedication

This dissertation is dedicated wholeheartedly to Clara Rose.

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List of Songs

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Bright Embrace (see sound file)

Interdisciplinarity consists of creating a new object, which belongs to no one

-Roland Barthes

I start in the middle of a sentence and move both directions at once

-John Coltrane

Chapter One: Methodology

This dissertation is a work of research-creation. In the definitions used for dissertation formats by York University, my research is multimodal, thus my dissertation will include important contributions from music, sound design, and creative writing. The method of research-creation, within a framework of feminist new materialism is defined by SSHRC as:

An approach to research that combines creative and academic research practices, and supports the development of knowledge and innovation through artistic expression, scholarly investigation, and experimentation. The creation process is situated within the research activity and produces critically informed work in a variety of media (art forms) (SSHRC, 2005).

Research-creation is an experimental process that is "more-than-disciplinary" (McCormack, 2008, p. 1) and cannot be predicted in advance (Springgay and Truman, 2018). It is implemented by scholars who have an awareness of the role of the creative in scholarship. Research-creation also tends to defy conventional workings around dissertation writing. When using research-creation as a method, a progressive, linear development, an "arrow" of a dissertation isn't viable. Step by step progression is not an approach used in any of my work, be it Zen practice, music

making or writing. I work in middles and circles; loop-de-loops, as Clara says

Springgay and Truman (2018) put it this way:

Research begins in the middle. For Deleuze and Guattari (1987), the middle is where things grow, expand, and pick up speed. The middle is not an average nor a zone between the beginning and the end. The middle passes between things as a “transversal movement” (p. 25). In the middle, immanent modes of thinking-making-doing come from within the processes themselves, not from outside them. In the middle the speculative “what if” emerges as a catalyst for the event. The middle is a difficult place to be. Deleuze and Guattari (1987) write that it’s hard to see things clearly in the middle. That is the point. The middle can’t be known in advance of research. You have to be “in it,” situated and responsive. (p. 4)

“Middle-ing”, as well as circling and spiraling in the middle, more accurately portray research creation, and emergence; the way species and entities become-with the world: immanently making-doing, from within the process. Like Coltrane.

In her manifesto *How to Make Art at the End of the World*, scholar Natalie Loveless writes about research-creation as a site of “generative re-crafting” in the academy. Research-creation’s potential, according to Loveless, lies in its interdisciplinary perspective, and as an “urgent challenge to reigning pedagogical ...modalities and outputs in the university today” (2019, p. 9-10). Loveless calls research-creation many things, including a “method of resistance” (p. 9), and “a touchstone and orienting point that might help render daily life in the academy more pedagogically, politically, and affectively sustainable” (p. 3). She demonstrates the strengths of this inter or trans-disciplinary approach, and repeatedly acknowledges the legacy of feminist and other social justice shifts in how arts and humanities are thought-with.

Another interesting key to research-creation is its failure to resolve itself into primarily either art or scholarship. It sits (at its best) as a boundary object, liminal and neither one nor the other, “*within and without simultaneously*” (Loveless, p. 46), and “in the face of the increasingly strict need to instrumentalize all university labour within the logics of assessment metrics” (Loveless, 2019, p. 46).

Literary theorist Nicholas Royle (2003) suggests the uncanny as an interdisciplinary political mode. The uncanny is, Loveless states, an “emergent phenomenon” (p. 51): not certain, never comfortable. In the same way, research and creation remake each other, and render each other contaminated and uncanny chimeras, hybrid monsters of a sort. In their becoming, what emerges, by necessity, fails to fully belong, while hopefully utterly belonging to itself.

Some of the propositions for research-creation, according to Springgay and Truman (2016), include the following which I have reframed as “melodies” with “harmonies” to demonstrate how these are used in my research-creation dissertation:

Speculate: Research-creation is future event oriented. As a speculative practice, it invents techniques of relation. *In my world, this is called dreaming.*

Propose enabling constraints: Enabling constraints are expansive and suggestive. They operate by delimiting process and possibility, although they always include more possibilities than any given event realizes. *This was determined by my artistic abilities, and the abilities I had in the last six years as a single mother in a pandemic.*

Create problems: Research-creation is a practice that does not seek to describe, explain, or solve problems. Rather, it is an ‘event’ that creates concepts that problematize. Concepts are not pre-given or known in advance. As an event of problems research-creation brings something new into the world. *This shows up in the ongoing dialogue I have with the precarious world and with childhood-*

motherhood. A story about a robot in a world of very few humans is an example of an "event of problems".

Think-in-movement: The aim of research-creation is not to reflect on something that has passed. Thinking-in-movement is to think in the act; it is a thinking saturated with rhythm and affect. *Meditation may connote stillness, but it is highly active. It is an act of re-memembering, ongoing and saturated. Music-making is the same.*

Note emergences - rework emergences: Concepts proliferate in research-creation, and with them ethico-political concerns emerge. Once an ethico-political concern emerges, re-work it to see what it can do. *I reworked these concerns in the iterations of Finding Solace. The first drafts were focused on a group of children, this version is a robot. Ethico-political concerns still emerge from the piece, which lends to discussion.*

More-than-represent: Rather than attempting to 'represent' or report on research-creations, use them to propel further thought, and create something new: new concepts, new ethico-political concerns, new problems. *I believe each of the ballads more-than represents.*

a. Objectives

As a feminist scholar becoming-with the precarity of climate change, I will be shaking a vessel of vital-post-hum-ani-muse theory with understandings of multi-species/multi-entity or earthling relating and creative and spiritual practice. I call the sounds of this shaking (k)now(n) materialism. Within this scholarship, the incantations are speculative fabulation and music/sound making. These various knowledges are not distinct silos, but dwell within, interpenetrate, and (critically) play with each other in the theory.

The dissertation is an interfusion of theoretical writing, creative writing translated to an audio story, and songs. And what for? This dissertation, at its broadest perspective, is a (k)now(n) materialist-creative response to the climate crisis, and the precarity of the world. A messy practice for a messy time. I am holding very carefully the knowing that human consumerism, capitalism, extractivism, (and all

those other “isms” we use to label dying or unreconcilable cosmologies) are making life unlivable. At the same time, I hold an otherwise possible that is right before us, hidden in plain sight. The here and now. The new and not new. Being-time. Emergence. Life’s processes. Art and making. Music. The interfusion of practice and creativity (play?) with the way of children and childhood foremost in mind. Perhaps this dissertation practice, and the resulting outcomes, can be a consequential entity, elixirs distilled from spells, if you will, for our ailing (we are ailing) selves.

b. Methods and Outputs

i. Foundational Method: Practice; Zen Practice

The overarching method of this work is practice, which you can see in the above propositions, is, by its nature, friendly with research-creation. It works “in the act”, and it creates anew – keeping fresh the varied textures of relating. Practice implies an ongoing, emergent, and entangled process rather than simply a one-dimensional arrow leading to outputs or products. What is practice, exactly? Many would say practice is doing something repeatedly, until we get better at it. There is superficial truth to this, but a definition of practice merits great care and attention, because while it is a relatively simple endeavor, it is also infinitely nuanced. Scholar Antonia Pont (2016) defines practice by saying it “corresponds to a mode of doing or register of action that simultaneously tends to cultivate stability and court transformation” (p. 4). She goes on to say:

One would expect that certain doings would stabilize, while other-perhaps different-doings would operate transformatively. Practice, however, unsettles this simple assumption and merits our interest due to its

cultivation and courting of these dual "effects" that we might typically assume to be mutually exclusive, hardly likely to arise in tandem. (p. 5)

It is in this "unsettling" (or uncanny, according to Nicolas Royle) vein that I practice-with within a research-creation methodology. The effects, which Pont says are dual, I prefer to think of as on an infinite continuum, (or perhaps another loop-de-loop). While I come back to it day in and day out, there's no telling where practice will take me, and it's not either stabilizing or transformative, but myriad iterations of both/and. Like research-creation, practice is starting in the middle (of the sentence) and moving in all directions at once. Andrew Pickering names the emergent process that gives an additional free-structure to something like a research-creation methodology "the mangle of practice" (2010). This too well-reflects the sticky, polyphonous (cacophonous?) indeterminacy I often find myself in, in practice. Practice, then, implies an ongoing, emergent and entangled process, carried out over time and in space. It tends to focus the self in a way that loosens the grip we have on subjectivity.

Zen practice (what I practice) is a type of meditation that springs from Buddhism. It involves, at its most basic and its most profound, only paying attention. One of the most well-known Zen masters was Dogen Zenji, a Buddhist teacher from medieval Japan. Dogen grappled with the meaning of time and space, and throughout his life, came to the embodied knowing that time was not separate from being, and that all beings are interrelated and not separate from time. Dogen was influenced by earlier Chinese Zen principles including mutual identity and mutual interpenetration. Mutual identity "refers to the non-differentiated state in which anti-

thesis such as one and many, absolute and relative, being and non-being, and so forth, co-exist in oneness and interfusion. Mutual interpenetration refers to the simultaneous origination of all things and events interpenetrating one another in their myriad realms and dimensions" (Kim, 2004, p. 29). Dogen summarizes these concepts by saying "everything exists in the present, within yourself" (Ridenour, 2010, p. 88). Awakening to this is the work and process of Zen practice.

In zazen, to be distinguished from concentration, attention is a state, a doing-without-object, that works intentionally in a liminal mode between inclusion and exclusion. Attention "'includes' more and more-a 'strange doing' tending towards excluding nothing" (Pont, 2016, p. 11). There are as many variations on practice as there are those practicing. Pont's noting that practice unsettles assumptions about cause and effect -- since it has this seemingly dual or contradictory capacity to both stabilize and unsettle/transform-- is the very power of practice. But practice is also always entangled and co-constituted with one's history and legacy.

In my case, my Zen practice is entangled with the history and current trajectory of American Buddhism; its trajectory from the 60's California culture across the US to New York State. From the late 60's onward, my own Zen teacher practiced in this lineage. This context also informs my artistic practice, which is inseparable from the milieu of my childhood in an isolated Northern British Columbia logging town, raised by white working-class parents who both came from challenging upbringings. This intertwining of my practice-life barely scratches the surface of the multi-entity agency of "a life" such as mine, which is far more entangled than I or you could ever know.

Being a student of emergence, of practice, of Zen, offers the chance to be with change, by cultivating a breath-by-breath awareness of “place” in the changing world. And so, methodologically speaking, (I) practice. (I) listen. (I) breathe. (I) pay attention to the way of the natural world, track the change that always is and sit in the recognition that the center is everywhere and we all “inter-are” (to use Thich Nhat Hanh’s now-ubiquitous phrase). Taking the time to stay present to, as adrienne maree brown says, “our foundational miraculous nature” (2017, p. 5) happens by breathing, by listening. Some days it’s only (me) trying to listen and trying to breathe in circumstances of feeling deaf and frozen. Some days it’s more like breathing-with the Linden tree outside my window and listening-with the dawn chorus. “Our entire future may depend on learning to listen” says brown (p. 5).

In my lineage of Zen practice, planetary-level breath and listening is called Shinkantaza, or attending (Pont, 2016). This is not necessarily a discrete or silo-d practice, it interfuses zazen practice in general. Shinkantaza can be likened to the kind of attention you have when you go bird watching – soft-focused, like a lantern. It is another awareness, diffuse, intent, curious. It is the Tao’s WuWei (無為) of effortless action. Dogen Zenji speaks of continuous practice, where “everything exists in the present, within yourself” (Ridenour, 2010, p. 88). The further you practice this, the further you notice, *this*. Zen practice is about attending-to, and, importantly, being accountable-with, the changes that occur, moment to moment. In practical terms, when practicing zazen (seated meditation), one can extend awareness from the body to the space of the room, then beyond: to the neighbourhood, the city, country,

planet, then even out to all of space, eventually returning to awareness of the body and the space it occupies. There is a very real awareness of the space of space, which is not the emptiness we conventionally believe it to be. A large part of zazen, by necessity, is listening, as eyes are cast down to prevent distractions from the visual world, but ears remain open. A large part is breathing. A large part is the internal observation of the thoughts that come and go. In its entirety, it is large and small; it is attention:

A student said to Master Ichu, "Please write for me something of great wisdom." Master Ichu picked up his brush and wrote one word: "Attention." The student said, "Is that all?" The master wrote, "Attention. Attention." The student became irritable. "That doesn't seem profound or subtle to me." In response, Master Ichu wrote simply, "Attention. Attention. Attention." In frustration, the student demanded, "What does this word 'attention' mean?" Master Ichu replied, "Attention means attention" (Beck, 1993, p. 1).

Practice opens myriad possibles and cannot compare to thinking at a logical and reflexive binary level. As Jelani Wilson writes, "when forced into a binary, you always choose wrong" (Brown, p. 155). Instead, practice is an invitation to "undo a definition of the human" (Gumbs, p. 9) and become-with, or unfold-into the universe you already are. As a Zen practitioner, it is worth saying that my work is quite specifically **not** to reinscribe a bifurcating mind-set. Practice is liminal; it is not "either-or," it is "both-and". By practicing in the now, I'm not disparaging known and practiced ways of being in capitalism or linear time; I'm just (radically) refusing to privilege living exclusively "there" (which, importantly, is still "right here").

As mentioned in the theoretical framework, my practice is a question: *Who am I?* Any Zen practitioner tasked with this question soon finds out there is no definitive

answer. Answering the question is most assuredly not the point of asking it. The “answer” (if there was one), lies in the deep asking, and the energy generated by an ongoing focusing of attention. It is the energy of that questioning that penetrates my work, and leads to hereness, nowness. It makes me ask questions, which have become the following research questions.

Can I sit in a question with no answer, in a world with no answer, and offer an imaginary, yet provocative and enlivening world? What happens when music/sound and speculative fabulation becomes a space for playful earthling relatings? How does emergence-as-practice ground theoretical possibilities for navigating precarity, grief, love, and a climate-changing world? By taking childhood and music seriously what imaginings arise to enrich and further (k)now(n) and “new” materialism as an epistemology necessary to the environmental humanities?

With these questions comes the method of practice(s): doing zazen, writing, creative writing, making music and soundscapes (see below for more on these methods). And with these methods comes a dissertation, a piece of creative writing, a soundscape/story, and some songs. Practicing indeterminacy, practicing possibility, practicing unknowable-ness is a discipline. What do I do while worlds blow apart? Practice.

ii. Outputs

The written component of the dissertation will be a reflexive theoretical component on the process to complement the creative outputs. I will speak about

time-being, a concept carefully plucked, gathered, and curiously handled from my work with Dogen Zenji's Shobogenzo, and stirred in with the work of quantum physicist Karan Barad. Time-being cannot be held without dispatches from space-matter, or notes on/to self. From there, emergence emerges. We will use these tools to critique narratives of, and learn lessons from beautiful aspects of some of my favourite emergent time-being space-matterings: Childhood and Music. This sets the stage for the creative work of the dissertation, a piece of audio visionary/speculative fiction set to a soundscape. This new work was inspired by a piece that I wrote which explores children becoming-with contaminated landscapes and somewhat magical-seeming birds. The piece was published in the Journal of Childhood Studies in 2022.

Interspersed throughout the written dissertation are two (time) capsule outputs. The first is love letters and notes to Clara Rose (my daughter). As little (time) capsules, the letters offer an "on all fours" perspective, pulled from the sometimes-lofty sky of my head to the level of a six-year-old (right about the level of my solar plexus and below). You will also be relieved of the written word via a listening journey through three of my songs, another (time) capsule output: Mountain Hymn (in Ballad No.1), Feather and Bone (in Ballad No. 2), and Bright Embrace (In the Conclusion), which speak broadly to themes in my work, and which I will further write about when they happily interrupt the writing.

iii. Creative Methods: Speculative Fabulation

1. Creative Writing as Method

"worlds out of words" - Ursula LeGuin

"Imagination is our path to freedom" - adrienne maree brown

Stories "craft and re-craft worlds" (Loveless, p. 14). We can craft worlds from words, as Ursula LeGuin says, by just adding a single letter: L. What is that L? For me, the L stands for Love. Love, as a process of curious discovery of what is.

"It is in allowing ourselves to be drawn by our loves, our intensive and extensive curiosities, attentive to what and whom we are *driven* to explore, and examining the complex web of relations that we inherit thereby, that we might inhabit research question ethically." (Loveless, p. 29)

The question below this method is: Let's look at what is and ask: What would happen if we set a story in a future world where we didn't center the human, but we still centered love and relatings? This story, entitled Finding Solace, is the result. In practicing this method, I hope to use SF (String Figures,) to hold open a possibility that others can tumble into and explore.

Philosopher Isabelle Stengers' book, *Penser avec Stengers*, has as its subtitle: "une libre et sauvage création de concepts" (a free and wild creation of concepts) (Haraway, 2018, p. 60). It is this spirit that infuses my practice of creative writing to offer provocative and perhaps even enlivening possibilities for storying the world. Haraway says "It matters what stories tell stories, what thoughts think thoughts, what worlds world worlds" (p. 60). To speculate on possible futures, I must think-with, become-with, and somehow nestle myself between and within the figures in the story. This is what Donna Haraway terms "cultivating response-ability", by which she means a collective knowing and doing that practices our capacity to respond:

I have proposed string figures, SF, as a serious figure for thinking—as a cognitive trope and material-semiotic technology for thinking more generative by far than binaries, hierarchies, triads, and linear arrays, all of which operate almost pornographically in the history of philosophy. SF: string figures, so in des ficelles, speculative feminism, science fiction, science fact, speculative fabulation, so far” (Haraway, 2018, p. 61).

Thus, the writing of speculative fiction helps us think more generatively, while also giving life to the concepts and theories that I’ve expounded on in the dissertation. In turn, concepts alighted upon in the creative writing of the story have managed to thread their way through this dissertation. Circles and fractals are everywhere.

2. Soundscaping: Making Music/Soundscape as Method

Musically, I call on my decades of work and practice as a pianist, multi-instrumentalist, songwriter, producer and recording engineer to bring sound-life and listening practice to this dissertation. I sing in a knowing of New Materialist Theory, which can be readily thought-with in the context of music. Isabella van Elferen says that “music is vibrant matter” (p. 13), and, using Bennett’s definition of “thing power”, coins the term “music power”, reflecting that music is “exactly the kind of vitality that Bennett describes” (2021, p. 16). Music is also ambiguous and always on the move; the first encounter we have with music, its timbre, is the most basic attribute of music. Timbre “takes the shape of hearing familiar or unfamiliar sonorities that evoke an almost primitive affective response” (van Elferen, 2020, p. 1).

But timbre is intangible and difficult to pin down and is loosely defined as “an emergent sound quality that is thoroughly contingent.... all timbre emerges from a

set of heterogeneous actors and is therefore undetermined, unpredictable and to a significant extent, unquantifiable” (Van Elferen, 2020, p. 11). Musical timbre is a paradox, a bridge between vibration and sound, and body and thought, and that “confusion, that aporia...is precisely what we desire from music itself” (ibid, p. 15). In creating music, I’ve always thought of myself as a world-maker, sculpting the words and sounds (from vocals to piano and otherwise), in a way that adequately expressed without, an emotional world that was within. This is the aim for the three songs presented here, and the soundscape and audio of Finding Solace.

Research exploring microbial songs led to a musical video essay which I presented at the Harvard Graduate Music Forum Conference in March 2022. That work informed the creative method of making-music-with as a process of research creation, and so has also informed the process of recording the soundscape that accompanies Finding Solace.

I ask: Can a project of creation, dialogue and listening make a world in which earthlings relate to each other without binding, without separation? Can the project do so amidst a failing cosmology based on the very premises of separation? In a climate changing world, can humans take accountability for their relatings and move forward as future earthling ancestors, being-with the world, otherwise? This is my response.

Chapter Two: Theoretical Framework

VITAL-POST-HUM-ANI-MUSE ----> (K)NOW(N) MATERIALISM

a. Introduction

I bring to you the theoretical framework portion of the dissertation, a framework I call (k)now(n) materialism, after both New Materialism, and the neologism coined by scholar-practitioner Virginie Magnat: (K)new Materialism (2022). Magnat contends that the non-anthropocentric indigenous principles of respect, reciprocity, relationality and responsibility, all Indigenous ethical principles, offers a (k)new materialism that can answer some of the questions raised by new materialist and post-human scholars (p. 24). So too, I believe, Zen Buddhist philosophy and related studies of time-being, spacemattering, selfing and emergence, (especially (but not exclusively) in relation to childhood) offers a (k)now(n) materialism, taking in the practice of listening and presence (the now) to decentre/trouble western paradigms, and the dead or dying cosmology of capitalism by saying that “everything matters, matter *matters*.” This is not “new”; but it is “known” and it is really about “now”.

The neologism (k)now(n) materialism, and the way it holds both the theory of new materialism and the practice of Zen, makes it a shapeshifter. Being made of eco-feminist and Zen Buddhist vapors, it is scented heavily with otherwise-possibilities. The power it has, the “spell it casts” over this dissertation comes from contemplations and incantations of vital materialism, posthumanism, animism and creativity. It emerged from a previous tongue twisting amalgam: VITAL-POST-HUM-ANI-MUSE,

which is the recipe card for (k)now(n) materialism. If it is the vessel, (k)now(n) Materialism is the sound the shaking of the vessel makes. If it is the pie, (k)now(n) materialism is the smell of cinnamon and apples wafting through the kitchen.

VITAL connotes both necessity and life, and the feminist thought underpinning vital materialist theory. POST means after, but it also means letters in the mail, notes to others, making material the link and relationships between species, entities, loves. Posthumous, suggested by POST+HUM of course, means after death. HUM isn't just/really about the human, it is also the prefix of humus, the odorous organic compound that makes up the clay and soil, where we go; where we come from in the circles of birth/death. HUM is also a tune on the lips, a vibrational message, music. ANI is a nod to animism, but it is also animation, with nods to the colourful, the childlike. It is our animal selves, it is the muse, the music. It is aliveness. MUSE is the impetus, the beautiful and ineffable inspiration. The hyphens are arrows in the ten directions (the eight points of the compass and the directions of up and down), revealing inter-*play* and interpenetration. The hyphens are also unconventional measurings of time, a delineation in the in-between. For just as it is vital-post-hum-ani-muse, it is ani-muse-hum-post-vital, or hum-post-ani-muse-vital. Start to finish isn't always the way forward. As Zen master Dogen says, "the true state of things is not to be found in one direction alone" (Roberts, 2018, p. 91). The hyphens also speak to the disarticulation of the not-so-solid world as we knew it, the hyphenated beings we've become, and to the dictum I've come to embrace to love your pieces, with/in

brokenness, instead of trying in futility to restore the (damaged/broken) familiar (Akomolafe, 2022).

This amalgam and the corresponding neologism of (k)now(n) materialism play with the sneaky solidity of theory, married as it can be to the solidified systems that theory ends up reconstituting through reiteration and/or resistance. My aim is to shake vital-post-hum-ani-muse, to make it sound in the here as *a new song: a-(k)now(n) materialist practice*. To cut the pie while it is still warm, and to breath in the scent that is both all the ingredients, and something brand new. To be with this while possibility sprouts through care and cultivation. Little chimeric monsters peek out and say hello as we re-craft theory, but we must, in order to whole-heartedly work with whatever times we find ourselves in.

This is in line with Sarah Truman's thinking on research-creation and theory: while the above theories in their original forms attempt to explain the world in some sense (be it material or abstract, for instance), I as a researcher am quite obviously appropriating and reshaping these theories in service to my engagement with this research. I have inherited these theories, and I grapple with them. But I also am making a new 'fold' (to use a Deleuzian term), to take these theories and incantate them, make a song, a pie, and carry on, presently.

What is it to re-craft in this way (Truman, p. 1, 2022)? Think of crafting in the spirit of making that one has when one sits at the table with a 6-year-old, as I often do. With glitter glue and ribbons and bows, we "disturb the subjectivity of what is known"

and “sit with the trouble as though it were an altar” (Akomolafe, N.D.). **We have tissue paper, glitter, popsicle sticks and googly eyes...what will happen, Clara? Let’s see!** And the next thing you know, little paper stick monsters are making appearances from behind the table in a puppet show.

We do this re-crafting so we don’t draft the same dissertations, sound the same sounds, or sing the same songs while expecting different results. So that we practice birth/death as a fertilizer for these rare earth-moments that we have. So that change is infused in the ordinary, which it already is. So that creation, play and whimsy are constant pals at the craft table, or the life table. Whatever we make together, the result, in a child’s eyes (where it counts, perhaps), is a small treasure worth setting up amidst all the others.

First, let’s look at new materialism.

b. New Materialism ---> Vital Materialism

New materialism as a speculative philosophy and theory has emerged over the last decade. It is situated firmly in ecofeminism and has, according to Gamble et al (2019) a central theoretical aim to “to problematize the anthropocentric and constructivist orientations of most twentieth-century theory in a way that encourages closer attention to the sciences by the humanities” (p. 111).

The “ontological schemes” of new materialisms are grounded in the idea “that all of existence is embedded in some type of material substrate, including not only material objects and bodies but also conceptual, discursive, semiotic and incorporeal

constructs, ideations and projections" (Dolphijn & van der Tuin, 2012, p. 14, Coole & Froste, 2010). As Coole and Froste write, "matter is no longer imagined...as a massive, opaque plenitude but is recognized instead as indeterminate, constantly forming and reforming in unexpected ways" (p. 10). In configuring matter as a kind of force "that both materializes and expresses the potentials of nature's dynamic indeterminacy," new materialism seeks to create concepts that support and underline the vitality of nature. New materialism demonstrates compatibility with Indigenous ontologies that acknowledge the vitality and agency of animals, plants, metals, minerals, and elemental forces such as wind, rain, and electricity (Dolphijn & van der Tuin, 2012, p. 14). It draws on fields such as quantum physics and posthumanism to propose lively possibilities that do not rely on critical analysis. It is not without critique. As Gamble et al (2019) state:

New materialism has been criticized for exaggerating the extent of earlier feminist scholarship's "biophobia" or neglect of matter; for rejecting Marxism and cultural materialism on mistaken grounds; for uncritically embracing and conflating the scientific study of matter with matter itself.

In Karen Barad's view, matter simply "is [...] a doing," or, it is what it does. This is, according to Gamble (2019) a performative view of new materialism. Barad has contributed formatively to the emerging field of new materialism with her concept of "agential realism." The heart of agential realism, she says, is that:

"the nature of nature is an ongoing dynamism of intra-activity through which the world is differentially articulated, and some of those articulations are what we call measurements." (2022, p. 1)

Barad says that while Newtonian physics is a "metaphysics of individualism" where individual or discrete entities predate their relations, quantum physics resists

this way of looking at reality. Instead, it “supports the understanding that reality is made of relations: that relata come into being only through and as constitutive parts of their intra-actions” (2022, p.1). According to Murris (2021) agential realism “is a short-hand for certain onto-epistemological commitments to intra-active relationality that are always already ethical and political” and “it troubles the new/old binary, as every iteration leaves traces and marks on bodies” (2021, footnote 46).

New materialism emerged from the green political theory of ecofeminism, which was first elaborated upon in the early 1990’s. Ecofeminism was given high praise for being a materialist theory that “suggests nothing less than a fundamental rethink of green politics” (Barry [1998](#), p. 150). According to MacGregor (2021), ecofeminism remains at the margins of environmental political scholarship, while many scholars now herald a “new materialist turn” (Eckersley, 2020, Schlosberg and Coles, 2016, Meyer, 2015).

MacGregor contends that “new materialism can be explained as a theoretical perspective that seeks to pick materiality out of the postmodernist dustbin, to remind social theorists that matter, matters.” It “attempts to shift away from the ‘exhausted’ normative political theories that dominate the social sciences and humanities” (2021, p. 47). But according to MacGregor, the new materialist turn has sidelined eco-feminism. She says that in new materialist environmentalism, there is a “denial/forgetting” of the contributions of eco-feminists (p. 49). But new materialism must be situated in the context of a rich ecofeminist ontology, the theory of which emerged in the 1970’s in a decidedly new materialist way: as a “field that reweaves

the biological and the cultural together by dismantling dualism" (MacGregor, 2021, p. 50).

Ecofeminism prefigures new materialism. In 2002 Val Plumwood wrote that "Ecofeminism has contributed a great deal both to activist struggle and to theorizing links between women's oppression and the domination of nature over the last two decades" (2002, p.9). It wasn't until the 2010's that the new materialist turn began. While new materialist environmentalism (according to a 2019 special issue of *Environmental Politics*) may have the potential to resuscitate environmental politics, scholars like Sherilyn MacGregor and others point out that in claiming the "new", this intellectual maneuvering involves the forgetting and omission of something: a large and robust body of foundational and lively eco-feminist work.

Eco-feminism embraces new materialism. It nurtures a vision consistent with multi-species and multi-entity kinship. At the same time, it "holds firmly to the (old) materialist view that meeting everyday needs is labour and it is the very stuff of politics" (Lupton, 2020, p. 56). It is both/and. Val Plumwood, in her 2014 article entitled *Nature in the Active Voice*, calls for an "animist materialism", an "enriched materialism...that can tell us more about the self-inventive and self-elaborative capacity of nature, about the intentionality of the non-human world" (2009, p. 122). Throughout the dissertation, even though I offer a (k)now(n) materialist perspective that emphasizes the indeterminacy of experience, I have not lost sight of eco-feminism's linking of women's oppression and the domination of nature; that is, the assertion of situated knowledge and the power of (differentials of) power. I am a

living and breathing ecofeminist single mother. I will use this lens to offer a critique of the new nature movement later in the dissertation. However, in my work I have come to realize a purely critical-analytical view of the world is simply not imaginative enough, because it often only serves to reconstitute that which it criticizes. I aim to offer something otherwise, while still breathing the air we all breathe.

Vital materialism, a subset of new materialism, is scholarship that is centered in what is named the “more-than-human”, first used by David Abrams as a phenomenological term; a term which I find gets trapped in the dualistic spell it tries to cast its way out of, (“more-than” and “human” being binaries once again) (2012). Despite this hurdle, vital materialist thought also challenges Western presumptions about what it means to be a human (,) being in the world. It reiterates multi-species relationship and relationality:

[It] positions humans and nonhumans as interrelated and co-productive of the interactions which comprise vitality or life. The notion of distributed relationality is at the centre of vital materialism, a relational ontology which disrupts Western binaries and is valuable for thinking with the historical and cultural contingencies of more-than-human perspectives. (Lupton, 2020, p. 2)

No matter, no things are excluded from this framework, as Jane Bennett (2010) suggests in her book *Vital Matter*. Bennett reminds us that it’s possible to remember a childhood populated by animate things rather than just merely passive objects. She uses the term ‘thing power’ to express the idea that matter is “alive” because it has the capacity to animate and produce effects (p. xvi). A favourite stuffed toy, for example, can cheer or comfort a child instantaneously. Vital materialism isn’t without critique: “While vital materialism explicitly rejects any form of essentialism, we think it

nevertheless manages to sneak back in through a metaphysics of life projected onto inorganic matter" (Gamble, 2019, p. 112). MacGregor also tells us that "we did not need Bennett to write *Vibrant Matter* to help us see the non-binary enmeshment of materiality and values" (2020, p. 50).

c. Posthumanism

Next, to the post-hum, derived of course from posthumanism. Posthumanism is a plea to rethink relationally without the Nature/Culture binary--as a sympoietic system. Sympoiesis, Haraway explains 'is a simple word; it means "making-with"', a 'thinking-with' and implies that human and nonhuman bodies do not move between points in space and time but are always "on the move". The posthuman ontology of a sympoietic system disrupts the Nature/Culture binary and reconfigures the kind of subjectivity on which modernity has been built. (Haynes and Murriss, 2019, p. 309). It also disrupts the pervasive (adult) conception of temporality that takes development and progress as inevitable (Gough & Adsit-Morris, 2019, p. 309).

What of the posthumous, the post and the hum? In her book *Staying with the Trouble* (2016), Haraway plays with a piece of speculative fiction entitled *The Camille Stories: Children and the Compost*. It is an "ongoing speculative fabulation". It insists that "we need to write stories and live lives for flourishing and for abundance, especially in the teeth of rampaging destruction and impoverization" (p. 136). Playing with disorder, death, and decay, as well as fecundity and flourishing, doesn't privilege one over the other, and can offer new imaginaries. Of her stories, Haraway says:

"Love and rage contained the germs of partial healing even in the face of onrushing destruction" (p. 137).

From a Zen perspective, goings on such as time/being, order/chaos, birth/death, and poison/cure make the world of the relative. Nothing is left out. Is decay not the beginning-of? "A heap of inert matter is soon a pulsing, *humming*, sweating community of creation" (Strand, 2016, emphasis added). Death is the moment when life overflows, into an "anarchic polyphony of life" (Strand, 2016). This kind of thinking is gathering a multiplicity of notions that are too often one-sided, favoured and separate, and muddling them up. This is seeing the redemptive in the anguish, the cure in the poison, the birth in the death (and the death in the birth). This is singing the blues; for "if the artist loses her sense for either the tragic or the sublime, she will cease to sing the true blues" (McCarthy-Nielsen, p 152). This tragic-sublime "hum" of the blues composition, brought to life by the singer, dispatches, or post-hums messages out from vibrating mouths, while it simultaneously "de/composes" itself into something new.

d. Animism/Panpsychism

Co-existing with vital materialism and the "post-hum"/posthuman, is the theory of animism. Critical animism, which scholar Shoko Yoneyama (2020) speaks to in her review of artist/film-maker/visionary Hayao Miyazaki's work, emerges "from the fusion of a critique of modernity with informal cultural heritage in Japan. It is a philosophy that perceives nature as a non-dualistic combination of the life-world and the spiritual-world, while also emphasizing the significance of place" (p 1). This is not the

“new animism” of scholars such as Descola or Ingold, that aims to “create a positive animism which seeks to disrupt the human-nature dichotomy” (p 6). Rather, theories of critical animism “emanated from people who experienced problematic aspects of modernity, which caused a ‘paradigm shift’ in their own lives” (p. 7). This is a kind of fugitive animism, which will show up most markedly in my creative work.

In what I see as a springboard from critical animism is the philosophical concept of panpsychism. Arne Vetlessen’s *Cosmologies of the Anthropocene* puts it well:

The easy part [of defining panpsychism] is to do with the claim that everything that exists exhibits mind, by which is meant (in various degrees, from the primitive to the most advanced) mentality, interiority, intelligence, and purposiveness. To postulate as much on behalf of “everything” is, however, so radical a thought as to be beyond what we can ever hope to settle. Does a stone possess properties of the kind meant here? Is there anything mind-like about such a thing as a stone at all? Isn’t there, in fact, only so many properties excluding everything we associate with mind, and so with agency, insofar as we take agency to presuppose and require mind – a capacity for thought – for intentionality, for the non-arbitrary pursuit of goals, and the like (2019, p. 10)?

The answer to the question Vetlessen proposes is: We will never know. And yet, despite hoping for more, this definition satisfies me (and my Zen sensibilities), being that it is, much like the *koan* I practice with, an unsolvable question, demanding we place our full presence and accountability within it. As Vetlessen states, it is “so radical a thought,” which is the best part about this piece of theory. It is unpindownable, this thought, like a water wiggler toy, which shoots through your hands if you hold it too tight. It seems that in the western, post-capitalist existence however, our “not-knowingness”, instead of facilitating wonder, love, or wisdom, has

led (the adults in the room, anyway) to a sort of resignation, for if we cannot know, then by some trick of the mind, we cannot hold any regard for the unknowable. Our incapacity to recognize, instead of leading to a respectful and wonderful capacitating, incapacitates. Our anthropocentric deficiencies have long been used to punish those upon whom we project these deficiencies, within our own species and without.

Before humans were “removed from nature, mind was removed from matter”
(Vetlessen, p. 15):

The Anthropocene is about being, for everything that exists, at the receiving end of this twice over removal, one not merely thought but physically enacted. Again: a way of looking at the world and acting in it that leads to the decimation, degradation, and extinction now occurring, pointed out as so many matters of scientific fact ... cannot be epistemically valid (correct about its subject matter) and cannot be morally right. The true relationship between culture and nature cannot be one of systemic destruction of the latter by the operations of the former. It must instead be one of enduring co-existence.
(Vetlessen, p. 15)

Because our epistemological space situates the human at the centre, it continues to be convenient. “But we tend to repeat and inscribe these crisis events [of decimation, degradation and extinction, as well as the results of the pandemic] even with our best efforts to resolve them because we're still stuck within the same epistemological space” (Akomolafe, 2021). This dissertation does not privilege the same spaces; it offers possibilities that are always already co-existing within the spaces we all live in (capitalism, linear time). If you are caught off-guard, I would argue that that is a good place to be. If you are confused (as my Zen teacher says) “Good! Keep going!”

I would argue that despite capitalism and its myriad henchmen (white supremacy, misogyny, anthropocentrism) making this epistemological space, the “stuck-ness” Akomolafe speaks of can be unstuck. The enduring co-existence that Vetlessen speaks of as an “instead,” is not an instead at all. In fact, it is *what is already happening* (for some, for all). Slipping into the fissures of these firmly entrenched spaces, this dissertation (I hope), and many others have responses to the Anthropocene that offer possibilities, rather than critical analyses. We are diffracted, diasporic, from the pandemic, from war, from the climate crisis. We are cracked and fissured, surely, but we are also not solid, but interpenetrating, which is a final concept of theory I wish to bring in, and which is represented by the hyphens between vital-post-hum-ani-muse.

E. Hyphens

Karen Barad’s work as a feminist quantum physicist is particularly influential in the realm of vital material and post-human relationality. She says that all things “inter-are”, blurring the boundaries of inside and outside. The relationality of all things is also a tenet of Buddhism (Thich Nhat Hanh spoke frequently of inter-being), in the sense that nothing is left out. Zen master Dogen’s scholarship (I am not sure he would have called it that) “points” to the tenet that reality is not necessarily sequential. This is in stark contrast to human-centred concepts of being-in-time such as progress, past-present-future, development, and a forward trajectory of linear time that we all live in. Barad says that quantum physics:

Not only deconstructs the strict determinism of Newtonian physics, where the future unfolds predictably from the past, but it also blows away the progressivist notion of time – Benjamin’s ‘homogenous and empty’ time – disrupting first-world efforts to harness it as a totalising system on behalf of universalism and its projects, such as imperialism. (Barad, 2018, p. 61)

And so, having shaken the confabulated container called vital-post-hum-animism, we move forward with the sounds of (k)now(n) materialism, grounded in Zen practice, sprinkled with the playful. This sounding vessel casts a spell-song of the possible in which everything/one is implicated. With a bow to Lao Tzu’s “The Uses of Not,” it is precisely where this sounding vessel, this shaker, *is not*, that makes it incredibly useful. The “empty” spaces, the voids into which we cast playful elements: a story, a song, a letter, (or a googly eyed popsicle-stick glitter monster).

Come along with me. What has emerged comes in the form of three Ballads. First, on the nature of time-being, space-matter, and emergence. Second, on childhood, time, sound, and music. Dispatches from the end of the world (nature). Love letters from a human-becoming (childhood). But that is not all. For the sounds leave traces; I scrape these up and give you Ballad Three, a fugitive audio work called: *Finding Solace*.

Dear Clara Rose,

I hope all this theory doesn't lead you down a rabbit hole. Or rather, I hope you go down lots of rabbit holes, and get to cuddle in with the rabbits. Smell their fur, the musty warren, the dirt, and go dark in the woods for as long as you need to stay warm and dry. Tell me all the dreams you had whenever it is that you feel like emerging again.

What I mean is, don't let this jargon lead you far from what you already know. What you are teaching me. I would offer this to you as a counter spell, if needs be: Recite the nicknames you've given to each of the plant-kin in our apartment to a jaunty French tune while you touch their leaves as you love to do: Stripey, Facey, Maisy, Jade. Jasmine, Calliope, Ponytail, Fig. Rubber, sucky, ZZ, Lily Pad. Coffee, Heart, Polkadot, Porcupine, Blossom.

Remember, love, when you went to Quebec with your dad this past summer, and ended up staying for a week by yourself with your grandmother? You tried so hard to be brave, but you missed me, more than you thought. In that longing you collected nature for me, odds and ends. You found a crumpled piece of red tissue paper, flattened it carefully, and gathered the bits and pieces (the fits and starts of your longing and your bravery), and placed them on the red paper. Feathers (glorious!), moss (soft), rocks (hard, ripped the paper), sticks, and the remnants of dirt from your challenging work. So many little missives/missings. You gave me that mushed-together and bundled ball of red tissue paper like it was your hurting heart (it was). I so gently opened it, carefully removing each treasure, each gift, placing them lovingly on our plant altar. Knowing that hurt was inevitable in this world, knowing there was nothing I could do but love you. Nothing to do but love.

Love, Mama

Please see the INFOGRAPHIC, Appendix A.

I am out with lanterns

Looking for myself.

-Emily Dickenson

You are something the whole universe is doing;
in the same way a wave is something the whole ocean is doing.

-Alan Watts

Chapter Three: Introduction

Dear Clara Rose,

I entered academic life at the same time I became your mother. I've already told you that you were made in Vermont. But there was a day in July 2015, when I was sitting in the Zendo at the start of the summer training program when you came to me in a vision. A view of the back of your newborn form, lying in a simple white bed. In the vision, I was lying behind you. Your hair was already there, the dark baby hair that would give way to the lightest of white-blond curls. Of course, at the time there was no way I could even know that I was pregnant, as it was only a few days after conception. But there you were in my vision, my girl, and there I was, a mother.

After confirming my pregnancy in August, I started my master's degree in September, and here I am with you, age six, done my masters, and about to finish my PhD.

How could this not be for you, about you, and because of you, Clara? It cannot. From my master's research in Japan with you when you were not even a year old, to the story that accompanies and concludes this dissertation, I have no doubt that you and I have done this together.

I wonder at the wisdom of the world, so present in you, and I feel that guidance both in what lingers from the vibrant matter you passed on to me during pregnancy, and in what alights during our time together now.

Love,

Mama

I begin by situating myself as a mother. This is for good reason. It is because being a mother is tangled with everything I am. As a mother, I am a creator (music-maker and writer), I am a lover of children, to many of whom I teach piano. I am a listener (to my child, yes, but to the world as a practice through Zen meditation). This is how I notice, how I hear, and how I tell the story of my relations. I am also a griever for what we are losing and what we have lost during this climate crisis, this pandemic, this time of war (the challenges and losses of my life as a single parent also get a special call out here). I am a multi-entity ethnographer, an ethnographer of time, of self, of music, of childhood and of creativity, plugged in to the “ongoing jeopardy and decimation” of life in the epistemically invalid cosmology of the Anthropocene (Vetlessen, 2019). I am a worrier. I am a lover. I am a mother.

If I may slide into a musical analogy, from my position as mother, there is a song (or a series of songs) I will sing here, to you. I would not call them an elegy, though they are not without sadness. Elements of loss have woven their way into the melody. But they are not mourning songs because foremost, the vivid melodies of my childhood (in my case a time of nurture and care) are still very much singing in me. These melodies form the bass line/baseline of this entire project. They sing the

landscapes of Northern British Columbia: The profundity and presence of the Sleeping Beauty Mountains, the river-smell of the Skeena, Gitnadoix and Exchamsiks, (and the roar of the aluminum-sided riverboat as we sped along them as a family). They sing the reverberating echos in the Kitselas Canyon, the endless days of dark rain, the birch grove across the street. All these sensory jewels; these melodies -- no different than me. Holding and generating an ineffable feeling of resonance, they sing love to me. The embodied feeling of being perfectly in tune, perfectly in "love-with" is in the metaphorical ink I'm using as I make circles and lines (and sounds) on the page.

(This is me, the one waving...)



Figure One. Shelley in a boat.

These are songs of remembering. I mean remembered as a re-“membered” way of being; it’s a word that is very much in the here and now. Don’t get stuck in the past with this word: please don’t think it’s merely a word meaning a transaction of rational thought where we call up a discrete happening from the past. Re-membering is timeless and ongoing. It is an emergent, earthling-centered kind of word. To really re-member, is to re-constitute. To put together again (and again) our place as earthlings in “the family of things” (thank you, Mary Oliver (2004)). And when we put together, we put ourselves together. In resonance, in tuning in, is there not the recognition of belonging? Of love?

Karen Barad puts it this way:

A sacred practice of re-membering – which is not a going back to what was, but rather a material reconfiguring of spacetime-mattering in ways that attempt to do justice to account for the devastation wrought and to produce openings, new possible histories, reconfigurings of spacetime-mattering through which time-beings might find a way to endure. (2017, p. 86)

No, re-membering isn’t utopic. It includes monstrosity. It is chimeric, hybrid, cut-up and pasty/cut and paste-y. It is not deva-realm perfection. Nothing is left out, after all. Death is included if fecundity is to be. Monstrous is included if the beauty is to be. The gutting of the fish we caught on the Exchamsiks is included if the glint of silver is seen beneath the water. And my father, working his blue-collar job and cutting the pristine northern timber is there, embedded in the timbre of the melodies. So too, the settling of the town is included. This is the settling that led to displacement, genocide, and horror for the Tsimshian, the Kitselas and the Kitsumkalum First Nations who were the original dwellers of my childhood landscape.

Terrace, BC was, and still is a logging town after all, as rife with racism and small-mindedness as it is with jaw-dropping beauty.

In any case I re-member my timbered/timbred childhood as a continuous-ness, because I remain that child while also being an adult. I am a being that is made of (membered-of) the very “stuff” (mountains and rivers) that I looked out upon with a full heart from the valley of my hometown. It’s not entirely accurate that I was “made of the very stuff”. More like I am still continuously embodying that very intangible indeterminate quality of inter-being. I wasn’t thinking about it that way at the time, of course, yet I was embodying that inter-being all the same, and I remember, I re-member it.

In Donna Haraway’s *The Companion Species Manifesto* (2003), she says: “I suspect that human genomes contain a considerable molecular record of the pathogens of their companion species.” We can consider intimate intra-action of multi-species and multi-entities as evidence of our relationship on a molecular level. To cast (k)now(n) materialist spells (of creative writing and music making) while shaking this vessel of vital-post-hum-ani-muse is practicing attending to the interfusion and interpenetration of all bodies and beings in community, without binding or being bound. It includes the practices and spells as well. As Karen Malone says, “the phenomenological experience of being” is “a shared intersubjective being in the world, with and through child [spell, story] who are equally exposed to the genomes that have infiltrated all bodies/entities (dirt, air, beings) at a molecular level” (2015, p. 10). Nothing is left out.

It all feels a bit stuck in my head as I sit at a laptop and type words into the keyboard. But who is to say where these earthling re-memberings (these mother-songs) reside? They express themselves in many ways. In my music. In my motherhood-ing, and in my deepest and most intimate moments of practice and of creation. This dissertation is one more (head-centric) iteration of this earthling's re-memberings. This earthling's love.

From a doctoral perspective, the singing of these mother-songs expresses what I've come to be in tune with: that reality is inseparable from childhood and play. So obvious, really, that children and play are intrinsic to the fabric of the reality of a mother. But what is that *play*? Children are simply being alive. This is what we have decided to call play. Animals do it (including bumblebees!). Children do it, if we are so lucky, we can even do it. Children playing. From the perspective of this mother, this Zen practitioner however, children are **living**. I watch Clara **living** all the time. Recently she had her favourite stuffed toy, Rosette, a brightly coloured unicorn, in her hands. She was spinning in a circle (one of her favourite things to do). She and I had just "glammed Rosette" up in a crown, fashioned with pipe cleaners, plastic gems, and a lot of hot glue.

She was in the place of living. Wholeheartedly nowhere else on earth but exactly there, spinning around and around with her favourite toy.

How about all the grown-ups in the room? Can you play? Are you **living**?

There are many ways to play. In this dissertation, play is distilled into topics of time-being; space-mattering, “selfing” and emergence. You will see in the neologisms of time-being and space-mattering that I am binding seemingly opposite concepts. This is because they are not opposites at all, but we see them that way, because we are “selfing.” These funny playful phrases are used with a nod to both a 12th century Zen master (Dogen Zenji) and a 21st century feminist quantum physicist (Karen Barad). Some would call these “religious perspectives” and “academic perspectives,” but I don’t see the tension between the two. Both Dogen and Karen are wordsmiths and visionaries. I see what links, not what divides. These funny phrases, like “selfing” have been plopped into a deeply playful and rhythmic world, and are attempts to sum up a lot of things, but really, if you tip their hats a little, they can be heard as questions like: *“Who/When am I (time-being)? What am I(space-mattering)? Is there an I (selfing)?”* And *“What the heck is going on here (emergence)?,”* respectively.

As I have mentioned previously, my overarching question in Zen practice has always been “Who am I,” asked, in good Zen tradition, with a deep not-knowing mind. That refrain remains at the heart of my work, singing with the other melodies. But I have become a mother in a precarious world. Pulled by power-based needs for expansion, colonialism, and unrelenting resource extraction, propelled by neoliberalism and excessive consumption, our world, and the earthlings in it have been driven out of whack. This progress is not emergence, as emergence far more resembles spirals. Loop-de-loops, not arrows. Alongside this growing precarity, a

concurrent question/refrain that has been stuck on loop-de-loop in my heart lately is: How can I practice daily accountability for those whom I love? My answer has been simple (maybe too simple): to practice and to listen.

I wonder, can we, in playfully asking the “big questions” and exploring their possibilities, “embrace a politics of not-knowing and birth emergent futures worth living” (Akomolafe and Ladha, 2017)? In singing the songs of time-being, space-mattering, selfing and emergence, I have come to play these rhythms as a compass to birth not only “futures worth living” but a present-day worth loving, worth being accountable to.

When we are instructed to listen to Teisho (a talk given by a Buddhist teacher), a quote from Zen master Mumon is often shared: “If you listen with your ear, it's hard to understand. If you hear with your eye, you are intimate at last”. These song-chapters, ballads if you will, may require you (or gently ask you at least) to hear with your eyes. May they take you to your own re-memberings.

A. Fetal Michrochimerism

Before I lay out more specifically the form of my dissertation, I would like to leave you with one further thread, which invites time-being, space-mattering, selfing and emergence to come together on a playdate with motherhood and monsters: fetal michrochimerism, an idea that recently bubbled up and into my world. Fetal michrochimerism is the term used to describe what occurs during pregnancy when a fetus shares her cells with her mother, and these cells continue to exist for years, even

decades, in the mother's blood and tissue. Any quantitative answer as to why this may be remains elusive to science. What scientists do know is that this isn't limited to human mothers, and it happened long before there were humans. In any case, the sharing of aliveness between mother and child is a mutual occurrence; it is reciprocal. It is flow; emergence in the sense that both mother and child become-anew and remember one another. It plays with time: when did the mother become the child, when did the child become the mother? Or does it hang in a liminal way, always just barely "becoming"? Fetal microchimerism has a playful resonance with this work and underpins the ballads I will sing. It asks: who is who, where is the self of the mother if she is also in the child? What part of the child is the mother, can you find her? Two hearts beat; but: child-mother-child-mother-child.

Fetal microchimerism is living and breathing interpenetration, (the interbeing of all relatings). It is time-being-in-action, with me becoming-child again, and my child becoming-mother. It bends the thinking about parenting going in a (one-way linear, top to bottom) adult to child direction, upsets chronological arrows of time and progress, and suggests a co-mothering, or childing-with, an intra-parenting/childing. It conjures up the term "transparence" for me, both in the sense that mothering/childing can come and go in myriad directions and that, in this way, relating and relatings become spacious, empty, and see-through, breathable, clear, and less rigid. It is loop-de-loops.

A scientist somewhere decided to include the word “chimera” in this naming. From a biological perspective, a chimera is an organism (often a grafted domestic plant) that has two separate tissues that are genetically unrelated to one another. Chimera, though, can mean many different things. Additionally, it is a fabled Greek hybrid monster made up of pieces of many creatures that were pieced together to create a single being. It is also a fantastical idea, a wild notion, or a dream. The most compelling definition to me? The third.

So, we move forward here with our own chimera, into the unknown.

To reiterate, my **research questions** are: Can I sit in a question with no answer, in a world with no answer, and offer an imaginary, yet provocative and enlivening world? What happens when music/sound and speculative fabulation becomes a space for playful earthling relatings? How does emergence-as-practice ground theoretical possibilities for navigating precarity, grief, love, and a climate-changing world? By taking childhood and music seriously, what imaginings arise to enrich and further (k)now(n) and “new” materialism as an epistemology necessary to the environmental humanities?

Explanations of each Ballad follow below.

b. Format of the Dissertation, Chapter Summaries

I tell my piano the things I used to tell you.

- Frederic Chopin

After this introduction, you will find three pieces/folders called Ballad No. 1, 2, and 3. Pianist/Composer Frederic Chopin is famous for his Ballades, and for good reason. Oscar Wilde put it this way: "After playing Chopin, I feel as if I had been weeping over sins that I had never committed and mourning over tragedies that were not my own" (1891).

Chopin's Ballades are almost perfect (in my opinion) dramatic narrative pieces for solo piano. They often accompany me when I write. They are shorter pieces for a solo musician (10 minutes or so), and remain both held in the highest regard, and extremely popular today as exemplary works both from Chopin and for classical piano. They are distinct entities, though they share some structural and creative commonalities. You do not need to listen to Chopin's Ballades all at once. It is a lot to do so. But if you're at all like me, once you begin to start listening to one, you will be compelled to listen to the end. They are time-beings, they are mattering-spaces, they are emergence personified. They are beyond me to play (shorter Mazurkas are more my speed and ability). They are chaos and order somehow expressed by a very young man, using only 88 keys. They are extra. (More extra than ordinary, but also full of that elusive genius of simplicity).

BALLAD No. 1

The first Ballad is a work of post-human and new/(k)now(n) materialist theory, grafted with Zen philosophy, on the big subjects of Time (movement 1), Space

(movement 2), Self (movement 3) and Emergence (movement 4). It also includes an original song, entitled *Mountain Hymn*.

What is time? I ask Clara this and her eyes look to the side. "Uhhh..." she says, in that very 6-year-old way of hers. Ha, perfect answer! In the first chapter (Ballad No. 1, movement 1) I dive into the rhythm and tempo of time and time-being. It is my own version of an "Uhhhhhhhh..." because time isn't what convention supports. Everything is all time, everywhere is time-beings. Whether it "matters" or not, mattering-in-space is happening, as is being-in-time, and the reason that bears paying attention to is because perspectives change when giving this kind (of) attention to tempo, to time. I only need to watch a child and I immediately see how differently they live in time. I only need to listen to a song to see how time isn't the default arrow I thought it was a few seconds ago. This way of looking at time or listening to time can change everything. It has for me; whether sitting for days on a zazen cushion, birthing a child, or conjuring up a new song. Time (and time-being, being-time) changes everything.

If time is the starting point, it is worth pulling that thread through completely, which is why the time chapter goes on to space and self. If you follow time, and realize you are being-time, you soon understand that you are mattering-space too (Ballad No. 1, movement 2). And if you are space-mattering, who is doing it? When you see that you are something the universe is doing (like a wave is done by the ocean), something more like a skin-bag of trillions of microbes, evolved from bacteria

playing with each other and becoming increasingly complicated chimeric monsters, where is your self-importance? Who are you? (Ballad No. 1, movement 3).

This leads to a movement on the rhythm of emergence (Ballad No. 1, movement 4). In recent discourse, emergence pops up a lot as a catch-all term that explains “everything.” This can let the writer off the hook because emergence can be complicated, systems-theory level stuff. But I think it deserves close listening. Emergence is a happening of time-being space-mattering. Some call it a “radical indeterminacy” (Akomolafe and Ladha, 2017), and while it may be both radical and indeterminate, I prefer to call it flow. It is both “extra” (as in omg she’s so extra: over-the-top, dramatic, and maybe even a little excessive) and totally unremarkable (as in we don’t even notice). It’s right under our noses, but we mostly don’t see it. Until we do. Flowing and flowing. I hope to engage with emergence as it is: spontaneous, ravishing, extra and ordinary, and always “now.” To recognize it as more intrinsically entangled than human minds can probably even imagine. I posit that reality is emergence and wonder how we make room for this uncanny and somewhat preposterous nudge away from the mainstream to the chimeras that often only can be sensed at the edges of our awareness. I haven’t come across many who talk about time-being, space-mattering, and emergence in this way. Who talk about the rhythms of reality.

BALLAD NO. 2

This ballad includes three movements: a critique of the NNM (New Nature Movement) a meditation on childhood in relation to time and being, and a meditation on music. It ends with a song entitled *Feather and Bone*. All movements distill the work and thoughts of the past 6-7 years about childhood, time, music, and ways of becoming-with children.

The first movement is a critical reflection on the “child-nature movement” or the new nature movement, using Erica Burman’s framework of critical developmental psychology and Louv’s seminal piece “The Last Child in the Woods.” This movement springs from my early work in the PhD while I was situating myself in the epistemological space of childhood studies and environmental humanities. It was written in 2019 and edited to weave into this dissertation. I keep the conversation going with my six-year-old throughout, to keep the imagination alive, and to check in with the mother-child in me as I question the assumptions and narratives of the new nature movement.

Next, I look at children and time. Emergence is so evident in childhood, isn’t it? As a mother, I find a growing child to be the epitome of emergence. Here is this time-being, (anecdotally, generally unconcerned about “grown-up” things), spiraling out and out, losing teeth, growing hair, and becoming a concentrically larger and larger ever-changing-but-totally-the-same version of herself, until she’s gone from inconceivably fitting through a birth canal, pink and screammy and helpless, to now staring at you, eye to eye. Where is she going? No one has any clue! Completely creepy, completely extra, and yet still completely unremarkable in most moments of

most days. Childhood, and children's relationship to time, is the focus of Ballad No. 2, movement 2.

Musical composition is another (chef's kiss) example of emergence. We have all this "matter" (piano, vocal chords, hands that know how to play) we have this sound coming out, and somehow, we press things and open our mouths, and vibrations come out that are so infinitely "more" than the constituent parts. The sounds can hit our hearts and our ears in a way that changes our emotional weather. How weird. How extra! How unremarkable (in my case, many songs I've written haven't even been heard by human ears other than mine, so they are doubly unremarkable). Music, sound, and vibrant matter are the subject of Ballad No. 2, movement 3.

Though Chopin's pieces are each a single movement, for the sake of ease of reading, I've broken my works into movements, but they are meant only to be a pause to regain your bearings. The pianist's hands remain on the keys as you move from movement to movement. The singer remains ready to keep singing.

BALLAD NO. 3

The third Ballade is a work of speculative audio-fiction, called *Finding Solace*, which includes an artist statement.

Finally, the Conclusion ends this dissertation with a song called Bright Embrace. The written portion of the dissertation includes both letters to Clara Rose,

(to keep things right here, present, with my six-year-old daughter/mother-mind) and original songs.

I give you these three Ballads, and I lean into worlds and possibilities that are, by their very ontology, on time, spacious, emergent, liminal, and indeterminate. Worlds and multi-entities that, if we practice/listen, can offer a different, but also entirely possible relationship with time, with space, with each other. Why? Well, with practice/listening, when attending, one can open lively experiments, otherwise-possibilities of being that interrupt the privileged, chosen system of time and space we all live in. In a world of precarity, in a world of monstrous indeterminacy, in the thick of a dying cosmology based on superficial but reiterated orders and arrows of chronological time, fixed space and, critically, separation, one can enact, animate, and send out the vitality, the hum, the love of the here and now, with the sensibility of a beautiful piece of music. My aspiration is that this work is iterative, playful, and generative, and full of not-knowing, with some lyrical lifts and drops, and an impetus to move. Hopefully, it flows and alights in places where it may find resonance, understanding, care and solace. I hope it offers an otherwise possible as we earthlings make our way as time-beings, space-mattering the emergent world.

C: Who is “We”?

An important question arises: Who is this we I mention? After Karen Murris’s explanation in *Karen Barad as Educator*, the “we” is not homogenous or universal. The “we” is not (only) human at all, but a “zoo of sub-atomic particles” (Barad, 2007, p.

354). I will use “we” and “our” throughout this dissertation, as my pronouns often expand into “they” territory when I work with the awareness that 70% of my DNA is bacterial. I am not really a “me” at all, a she or a he. I am actually a they; a chimera. But I ask you to be aware of how “me” using “we” makes you feel: Do you feel like I’m essentializing or universalizing? Do you feel included?

In looking at the human “we”, Rosi Braidotti (2020) says, “we are in this together, but we are not one and the same.” The human we(s) are interconnected, but also a mess. Broken, unequal, fractured. Under a dysfunctional cosmology (capitalism), age, able-bodiedness, class, race, gender and sexual orientation continue to be flags that monitor and police access to a “normal” (there is no such thing) humanity (Braidotti, 2018, p. 21). The we, the us, is “understood not as in a unified entity of humankind – but as a diverse and very unevenly enacted multiplicity, always constituted through processes of differentiation” (Juelskjær et al., 2020, p. 20).

I would subtly tweak Braidotti’s phrase. “we **are** this together, but we are not one and the same.” The “we” is also not only human. Nothing is left out, as you will see as “we” go along. Braidotti goes on to say that what needs to be done “in times of severe crisis is to affirmatively search for a new earth and people to come, a missing ‘we’ which can be collaboratively brought about – actualized – in thinking together against the grain and speaking truth to the powers of our times.” (2018, p. 8). In some ways, I hope this project calls this “missing we” into being. Earthlings are a “we” that is (undeniably right here, before) us, all of us, accountable and accounting for what we love.

Chapter Four: Ballad No. 1

(On Time-Being, Space-Mattering, Selfing and Emergence)

I wish I had a time-trampoline
- Clara Rose

[There's] a wrinkle in time
- Madeleine L'Engle

a. Movement I: Time-Being, Being-Time

I will begin with notes (sung to myself, under my breath, now shared with you) on/from time. If I'm practicing-with the theories of k(now)n materialism, time is an obvious starting point because like matter, time has vitality, and it is relational, dynamic and "intra-active" (Barad, 2022, p. 1). Perhaps there are those that would argue that time doesn't "matter". In practice-life, however, I've come to find some wrinkles, some troubles, with time that bear attending-to. This isn't news: we all know time just doesn't mean or "do" what's expected a lot of the time. My many days spent in retreat, or in quarantine with a young child, or in birthing and parenting-with that child has shown me the fun-house mirror, precarious, indeterminate aspects of time. It is as indeterminate as matter, and like matter, is "constantly forming and reforming in unexpected ways" (Coole & Froste, 2010, p. 10). For example, days have lasted forever in lockdown. But in retreat, I often lose track of the days, and there is only this bright, infinitely rich "now"; I am surprised to find myself at the last day of seven. In childbirth, the now was explosive and burned into my being, and not without

traumatic effect. While I may be “troubling time in troubled times” (Barad, 2018, p. 56) to paraphrase feminist-physicist Karen Barad, I am more inclined to say I’m being in emergence as a time-being, or an emergent fugitive in time and space, as Barad and Dogen Zenji as well as others (Akomolafe, 2017), reiterate.

This is a musing (an improvised tune, quiet notes) into not relying on the past, not pressing a body into a knowable future, but slipping through the spacious cracks to the present, to now, to indeterminacy, emergence, to space-mattering and time-being. But as any ballad sung well will express, it cannot deny the situated-ness, the relative, the real sorrow and joy in our day-to-day existence, and the inequalities that are ubiquitous as we “roam the dry wastelands of this modern cosmovision” (Akomolafe, 2022, Twitter). When nothing is left out, wastelands are not left out. Everything feels so very separate sometimes, and there is not only comfort but a necessity (in the privileged and maintained way of being in this society anyway) in productivity, goal setting, linear time. But in time-being and space-mattering, myriad someones, myriad earthlings are singing the otherwise possible, right before our eyes or our ears, right before our attention.

Now, I will review the conceptualization and hegemony of linear time, and consider ways of seeing time differently, through the lenses of Zen Philosopher Dogen Zenji and Karen Barad’s quantum physics.

I. It’s About Time: Clock Time

Uni-directional clock time is history-as-time. It is what Walter Benjamin calls “homogenous empty time” (Benjamin, 2009, p. 9). It advances in a straight line, a steady stream, and is non-repetitive. Time, in this sense, has informed Western thought for centuries:

This linear sense of time is apparent in 18th-century philosophical ideas of progress – for example, in Descartes’s rationalist vision of the progress of human knowledge or in Rousseau’s progressive vision of mankind’s gradual acceptance of democratic authority as part of the social contract. The linear sense is obvious, too, in 19th-century concepts of evolution, particularly in the teleological view of progress that characterizes Darwin’s explanation of the origin of species as evolutionary development, and in Hegel’s ideal of historical progress towards an absolute ideal through the continuous advancement of reasoned thought. We are still caught in a linear modality in 20th- and 21st-century ideas of developed and developing nations, with progress as industrial, technological and scientific advancement, increasingly measured in terms of economic productivity (Farquar, 2016, p. 412).

Linear time has acted as a major organizing concept of culture and society.

“Following Deleuze, linearity is the dominant mode of Chronos – the keeper of institutional time and upholder of the authority of the past – as opposed to the dynamic, insurgent and more cyclical time of becoming or Aion” (Braidotti, 2019, p. 41). It coordinates industry and groups of people, using its devices of monochronic clocks and calendars, divided up into standard segments that are vital to society functioning. Past, present, and future all line up in a metric that strengthens hierarchy: modernity forges ahead, those left behind must catch up, must improve, must progress. The presumptive basis of time also portrays a deep sense of urgency, as a currency that we must use, we must not waste, we must not run out of. The hands of the clock push and press us forward like the myriad hands of crowds and crowds of clock-people. Clock hands become (through strange magical thinking) wheels moving in one direction: forward, along the road of progress, though all they can do

is turn in circles. Clock time, 'homogenous empty time' is, according to Karen Barad, the time of capitalism, colonialism, and militarism:

Whether calibrated to a projected future, an individual event, or a periodically recurring phenomenon...it is attuned to a succession of discrete moments, where a moment is understood to be the thinnest slice of time and where each successive moment replaces the one before it. (Barad, 2018, p. 59)

Time is an undeniably powerful ideological and universal symbol for modernity and Western civilization. After all, monks devised clocks to assemble the populace at the church. The complex multi-species and multi-entity systems on this planet are currently experiencing the most disruption due to the "homogenizing influence" (Kakkori, 2013) of the "metaphysics of progress" which one can see relates to our abstraction of time as a one-way arrow (Barad, 2018, p. 60). A historical-relational perspective can be used to view time in addition to philosophers' observations on abstracted time. The cyclical mythology that followed the seasons can be traced to an absolute time determined by the gods. Following the linear time between the beginning of the world and judgment day is Newtonian clock time, or "grinding historical/evolutionary materialist time" (Rogers, 2020) and thus we arrive at the commodified time of capitalism. We find ourselves in this challenging period marked by radiation, the climate crisis, and the merging of culture and nature (Rogers, 2020).

Environmental Philosopher Deborah Rose speaks of 'knots of embodied/ethical time' that entangle humans and non-humans in what she calls the 'dynamic exuberance of life' (Rose, 2012, p.128). She says that there is a temporal diversity and that ecological time, synchronicities, patterns, generations of living things, intervals

and rhythms are all forms of time, and that ways of looking at time other than (or in addition to) "abstracted, disembedded, disembodied absolute time posited by Newton" are critical (Rose, 2102, p. 128). In other words, when attending to the world of 'nature,' scholarship that addresses the complexity and diversity of time can 'take time seriously' by focusing on the embodied and embedded qualities it has (Metcalf and Van Dooren, 2012, p.9; Rose, 2012, p. 128). Even as we do this, a day passes, and we'll never be as young as we were yesterday.

Barad urges us to shake time "to its core," and to "trouble time in these troubling times" to produce creative imaginaries that address how we can "undo pervasive conceptions of temporality that take progress as inevitable and the past as something that has passed and is no longer with us" (Barad, 2018, p. 56). When we subscribe to a life of only uni-directional sequential time, says Buddhist scholar Stephen Heine, we create the gap (or gulf) between "self" and experience. Getting stuck in past-present-future, says Shunshu Roberts, "obliterates the immediacy and comprehensive totality of the here and now" (Roberts, 2018, p. 87). Time is a doorway to thinking with otherwise possibilities.

II. Making Up for Lost Time (or, all the time in the world)

"The time we call spring blossoms directly as an existence called flowers. The flowers, in turn, express the time called spring. This is not existence within time; existence itself is time." (Dogen, 1200-1253)

To begin to trouble time, is to begin to realize that much of our experience of reality is an illusion. An evolutionary strategy of survival, undertaken by the play between our predictive brains and the world. If we measure success by the number of

humans on the planet, our strategy would be considered successful. But what is success if it is based on an illusion? How does thinking-with non-linear temporality address this question? We do have a past and future, but Buddhism and Quantum Physics both speak to time and being *not being* what we imagine them to be, most obviously because they *are* each other: being-time, time-being. The now in (k)now(n) materialism is this time-being/being-time.

Time and existence are all-inclusive, all-elusive, healing, and eternal, according to the dissertation on time authored by the famous Zen master Dogen Zenji in his primary book, the Shobogenzo, which was written 800 years ago. There is no set order to reality. Dogen resists characterizing it this way at all. The genuine state of things, he claims, "cannot be found in just one direction" (Roberts, 2018, p. 91). At the very same *time*, we move forward. We grow. We age. We start and finish. But linear time doesn't always get the whole picture. Dogen acknowledges that change occurs but argues that it does not occur in the way we typically assume. We cannot dismiss linear time. But it is only one limited way of seeing it. The "problem" we have with time is the dualism we experience between an object and time, because we believe in an exclusively separate self with a past, present and future. However, Dogen dismantled this dualism by folding being and time into each other. Dogen mentions nonduality frequently, and academics typically assume that he is seeing beyond duality, seeing through form (object), time/space, or some other widespread delusion. However, according to Taigen Dan Leighton (2002, website), Dogen is referring to nonduality as a synthesis of duality and nonduality, with both included,

"and both seen as ultimately not separate, but as integrated..."space" is not empty space, "space" is our activity and life, the dialectical synthesis of form and emptiness" (2002, website).

The Japanese characters for "being" and "time," which become being-time or time-being, are combined by Dogen to form the neologism "Uji" in the Shobogenzo. Being is time, and time is being. As with emergence, which we shall discuss in the following chapter, Dogen claims that this is the total non-duality of objects, existence, and time:

Things do not hinder one another, just as moments do not hinder one another. The way-seeking mind arises in this moment. A way-seeking moment arises in this mind...thus, the self setting itself out in array sees itself. This is the understanding that self is time. (Tanahashi, 2013, p. 10)

Shunshu Roberts, who writes extensively about Dogen's work on time, puts it this way:

If we only understand our life to be a series of discrete sequential moments passing by, we do not see the virtue and intimacy of each moment's interconnection and impermanence. Impermanence can be understood not just as fleeting stability, but as an expression of process and interconnection. It is when we embrace the impermanence of being-time that we drop our egocentric self and fully participate in the total activity of *all* being's time because we can now perceive ourselves as part of the whole. This complete engagement is freedom. (Roberts, 2018, p. 91)

Put another way, the "awakening to liberation is thus the realization that all choices between opposites are the separation of inseparables" (Gordon, 2012, p. 85). Dogen, in his work, is "saying yes to everything, and cutting through duality and nonduality, right in our everyday life" (Leighton, 2002, website).

Dear Clara Rose,

Time matters, but not in the way I think it does. I get caught by arrows all the time, they pierce my sleeve and pin me to the wall, and then I tell you: "Hurry UP! We are going to be LATE!" And you are outside of me, you are a goal, you are a task. And you say ok, mama, ok. And you take your time.

Amidst my impatience, patient one, you are a time-being, being time in the most obvious and honest way, moving through the world at the pace of a child, the pace of an earthling. Not at the pace of capitalism, hurtling forward as the hands of the clock zip up your coat and hastily grab your backpack, riding a one-dimensional arrow toward a goal, rising above the ocean wave to achieve and accomplish, no. That isn't your time. Time matters, if we take the time to wrinkle it a little bit. Your moments are the moments of all time. Sun Time. Climate Change Time. Covid Time. Not separate but threaded to all time. Even though I say hurry up, even my impatience is time-being. My separation is time-being. Take your time, past time, future time, time-being. Why do grown-ups teach our time-beings so thoroughly about separation from time? Why do we believe in linear time so unerringly? Led by our blind belief in chronos (the grand conductor) we relentlessly march children forward, to develop, to become, to grow up. And in doing so we occlude all the wonder that they/we already are.

*Love,
Mama*

b. Movement II: Lost In Space (Space-Mattering)

"In essence, all things in the entire world are linked with one another as moments. Because all moments are the time being, they are your time being" (Dogen, from Tanahashi, 2013, p. 106).

Just as conventional abstractions posit that time marches forward with no regard for anyone or anything, in classical Newtonian physics, nature is made of two elements, atoms, and nothingness, or the void. Space is measured through linear function. Nothingness, according to Karen Barad, is seen as "that which literally doesn't matter" (2019, p. 528). She goes on:

The void provides a backdrop against which that which matters—namely, matter—can be mapped in space and time; where space and time are absolute—universal fixed homogenous coordinates that have their existence independently of all matter, and of each other. And matter, discrete bits of substance, are immutable. These bits can move about and change their motion according to the application of forces that are external to the bits of inert matter. Newton's equations are designed to account for their motion (2019, p. 528).

In quantum physics, however, matter is neither inert nor solid. "Theoretical quantum physics posits that vibrations are circular, not linear, and what is produced is by a double action in a specific consciousness to perceive it. Matter is not entirely material but a product of consciousness" (Drohan, 1999, p. 25). For Dogen Zenji, space in its entirety is form, or matter. In (k)now(n) materialism, matter matters. Nothing(ness) matters. Dogen's view of space is, according to Leighton, unobstructed. For Dogen, "space is not merely a dead, objective, external container in which there are forms. Space is presence; space is stimulating; space has power"

(Leighton, 2002, website). Dogen's perspective resonates with (k)now(n) materialism; he often points to the vitality of space. This includes air, the cosmos, the earth and all the subjects in it. In time-being, one expresses the totality of space-matter. Nothing is left out, in this changing field (Barad, 2019, p. 525). Indeed, "nothingness is an infinite plentitude, not a thing, but a dynamic of ontological indeterminacy that cannot be disentangled from (what) matter(s)" (p. 542).

Dogen's work also aligns with quantum field theory, where "matter is not some given that pre-exists its interactions, and the void is not determinately empty" (Barad, 2019, p. 528). Barad goes on to say that:

At the core of quantum field theory is the indeterminacy of time-being, and this gives rise to the fact that nothingness is not empty, but on the contrary, it is flush with the dynamism of the in/determinacy of time-being, the play of the non/presence of non/existence. As a result of a primary ontological in/determinacy, the void is not nothing (while not being something), but rather a desiring orientation toward being/becoming, innumerable imaginings of what might yet be/have been. Nothingness is material (even) in its non/presence. (p. 528)

Quantum Physics, she says:

Not only deconstructs the strict determinism of Newtonian physics, where the future unfolds predictably from the past, but it also blows away the progressivist notion of time -- Benjamin's 'homogenous and empty' time -- disrupting first-world efforts to harness it as a totalising system on behalf of universalism and its projects. (Barad, 2018, p. 61).

As Leighton says, after Dogen: "Space is presence; space is stimulating; space has power" (2022, website). The classical Newtonian concept of the void may have been a highly valued tool in the service of colonialism, but according to both Zen philosophy and Quantum Field Theory, the void is an active constituent of every

"thing," not the background against which something happens, something matters, or something appears (Barad, 2019, p. 544).

Dogen's neologism for time was "uji" or being-time/time-being. In discussing space, Dogen, like Barad, is often addressing the very nature of form, not just as space, but as "space-mattering."

As scholar and Zen teacher David Loy explains:

To become completely groundless is to become completely grounded, not in some particular, but in the whole web of interdependent relations. The supreme irony of my struggle to ground myself is that it cannot succeed because I am already grounded-in the totality...the Buddhist solution to the problem of life is thus very simple: the "bong!" of a temple bell, the "tock!" of pebble against bamboo, the flowers on a tree in springtime, to cite some Zen examples. Of course, becoming an object is precisely what we have been trying to do all along, yet in a self-defeating way, compulsively seizing on our objectifications in order to stabilize ourselves. But I cannot become something by grasping at it. That merely reinforces a delusive sense of separation between that-which-is-grasped and that-which-grasps-at-it. The only way I can become a phenomenon is to realize I have always been it." (2002, p. 489)

Dear Clara Rose,

You love it when I fill the space with the sounds of music. Sound fills the void and our bodies and hearts change. Sometimes when you seem to be close to the end of your rope, I put on one of your favorites: Shake it Off by Taylor Swift. How that space-matter matters! Music is invisible but it is not nothing, it has vitality and changes the time-being as it space-matters. You immediately, quite literally, shake off the irritation and move your body through the world with a lighter heart; a lighter heart that lightens the space-matter-you. Space matters, and music can point us to this.

Love,

Mama

c. Movement III: A Note to Self (Selfing, or Subjectivity)

If time and being are not separate, and space and matter are not separate, how then can we situate ourselves? Buddhism holds that the self is an ongoing process that is constantly trying to feel more real and safe (Loy & Goodhew, 2002, p. 100). According to Loy and Goodhew, the more time is used as a commodity, the more alienated we feel from our sense of self that is rooted in time. We attempt to secure ourselves because we are motivated by our separation from time. This misconception usurps and prevents a solution because existence and time are not distinct.

This too resonates with Karen Barad's work. She points out that *the 'other'* in the self-other dualism we create is *the constitutively excluded*. However, like the Buddhist Net of Indra (which I will talk about more in the next movement), where "multifaceted jewels reflect one another ad infinitum" (Kaza, 2000, p. 13), the 'other' is in fact, already within:

the very notion of the 'self' is a troubling of the interior/exterior distinction. Matter in the indeterminacy of its being un/does identity and unsettles the very foundations of non/being. What is being called into question here is the very nature of the 'self'; all 'selves' are not themselves but rather the iterative intra-activity of all matter of time-beings. *The self is dispersed/diffracted through being and time*. In an undoing of the inside/outside distinction, it is undecidable whether there is an implosion of otherness or a dispersion of self throughout spacetime-mattering (Barad, 2018, p. 80).

For both a quantum physics perspective and a 12th century Zen Master's perspective, self is not what we think it is, but rather, the intra-activeness of time-

beings. Dogen writes that “each moment is all being, each moment is the entire world. Reflect now whether any being, or any world is left out of the present moment” (Tanahashi, 2013, p. 105). Nobody and nothing get left out of this moment of relational reality. We are all – it – together.

From an evolutionary standpoint also, Lynn Margulis’ ego-I or bounded self is a different self than the one commonly thought of. It is not time-independent; it has no fixity as a skin-encapsulated entity in chronological time. “Mucus, excrement, urine, spittle, corpses, pornography, and other detachments from and marginal representations of the human body call its essential hegemony, its universal nature, into question.” (Margulis, 2007, p. 19). Freud and his “polymorphic perverse sensations” are like a deconstructed Bosch or Picasso in bits and pieces, and Margulis says these piecemeal sensations and perceptions should be considered legitimate realities. “The infant’s primordial pre-socialization experience of the world should not be considered inaccurate but rather, precisely because it precedes sociocultural and linguistic norms, less prejudiced and potentially *more “realistic”*” (Margulis 2007, p. 20, emphasis added).

Debates around self and individuality are very present in the philosophy of biology and evolutionary theory. In the nineteenth century, Samuel Butler (1835-1902), an English novelist, painter, musician and essayist “parasitized” Darwin’s texts. Butler suggested “no grand design in nature”, but recognized the continuity of life, to which “he attributed millions of little purposes” (Margulis, 2007, p.204). He rejected a mathematical God and brought multi-species consciousness back to the discussion.

“He claimed that life is exuberant matter that chooses *now*. Over the eons of choices made by some, life-forms have produced more and different organisms, including the colonies of cells that stick together and become human individuals” (ibid).

Our popular notions of self do not see the whole picture; the self (the time-being, space-mattering) is in fact dispersed and diffracted through both being and time, and manifests as space and matter. This dispersion/diffraction holds true for moments of time as well as matter or form (being), “each of which is indeterminately infinitely large and infinitesimally small, where each bit is specifically constituted through an infinity of intra-actions with all others” (Barad, 2018, p. 80), like the jewels in the Net of Indra, all inter-connected, emergent and all holding and reflecting each other.

I. Monocultures of the Familiar

A coda to this movement, to this note to self: The “individual” as a popular notion of self, is one that must be taken seriously, as Barad says, “it is a very potent notion at the center of the action of neoliberal forces. At the same time, it is crucial to raise the question of how “the individual,” including any particular individual, is iteratively (re)constituted” (Barad, in Juelskjær & Schwennesen, [2012](#), p. 11). This iterative (re)constitution can “axiomatize identity as a stable category” (Akomolafe, 2022, Twitter). Akomolafe points out that this can be a gesture of colonization, a “deification” which in turn ends up functioning as a tool of the Anthropocene that “predicates identity as an individual property instead of as a moving, roaming,

postural relationship" (Akomolafe, 2022, Twitter). I wonder how this plays with ecofeminist conceptions of situated knowledges. I am a white, (until recently) poor single mother, for example, at least on paper, but gosh when I write this I smile to myself (like....huh???). This is borne out in the power or lack thereof in my day-to-day. This changes in ways, and stays the same in others, and is folded into the Net of Indra. It is not separate-from anything else (at least in this body). And this situatedness is not left out. However, the individual-as-identity is an "artifice of modern rationality" (Akomolafe, 2022, Twitter) that can obscure and obfuscate the subtlety of the permeability and shape-shifting nature of self. I see the lack of power, but truly I don't *live* "poor single mother", I'm privileged to have access to multi-entity relations, and even though I've been through a lot, I am taken care of /take care in ways that many are not.

Am I suggesting a de-politicization of situatedness? No. When going on this journey nothing is left out (even though I am sure I leave things out). Linear time joins us. Power imbalances join us. Both academic scholarship and religious writing join us. I am suggesting that we turn ourselves; shift our seeing. When we look out a window at night, we look one way, and we see the stars, the treetops, the city skyline; we look another way, we see ourselves in the window. Both are present at once. Taking a deep dive through the treetops into the stars may seem to you, dear reader, to be ignoring the reflection. But it is always there. And we so often focus on the reflection. Let's not forget the thrum of breathtaking entanglement.

“To turn away from the ways we are instigated by, entangled with, curated by, and molecularly driven by the more-than-human [sic] is to in part co-create the deleterious conditions we now define as the Anthropocene” (Akomolafe, 2022, Twitter). A Gen Z student in my tutorial recently said something like: We individualize so hard, everyone is the other, and that’s not good. Akomolafe calls us to free ourselves from the “monocultures of the familiar” (2022, Twitter).

d. Mountain Hymn

In this piece below, entitled Mountain Hymn, I bring together some of the elements in this section, namely losing the self, but also the elasticity and unexpected qualities of time, and mountain-spaces. This is a ballad within the Ballad. It is (k)now(n) materialism in practice, existing as a time-being, space-mattering with its message, spoken through my lyrics, but also intimated through the music I wrote, performed, and recorded in time, in the past, for you now.

Lyrically, the first verse speaks to getting lost in a mountain, becoming-with a mountain. The vibration or hymn of the mountain is apparent, I only need to put my hands on it to vibrate in this way. The city is dimming and thinning of this feeling (it’s so easy to get trapped in cosmologies of linear time and narratives of self in the consumer culture of the city) and going up a mountain is the remedy.

The second verse speaks more specifically to me becoming-with a mountain as my breathing becomes more present. Dirt under my nails, and moss on my tongue. The trees become alive in a different way, like lit-up guardians. In the third verse, time

has changed for me, I'm not enslaved to clocks and hours on these mountain trails. I've lost my boundaries, my name, and the mountain has effectively ended (a linear notion of) time.

Musically, the piano does a series of ostinato, or endless repeating phrases. It's something that comes up frequently in my accompaniments. The left hand has a two-note pattern and the right a three-note pattern, which plays with the rhythms of time in its own way. In the third verse I have put a long rubato (meaning "robbed time") phrase (slowing the tempo at my discretion) of music underneath the lyric "hours will not own me" to underline that rigid musical time keeping is also not a concern. When the last verse begins, you can hear my voice singing "do do do do" over and over. These are raindrops, a quickly passing rainfall, expressed through my vocalizations.

Please click [HERE](#) to access the song in Dropbox.

Mountain Hymn

A mountain hymn for all my senses,
I put my hands on you I hum
Been city-dim and thin to paper
Skyward sender, here I come

My breathing stirs I press against you,
Dirt under nails moss on tongue
The trees are sentinels with halos
Heart mender, here I come

Hours will not own me
On trails rolled out from the sun
I lose my name I lose my edges,
Time ender, here I come

Dear Clara Rose, my little time-being,

Hahahahaha. Does this entire section make you laugh? The fact that I try to write about something that you just demonstrate with your whole self? Once when you were a whole-and-complete time-being I asked, "What are you thinking about, Clara?" I had interrupted your moment, but you still had the compassion to respond. "Mama" you said slightly frustrated, but also patient "I wasn't thinking at all." We are at the point now in your childhood where chronological time is infiltrating your life. You know that "Wednesday is Dad Day" for instance. Tomorrow is now actually tomorrow. Tomorrow tomorrow tomorrow is three days away. You count the sleeps you have with me, and with your dad. And whenever I say an hour, or twenty minutes, you still wonder, deeply, what on earth that means.

*We are also well into your discriminating of entities, well past the early days, when all of the outside world, be it your mother, a spilled glass of water, or mud, held equal honour and fascination. You have keen knowledge of what is alive or not alive, though I do relish the fuzzy edges of this for you. You love your stuffed toys so much. The purple unicorn we've named Rosette has been "all glammed up" with sequins, feathers, a necklace, bracelet and anklet. You cherish her, and her worn patina reflects this. But when I ask you why you toss her into the air and let her tumble quickly to the hard earth, when I say "Poor Rosette!," you state somewhat exasperatedly: "Silly Mom, she's a **stuffy**". Yes, she is. A stuffy that cheers you, comforts you, and in turn receives all the love you can muster. :)*

Love,

Mama



Figure Two: Clara and Rosette

e. Movement IV: Emergence

The moon accompanying the flowing water, the rain pursuing the drifting clouds -
Hongzhi

If you are a poet, you will see clearly that there is a cloud floating in this sheet of paper. Without a cloud, there will be no rain; without rain, the trees cannot grow, and without trees we cannot make paper. The cloud is essential for the paper to exist. If the cloud is not here, the sheet of paper cannot be here either.... If we look into this sheet of paper even more deeply, we can see the sunshine in it. If the sunshine is not there, the tree cannot grow. In fact, nothing can grow. Even we cannot grow without sunshine. And so, we know that the sunshine is also in this sheet of paper. The paper and the sunshine inter-are. And if we continue to look, we can see the logger who cut the tree and brought it to the mill to be transformed into paper. And we see the wheat. We know that the logger cannot exist without his daily bread, and therefore the wheat that became his bread is also in this sheet of paper. And the logger's father and mother are in it too. You cannot point out one thing that is not here-time, space, the earth, the rain, the minerals in the soil, the sunshine, the cloud, the river, the heat. Everything co-exists with this sheet of paper.... As thin as this sheet of paper is, it contains everything in the universe in it.

-Thich Nhat Hanh

"The only thing that makes life possible is permanent, intolerable uncertainty: not knowing what comes next"
-Ursula Le Guin

Having kept a beat with our notes and songs on time-being, space-mattering and selfing, we arrive at a rhythmic confluence of sorts, the flow of emergence. It is safe to say there are questions around what emergence is, exactly (Corning, p. 23). In adrienne maree brown's *Emergent Strategy*, Nick Obolensky defines it as "the way complex systems and patterns arise out of a multiplicity of relatively simple interactions" (p. 13). The murmuration of starlings is often a classic example of emergence, but emergence also speaks to the butterfly in the caterpillar, the

dendritic delta and the dendritic systems in animal bodies, an oak woodland in an acorn. Emergence is time-being, space-mattering magnificence. It is a manifestation of the self, but also the impossible to imagine, a demonstration of a “whole” beyond a “part” (alongside Aristotle’s thinking that “the totality is not, as it were, a mere heap, but the whole is something besides the parts...” (Shore, 2012, p. 149)).

In fact, there is no universally acknowledged definition of emergence, though many scholars agree with Aristotle’s dictum above. Having been consistently unsatisfied with the scholarly discourse on emergence, and the lack of magic contained within, I bring you a chapter that questions whether it’s even something we can pin down. It’s worth exploring, and in the mother-song of this dissertation, is essential to any meditation on time-being, space-mattering and selfing, because it is the drumbeat, the flow, the pattern, and the cadence of all of these.

Peter Corning, complex systems scientist, in his article *The re-emergence of “emergence”* defines it in this way:

Complexity, it is said, is an emergent phenomenon. Emergence is what “self-organizing” processes produce. Emergence is the reason why there are hurricanes, and ecosystems, and complex organisms like humankind, not to mention traffic congestion and rock concerts. Indeed, the term is positively awe-inspiring. As physicist Doyne Farmer observed, “It’s not magic...but it feels like magic” (2002, p. 1).

Philosopher and professor Jeffrey Goldstein states that emergence refers to the arising of “novel and coherent structures, patterns, and properties during the processes of self-organization in complex systems. Emergent phenomena are

conceptualized as occurring on the macro level, in contrast to the micro-level components and processes out of which they arise." (1999, p. 49).

Is it enough to group emergent phenomena under the umbrella of "complexity theory," determine characteristics, laws, and properties of emergence, and having explained it, feel that we can perhaps "recreate the universe" (Anderson, 1972)? The construct of emergence and emergents do not only function as "an explanation but rather as a descriptive term pointing to the patterns, structures, or properties that are exhibited on the macro-level" (Goldstein, 1999, p. 58).

If emergence cannot be defined in concrete terms, but only as pointing fingers—so that you can know it when you see it—perhaps it really cannot be deconstructed to the sum of its parts. Emergence, in other words, is emergent. As Henri Bergson says, "we see that the intellect, so skillful in dealing with the inert, is awkward the moment it touches the living" (1983, p. 165).

Emergence, in its phenomena of complexity, "magic" and links to chaos theory, is mysterious, indeterminate. Its "interactions among many parts may be at once deterministic yet for various reasons unpredictable" (Corning, p. 21). Change plays a big part. Emergence is cause and effect, and karma (the Buddhist name for cause and effect) is change. Causation is also iterative in that effects are also causes, and vice-versa. Emergence is relational, it is Indra's Net in action, it is (k)now(n) materialism. As Loy says:

every process of signification, including self-consciousness, is an economy of differences: The play of differences supposes, in effect, syntheses and referrals,

which forbid at any moment, or in any sense, that a simple element be present in and of itself, referring only to itself.... There are only, everywhere, differences and traces of traces (p. 487).

Emergence has both stability and transformation as properties. One cannot predict one's fate as a starling in a flock or from the perspective of an acorn. While a mesmerizing murmuration or oak forest may emerge, it is only due to moment-by-moment gestures and relations and is not predictable-in-time or space. Each causal gesture is an ongoing interconnected dispatch from the web of the here and now, though informed by past and future, by space, and by subjectivity.

I. Indra's Net

"The world is queer, a mangled, cat-cradling field of ongoing entanglements" (Akomolafe, 2017, p. 116). There are no easy linear karmic paths from certain cause to definitive effect. It is the way everything is (connected to) everything, with no definitive origin. We are the product of our genetic and cultural inheritance and of innumerable other unknowable conditions that bring us to our present state (Leighton, 2020, Website). Let us amplify this definition with the metaphor of Indra's Net from the Buddhist Avatamsaka Sutra, which has been referred to a few times now:

Far away in the heavenly abode of the great god Indra, there is a wonderful net that has been hung by some cunning artificer in such a manner that it stretches out infinitely in all directions. In accordance with the extravagant tastes of deities, the artificer has hung a single glittering jewel in each "eye" of the net, and since the net itself is infinite in all dimensions, the jewels are infinite in number. There hang the jewels, glittering like stars of the first magnitude, a wonderful sight to behold. If we now arbitrarily select one of these jewels for inspection and look closely at it, we will discover that in its polished surface there are reflected all the other

jewels in the net, infinite in number. Not only that, but each of the jewels reflected in this one jewel is also reflecting all the other jewels, so that there is an infinite reflecting process occurring. (Cook, 1977, p. 2)

As Leighton says, "this holographic image expresses our deep intimacy and interrelatedness with every being and every time in the universe" (Leighton, 2020, website).

This web (I prefer the use of the word web, as it implies fine, sticky threads) represents a universe, an emergent cosmos, with infinitely emergent patterns of interrelationship among all members. This great net of Indra is emergence-in-action, the absolute interconnectedness of the cosmos, in Cook's words: "in short, a self-creating, self-maintaining, and self-defining organism." It is also inherently without teleology or hierarchy: "There is no theory of a beginning time, no concept of a creator, no question of the purpose of it all. The universe is taken as a given...There is no center, or perhaps if there is one, it is everywhere" (Cook, 1977, p. 2). Loy, in his article *Indra's postmodern Net* says: The teleology of Indra's net:

implies not the meaninglessness of life but its meaningfreeness. Meaning may not be fixed, but it is not lacking. Life becomes play; yet it has always been play: the issue is whether we suffer our games because they are the means whereby we hope to ground ourselves somewhere in Indra's Net, or whether we dance freely within the Net because we are it. The dangers of relativism in ethics are vitiated to the extent I realize my interdependence with other beings: I shall indeed love my neighbour as myself when I experience that I am my neighbour. (1993, p. 484)

We never act alone. Nothing is left out. Every gesture vibrates the net.

Rather than pinning down a concrete definition of what emergence is and is not, perhaps we can speak of co-emergence, like new materialist thinkers Bayo

Akomolafe and Karen Barad, as well as Buddhist thinkers like Thich Nhat Hanh and Dogen.

Bayo Akomolafe says:

One cannot draw too straight of a line from cause to effect. Indeed, one cannot even draw a line...since effect can flow into cause, and –even more startlingly–also because time is not conceived as a single stream flowing from past to future but as a cycle. We—together with multiple others—are part of a web of life, not just stuck on it like a hapless fly-turned-spider-breakfast, but the very web itself in its fluctuations and rich complexity. And movement, the slightest gesture, sends tremors through the veins of our never-ending reiterative becomings. (2017, p. 105).

This is Karen Barad's intra-action. This is Thich Nhat Hanh's inter-being, based on the Buddhist concept of dependent arising, meaning that all things arise (and pass) in interdependence with myriad causes and conditions. This is Dogen's continuous practice, where space is vital matter. This is Indra's Net.

As demonstrated, Barad makes an argument for the intra-dependence of things from her own work in quantum physics. Rather than a world made of linear causes, along with independent and bound objects, properties and meanings, Barad demonstrates otherwise. Akomolafe says that she shows how relationships "precede the objects in that relationship...objects—be it a laptop, climate change, the idea of determinism...only come to gain their "thingness" and specificity in the context of [a] relationship" (Akomolafe, 2017, p. 106). So, one can see that emergence does not happen as an ending, as a final movement. It is ongoing, where things "are constantly rupturing and congealing" (Akomolafe, 2017, p. 106). Traditional Newtonian physics, you will remember, had tools for detecting either complete order or complete

randomness. However, “the middle ground...has been left out. But it is precisely this middle ground that is the locus of emergence” (Akomolafe, 2017, p. 64).

Time-Being, Space-matter, and our very selves are fluid and co-emergent. Karan Barad’s study of Bohr’s work reiterates this strange truth found in Dogen’s texts: that things only emerge in the context of intra-acting relationships in time. In the context of Indra’s web, in a way, like this: time<--->Being/Subject<--->object/Inside<--->outside/matter<--->meaning (etc). To be emergent is not simply to be intertwined and larger than the sum of your parts, but to lack an independent, self-contained existence.

At the heart of it then, says Barad:

Existence is not an individual affair...individuals emerge through and as part of their entangled intra-relating. Which is not to say emergence happens once and for all...but rather that time and space, like matter and meaning, come into existence, are iteratively reconfigured through each intra- action, thereby making it impossible to differentiate in any absolute sense between creation and renewal, beginning and returning, continuity and discontinuity, here and there, past and future” (Barad, 2006, p. 1).

“We live [in], and are [produced by], a celebratory, orgiastic, festive, teenage, promiscuous, and downright perverse world that offers no safe grounds” (Akomolafe, 2017, p. 119). We just simply cannot define a thing (even a thing like emergence) as separate from this “relationshiping”. We cannot find some origin point or essential nature. “To attempt to extricate a thing, to find its essence apart from the processes that make it, is merely to introduce different processes” (Akomolafe, 2017, p. 111). This is addressing time-being in space. Our time-being, our space-mattering is relationshiping. Nothing is left out: Covid, Song, Pollution, Plants, Love. So perhaps

emergence emerges from the theory of (k)now(n) materialism to say that it's not only matter that matters, but the in-betweens: the inter-beings.

II. Hearts and Diamonds

There are works far older than writing on quantum physics that encompass discourse on inter-being and intra-penetration. The Heart Sutra and the Diamond Sutra (thought to be the oldest written work, dated 11 May 868) Are two Buddhist scriptures which speak to these ideas. A frequently chanted phrase of the Heart Sutra: Form is Emptiness and Emptiness is Form, Form is no other than Emptiness, Emptiness is no other than Form. Matter is also part of, and not different from space; therefore, we, in our physical forms, can be spacious. Thich Nhat Hanh (2021) says: The ultimate truth (also called emptiness or the absolute in my Zen tradition) transcends the ideas of separate selves, separate species, and even the idea of "birth" and "death". At the level of the absolute, there is no such thing as death; there is only continuation. The ultimate truth is not something that is separate from what Lin and Khoo (2022) call the conventional truth; the world of form. When we "touch" the conventional truth deeply, we "touch" the ultimate (pp. 44-45). This is Dogen, folding time and being into Uji.

The Diamond Sutra further reminds those people who want to experience or embody emptiness, the absolute or the ultimate truth, to remove four discriminative notions: "the notion of a separate self, the notion of a human being as separate from non-human elements, the notion of a living being as separate from non-living beings,

and the notion of a life span, or the idea that we only exist between the time that we were born and the time that we die" (Plum Village 2020a), (Lin and Khoo, 2022, p. 4-5).

III. An Ethics of Emergence?

There is also an ethical dimension to emergence that is worth parsing. The web of Indra implies that:

insofar as I am caused by the whole universe, it exists for my benefit; but insofar as I am the cause of the whole universe, I exist for it. This dilemma is resolved by realizing that there is no real distinction between the terms: when I am the universe, to help others is to help myself. (Loy, 1993, p. 502)

In Dogen's writings on meditation also, he affirms this possibility and reality of awakening space itself. There is an intimate, personal relationship between practitioner and this "world of space" (Leighton, 2022, website). According to Leighton, practice, Dogen says,

influences not only the people around the practitioner, but also, "grasses and trees, fences and walls, tiles and pebbles." But ... the elements of space in turn inform and assist the practice of the person engaged in [practice]. (Leighton, 2022, website)

This is a radical and unconventional position, to state that by paying attention, we are attending-to time-being and space-mattering in a way that influences them, because we are so intimately *them*. Dogen says that the practitioner and all things "intimately and imperceptibly assist each other...therefore everyone receives the benefit" (Leighton, 2022, website). This is not unlike Barad's work with the physicist Niels Bohr's claim "that phenomena are in constant processes of differentiation and

that these processes depend on the *apparatuses through which the observer takes an interest in, or investigates, them—including the material apparatuses (e.g., instruments) and the apparatuses of the human mind that is doing the knowing*" (Stark, 2019, p. 335).

While Buddhism sees an ethical mutual aid, Barad sees mutual affect and effect. In this kind of relational ontology, everything is both accountable and accounted for, in emergence. This seems to be on the very edges of (k)now(n) materialist theory.

As Janae Sholtz points out, "A different kind of attunement to matter and earth is operative here. It is not about merely freeing objects or materiality from human intentionality, but of *freeing ourselves* from the misconception of essential or inherent form of materials or bodies" (Sholtz, 2021, p. 207, emphasis added).

The questions, the indeterminate, the not-quite-sure, the monstrous and weird, the uncanny, the messy and the precarious is where practice is. It is where emergence is. It is what Ursula LeGuin calls "bewilderness" in her commentary on Chapter 20 of the Tao Te Ching (1998), *Being Different*. She says: "in the milky dim strangeness lies the way. It can't be found in the superficial order" (p. 25). And so, "we seek something to fixate on, but the Buddhist solution is to take away: to keep pulling the rug out from beneath us until we let go of that need for solid ground and discover that groundlessness is not so bad, after all" (Loy, 1993, p. 490).

Emergence is beyond what each part could imagine, and yet, in each child, bird, mushroom, or piece of music, an entire emergent “chaosmic” world resides (Deleuze and Guatari, 1987).

At the end of a Ballad, a rhythm, or a movement, it must be said: Language is not an adequate space to grapple with emergence. As Bayo Akomolafe says: “It seems there is much more at work than our plots make space for—much more than can be beaten into the gauntness of alphabets” (2017, p. 64). But we try. We take Karen Barad’s dictum; we attempt to meet the universe halfway. Emergence remains confusing, but it’s not always uncomfortable to live in a question: “con-fusion: a mixing together, a messy mangling of things” (Barad, 2017 p. 65).

Dear Clara Rose,

Sometimes you don't listen (to me).

But in those moments where I'm looking at you, and saying your name, I get the sense that you are in fact, deeply listening, in a way. Not to my voice, no, but you are totally present. I've made a little mental list this week about all the times when I could say, with increasing irritation, "Clara, listen to me," and instead, my inner dialogue looks like this:

- 1. Stop. She's turning rocks in the garden and gently holding the potato bugs.*
- 2. Stop. She's spinning around because it's her #1 favourite thing to do.*
- 3. Stop. She's focused on collecting the best petals from the wilting rose, who has left her petals scattered on the pavement.*
- 4. Stop. She's realized her sock is slipping off.*
- 5. Stop. She's counting how many red crayons she has.*
- 6. Stop.*

Not long ago, after seeing how frustrated you would get sometimes, I suggested we practice Tonglen, a breathing meditation, where we breathe in suffering (in this case it was your frustration) and breathe out feelings of happiness. It is a practice of becoming-with, and recognizing the fluidity of our feelings. Their itinerance. You took to it right away.

All these plants on the sideboard, sitting on top of drawers of your puzzles and games, they are breathing out what we breathe in, my dear. Sometimes I think that is why everyone comments on how green my thumb is. Not because I have any skill with these green beauties, but because we are breathing laughter and presence around them. You gave them their own names, after all. We breathe so much in my dear. That includes our skinned knees, our scary dreams, our fear of the dark, our lost hopes. But it also includes the million shades of green that surround us in our home and out our window, in the leaves of the jasmine, the plumeria, the prayer plant, the jade, the linden and the pear.

I remember you asking me why I switched our way home one day, after I saw a lot of city trucks idling on the sidewalk ahead. "Those vehicles are making pollution; I don't want to breathe it in." "But why would they be doing something bad like that?" I had no answer, for that is something I also don't understand. We breathe so much in, my dear. Let's take a deep breath. Here. With the green.

Last month we sat in this same beautiful room, breaths coming shallow and disrupted by dry coughing as we struggled with covid. I sat at the piano to sing you songs, forcing the breaths required to project lyrics. It felt good to make my lungs work in different, deeper ways again. Your favourite was—hands down—(I've got you) Under My Skin. I was secretly pleased by our mutual respect of Cole Porter:

*"I've got you, under my skin;
I've got you, deep in the heart of me
So deep in my heart, you're really a part of me..."*

Oh, how you loved moving while I sang that song for you, swaying back and forth beside the piano!

Remember when I told you, stroking the skin on your arm, that we are made of stars? You were so excited by that but didn't understand why the stars were then so far away from you, up in the sky. Why couldn't you reach out and hold one close, in a bright embrace? I told you, if you hold my hand, you can hold the

stars. You weren't convinced. But maybe our skins are not encasements marking borders of over and under, outside and in, separating me from you, self from other. Instead, how about we let our skins be our connector portal. Our sacred porous meeting-place. Mirrored-and-mirroring, our haptic confluences and convergent blurry surfaces for solace. How about they stop being me-you bounded divides? Isn't this where we really met, anyway? With you completely and utterly inside, really a part of me? Under my skin, deep-in-our hearts, up-in-the-stars? I'll be mama-star tickling your elbow, you be my Clara-star, wriggling and giggling. Let's not be "in it together", let's "be it, together", Ok, Love? OK.

I'll let another favourite of mine, Irving Berlin, take us to this letter's end, my dear.

*"How far would I travel
Just to be where you are?
How far is the journey
From here to a star?
And if I ever lost you
How much would I cry?
How deep is the ocean?
How high is the sky?"*

Love,

Mama

Chapter Five: Ballad No. 2

(On The NNM/NDD, On Childhood & Time, On Sound & Music)

a. Movement 1: A Critique of the New Nature Movement (NNM) and Nature Deficit Disorder (NDD)

Dear Clara Rose,

This morning you were so funny. "Mom, what does TTC stand for?" You asked. Toronto Transit Commission, I said. "Huh, how about "TA?" Teaching Assistant, buddy. Where did you hear that? "Oh," you said, "I'm just making up letters to see if they stand for anything." LOL!

Yes. Letters do "stand" for things. I'm starting a new job in a field I'm not familiar with, and goodness the acronyms are too much sometimes. But I digress. NNM means the new nature movement, my dear. It is truly nothing to concern yourself with, as you walk to your public school in the heart of the biggest city in Canada, Toronto.

The other day we stood at the gate and watched no fewer than three Red-tailed Hawks hanging about around College St and Spadina Road. One of your teachers said that the other week, your class got to watch a hawk from the window. "Wow, Clara!" I said. "It was ripping apart a pigeon." As the teacher said this, your eyes looked over to me, completely unperturbed. "Hawks are predators" you said, like this: pred-ah- TORS. Indeed.

You do not have access to a treehouse, or very much green space at all. This would never have been my choice for your childhood, but your connection goes both humbly into the earth, and nobly up to the stars. Of this I have no doubt.

Love,

Mama

Let me begin by saying that the point of this dissertation is not to reconstitute a binary by presenting a critical analysis of something. I will now critically analyze something. What a con-fusion! But as my supervisor says: "Critical analysis can imagine possibilities" (Fawcett, 2023). As a reminder, this section was part of the first comprehensive, written in 2019 when Clara was three. I've since re-worked it (in 2023) and added anecdotes in the form of notes to Clara.

How are children and nature conceptualized in dominant Western thought and culture? Here, I offer a critical analysis of this (de)coupling. Narratives of children and nature are the foundation for the New Nature Movement (NNM), by Affrica Taylor and others (especially Louv, 2016, The Children and Nature Network 2017, founded by Louv). Richard Louv (*The Last Child in the Woods*, 2005, *Vitamin N*, 2016) is often positioned at the centre of the NNM, though many scholars of childhood and environmental education, like Kellert, Kahn, Chawla, Pyle, and Sobel situate themselves within it. The NNM, through books like Louv's, popularly and pragmatically addresses the well-understood narrative that children need to return to nature or connect with nature as a solution to a very real problem in our world: the impoverishment of nature experience for children. Louv points out that Nature Deficit Disorder (NDD), (or not connecting adequately with nature), affects most children today. This issue of alienation from nature and its corollary, (re)connection with nature has major currency as an increasingly conventional wisdom in the Western imaginary; indeed, it is how many people contextualize human-nature relations (Dickenson, 2013, p. 317).

It is the hope of many parents and educators with a humanist approach, that if a child experiences nature, then when that child grows up, the future adult will feel connected to nature, and less likely to exploit it (Dunn, Malone & Tesar, 2017, p.1358). Studies reveal that a deficit of nature has a host of debilitating effects, while hands-on experience in nature is therapeutic, restorative, relaxing and beneficial. The general conclusion reached by the NNM is to connect as many children as possible

with nature. These conclusions are considered by Kellert, Kahn, Chawla, Pyle, Sobel and many early childhood and environmental educators, a given. However, “much goes unspoken about the complex cultural issues [and historical contexts] that contribute to the problem in the first place” (Dickenson, 2013, p. 318).

If we take a moment to probe a little more deeply, it becomes clear that a particular culture and history have infused and informed the (de)coupling of children and nature and the resulting prescribed “return” to nature as a cure for what is termed Nature Deficit Disorder (NDD). What I am concerned with here is the oversimplicity, limitations, relevance (and frankly, the lack of imagination) of the NNM discourse when it is more closely examined against the present-day precarity of the world. It appears to be set, (like a relic, like an easy out, like blinders?), within the world’s current troubling reality.

I do not wish to diminish what these scholars are valuably pointing out; I can see they wish to help move the discourse forward. Admittedly, I love and support the idea of Clara “getting out into nature” but I must ask: what nature, what child, and what experience? When a full context isn’t considered, “scholars and practitioners can inadvertently do a disservice by oversimplifying and omitting deeply embedded cultural [and historical] matters” (Dickenson, 2013, p. 318).

In some Asian traditions like Zen and Taoism, nature has long been contemplated and given great authority as both a teacher and a place of refuge, and children are often given credit in their “beginner’s mind” way of seeing clearly. “For

Buddhists throughout Asia, the natural world not only expresses truth directly, it also points metaphorically to the richness and generosity of Dharma [truth] teachings” (Kaza, 2000, p. 12). Han Shan, a Chinese poet from the eighth or ninth century, retired to Cold Mountain, where he scratched his poetry into tree trunks and rock faces, saying (like an ancestor of Wordsworth or Thoreau): “Here in the wilderness I am completely free, with my friends the clouds, idling forever...who can break the snares of the world, and sit with me among the white clouds?” Even before this (and long, long before the romantic period in Western Europe), people took refuge in, and gave authority to the teachings of nature.

So, what do concepts of nature or childhood mean for Buddhists like me? The answer is not simple, as there is no single Buddhist philosophy of nature or child development, nor a universally shared experience of either (Kaza, 2000, p. 13). But one can investigate this question through various teachings, such as interdependence, which states that all phenomena (things, beings, moments) depend on all other phenomena for their existence. The Net of Indra, where “multifaceted jewels reflect one another ad infinitum” (Kaza, 2000, p. 13) is one such teaching which we will visit throughout this dissertation. The *Sandokai*, or Coincidence of Opposites, is another teaching by Zen master Shih-t’ou that marvels at “the perfect interlocking of essence and particularity” (Kaza, 2000, p. 13), like a box and lid fitting. For Dogen (1200-1253), who founded a Zen lineage that remains influential today, “the reality of nature is synonymous with the nature of reality” (Kaza, 2000, p. 13).

Cartesian thought and the nature-culture binary come up frequently in research on children and nature. While ideas of dualism and binaries like self and other are not a historic or cultural universal in human society (Margulis, 2003, p. 17), the bifurcating ego (that creates a self and an other beginning in early childhood) has been both a product and challenge of the conscious mind since even before the historical Buddha, who grappled with duality until his own enlightenment, and lived 2000 years before Descartes.

I) The Legacy of Romanticism in the NNM

The NNM calls “for a reinvigorated faith in the “special relationship between children and nature that can only be tapped by returning children to nature” (Taylor, 2013 p. 49). It pushes along and reinforces a model that couples ‘natural’ children with a ‘special’ nature, an idea that finds its beginnings in the Romantic period in Western thought. Indeed, the influence of the Romantic period, and the Transcendentalism that followed in the US has been a major source of rhetoric and inspiration for the NNM. It was at this point in history that views about children and childhood shifted significantly. Previous Judeo-Christian thought positioned children as the site of original sin, but during the Romantic period children became viewed as innocent, pure and good. The “Rousseau-inspired idea that education is philosophically tied to the purity of nature and the innocence of the child”, as Baker says, (cited in Duhn, I., Malone, K., & Tesar, M., 2017, p. 1358) is reinforced and reinscribed by the NNM’s commitment to humanism in environmental education. An examination of Rousseau (often called the father of the Romantics and the prophet of

nature education), can help to contextualize couplings of children and nature. Dear Clara, you always tease me about my French “R” (which I am truly no good at). Perhaps I can ask you to say the word “Rousseau” every time it comes up from now on, since your French is parfait? I think it would lend the right kind of levity to this section.

In Western-European history, the period of Enlightenment, in which science, rationalism, order and logic went hand in hand with industrialization and a move from pastoral to city life, was met with resistance. It was Jean-Jacques Rousseau who declared in 1762 that “everywhere Man is in chains”. This movement of resistance is posthumously called the Romantic period. Today it is seen as a movement that encouraged a return to nature and innocence, but it was first a time of rebellion and upheaval, a time which held up both individual and personal expression. The dissatisfaction of artists, poets and intellectuals challenged the established, scientific and rationalized way of looking at the world, and led to new attitudes around childhood. According to Stephanie Forward, the Romantics believed that one had to approach the world from the perspective of a child, and that only then could humanity undergo a radical regeneration (Forward, 2014). Children, in the eyes of the Romantics, were innocent and uncorrupted by society, and because of this state of innocence, had a “special” relationship with the (also uncorrupted) natural world.

Rousseau envisioned an ideal society and used a perfected state of nature to base this vision on. His educational treatise entitled “*Emile*” was written in the early

years of the Romantic period, in 1762, and is thought to be the beginning of the Romantic 'cult of the child' (Brown, 2017, p. 3). Visually and verbally representing this cult, British portraiture artists such as William Hogarth and Thomas Gainsborough and poets such as Wordsworth and Coleridge supported and spread the notion of good children and good nature, often citing memories of their own unspoiled childhoods. What Brown calls "a nostalgic regression of such mythic proportions", or the idealization of childhood, was the "cultural product of adults who were often disguising their own hostility to abuse they believed they themselves had suffered as children" (Brown, 2017, p. 24). Paradoxically, this idealized notion of children and childhood corresponded with the increased exploitation of children in industrialized society. It wasn't until compulsory education, from the 1870's to the 1930's, that children, according to American Sociologist Viviana Zelizer, became "economically worthless" but "emotionally priceless" (as cited in May 2019, p. 145).

II) The Tenacity of Rousseau's Ideal

Rousseau's opening statement in this seminal piece, that "everything is good as it comes from the hands of the Author of Nature; but everything degenerates in the hands of man" (Taylor, 2013, p. 3) summarizes much of his work. His thinking, that children are born into an original state of essential goodness, and are then corrupted by society, marks a pivotal point at which a natural boy-child emerged from the increasingly darkly felt civilized, rational man.

Rousseau's writings importantly reflect and reinforce the dualism of nature/culture that was increasingly taken up during the Enlightenment. He likened growing up in European society as 'a state of slavery', and advocated that freedom from this bondage was only to be found in nature:

Rousseau's contempt for European 'civilized man' and society seems to have driven his infatuation with pure nature [and pure boyhood] as a form of radical alterity. The emotionality of his rhetoric was ramped up by this polarity—his passionate idealization of nature was matched only by his obsessive demonization of society. In other words, Rousseau's figurations of Nature as a perfect child and a perfect teacher were not only boosted up by the nature/culture divide, but they were the products of his emotional investment in reproducing the binary logic of good nature as opposed to evil culture (Taylor, 2013, p. 9).

According to Affrica Taylor, Rousseau evoked 3 senses of nature. First, *Nature was an internal force*. Innate human nature, the inner nature of a boy was different and superior to that of a man. Boys had 'primitive dispositions' in which they were hard-wired to explore and inquire, they were simply purer and more authentic. Thinking of Nature as an internal force is an idea that's been universally adopted into western educational theory and has become foundational. It heralds child-centered (boy-centered) approaches that respect the stages of growth and development, and has filtered into the NNM (Taylor, 2013, p. 36).

Second, *Nature is 'not-man'*. This is Rousseau's idea that boys needed to be protected from manufactured education/society for as long as possible, at least until age 12. Adult intervention disrupts a boy's natural learning processes, impoverishing them of their superior-to-man natures. The purpose of this 'negative education' was not to gain time but to 'lose it' by allowing boys to learn at their pace in nature (Taylor, 2013, p. 37).

Third, *Nature was the world in which we live, therefore was not manufactured*. This 'education of things' idea became deeply entrenched in Developmental Psychology, apparent in Piaget's cognitive development theory "In which the development of 'figurative' and 'operative' cognitive skills is founded upon the child's repeated physical and sensory concrete experiences of the material world" (Taylor, 2013, p. 39).

Even as nature and culture remained in their own silos in popular Western thought, modernity saw the boundaries of nature and culture inevitably blur. The anxiety this created allowed a purification effect to happen. Considering "society's perceived disfiguring and mutilating effects" (Taylor, 2013, p. 11), Rousseau conjured up and unleashed these ideas of Nature's Child and Nature as Teacher to "carry out what Bruno Latour calls the 'work of purification'" (as cited in Taylor, 2013, p. 11), so he could rescue childhood from such a corrupt society. The tropes of rescue, purification and salvation can be followed into psychology all the way to the present NNM, with Louv's Nature Deficit Disorder being a trope of this work of purification.

There are many troubling issues with Rousseau, who Taylor calls "the prophet of nature education" (2013, p. 35). He wasn't an educator or parent. He surrendered his own children into foundling homes in France. Despite this, *Emile*, a fictionalized philosophical text on the ideal education of a boy in the countryside, gained sufficient traction to become a canon on childhood and education. Rousseau's lack of credentials did nothing to silence his treatises on the impactful and enduring figures of Nature as Teacher and Nature's Child. They led him to become a long-lasting authority "on two subjects that he knew very little about: child rearing and education." (Taylor, 2013, p.7)

Additionally questionable were Rousseau's ideas of women:

The women's entire education should be planned in relation to men. To please men, to be useful to them, to win their love and respect, to raise them as children, care for them as adults... these are women's duties in all ages and these are what they should be taught from childhood. (Rousseau, 1762)

Girl children (yes, Clara, that means you) are entirely deleted from Rousseau's project of natural education. (Dear Clara, every day I pick you up from school, your clothes are filthy! Time and again I ask what you were up to at school, in that parking lot of a school yard (undergoing renovations), and every day it is different. "Searching for treasure!" (Bottle caps, bits of asphalt, a plastic ring) ..."playing soccer with ice!" "Digging beside the pavement!" (Dirt under nails, socks filthy). No pleasing anyone, but yourself and your moment)

Rousseau was heralded as a revolutionary figure for his ideas, but his ideals were, at their core, not only problematic and troubling, but contradictory. For example, nature was not only the opposite and antithesis of society, but at the same time society's only salvation. Children and nature are coupled against society, but a natural education was the critical precondition for any successful society. Further, Rousseau specifically argued that for male children, the best upbringing was a negative education, in which the child is free to roam in nature. However, this child must have the guidance of a male tutor because his inherent goodness is no match for the ills and corrupting influence of society. So, because children are pure and innocent, any faults that may arise are then due to parental/caretaker missteps, or from a failure to protect. The prior Judeo-Christian child was the site of original sin, a far less implicating refuge for caretakers in the event of faults. (Taylor, 2013, Brown, 2017). In any event, "Rousseau's curious legacy appears to be a testimony to nature's powerful seductive appeal and to the dictum that if you have nature on your side, you must be right" (Taylor, 2013, p. 7). His troubling ideas are unfortunately still very influential today.

Rousseau's "prophetic philosophies" about natural education, essential, good, and pure nature and childhood were made 250 years ago and remain enduringly appealing for many environmental educators in the west. NNM writers seem to largely remain within his grip. But his ideas about natural child development and "singly deployed nature" (Taylor, 2013, p. 15) also have indelibly coloured the western popular imaginary and the ways in which many conceive of and value

childhood. “The figure of the child—with its appeal to the natural, the divine and the taken for granted—has flourished precisely to the extent that it obscures its cultural and ideological origins” (Burman, 2008, p. 98). Rousseau’s legacy of coupling good boy-children and good nature was pivotal and has endured.

III) Influences of Development Psychology on NNM

The NNM and NDD also operate on premises formulated and maintained in the specific historical and cultural contexts of the field of Western Developmental Psychology (DP). Themes like universalism, individualism, developmentalism and naturalism are used to stake claims for (de)coupling children with nature. For example, NNM writers rely on cognitive and moral stages to underline and reinforce children’s innate and special relationship with a special nature and use these stages to call out for children’s “essential” need to return to nature. (Kellert, 2002; Kahn, 2002; Sobel, 2001, Louv, 2008). A critical look at DP provides more context to this (de)coupling and reveals the limitations of the NNM. We will now turn to it to find more fodder for analyzing the NNM. (Dear Clara, this isn't easy for me to talk about. But right around the time I was writing this, you told me some things that made me worry for your safety. After speaking with my lawyer (yes, I had to have a lawyer, love), I made the difficult decision to call Children's Services and was suddenly thrust into an institutionalized mechanism based on many of the principles of Developmental Psychology. Buddy, my body got

metaphorically chewed up and spit out while part of me, the part that had to split away from my body to watch, floating above, saw how inept a system is at truly listening to a three-year-old girl and her mother. How that system, embodied in a social worker, sitting on my patio, asked all the wrong questions, how that system listened to the "reasonable" man on the phone instead of the distraught woman sitting before her. How the emotion of my real fear was seen as volatile and unstable, unsuitable for a mother, and a potential reason "to remove the child for psychiatric reasons from your home." How our obvious love for each other (yours and mine) was the one thing that prevented the system from intervening more, and from doing more harm. DP represents at best, a great lack of imagination to me. At worst, it could've been the end of me. Love, Mama)

First, a definition of DP:

It is not just a scientific discipline combining theory with practice and research. It is also wholly a part of society, a social institution with a professional structure and a public presence. Not only does it influence social behaviour, but it also represents a special form of continuous participation in the political process. It not only reflects ongoing social activities but joins concertedly in their formation, regulation, and reformation. (Broughton, 1987, p. 1)

DP, according to Broughton, has several potentially questionable objectives and results. It segments, classifies, orders, and coordinates the phases of human growth. It defines what is and is not growth. It creates a discourse that encourages (and limits)

the range of how human lives make sense. It creates and produces meaning. It sets goals and formulates development ideals and provides a means for realizing them. It slips into the private realm, participating in our formation as subject and object, and it fashions us with an "intentional matrix of the world situation" (Broughton, 1987, p. 2). The consensus among developmental psychologists is that "their field is an academic sub-discipline contained within the behavioural sciences, one that objectively observes, and measures age-related changes exhibited by human individuals, more or less independent of concrete context or history" (Broughton, 1987, p. 2).

Just as gender, race, class, and sexuality do, *age* plays a key part in social relations and is, in fact, not independent of context. While some assumptions around gender, race, class, and sexuality are seen as contingent, both historically and culturally, "age, and in particular 'the child,' seems particularly intransigent to this contextual analysis" (Burman, 2008, p. 49). "In part, this assumption reflects the benign paternalism (in all its gendered and colonial meanings) of a willingness to oversee, to repress difference, and to extend our understandings of children to Others." (Burman, 2008, p. 151). DP has been heir to both Romantic and functionalist traditions, coming together within a (white, male) European-US context. I will briefly summarize some of DP's troubling assumptions below.

Universalism

The child in this discipline, a discipline which underpins much of the now-global popular thought around children and childhood, develops predictably according to

patterns that are presumed to be universal. "Yet this universality—like the modern liberal-bourgeois subject that inhabits psychology—and harboured especially within developmental psychology—is actually culturally specific" (Burman, 2008, p.164). This Developmental Psychology, like the Transcendentalists, like Freud and Rousseau's models before, represents Western Enlightenment, culturally white, middle-class, masculine subjectivity.

Individualism

Further, casting the *individual* child as the isolated unit of development is also characteristic of global North (minority) developmental models, which reinforce Western Enlightenment thinking. We use this definition in a universal and normative way, render it technically correct and neutral, then deploy it as culture-free model of global children's rights with organizations like the UN and UNICEF (Burman, 2008, p. 193). Development is also portrayed as an isolated or individual activity,

a trajectory that seems to speak of the specific child, but is in fact a methodological abstraction, a statistical fictional 'individual' synthesized through analysis of multiple patterns of populations in the course of which one has been stripped of all that tied her to her time, place and position. (Burman, 2008 p. 167)

Piaget, (the "prolific and original theorist", according to Burman), committed to the "modern celebration of science and reason as the panacea for social inequalities" (as cited in Burman, 2016), and saw his boy-child subject specifically as a budding scientist who rationally engaged with problems in the material world, developed hypotheses and learned by discovery and activity.

Here again, the individual is the unit of development, rationally resolving obstacles presented by, and within, the material world. Logic, epitomized within the scientific method', is cast as the pinnacle of intellectual development. This produces a model of thinking that treats the individual as prior and separate, and celebrates activity and discovery – qualities which also carry colonial and gendered nuances. (Burman, (2016), p. 322)

Developmentalism

Constructions of childhood are firmly entrenched in developmentalism, “the conviction that explanation or greater understanding lies in situating a phenomenon within its species as well as individual history” (Burman, 2008 p. 50). This again is a hallmark of (and residue from) nineteenth-century European thinking. Part of the power of the developmental explanation “lies in the slippage from the specific and singular to the general: from the child to children; from the way it is to the way it has to or is supposed to be.” (Burman, 2008 p. 50) “The child, the ‘primitive’, women and the mentally ill were treated as immature versions of the adult, male, rational mind, as expressions of the binary oppositions between human and animal, European and non-European, male and female.” (Burman, 2008 p. 48).

There is a political burden or load that accompanies the discourse of development, and it is placed on the children who are positioned to bear development. It comes with

notions of progress, improvement, skill and adaptation...words that migrate or even flow easily between the specific and the general, or from individual to social allocation. This happens whether we are talking about a single child or children, or about descriptors of species as well as states or conditions; or, further, from discussions of states of individual minds or bodies to evaluations of the relative status of nation states. Children thus provide the conceptual and emotional means by which contested social hierarchy can be perpetuated by

being mapped onto an apparently natural asocial category. (Burman, 2008, p. 95)

The notion of progress binds DP to modernity. Shanin (1997) says “the idea of progress became a powerful ideology of disenfranchisement” (as cited in Burman, 2008). So, “invested and performed” (Burman, (2008), p. 48) within studies of the child are preoccupations with progress and modernity. The idea of progress, “that individuals and societies develop towards some ‘better,’ more adaptive, more beneficial form of organization...” becomes the misplaced goal (Burman, (2008), p. 48).

The then misplaced developmental trajectory of children’s thinking following the ‘up the hill’ model of science and progress is therefore an error (Rorty, 1980, as cited in Burman, 2016, p. 245). Regardless,

a hierarchical model of ‘cognitive structures’ emerges. A more mature logic arises from and supersedes earlier and less adequate structures. This developmental path as a hierarchical model is depicted as common to all, no matter your culture and history. Because of this, it is thoroughly normative. (Burman, 2016, p. 248)

Naturalism

Normal (statistical) description becomes the rhetorical (natural) prescription:

the ideological “bugbear” beleaguering the truth claims of the modern social and human sciences...most acutely because of psychology’s pretensions to scientific status. If the normal becomes presumed, then it is the abnormal that excites attention or scrutiny. (Burman, 2008, p. 50)

Nature Deficit Disorder embodies all of DP’s assumptions, as it individualizes, universalizes, naturalizes, and privatizes the many ways in which the care and

containment of the young is structured, and does so according to culturally and historically specific models of who children should be.

In short, traces of the project and projections of Developmental Psychology can be detected in so much policy and practice around children, and correspondingly DP is a key maker underlying the narrative themes in the NNM.

IV. Dominant Narrative Themes of the NNM

I will use some of Erica Burman's ideas in the following sections to analyze these narrative themes in the work of Kellert, Kahn, Pyle, Sobel, Chawla and Louv. I want to emphasize that these scholars, in their tireless work, are expressing their compassion for children, and for the world around us. This is a well-intended discourse. But there are consequences for the over-simplification and limitations of this discourse. At a minimum, (15 years after Louv's *Last Child in the Woods*), childhood and nature coupling, an ambiguous project sitting on a questionable foundation, remains as undone (or more so) as ever.

Stephen Kellert ties nature (in childhood personality and character formation) to Developmental Psychological models of learning: cognitive, affective, and value-related development, and his work is a theoretical investigation into child development through the role of experience and contact with nature. Kellert states that various "values of nature" develop at different ages. Between 3-6 years old there are utilitarian, dominating, negativising perspectives. From 6-12 years old views become humanistic, symbolic, aesthetic, scientific, and from 13-17 years old, views of

nature move towards being more moralistic and scientific. This framework is taken from the developmentalism model (2002).

He reiterates that nature is a key teacher of children, echoing Rousseau's ideas of "Nature as Teacher" and negative education. He quotes psychologist Harold Searles, who wrote that "The non-human environment, far from being of little or no account to human personality development, constitutes one of the most basically important ingredients of human psychological existence" (Searles, 1960, p.102). Kellert's conceptual framework delineates levels of experiencing nature as children, including Direct Experience (unplanned, spontaneous play in a natural setting which includes creatures and habitats that function independent of human intervention/control), Indirect Experience (Restricted, programmed, managed contexts like zoos, aquariums, nature centres, gardens, orchards, farm animals (domesticated animals fit here too)), and Vicarious/Symbolic Experience (representations/depictions of nature). These can also stand in for a human evaluation of the natural world, from seemingly rich to seemingly impoverished (2002). I'm not sure children see their experiences this way. Clara certainly never has. The acoustics of our apartment hallway offer her wonderful things; so does dirt.

Kellert makes note of a gap in this kind of knowledge by saying "I soon discovered the paucity of systematic study of the role played by childhood contact with natural systems in character and personality formation" and that existing approaches "rarely consider the child's *experience*" (2002, p. 124). Kellert then states that: "One...wonders if the relative absence of published material on this subject may

be indicative of a society so estranged from its natural origins it has failed to recognize our species' basic dependence on nature as a condition of growth and development" (2002, p. 118), which so like Rousseau places nature "outside" of "estranged" society and culture. Kellert wonders at how "the possible erosion of opportunities for direct contact with healthy and diverse natural environments has altered or compromised ... children's physical and mental development" (2002, p. 124). However, to bridge that gap, Kellert then goes on to outline children's experience using cognitive development theory, which situates children in a strictly scientific/rational/intellectual realm of knowing, a specific and limited part of *experience*. This situating both erases the myriad experiential ways of knowing and suggests that cognition is not only more important, but the only (legitimate) way to know. This has a naturalizing effect and universalizes cognition. He then goes on, unfortunately, to support nature as a "repository for information" and suggests that "few areas of life provide young people with as much opportunity as the natural world for...intellectual development" (2002, p. 124). He seems firmly entrenched in a distinct and specific development model and a specific type of experience.

A permeating aspect of Kellert's work is that nature is special, essential, and separate from humanity. Kellert reiterates this notion by saying: "Nature is intrinsically and qualitatively different from anything the child confronts in the human-built world, no matter how well simulated, technologically sophisticated, or virtual these manufactured representations may be. Nature for the child fundamentally signifies

life...the child's experience of nature is...portrayed as essential critical, and irreplaceable..." (2004, p. 140).

Peter Kahn says, "we need to help children experience a more pristine nature" (2004, p. 112), immediately positioning himself in the nature/culture binary, and making both children and nature "special" and other. He wonders how children *reason* about environmental problems (emphasis added) and uses the results of 5 studies to determine moral conceptions and values. He leans heavily on structural-development theory from DP, which posits that children construct understanding and values through social and physical interactions.

Kahn then goes on to define "environmental generational amnesia," which states that each generation has a normalized view on the extent of the nature in their respective purviews, but as nature declines, impoverishment is normalized, and respective generations take this nature for granted. Here he touches on themes of memory and loss that often come up in conceptions of child-adult relations, where adults' nostalgia for what was (or what never was) can colour and impose their adult hopes for their children, taking the place of what the children may want.

Robert Michael Pyle writes about finding 'Eden' in a vacant lot, stating that direct experience with nature need not be a perfect wilderness experience. Urban, accessible nature is becoming more critical, as cities are where more children are growing up. Eden, according to Pyle, can be found in a mountain landscape, a flower, on a street corner, in a crack on the sidewalk, or in a vacant lot. He also talks about

the extinction of experience. Researchers like Pyle suggest that the Anthropocene has seen compromised possibilities for opportunities to experience the natural world. Pyle's concept of "the extinction of experience" summarizes that "direct, personal contact with living things affects us in vital ways that vicarious experience can never replace" (1993, p. 145). Pyle argues that one of the greatest causes of the ecological crisis is the "state of personal alienation from nature in which many people live" (1993, p. 145).

Undeveloped land in modern cities is in a precarious situation - it is assumed that the 'raw land' *needs* to be developed or is otherwise 'wasted.' Pyle decides 'vacant lot' is most appropriately used here, affectionately, as he discusses urban children's experience with this type of place. Pyle says that children form intense connections with place. He says from the late 1800-mid-1900's nature study was a formal element of the curriculum in America, and while it did not produce a nation of naturalists, students did learn the basics. But once WWII happened, and hard, numerical science and math trumped nature study, observational approaches fell by the wayside. He says, "outdoor education's common emphasis on games, teamwork and motion militates against deliberative and ruminative natural history" (1993, p. 310).

To imagine the consequences of destroying the vacant lot, Pyle says we must consider the service they provide, which he details as play, nature literacy and intimacy, the lack of which demonstrates the extinction of experience. When experience with nature diminishes the results are physical, intellectual, emotional,

and moral. We have become risk-adverse also, and the result is that virtual nature replaces real nature. Pyle slides past the nature/culture divide as well. Nature in Pyle's world, even a vacant lot, is still not culture (1993).

David Sobel says a child's opportunity to explore the ditch gets replaced by memorizing lists of the plants you might find if you ever went to the ditch. And that "one transcendental experience in nature is worth 1000 nature facts" (2013, p.4). Sobel says embodied nature experiences pack more punch than objective study. Sobel repeatedly calls for *returning children to nature* to ensure that their *special* relationship is impactful. He states that children are so overwhelmed by the information about environmental crises and simultaneously so disconnected from actual nature that they develop what he terms 'ecophobia.'

While Pyle critiques a science-based curriculum and the loss of nature study in America, Sobel "enlists science to authorize children's experiences in Nature" (Taylor, 2013 p. 48). He reiterates that experiencing nature is critical for children's moral, cognitive, social, and emotional development and reiterates others (like Pyle, Kellert and Louv) in saying that direct experience in Nature is most impactful and provides an irreplaceable role as teacher in the lives of children.

Louise Chawla feels cognitive theories are not able to explain children's experiences in nature, and searches for meaning in childhood encounters with nature, as she says, "reclaiming Romantic traditions" (2002, p. 200). Chawla believes that most developmental theories do not accommodate myriad ways of children's

knowing nature. "Cognitive and psychoanalytic theories of development and social learning theory do not adequately account for the apparent importance of just being in and appreciatively noticing the natural world..." (Chawla, 2002, p. 213). This is true, but I would go further and say that theories of development have been invested in Western thought and imagination so thoroughly that they are hard to circumvent.

In her 2002 work *Spots of Time*, Chawla's main argument is that there are diverse ways of knowing nature in childhood, and diverse ways of relating to childhood from the view of adulthood. She goes on to say that some ways of knowing are under-researched. She uses the Romantic period, Wordsworth's poetry, and Gebser's *Structures of Consciousness* as her theoretical framework. According to Chawla and based on Gebser's work, children's experiences in nature can create a foundation for a "wisdom that recognizes identity with the natural world as the origin of life." (Chawla, 2002, p. 206) Gebser suggests that when we are grounded in the consciousness of our body with a sense of basic trust and security, we are enabled to accept identity with the world as the maker of wisdom (2002). Chawla leaves science and cognition behind in favour of a Romantic and Philosophical approach, which presents limitations. She problematizes dominant and current ways of summing up children's experience as potentially lacking, but reverts to a Romantic framework, once again coupling children and nature, and placing them in the realm of the special.

In her piece, *Ecstatic Places*, Chawla reports on her study of 15 autobiographies from a larger sample of Edith Cobb's collection for her book *The*

Ecology of Imagination in Childhood. Each biography shows a type of intense environmental encounter. "Radioactive jewels buried within us, emitting energy across the years of our lives" are moments most often experienced during our formative years (1990, p.20). Chawla looks at the landscape qualities and the social and psychological contexts in which ecstatic nature memories have been recorded. The memories of each of the subjects in this study provided a fund of strength and stability, and a sense of integration of nature and human life, and she concludes that the relationship between childhood memory and adult creativity is more complex than Cobb suggests. Chawla concludes that no education can take the place of undistracted encounters with places themselves, echoing Rousseau's theory of negative education.

In Chawla's *The ecology of environmental memory*, she refers to how a collection or memory can arise as a selective and distorted but acute form in dealings with children and childhood. She states that one of the characteristics of the work in studying childhood is that it is carried out by those who do not inhabit that social category but have been in that category. "How can one square the (dis)connections between our memories and the possible actualities of children's lives" (1986, p. 56)? Can we distinguish between what we recall, what we tell and what was? She touches on themes of memory and loss when coupling children and nature, which will be looked at below.

V. Louv's Last Child

The most well-known of the NNM writers, and the one who coined the term Nature Deficit Disorder, is Richard Louv. Louv uses the work of all the above scholars in his most popular book: *The Last Child in the Woods* (2008). Fittingly, Louv begins his book with a Walt Whitman quote, and he admits to his “romanticized” memories of his own childhood at the outset, along with his longings for his children to have similar childhood experiences in nature.

The new edition (2008) starts with a reinforcement of the “growing international concern about nature deficit in children and the book’s 100 Practical Actions...that are *essential to healthy childhood development*” (emphasis added as I furtively look around at Clara’s urban existence). Nature, he says can act as therapy for ADD (2008, p.3). The basic premise of his book is to explore the “increasing divide” between the young and the natural world, and what the implications are of that, reiterating that exposure to nature is necessary for “healthy development” (I guess I’m a failure). While lamenting this increasing divide between children and nature, he contradictorily says in a dire tone that rapidly advancing technologies are in fact “blurring the lines” between humans, other animals, and machines. The lines are blurred *and* children’s “bonds are breaking” with the natural world. First, a return to “special” nature is necessary for children because children are special. Next, healthy, (read: “normal”) development hinges on this special relationship. Third, science and technology (culture) are the enemies of this relationship, echoing Rousseau’s notions of “degenerative” society. Fourth, paradoxically science is also *encouraged and pushed* to both authorize nature study and to study how children

experience nature. Finally, children are pathologized as being deficient, and special nature is the cure.

Louv says that we (parents and educators) need to heal that broken bond or save our children, not only for our health as humans, but for our future as humanity, and that there is a “new frontier” a “better way to live with nature” (2008, p.4). But who will be doing this better “frontier” living (not me in Toronto!), and where is this nature, specifically? Louv’s “gifts of nature” include its ability to offer and inspire healing, serve as a blank slate, and offer a separate peace, away from “the adult world.” There is clearly a preferred kind of nature, as he warns that our cities are being invaded by wild animals (Clara loves hawks and pigeons, by the way). “We can no longer assume a cultural core belief in the perfection of nature” (2008, p.23), he says sadly, embodying Rousseau. Disavowing this erroneous belief in perfection sounds to me like a particularly good thing. His statements consistently reiterate dualistic thinking and make troubling assumptions that with a very superficial amount of scrutiny, ring hollow.

Louv couples ADD with nature deficit disorder (NDD). He hesitates to introduce the illness model that our society is already so caught up in, but uses the term NDD anyway (2008, p. 101), and it is precisely this term and all its underlying baggage that has been greedily taken up in popular Western culture and thought around the NNM. Louv talks about Nature’s Ritalin, or nature and free space as a treatment for autism spectrum disorder, and says, “The real disorder is less in the child than it is in the imposed, artificial environment.... the society that has

disengaged the child from nature is most certainly disordered" (Louv, 2008, p. 101). While this makes a certain kind of sense, it also sets the opposition of bad society to good nature just as Rousseau did. Louv then regrettably fails to develop this argument any further. He does not adequately convince the reader that children are not the ones shouldering the burden of this invented deficiency.

Louv is a proponent of Rousseau's negative education. He quotes E.O. Wilson as saying "better to be an untutored savage [sic] for a while, not to know the names or anatomical detail. Better to spend long stretches of time just searching and dreaming" (Louv, 2008, p. 151).

Louv advises parents (and educators) on ways to ensure a healthy relationship with their children and nature, calling a section "The Most Important Thing Parents Can Do," and saying, "Time in nature is not leisure time, it's an *essential investment* in our children's health" (2008, p. 150). This very adult and capitalist tone imposes nature-as-investment upon adults to dole out, and in doing so, erases both the child and their experience, which occurs in *their time*, not linear time. Louv siphons off a special kind of nature, available to very few, when he conflates nature with what is beautiful: "When we deny our children nature, we deny them beauty" (2008, p. 150). (Dear Clara, I see how you love the old run-down hallway of our 1950's apartment building, which used to be a rooming house. The acoustics are something else in this hall, aren't they? What are acoustics? Sounds, honey. You love the reverb here. Reverb? It is the bounciness of sound my love, that's

why you always make sounds when we are in the hall. You find it so beautiful.

"Spending" time in this dark dingy dirty hallway is worthy, an essential investment. Love, Mama).

Louv takes up the cause of the early conservationists when he makes a case for continued hunting and fishing in the vein of the elite white sport hunters of America, who rarely fished or hunted for survival. He recommends catching and release of "non-glamour" fish first and questions the contributions of organizations like PETA who "speak up for fish" (2008, p. 194). Many of these fish, Louv fails to acknowledge, continue to disappear into extinction at an alarming rate. He says fishing isn't just for boys, and that girls can fish too (*lucky you, Clara!*). Louv wonders if "fish feel pain," as if they may or may not (my eyes are wide as I type this, dear reader, I am so shocked), so in the meantime, we should all just fish (*Clara, you've been a vegetarian your whole life; you cannot bear the thought of eating an animal*).

He says nature is morally messy and feels that hunting and fishing are "among the last ways that the young learn of the mystery and moral complexity of nature" (2008, p. 194). (*Clara, you are officially exempt from learning of the moral complexity of nature*). He says that if we "remove hunting and fishing from human activity...we lose many of the voters and organizations that now work against the destruction of woods, fields, and watersheds" (2008, p. 194). This is both a privileged and controversial ethos, to say the least. Many of these protected or natural areas were ethnically

“cleansed” of indigenous peoples during the formation of National Parks. Climate change is not fussy either. Biodiversity loss is everywhere. Will the woods, fields, and watersheds Louv speaks of thriving with no plants or animals in them? With this legacy and this reality, it’s difficult to square Louv’s recommendation for children to enthusiastically sport hunt and fly fish as a key way to save children/childhood/nature. It’s ignorant at best.

Louv spends some time discussing children and spirituality. However, he quickly pigeon-holes himself in a Judeo-Christian belief system of a God-created universe, reducing and making very narrow his spiritual discussion as monotheistic. He spends time equating nature and his relationship to God, writing: “Nature is the way that God communicates to us most forcefully...We cannot care for God if we do not care for his creation...God’s creation...is being conserved for future generations” (2008, p. 300). This is problematic on a few levels. First, many don’t believe in a Christian God. How would we “care for *him*?” Also, does Louv’s God “own” nature? It kind of sounds that way when he says “God’s creation.” What if I can’t hear what his God is communicating? Are all acts of nature God’s communications? Do children have to believe in God to communicate with nature? *Clara! I thought this guy wanted to help you. Do you have any clue what he is talking about?*

Louv quotes Candy Vanderhoff who says, “the future of education is in the outdoors” and proposes (with a nod to the Transcendentalists) a utopic “back to the land” scenario, akin to “Jefferson’s agrarian vision, Thoreau’s self-reliance, and the

homesteading of the West” and a return to wild prairie (2008, p. 232). Quite logically, with the climate reality upon us, this utopia is all but impossible, full stop, barring some cataclysmic apocalypse, killing most of humanity, and a long time period of recovery. Louv’s book is a lost, white male Romantic’s broken record for “progress towards a nature-child reunion” (2008, p. 291). In truth, I don’t know what that is.

VI. NNM and Postmodern Naturecultures

As touched on, the historical and cultural context of the NNM reveals a nature/culture opposition that posits children as natural and special (vs adults), in the varying-but-still-special beauty of non-cultural nature. Current debates and familiar tropes on the coupling of children and nature cannot be separated from the nature/culture binary under which western society continues to operate. This ‘Great Divide,’ using Bruno Latour’s phrase, has become, (according to him), the old regime (Latour, 2017). As Latour, Margulis, Haraway, Tsing, and Taylor, as well as social theorists like Simon May, Michel Serres and many others suggest, this binary has become, if not an outdated dichotomy, then very truly scrambled. Within the New Climate Regime (Latour, 2017), humans have deeply implicated the world’s ground, the world’s places, and the world has (always) deeply implicated humans. As a result, the binary has folded in on itself. “In the era of counter-Copernican revolution, when we turn toward the old solid ground of natural law, what do we find? The traces of our action, visible everywhere!” (Latour, 2017, p. 62). “It makes no sense to separate humans/other-than-humans, nature/culture, cities/wilderness when climate change, ocean acidification and spatial fragmentation affect all aspects of every living

organism on this planet” (Dunn, Malone & Tesar, 2017, p.1359). This dualism is becoming increasingly unsettled. It would seem wise then, to stop taking sides. “The climate crisis has driven *both sides* off the rails” (Latour, 2018, p. 86). And yet, when it comes to our children and their relationship to nature in Western thought; when it comes to the New Nature Movement and Nature Deficit Disorder, we continue to take sides.

VII. Reconfiguring “Childhood” and “Nature” (Whose Loss and Who Needs Saving?)

The history of the Romantic period and the discipline of DP contextualize the (de)coupling of children and nature. There are also some tropes in Western thought that I’d like to address, which are tied into the contexts reviewed above. They can be seen through the lenses of linear time: facing the future, the past and the present.

Saving our planet and our children is a common theme in the NNM. The NNM suggests saving children and nature for their future-potential, through future-looking ideas around ‘getting back to nature,’ “saving” children, as children are natural (and therefore innocent), and because the future depends on (and is a burden therefore placed on) our children. But giving children back their future, their lost childhood, and their restored childhood fails to ask: whose childhood are we referring to (or imposing upon) here? Who is the child in need of saving? Often this theme is represented with a girl child.

To restore subjectivity denied to the child by virtue of the limitations of ... prevailing models [of development] ...fantasies indicate how children–

especially little girls—signify not only the inner, fragile self, but also have come to express longing and loss within the modern Western imaginary...hence the romance of the other is rendered docile and diminutive in the form of the little girl, who is positioned as in need of protection (Burman, p. 98).

Another call to our future children is using the child as a moral injunction (Burman, 2008, p. 149), or as the voice of the planet, with the child as a moral guarantor. In a recent Nature Valley Granola Bar commercial, we are told to “rediscover the joy of nature” through their ad campaign. On the screen, we see a young (around eight or nine years old) white, upper-middle class girl child running alone through completely natural (though manicured, as opposed to wild) landscapes. The voiceover says:

Imagine if we played outside, instead of online. We could make friends, face to face, search without an engine, and go only where the birds tweet. We could recharge our batteries with sunshine, talk without text and connect without wifi. Instead of looking things up, what if we just look up? (Nature Valley, 2019)

This advertisement plays to many narratives described throughout. It is a clear return to nature narrative, with a young girl as the voice of the planet, telling “us” adults (and other children) to get off their devices and get back to nature. But it also misrepresents reality, while simultaneously representing fantasy. The landscape imagery is impossible in all but the wealthiest parts of the world. The chances of a young girl running around alone are unlikely in our risk-adverse present day, or in our crowded cities. The voiceover, though clever, is inaccurate. Many children and adults do play outside, make friends, search, go where birds tweet, talk, and look up. Despite this, it presses emotional buttons, and the images fill me with a longing for something, something I am quite sure I never had, while the voice gently encourages

me to be better than I am. Coming as it did on the eve of the covid pandemic and reading it from the after times of 2023, it is even more eerie (and quaint).

Childhood is often mobilized as potential when it comes to environmental messaging. Here, children are regularly given the roles of moral evaluators of adult overconsumption or environmental problems. We adults are called upon to save the planet by the children who are 'our future.' But children also represent our better, ideal selves, and are given access to those perspectives that may not be seen by others, or that others may not have permission to express (Burman, 2008 p. 149).

There is also Louv's utopian child, a child of some imaginary and unlikely future, an idealized subject abstracted from cultural and political contexts, that Louv calls upon in the final pages of his book. This child lives in a small farm-like cooperative community in the wild prairie in the US, reminiscent of Thoreau's transcendentalist ideals of communal and non-urban living. According to Dunn, Malone & Tesar (2017), by 2030, urban centres in the global south will be home to four times as many people as in the global north. This idyllic lifestyle seems clearly of touch with the reality of most of humanity, which is increasingly urban. As Erica Burman says, "Onto the child we heap the thwarted longings of decaying societies and try to figure something better. It's a hard burden for children to carry. Surely, they should be their own future; not ours" (2008, p. 171).

The NNM also operates through the past-facing lens of adult memory of a lost (or possibly never-existing) space of nostalgia or sentiment, while children of each

generation are pathologized to suffer from “environmental amnesia” by adjusting to current levels of biodiversity. There is also a harkening back to a romantic child and childhood of the past for many of the NNM writers. Louv, Pyle, and others echo the words of Wordsworth frequently in their work. These writer’s Romantic childhoods, and who they were as children are also abstractions, memories from their own past and not real children.

This theme of recollection or memory arises often in discourses of children and nature experience. Chawla takes up this theme in her work. As she mentions, one of the characteristics of the work of studying childhood is that it is carried out by those who do not inhabit that social category but have only been in that category in the past. Burman asks how we can square the (dis)connections between our memories and the possible actualities of children’s lives (2008, p. 56). Can we distinguish between what we recall, what we tell, and what was? How do dominant notions of childhood conflate our memories with the subjects of our study?

Concepts of selfhood/childhood are so entrenched, it’s difficult to separate longing for what we no longer have (or never had) with how today or tomorrow’s children “should” be. The NNM writers do not necessarily keep these projects distinct, but often use their memories of pristine nature in their own childhood as an ideal and place those rose-coloured ideals on the present. This impoverished present doesn’t ever stack up to their memories. Louv for example, grew up in the 50’s. While climate change wasn’t prevalent at that time, the cold war must’ve caused some anxiety. It was not a perfect time, because there is no perfect time.

Through the rosy lenses of what we wished we had been and done (rather than who we probably were and what we did), we impose on current children all kinds of cultural baggage...intrusive intervention in the name of protection—children are incapable of looking after themselves, not allowed to go out on their own, or conversely we project our own desires for freedom, exonerating them, as in ‘you’re only young once, boys will be boys’ (Burman, 2008, p. 149).

On the other hand, sentimentality (“that drips off the dominant imagery of children” (Burman, 2008, p. 166)) protects children from evaluation under adult criteria. It separates them, but the cost is denial of full humanity and subjectivity, and that furthers unequal power relations: “I, the adult, can define the terms on which you, the child, relate to me, and not vice versa.” It is sentimentality of “times that never were” (Burman, 2008, p. 166). Burman states that as we replay the Oedipal story, we are

constituted as adults by our repudiation of the passions and desires of childhood. What we gain by this is not only common membership of the group [adult], but also common access to the narrative of loss. We *retrospectively construct* the story of childhood as fulfilling those features we currently lack, as the domain of lost potency and passion. (2008, p. 148, emphasis added)

Children then “mark the borders of human rationality and carry the residues of desire and horror that this produces” (Burman, 2008, p. 159). The return to nature-as-it-was narrative can be seen as an example of this kind of construction and projection. It seems in today’s climate reality that the adults, not children, may be the ones that are most in need of rescue, reform, and return, and yet child activists like Greta Thunberg often end up being pathologized for their views.

The arguments of the NNM scholars also reiterate an over-simplified, limited and limiting present-day perspective. In the present time, its thoroughly normative ideals send out and perform a narrative of contrived necessity, a need to couple children and nature *for their own good*, within the contextualized confines of the

disordered society that has decoupled them. The NNM often uses its call as a response to the “strange and disturbing” (Louv, 2008 p. 23) news of modern science and technology in its complexities, focusing on how children are impacted poorly by science and technology. They question the dependence on screen time and social media and wonder about standardized technology-driven learning in its effectiveness compared to the rich pedagogy of the natural world. Paradoxically, in the present time, science is also a reason for a return to nature, as a way for children to develop STEM skills, and is the very discipline used to evaluate and study children’s experiences in nature.

Children are the future, the past, good, innocent, sacred, beastly, uncivilized, deficient, problematic. Burman calls these the ‘Metaphorics of childhood.’ But when are they simply themselves? We should refuse the naturalness of the child, she says, as the natural child can only exist alongside the unnatural child. What are our responsibilities to children regarding their experience? After the application of this historical and cultural context, it appears that these (de)couplings of children and nature in the NNM in fact “rest on an irreducibly ambiguous foundation which may function in practice in ways that depart quite dramatically from the ‘best interest’ they purport to promote” (Burman, 2008, p. 187).

VIII. Disrupting “Normal” and Perceived “Deficits”

These ambiguous foundations and destabilizing contexts lead to the on-the-ground discourses that inform and colour children’s realities in the world. Any child or

person (woman, girl, working children, those with disabilities, children of colour, and LGBTQ2S children for example) can be made invisible by their 'inferior' developmental status, but they still, as Burman says, must somehow manage to arrange themselves around a dominant development discourse (2008), married (as this discourse is) to a commitment to linear time. In this historical and cultural context, whose definitions of development hold the most sway? Those of 'normal' (white, global North, Western Euro-US middle-class) development. This means that many, if not most children, set against this definition, are abnormal. The child, who occupies myriad positions and relations in her world, is thus unable to fit into the impossibly narrow constraints of what is considered "normal" or, in this case, "natural." Her body then lives and moves through space as the assigned site of deficiencies (of attention, or nature, or adulthood, for example). Onto her very self is laid the cloak of a projected, adult-created-and-maintained pathological trajectory. (*Dear Clara, I know you do not know what I am talking about here. The only cloaks you wear currently are your furry cloak with a lion's mane on the hood, and imaginary elaborately decorated cloaks that are always the colour violet and covered with sparkles*) The well-meant NNM puts children in a triple bind, conducted by our friend, Chronos. It first heralds a natural, wholesome, and normal developmentalism (that of spending time in nature) which is available (in the way the NNM prescribes) to very few children in the world. At the very same time, Louv's characterization of Nature Deficit Disorder, and his conflation of it with autism spectrum disorder, catch

many children in the sticky and inescapable net of a pathological gaze. Not only are they unable to adequately return to nature, but because they are unable to, who they are as a result becomes unnatural and abnormal. The child then finally and inevitably becomes the site of improvement by adults. Parents or teachers are encouraged by Louv to reinsert as many children as possible into this singular, "perfect," not-culture nature, so they can come back to 'normal' society after administering a dose of green space, "nature's Ritalin" (Louv, 2008, p.105). Children are our past, we project our misplaced memories of childhood onto them. They are our present, in that they are our project to develop these squiggly creatures into "functional" adults. They are our future, as the only ones who can save the planet. For as long as we catch them in this chronological net, they can never be themselves.

Child climate activists like Greta Thunberg don't seem to have any place in the NNM narrative. Though in many ways she could be seen as 'fitting into' the DP model of 'normal' (white, global north, middle class) her life and work don't cry out as though in need of a 'special' and 'essential' reunion with a largely imaginary pristine natural world. Nor is she a success story of someone who has been "saved" and has "reconnected" with nature. Yet, she is called the world's most visible and talked about climate change activist (The Independent, 2019), and has received, among other accolades, a nomination for the Nobel Peace Prize. She is clearly engaged with the current state of the world, isn't she? She's also a teenager (a city-dweller, from Stockholm) who started skipping school on Fridays after learning about climate change. At the age of 11, Thunberg stopped talking, eating, reading, and interacting.

She was diagnosed with autism spectrum disorder (ASD) as Aspergers and selective mutism. It seems troubling and disingenuous to frame her diagnosis within a Deficit of Nature when she's completely given her young life over to addressing the state of the world through climate activism. Aspergers, her self-proclaimed superpower has, in her words, only contributed positively to her work (which began after her diagnosis) and has finely focused her attention on advocating for urgent action on the climate. No adults are rescuing or restoring Greta Thunberg through connections with nature as a nature-deficient child. She sees our current world reality and is a crucial voice for the unsettled precarity and urgency of the climate crisis.

If we are to turn to the NNM, we'd find, according to Louv, that "nature may be useful as a therapy for" ASD (Louv, p. 100). Greta Thunberg doesn't seem to want to 'cure' her superpower. We find we should "encourage children to build a tree house" (p. 363). Instead, Greta chose to sail across the Atlantic and speak to the UN. What does the NNM have to offer her (and many other children like her, like Quannah Chasinghorse from Alaska, Helena Gualinga from Ecuador, and Ridhima Pandey from India)? What can the NNM offer to my city-dwelling daughter?

A list of 100 actions (Louv, 2008) to bring children back to nature will not and have not "saved" our children (do they want to be saved by adults?). The notion of returning kids to nature to cure or "restore" them as Louv suggests (pg. 102), is such a hopeful/less scramble; it has not changed our trajectory. It loses its potency when held up to the complicated ways we are currently being human with the earth. In 2023, we are navigating the precarity of a global pandemic, a grinding war in Europe,

bio-diversity loss, natural disasters, increasing climate fluctuations and many other precarities. The narratives of the NNM, while so seemingly hopeful and wholesome, are ambiguous, troubling, and effectively obsolete. In their obsolescence, they can be burned away to reveal opportunities for creative, urgent and re-imagined responses. As Thunberg herself says: "I don't want you to be hopeful. I want you to panic, and act as if the house was on fire" (Thunberg, 2019).

The world's climate is going haywire, and industrial progress has proved much more deadly to life on earth than anyone imagined a century ago. The economy is no longer a source of growth or optimism...precarity once seemed the fate of the less fortunate. Now it seems that all our lives are precarious... now many of us, north and south, confront the condition of trouble without end." (Tsing, 2015, p. 2)

By unpacking the history and cultural context of the childhood-and-nature narrative, along with the reality of this socio-cultural moment in which the nature-culture binary is unsettling, one can lay bare the limitations and shortcomings of the NNM and of NDD. The fact is that children are right here, in these precarious conditions, occupying multiple terrains, frames and positions. They, (in fact, any 'terrestrials' (Latour, 2018), human or more-than-human, adult or child, plant, animal or bacteria), are not adequately supported or cared for by reducing our current reality into a narrative of saving ourselves by returning our children to nature.

There is an indeterminacy to our existence in this age of the human, the so-called Anthropocene. Children and nature alike, and everything around and in between, are disrupted by this world reality and all its implications. Perhaps the false dichotomies of nature and culture can be shaken loose, and instead 'children' and

'nature' alike can ground themselves as canny survivors like Thunberg, squarely within the precarity, disturbance, and beauty of this world and this moment. To borrow from Anna Tsing, it is crucial to both children and their caretakers (and perhaps to all Earthlings), to be investigating the sticky-handed messiness that is emerging from disturbance and looking at the myriad possibilities for "collaborative survival in precarious times" (Tsing, 2015, p. 2).

IX. Conclusion

In this section, I have conducted a critical analysis of the current New Nature Movement. I addressed Rousseau's contribution in the Romantic Period to provide context for the (de)coupling of children and nature within this movement. Erica Burman's work in deconstructing development and Developmental Psychology acted as a lens through which to see limitations of the discourse of the scholars of the NNM, and the corresponding pathologizing diagnosis of NDD. While this section is critical, my aim is to point out the ways children and nature are (de)coupled and conceptualized today so that the rest of the dissertation lands as an imagining of what's possible in enacting our relationships to ourselves and our world (to time, to space, to becoming and emerging). This section serves as a foundational lynchpin for the discussions and meditations that surround it on time. Dominant structures are propped up and propagated by our vast and whole-hearted subscription to linear time as the only reality, as inevitability. But this seems to me a fundamental error. A fundamental misunderstanding of circliciprocity (see the final movement, Finding Solace). A blindness that erases existence for children, because they are inevitably

“becoming-adult”. If they are always on their way to being something other than what they are, what are they? And grown-ups in turn focus on the development, the progress, the normalizing, impatiently waiting for children to stop being themselves.

Instead, let us explore “making strange” our “understandings of pasts, presents, and futures, as well as sequences of childhood to adulthood and birth to death” (da Rosa and Millei, 2023, p. 145). Does time, “if differently construed, open possibilities for fracturing modern childhood and its civilization project, built from the hegemony of linear, sequential, progressive, and principled time” (da Rosa and Millei, 2023, p. 136)? Can we move our attention away from the forward arrow of time to the circles of the present?

b. Movement II: Childhood and Time

“Do not foolishly suppose that what we see as water is used as water by all other beings.”

-Dogen Zenji

Dear Clara Rose,

Having you as my dear companion when I was doing this research was such good teaching for me. It helped me understand this in an on-the-ground way. I stand by this research, and know its importance, but it is so crucial to know that being present with you (in our time) was a richer and greater gift than I can even put into words. As a Zen student, we practice and practice and slowly begin to disarticulate these pathways of behaviour, of thinking, of habit. In that work we begin to understand that there is a whole universe we've been missing out on, because we've trapped ourselves. To be with you (the greatest Zen teacher, my Zen teacher always says, is children) is to bear witness to the

full spectrum of what is. It's to find the absolute wonder in a potato bug. The absolute pain of skinning your knee. The absolute love of mutual co-creation.

When we were in Bella Coola this summer, we got to go sit beside a waterfall. The trees surrounding the creek that the waterfall spilled into were magnificent. They weren't old growth, but the wet climate of the Great Bear Rainforest on the coast of BC had allowed for moss and lichen to flourish on their branches, like a fairy tale land. We named some of the beings we found there: Pixie cup lichen, lungwort, Banana Slugs. Each is as interesting as the last. It was a magical place to be sure, and you pointed that out right away. "I want to stay here." "Can I go across the creek?" "It's a magic place here." "I think there are bears over there." We paused at the edge of the deafening rushing water, taking it all in, in water/moss/forest-time. To me, it was also BC Hydro-time, as there was a hydroelectric generating system next to the creek. Even that was part of the magic to you "Is there fish inside that big box? Can we go in there?" You asked.

*Love you (as you say) to the end of the universe and past the next one too,
Mama.*

i. Introduction: Children are Right on Time

"Childhood as a concept is steeped in assumptions about time"

- Iris Duhn

Because they haven't yet fully tumbled into their inherited 'temporal legacies' (Pacini-Ketchabaw, 2016, p. 432), children live in time in a different way than adults. For most adults, time is taken for granted, a believed abstraction that is a product of Western thought. Within the Western education system, ideas of linear time are foundational. They underline narratives of progress, child development, age-

appropriate behaviour and maturity measurements. Children are placed and contained in particular ways within the ideas of linear time (Farquar, 2016, p. 410).

Erica Burman and others have extensively established that childhood is a governable domain, defined through chronological, linear development. As addressed extensively in the previous chapter, developmental psychology (a discipline married to belief in linear time) individualizes, universalizes, naturalizes, and privatizes the many ways in which the care and containment of the young is structured, and this is done according to culturally and historically specific models of who children should be. Adults tend to construct children and childhoods in various projections, which “fail to take into account the rich texture of encounters among humans, cultures and political projects” (Farquar, 2016 p. 411). (Linear) Development (in time) is a limited framework for children and childhood in a world that is “increasingly complex, mixed-up, boundary blurring, heterogeneous, interdependent and ethically confronting” (Taylor et al., 2012, p. 81). A doubling down on our projections can also be a “sign of the times,” as Iris Duhn says: “modernity’s desires for childhood as a time of innocent beginnings and unfolding potential are possibly even more pronounced when the world looks increasingly unstable” (2016, p. 378).

As a temporal construct, the “modern Western childhood” is a powerful ideal that has expanded, exacting costs to a diverse range of ways of being a child and learning in the world. Duhn emphasizes that globally, a present-day childhood without a western-based education system built into it is currently almost unimaginable. If there are these childhoods, they are usually considered disadvantaged ones. “Furthermore,

the concept of childhood also governs how the future is imagined. Children are a direct link to the future, at times at the cost of paying close attention to children's state of being in the present" (Duhn, 2016, p. 379).

Using temporality as a jumping off point, we can also orient ourselves to the posthum and the posthuman and participate in the project of (re)configuring who and what counts as *fully* human. According to Haynes and Murriss:

Posthumanism is a plea to rethink relationally without the Nature/ Culture binary--as a sympoietic system. Sympoiesis, Haraway explains 'is a simple word; it means "making-with"', a 'thinking-with' and implies that human and nonhuman bodies do not move between points in space and time, but are always "on the move". The posthuman ontology of a sympoietic system disrupts the Nature/Culture binary, reconfigures the kind of subjectivity on which modern schooling has been built and brings into existence the figuration of posthuman child. It also disrupts the pervasive (adult) conception of temporality that takes development and progress as inevitable (2019, p. 309).

This (re)orientation to the posthuman draws on scholars that I've touched on in my theoretical framework, like Haraway, Tsing, Barad, and others, and it brings the child to light as an often-overlooked category, adding "child" into posthuman scholar Rosi Braidotti's list of missing peoples, "real-life subjects whose knowledge never made it into any of the official cartographies" (Braidotti, 2019, p. 51). According to Braidotti, we can turn this experience of nonexistence into "generative relational encounters and knowledge production" (2019, p. 52). Looking at how children may experience time (and offering other ways of experiencing time) attempts to unpack this task.

In this spirit, in this chapter, in order to play with the conventional knowledge that most children live in the present in a different way than most adults (Kakkori, 2013), I

investigate the neurological underpinnings of a child's sense of self, in-time and with-others. I take Elaine Gan's edict, that "human clocks and calendars are insufficient apparatuses for more-than-human [sic] dynamics", (2018, p. 97), to heart, and wonder how we can come to understand-with children as beings-in-time with more-than-human others, in more robust ways. How can we be in time and "exceed its confinement as a universal, forever forward-moving arrow" (Farquar, 2016, p. 412)? And in these troubled times, as Karen Barad says, how can we "trouble time", so that non-linear approaches to time can be thought-with to summon up other possibilities of being-with childhood?

ii. High Time: The Default Mode Network and the Entropic Brain

I mean Negative Capability, that is, when a [hu]man is capable of being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason.

-John Keats

Before we begin this section proper, a caution and acknowledgement around scientific research and study. Science, not unlike developmental psychology, functions to universalize by attempting to explain. As I mentioned in my theoretical framework, there are (most/many) things that are just not knowable, and in some ways science "replicates the extractivism of late-stage capitalism: We can take the knowledge and put it within our own terms, we can render it into data, and then we call it science" (Akomolafe, podcast 2021). It is my aim here only to situate science (and neurology) within the system from which it functions: late-stage capitalism.

Recent neurological research and theories by Robin Carhart-Harris and others have been emerging around “The Entropic Brain”. The adult brain has evolved to become a prediction-maker: “to form a perception of something out in the world, the brain takes in as little sensory information as it needs to make an educated guess. We are forever cutting to the chase and leaping to conclusions” (Pollan, 2018, p. 308). Our brains, functioning in a low entropy state, very efficiently predictively code the world:

In normal waking consciousness, the handshake between the data of our senses and our preconceptions is especially firm...because it is subject to a continual process of reality testing. Unlike other states of consciousness, ordinary waking consciousness has been optimized by natural selection to best facilitate our everyday survival. (Pollan, 2018, p. 308)

If we can conceive of the mind as an uncertainty-reducing machine “with a few serious bugs in it”, the vast complexity of the human brain and the sheer number of varying mental/emotional states it has “make the maintenance of order [low entropy] a top priority” (Pollan, 2018, p. 312). A low entropy state is the normal waking state of an adult brain.

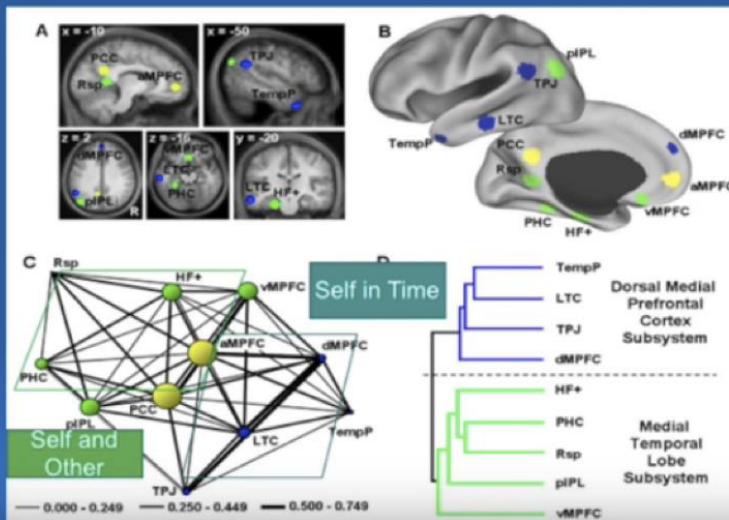
Neuroscientists Gerald Edelman and William Calvin write that as our brains become older, they develop by rules of natural selection:

As brains mature, over 90 percent of their cells die. By programmed death and predictable protein synthesis, connections selectively atrophy or hypertrophy. Neural selection against possibilities, always dynamic, leads to choice and learning as the remaining neuron interactions strengthen. Cell adhesion molecules synthesize and some new synaptic densities form and strengthen... as practice turns to habit. Selection is against most nerve cells...but it is *for* a precious few of them. (From Margulis, 2003, p. 206)

Why is the brain ordinarily so constrained as practice turns to habit? A socio-biological explanation of the low-entropic brain is that it ensures individual and species survival. A central network in the measurement and study of brain entropy is the default mode network. This network (DMN) is a brain-regulating architecture, or system that emerges along with the ego (a coherent sense of self), and a capacity for self-reflection and reason. In other words, the DMN is responsible for, among other things, creating a sense of "self-in-time" and "self-in-relationship". The autobiographical self can think through who they are in the past, and who they may be in the future. The self-in-relationship creates boundaries between self and other. The formation of self with the emergence of the DMN coincides with a more efficient, but more limited consciousness.

In the entropic brain hypothesis, markedly low-entropy states result from an excess of order in the brain, or a highly integrated DMN: narrow/rigid thinking, addiction and depression are examples of lower-entropy states of consciousness. Waking consciousness is a relatively low-entropy state.

Default Mode Network



Andrews-Hanna et.al. 2010

Figure 3. A depiction of the Default Mode Network in adults. This illustration demonstrates the architecture of the DMN in a brain; it is a series of connections. This DMN is typical; it is highly integrated. We can compare this highly integrated network to the illustration below comparing a child and adult DMN.

Higher-entropy states that result from less order in a human brain include psychedelic experience (through shamanic practice or otherwise), meditation, and creative thinking. Expanding our consciousness (through meditation, or shamanic practice) leads to a higher entropy brain, and in these cases the DMN becomes more loosely associated. These “altered” states of consciousness have long been integrated into systems of belief as shamanic practice, and lead to heightened awareness, perception, and ecstatic or profound experience (Drury, 2019).

The above diagram, Figure 1, illustrates the architecture of the DMN in the adult brain, showing how the DMN forms connections between brain regions, rather than existing in a certain region of the brain.

In a high-entropy brain, the DMN and visual processing systems are dis-integrated, while the brain becomes more integrated. If it is a brain that was previously at lower entropy, connections that have been tried and true become less distinct, and the brain operates more flexibly and with more interconnectedness. The complex inter-relatedness of the brain and the world causes the sense of self to loosen.

iii. For the Time Being: The DMN in Childhood, Childhood Consciousness

Most of the literature on the function of the default network is limited to adults, a system that has reached maturity. However, in a 2012 study by Fair and others, resting-state functional connectivity MRI (rs-fcMRI), or waking consciousness, was used to characterize the development of the brain's default network. The findings were that the default regions are only sparsely functionally connected at early school age (7-9 years old). Over time, these regions integrated into a cohesive, interconnected network.

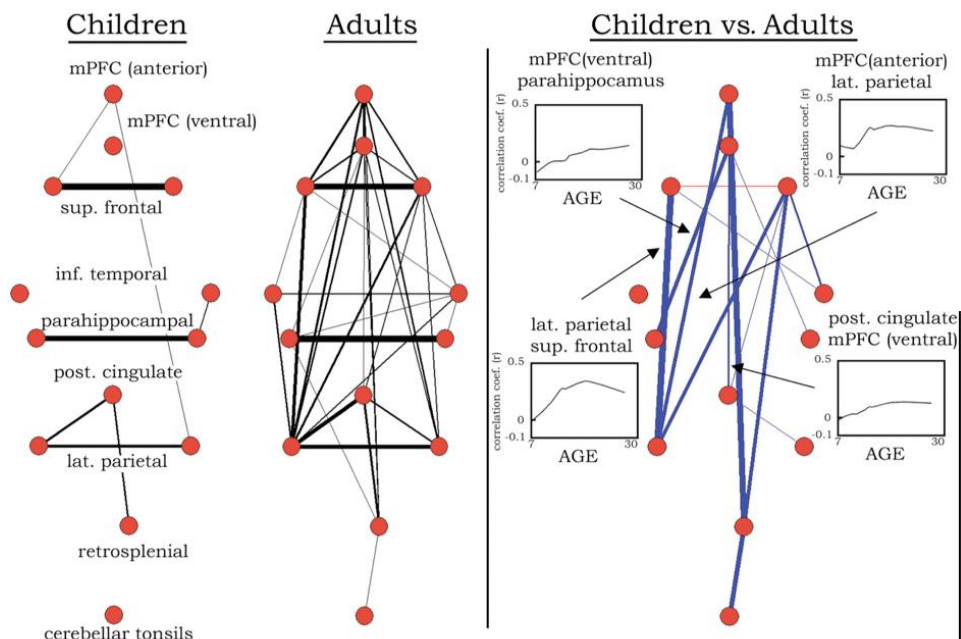


Figure 4. The Default Mode Network in children vs adults

Figure 4 above (Fair et al., 2012), shows that the default network is only sparsely connected in children aged 7–9 years, which reveals a significant difference from adult DMN architecture. In adults, the default network and associated regions are highly integrated, or strongly functionally connected into maximum efficiency and minimum entropy. But when adult brains on psychedelics or during meditation are mapped, the DMN shows disintegration. “It’s not just that one system drops away [in adults experiencing a higher-entropy state], but that *an older system reemerges*” (Carhart-Harris, from Pollan, 2018, p. 318). What is intriguing about this is that this “older system” is the higher entropy, sparsely connected DMN from childhood. A higher entropy brain is a more flexible and interconnected brain. It is also a brain where the sense of self-in-time and self-in-relationship, or the “me” network, is

disintegrated. A disintegrated DMN has a profound effect on perceptions of reality.

"When the influence of the DMN declines, so too does our sense of separateness from the environment" (Pollan, 2018, p. 313, emphasis added). To avoid any sense of determinism here, it must be pointed out that everything co-constitutes everything else. The brain isn't functioning independently of the world, it, in fact *is* the world, which is also the brain. They cannot be separate, and yet they also are. This very statement is a high entropy statement, realized and practiced with a likely more diffracted DMN. The rest of this dissertation further reiterates this.

As scientist-philosopher Alison Gopnik (2009) says, understanding the consciousness of young children is tricky - we've all been children, but all we have are coloured memories of what it was like. Living and loving a six-year-old, I would say that this understanding is both entirely possible and entirely impossible.

Consciousness is a "thorny problem" in philosophy. "While we don't know how capital C Consciousness is related to the brain, we know an increasing amount about how particular features of consciousness are related to particular psychological and neural states" (Gopnik, 2009, p. 108). According to the entropic brain hypothesis, as the DMN becomes highly integrated and lower entropy, our consciousness narrows as we age. As a primary result, adult thinking about childhood and children's experiences in some ways become constrained by our current adult experience of a narrower consciousness. This correlates with the neurological research into the DMN in childhood summarized above.

"Babies and young children pay attention in systematically different ways than adults, and their brains work differently too" (Gopnik, 2009, p. 110). Gopnik describes two kinds of attention: Exogenous Attention, when something catches our eye, and Endogenous Attention, which is voluntarily directed attention. Gopnik asserts that babies and young children have much greater capacity towards Exogenous Attention (2009, p. 119). Attention gradually "becomes more controlled by their internal agenda rather than by the intrinsic interest of external events" (Gopnik, 2009, p. 118). Babies and young children are, in general, not as focused on concentrating on just one thing as adults are. Another way of putting this is that young children are conscious of more of the world at once. Instead of deciding where to focus, they let the world decide for them (Gopnik, 2009, p. 118). This is the necessary capacity for general attention, which makes young children such great learners, and hints at the relatively lengthy time human children remain children. Children's brains tend to be much more malleable and plastic, more flexible than adult brains. Children simply have a more expanded consciousness than adults. Most who have spent any time at all with young children know this, but science also bears this out: Babies require more anesthetic relative in size to adults because of their lack of inhibitory transmitters. Consciousness, of course, being the thing anesthetic gets rid of (Gopnik, 2009, p. 119).

Brains make more and more connections between different neurons, but they prune the less-used connections and retain only the cost-efficient ones. Both these processes take place simultaneously in the thrust of development. Both are of course

influenced and shaped by external events. But the balance changes—earlier in life we make more connections, and as we grow older, we begin to prune more connections. Early in life we tend to be sensitive to more possibilities, while later in life we just focus on the possibilities that are most likely to be in front of us (Gopnik, 2009, p.122).

The brain predictively codes the world (but simultaneously the world codes the brain, do not forget!); it is a matter of survival, but the cost is a narrowing of the possible. Gopnik distinguishes child and adult consciousness by using the analogy of Lantern and Spotlight Consciousness. She says that:

Lantern Consciousness leads to a very different kind of happiness. There is a similar feeling that we have lost our sense of self [like religious experience...or the kinds of mystical experience in which the external world seems to disappear altogether] but we lose ourselves by *becoming part of the world*. Lantern consciousness is invoked by writers like Virginia Woolf and Emily Dickenson...It is William Blake's world in a grain of sand, William Wordsworth's splendor in the grass. This kind of phenomenology has historically often been associated with childhood. The Romantic poets such as Wordsworth, who made something of a specialty of invoking this sort of experience, explicitly identified it with childhood. They thought childhood was especially valuable because children experienced the world with this sort of infinite wonder. (Gopnik, 2009, p.130)

According to Gopnik, the New Nature Movement writers who advocated for getting children "back to nature" are on to something when they evoke Wordsworth and the Romantics. This "infinite wonder" is not necessarily just a social construction, it's a neurological state in children and childhood. Though if we harken back to the last section, it bears remembering that we, as adults, with a narrowed consciousness, are the ones studying children (with our lack of consciousness and, quite possibly a

lack of imagination). And though the Cartesian stream of bifurcating consciousness and separating nature out of society is still embedded in Romantic thought, the touted childhood experience of awe and no separation, communion, and oneness with the world (the “special” relationship) seems to agree with aspects of this entropic brain hypothesis in neuroscience. Indeed, Alison Gopnik asserts that we should “regard the mind of a child as [a] kind of “altered state”” (From Pollan, 2018, p. 163). I reject the use of the word “altered” however, and suspect it’s the “adults in the room” who have fallen into an altered (lower entropy, self-centered, bounded) state of consciousness that has led humanity to a unsustainable cosmology, an Anthropocene that Arne Vetlessen alludes to as “not epistemically valid...the true relationship between culture and nature cannot be one of systemic destruction of the latter by the operations of the former. It must instead be one of enduring co-existence” (Vetlessen, p. 15).

iv. Children’s Self-in-Time-Being

Further to the differences in conscious attention, there is another temporal aspect of consciousness for adults that bears paying attention to: memory. Episodic memory (of specific events) which is intense and specific, exists in children. But there is another aspect to memory called autobiographical memory, which is the stream of consciousness that adults attribute to a keen sense of personal identity, or *self-in-time*. This inner observer unites memories with anticipation and plans in a *single past-to-future timeline*. This is “self-in-time”, a past to future autobiographical timeline that does not exist in babies and young children.

Very young children have some sense of self, “but they don’t seem to understand how this self is related to past and future selves—they don’t have a single timeline” (Gopnik, 2009, p.145). Crucially, children *don’t think in linear time*. I again want to offer a caveat to Gopnik’s line of thinking. She assumes that children don’t “have a single timeline”, but we don’t have to dig around much in science to see that we are new “selves” constantly: The cells of our body are regenerating constantly, for example. So, young children don’t experience “their lives as a single timeline stretching back into the past and forward into the future and they don’t feel immersed in a constant stream of changing thoughts and feelings” (Gopnik, 2009, p.153). Perhaps this is because linear time is abstracted and ascribed. Seeing our lives as a single timeline isn’t a developmental destination or a goal; it’s just the way things have gone. “In fact, for babies and young children there doesn’t seem to be the same kind of “me” making these projections into the past and future” (Gopnik, 2009). They don’t keep track of their past mental states. Gopnik says “Young children believe that you yourself *think only when there is something to think about*” (2009, p. 151). (As a mother, I cannot count the number of times I’ve asked Clara (staring off into space) what she is thinking about. Often (especially at ages 4 and 5) her response has been: “I’m not thinking at all!”). As this dissertation makes clear, it is somewhat common knowledge that children do not think in terms of abstracted time. But they also don’t think in terms of an abstracted self in time the way adults do. But what is self, anyway?

Margulis and Sagan call out for a revision of the “rectilinear notion of the self, of the bounded I” (2007, p. 17), and say that this idea of a bounded sense of self

seems natural, but it's not universal. Rosi Braidotti also addresses a sense of separate self when she echoes Sagan and Margulis' statement that subjectivity is not restricted to bound individuals, but "is rather a co-operative trans-species effort that takes place transversally, in-between nature/technology; male/female; black/ white; local/global; present/past-in assemblages that flow across and displace the binaries" (Braidotti, 2019, p. 33). Braidotti maintains that these in-between states "defy the logic of the excluded middle" (ibid).

Alongside the differences in conscious attention and autobiographic memory in children's consciousness, we can also see that children do not have the same sense of self-in-relationship:

It's possible that babies don't know the difference between their pain and other's pain. Moral thinkers suggest that erasing the boundaries between yourself and others...can underpin morality...we know that children's conception of a continuous separate self develops slowly in the first five years (Gopnik, 2009, p. 208).

As a new mother, I was quite sure Clara and I *were actually still each other* well into her life outside of my womb (see the Fetalmicrochimerism section). While Gopnik says babies' separate selves develop over the first five years, I ask: What mother doesn't feel the pain of their child's pain? I understand the idea behind "erasing boundaries" as a vehicle to morality, but there were simply no boundaries between my daughter and me at all. That experience was many things on the spectrum of wonderful to painful. It's only been through 6 years of growing (for her and for me) that the veil has been slowly woven into place. This is not romanticizing a parent-child relationship. While it is remarkable, I feel a good deal of relief to find my boundaried

self emerging again as Clara gets older. It falls away frequently still though, and this is where I look cautiously at Gopnik's assertions and categorizations. Gopnik is an adult with a self-proclaimed limited consciousness ascribing a consciousness framework onto children with consciousnesses-otherwise. It's a bit silly, isn't it? At the very least, we must take care when ascribing age-and-stage or this and that logic to little one's or anyone's lives.

v. The Time is Now: Temporal Approaches in Pedagogy

Are there imaginative, creative, and responsible ways to engage with both temporality and children during these precarious and "troubled times" of climate change or pandemic? Can pedagogies be created that address the persistence of Euro-Western thought and logic when it comes to time? What would happen if we, as environmental educators, and academics, worked with the shifting temporal frames that shape relations in childhood? What kinds of workings-with time, and approaches to time could disrupt the hegemony and power of the development narrative, so steeped as it has been in a linear sense of time? Can we emancipate education by re-thinking our relationship to time, as linear time and nature/culture divides face more pressing precarity and increasingly indistinct boundaries?

In this next section, I look at the work of various feminist scholars in early childhood education for examples of pedagogies and practices that attempt to engage with temporality. This is not to bring light to a set of approaches that can be widely applied, as that can take us out of the liveliness of attending-to and modest

witnessing that is critical to doing these pedagogies. Rather, it illustrates how others are practicing this kind of work, to open other possibilities of doing (Pacini-Ketchabaw, 2020).

In a piece grappling with temporal legacies that children inherit, Veronica Pacini-Ketchabaw and Kathleen Kummen employ Bruno Latour's (2014) concept of 'common worlds' to refer to a fundamentally expanded understanding of the social, "requiring the reconvening of all of the constituents of our worlds, including non-human life forms, forces and entities" (Pacini-Ketchabaw et al, 2016, p.432). Using an actively more-than-human framework, they attempt to reassemble worlds by countering the nature-culture binaries so present in post-Enlightenment thinking in early childhood education. They narrate a series of happenings drawn from their research on 'children's common worlds', and using temporal frames, work with responding to the challenges and paradoxes of the Anthropocene.

Pacini et al's thesis is that there are myriad times, including forest time(s), moss time and crow time. Time, in these events, is "produced, constructed, maintained, lived, multiple, and a more-than-human concern within particular environments" (Metcalf and Van Dooren, 2012, p.9). This multi-species time is embodied time, extended to include diversities of generations, ecologies, patterns, and rhythms that are beyond human. Pacini-Ketchabaw wonders how diverse temporal frames alter or re-orient us by their ability to allow for "modest witnessing" (Haraway, 2004), a re-working of Haraway's Modest Witness figure. This figure references the scientific method's "modest witness" of the seventeenth century, who was almost exclusively a

wealthy white Englishman, and instead calls for a kind of *mutated* modest witness: situated, partial and engaged in a practice of thinking-with, rather than judging and fact-finding (Blaise et. Al., 2017, pg. 34). Deborah Bird Rose also has explored feminist scholarship with witnessing, and says witnessing is active and related to place. The three elements she says that are critical to witnessing include listening with attentiveness, being called into connection, and responding (Blaise et. Al., 2017, pg. 35). This witnessing is Shinkantaza, it is practice.

To be with Pacini-Ketchawbaw's forest time(s) for instance, is time-being forest Shinkantaza: experiencing it fully, to allow all aspects of the forest to become worthy of attention, and this demands that we orient our very selves differently as modest witnesses, right into a "different ecological accountability" (Loveless, 2013, p. 130). Within a practice of forest time, there are opportunities to modestly witness the intra-action of all humanness and more-than-humanness. Within non-chronological temporality, Margulis' and Haraway's ideas of sympoiesis come to life, both as a descriptor of the "entanglements that underpin life—and not necessarily to the advantage of human survival— and [as a] model for new forms of multispecies kinship that will be necessary amid an increasingly precarious existence" (Schuller, K., 2018, p. 57).

By modest witnessing with children, we also can begin to notice what Karen Barad calls the "resilience of the animate/inanimate dualism that stops animacy cold in its tracks, leaving rocks, molecules, particles and other inorganic entities on the side of those who are denied even the ability to die, despite the fact that particles

have finite lifetimes" (Barad, from Haynes and Murris, 2019, p. 11) In fact, Barad argues, matter is an active participant in the world's becoming (ibid). Dogen agrees: "Nothing is left out [of being-time] ... we are not different, better, or more important than grasses, trees, rocks, or tiles [any 'thing']" (Roberts, 2018, p. 23).

Iris Duhn speaks of the discernible quality, when the educator gives the child time, in the sense of giving the child the timelessness in which they already seem to dwell. There is no rush, nothing dictated by the 'tyranny of the clock' that often dominates daily practice in early childhood pedagogy (Pacini-Ketchabaw, 2012, p. 159). Duhn says that it can be challenging to escape the "post-industrial intensification of time as commodity" (Duhn, 2016, p. 383), but that it is especially important, as Haraway says "to imagine and explore wholeheartedly what else is possible, and what other stories can be storied to support liveliness and vibrancy on a damaged planet" (ibid). If we are to live on a damaged planet, that must involve "rethinking ethics, response-ability, belonging, relationships across species and in relation to matter, and, perhaps most challenging of all, thought itself" (Duhn, 2016, p. 383).

Duhn sees the opportunity to practice 'curious time', which involves a degree of speculation:

What if this child is experiencing time as intense micro-movements right now? While the watchful adult hears the minutes tick by, the child may feel his muscles contract in each toe while the plank shivers imperceptibly under his feet. What if his experience of time is multiple and complex? His eyes appear fixed on the plank, but he may feel tiny flickering movements in his eyelids and his eyeballs while his heartbeat thrums in his ears. What if his left big toe

senses a fine crack in the wood while his left knee bends a fraction more to support the invisible toe/skin encounter? What if the child feels his breath building up, asking to be released from his lungs? What if he hears his heartbeat and notices that there are several sounds, not just one beat? What if he hears an echo of the sounds he heard no so long ago in the womb? What if the adult imagines what the child experiences and speculates with him, silently? (Duhn, 2016, p. 384).

This points to being-time and time-being as critical tools to think-with in children's early years pedagogies, for it asks that we ourselves re-think our allegiance to Chronos in such a way it can only alter our own ways of time-being.

Tonya Rooney's work explores how children learn 'with' the environment through bodily and affective encounters children have with the weather. She poses the weather and the elements as intra-active agents in children's more-than-human worlds, because the weather and children are always "acting on and through each other to shape new worldly relations over time and space" (Rooney, 2019, p. 178). Her aim is to illustrate the entanglements children have with the weather as a key to their understanding of the time and scale of climate change. She calls on Stenger's reminder to slow down, saying that slowing is an important response to the challenges posed by goal-oriented and urgent forms of action, lest we move in a way that leaves potentially significant matters unnoticed. This 'slow' pedagogy, which began as an offshoot of the slow food movement in the 1980's, is a common thread throughout these perspectives, and these methods are a way of revealing the unexpected or otherwise disregarded. "Slow" doesn't necessarily have much to do with speed, but with depth of engagement. "Slowing down, or decolonizing time, is about reconnecting to our embodied selves and nurturing 'depth' in our work for

equity and social justice...and about improving our quality of life and work.”

(Shahjahan, 2015, p. 499).

Karen Malone ‘walks-with’ children in Semipalatinsk, a radiation-contaminated town near a nuclear plant in Kazakhstan, and in doing so:

Opens up possibilities of an entangled set of uneasy encounters, revealing and provoking an alternative geo-storying, a de-colonialising pursuit conjured up from an awakened ethical sensibility. I am walking-with those who have been deemed unworthy of recognition and are invisible in the obscene manifestations of capitalism, the arms race, and the cold war: these companions walk with us as past ghosts as we share the horrors of a dystopian future (Malone, 2019, Abstract).

In “Uji,” Dogen writes that everything is present right now. Very importantly, “This moment...also includes the things we don’t want,” writes Roberts (2018, p. 83).

Dogen writes that “flowers, while loved, fall; and weeds, while hated, flourish”

(Roberts, 2018 p. 84). Malone brings light to the invisible, the stories of fear, the

‘unsightly possibilities,’ the ‘monsters.’ Though this may seem dark, this supports relational knowing, where “children recognize the fragility and porosity of human and non-human life, and its link to the contaminated earth” (Malone, 2019, p. 157).

Malone writes that monsters walk with us. Sunnerstam (2013) explains that the:

monstrous corresponds not necessarily to widely-spread images of monsters (known from various cultural masterplots) or to bodies that distinctly disobey the norms. It is, above all, the corporeal ambiguity and fluidity, the troublesome lack of fixed definition, that marks the monstrous as a site of disruption” (2013, p. 11).

These chimeric monsters call into question notions of self and other, in this instance for the children of Semipalatinsk, monsters include “deformed babies and deformed dogs” (Malone, 2019, p.163). Their corporeal unsightliness helps us notice

differently the “landscapes of entanglement: bodies with other bodies, times with other times” (Malone, 2019, p. 157).

Malone also expands our notions of time, thinking with Barad, who says “The temporality of radiation exposure is not one of immediacy; or rather, it reworks this notion,” which must then “rework calculations of how to understand what comes before and after, while thinking generationally” (Barad, 2017, p. 63). Malone attends to this “liveliness of radiation, and how it disrupts all concepts of time and temporality” (2019, p. 160):

Radioactivity inhabits time-beings, resynchronises, and reconfigures temporalities/spacetimematterings” (Barad, 2017, p. 63). Walking-with children on/through irradiated landscapes: time in this messy, entangled space is unstable: “Radioactive decay elongates, disperses, and exponentially frays time’s coherence.” Time, in this walking-with children, is always in the process of “leaking away from itself” (Malone, 2019, p. 160).

Place-walking, Malone says, becomes the shared rhythm of her and the children, and, like other scholars above, she too mentions that she is the modest witness who brings the past, present and future together “as encounters with the ruinations of a precarious monstrous planet” (Malone, 2019, p. 160). She considers being attentive to the “redoing of material configurations and spacetimemattering” so that we can constantly rework the past, present and future. She calls on this ethical work to replace “an understanding of human subjective as neatly bordered, situated within (but distinct from) an environment” with a permeable subjectivity that intra-acts with everything (2019, p. 160).

In considering this chapter, a different way of thinking-with childhood begins to emerge, opening the opportunity to wonder about being-time, space-matters, and self-ing, or consciousness in childhood, and what it means to modestly witness, with care, different possibilities. To see “the universal multidimensional enactment of reality” (Roberts, 2018, p22). To practice re-thinking our relationship with time can help educators respond with children in a way that opens to include everyone and everything. Questions of ethics then become not something extra to be placed upon our ways of seeing, but like being and time, inseparable and intrinsic, which could “have a radical impact on the ways in which we understand our relationship to all beings” (ibid). Nothing gets left out here, as Dogen emphasizes every time he says humans are no better or more important than grasses, trees, rocks, or tiles (ibid, p. 23). In a comparable way, Malone is inclusive when she walks with the Semipalatinsk children:

Seductive simplifications of industrial production have rendered most blind to monstrosity in all its forms by covering over both lively and destructive connections. They bury once-vibrant rivers under urban concrete. Radiation particles settle, nurtured, flourishing in the warmth of growing bodies. Capitalism obscures increasing inequalities beneath discourses of freedom and personal response-ability. Somehow, in the midst of these ruins, the children and I walk with earthly assemblages, rocks, dust, radiation, water and porous bodies maintaining curiosity, noticing the strange and wonderful as well as the terrible and terrifying (Malone, 2019, p. 158).

Malone reckons with the point of telling this (often terrifying) story, but concludes by agreeing with Deborah Rose that writing is an act of witness, and silence “is a failure to acknowledge the gravity of violence” (Rose, 2012, p. 139):

As I am walking-with children, we bear witness to lively matters of the Anthropocene: "We are afraid of the street dogs. Dead dogs stink." Deformed babies, deformed dogs; dead dogs' dead babies. "Do you know about the nuclear tests?" they ask as we walk. "Yes," I say, "I do know." "It is inside us," one child remarks. "It is probably in you now." I blow my nose, we walk on. (Malone, 2019, p. 163)

vi. Conclusion

With a vital-post-hum-animist/Buddhist approach, in this movement of this ballad, I have undertaken the work of looking at the limitations of clock time when it comes to childhood. I've explored neurological scholarship looking at consciousness, the Default Mode Network, and the higher-entropy brains of children. I've explored and engaged-with various works of post-human and feminist scholars who think-with time differently in their approaches to pedagogy and working with children. I see this section of the dissertation as a triple-troubling. First, unearthing the possibilities that exist when we acknowledge the more expansive consciousness of children. Second, acknowledging "the radical political potential that exists in the thick-now of this moment" (Haynes and Murris, 2019, p. 309), and how thinking-with being-time/time-being requires thinking time anew. And third, as a troubling and relational ontological tool, how vital-post-hum-animus brings the very idea of self into question, de-centers the (Euro-Western, colonizing) human, and attends to entanglements and injustices between all manner of matter(s), bodies and times.

Movement III: Sound, Music, Vibrant Matter

From chaos, Milieus and Rhythms are born. This is the concern of very ancient cosmogonies. Chaos is not without its own directional components, which are its own ecstasies.

-Deleuze and Guatarri

Dear Clara Rose,

After the primal rhythm of two hearts in one body, our voices are our next experience with music. When I gave birth to you, you let out a cry that came into my heart so directly, I didn't even know what it was. It was otherworldly and pure, and it wasn't until the midwife said, "here she is!" That I realized what I was hearing was your very first song, your first breath, exhaled. Music has encircled the two of us, hasn't it? Even when I was 6 months pregnant with you, I traveled by train across Canada, hired to perform on the train during the winter, and between the rhythm of the rocking train, the melody of my songs and ukulele, and the snowy landscapes rolling by, I felt you were very content.

During harder times, I remember holding your small body, rocking you to sleep on the front lawn singing "Pennies from Heaven":

*...If you want the things you love,
you must have showers,*

I sang, tears streaming down, deeply worried about the legal proceedings that haunted me for years.

Now, you bellow out the theme songs to your favourite shows, the odd 80's tune I introduce to you ("abra abra cadabra, I wanna reach out and grab ya" is a current fave hahaha), and patiently sit and absorb the intricacies of playing the piano, preferring to noodle away without any guidance from me.

Anyway, buddy, since I was 3 years old, I was music.

I don't mean that I really enjoyed listening to music; grandma and grandpa didn't have a huge love or library or music, or a big need to listen. If I remember correctly, it was either CFTK (local Northern Canadian talk radio), or occasionally ABBA or Nana Mouskory.

This listening wasn't really what I was interested in. What was real was the piano in the basement. Your auntie Mel started taking lessons first, and I followed. My strongest early music memory (and we have talked about memory in the last chapter, my dear!) was that, in practicing piano every morning, prior to the bowl of cheerios, I was practicing a way of being. I was a time-being. A music-being. This sounds somehow profound, but really it was totally ordinary for me. It was 30 minutes of co-emergence with a piano. This was me as a child being music. This was my introduction to a life of practice, though the form of the practice has grown to include Zen meditation.

I was a solid music student all the way to age 16 or so, when I opened the grade 9 Royal Conservatory Book, started working on the Minute Waltz by Chopin, scratched my head a bit, and realized I would rather decorate the gym for the school dance. But the daily practice for over a decade during childhood was formative. I went on to university always looking for ways back into that music-time, and finally found myself writing songs. It was shortly after this that I took a step from being-music to realizing I could sculpt the sounds I made, through recording. This is where my curious dedication to using timbre to create emotional sound-worlds began. The processes of writing and recording mirrored all those hours as a child. I was music again.

You won't remember this, but one time when you were not even three, I went with you on a field trip with your daycare. It wasn't far. In our neighbourhood at the time, it was probably only a five-minute walk for an adult. But you were with around 20 of your classmates, all under three years old. The process of getting all you little ones from point A to point B was involved. First, you all needed bibs with the name and phone number of the daycare on them, placed over top of your coats and hats. Then, you and a friend were assigned an adult with whom you held hands. Then we lined up, and slowly, at a child's very leisurely pace, all of us headed out the door. I then noticed how

very much the educators were focused on the children moving in a straight line, in a timely fashion to arrive at the destination. Your time-world, your time-being, was completely at odds with what I saw as the development-focused and goal-oriented approach of the educators, who wanted very much for all of us to arrive "on time."

As there was no chance for stopping, you, Grace (your prophetically named partner) and I had little choice but to "fall in line" and try to do as we were asked. Do you remember (probably not!) I sang a silly little made-up song to you two to "keep time," and by that, I mean to amplify your time-being which I saw as the correct way to be with the moment. I wanted to create more space for your time-being, in what I felt were the cracks of the teacher's...futility, really. This was a small (re)configuring, but in these little spaces, I could, (only because I was your mother, and knew where and when you were living very well), pay attention and listen and care. For you my love, with song, I could safeguard a different sort of time.

Love,

Mama

i. Resounding (on Sound)

Sound does not view itself as thought, as ought, as needing another sound for its elucidation, as etc.; it has not time for any consideration--it is occupied with the performance of its characteristics: before it has died away it must have made perfectly exact its frequency, its loudness, its length, its overtone structure, the precise morphology of these and of itself.

-John Cage

The music-making process is very intimate and personal, and I think this is because for many musicians, it is a practice of being-time, or of mattering-space with sound. It is a practice of performing the self in a way where we don't have to be a "self" at all. We get "lost" in the music, as a player and as a listener, not because we've made a

wrong turn, but because we've slipped out of the constructs of selfing and Chronos, into being-time. Into music-time, into now.

Music shapes the time-being/being-time with a certain compelling collection of sounds, and configures a space-mattering with vibration, presence; a here and nowness. As well as its shaping and configuring ability, Sound and music *are time-being, space-mattering*. Undeniably, sound and music work powerfully with body-minds, with multi-species with earthlings who remember and love. Music is simultaneously a presence, given back to the world, and an expression of the same world. It is an interpenetrating phenomenon, with potential to move (in many ways) bodies (of all configurations).

As a caveat, in my work as a scholar and musician, I do not consider myself a musicologist. I see myself more as a tender of rhythm, of time. A tender of flow, of change, as any musician or mother is. Before we dive into some of the intricacies and indeterminacies of music, let us look at the emergent properties of sound.

Michel Chion's term of acuology (*Sound: An Acoulogical Treatise* (2016)) explains that sound is a physical sound wave, or a vibration that emanates from sounding bodies. It touches the ear and other parts of the human body (p. 16). The relationship between vibration and perception is a little less clear cut, but can be defined as the feeling of vibration, as a physical sensation. (p. 21).

According to philosopher Jean Luc Nancy, sound "weds the space that it travels through, and the duration of this journey belongs to it as an intrinsic property.

Sound does not unfold in time: it spatio-temporalizes itself according to its own characteristics (its frequency, its timbre, etc.)" (2021, p. 81).

Nancy asserts that resonance is the shaping of space-time. But resonance also extends, develops, and lasts over a duration. By living its life, it does more than make noise, it "configures a presence to the world" (ibid). Sound, according to Deleuze and Guattari, "invades us, impels us, drags us, transpierces us. It takes leave of the earth, as much in order to drop us into a black hole as to open us up to a cosmos. It makes us want to die" (1987, p. 348). Resonance or sound doesn't just enter our ears, "but the whole body, its muscles and nerves... it also penetrates the social or common body" (Nancy, p. 81). These ideas demonstrate the oft-forgotten power of sound to affect the bodies of all species and entities.

Sound then, is an emergent entity, it is both cause and effect. It *is* the space it travels through, and it is the duration. Nothing is left out. If a person sits at a piano to play, one can think of the piano as "making a sound," but, taking after the ideas presented in the previous Ballad, we must also consider the person, their background and training, the energy with which they push down their fingertips, the piano hammers that hit the strings, and the resulting resonance that expresses itself, and so on.

Nancy says there is always a relation in sound, with the thing striking and the thing struck being in relation. He goes on to emphasize sensory reciprocity, or the interpenetration of sound. That one musician is inherently already two; that when you

play an instrument, you also listen. It is like writing a letter. In the writing on the page, we further ourselves, we leave ourselves on the paper. Sound and music exhibit these postal qualities, like a note being written, being sent, arriving, and being received. The sensing, the sensed and the sensation are all there. Whether it is noise, or music (which has its own variation depending on who the listener is), this is, according to Nancy, what gives sound meaning (p. 81).

In the western history of human thought, philosophers from Plato to Aristotle, from Gallileo to Aquinas, even Descartes speak of a hierarchy of the senses. Philosophy itself privileges sight (Kambaskovic-Sawers & Wolfe, 2014, p.110).

According to Deleuze and Guattari, though, we must not let our privileging of the visual lead us to underestimating the uncanny power of sound: "Colors do not move a people. Flags can do nothing without trumpets" (1987, p. 348).

Sound is more uncanny, more indeterminate, and ambiguous than seeing. The writer Jean-Christophe Bailly echoes this thinking: "Sound is linked to the ungraspable, and this is why listening, despite its swiftness, vivacity or patience, always remains imperfect and tense, as everything happens for it as if even that towards which it tended was fleeing and slipping away" (Nancy, 2021, p. 83). Listening as practice has its power in this way too. We can never hold on to listening, as sound is forever slipping away, and arising again. And so, we start over, and over and over again, moment by moment.

ii. The Ritournelle of the Anthropocene

to live human life to the fullest is to always venture forth on the thread of an
improvised tune - E Holland

There is a benefit in thinking-with existence in new ways. It offers an otherwise-possible, as I have mentioned throughout this work. It can facilitate openings and challenge the expected and can take a “departure from the expected” and on “notions of becoming” (Kuby and Vaughn, 2015: 438), a concept drawn from the work of Deleuze and Guattari (1987).

I would suggest thinking-with sound is one way to think with existence in new ways. Sound and music often offer openings, challenge the expected, and certainly bring forth questions of otherwise-possibles. Sound, (which includes resonance and vibration) according to Powell and Somerville “is a material force, that intra-acts ... to give rise to something new, where each constituent implicates others and is simultaneously implicated by these others in a simultaneous process of be(com)ing” (Powell and Somerville, 2020, p. 2).

Deleuze and Guattari wrote a section about music and sound in their work *A Thousand Plateaus* (1987). In it, they consider music in relation to nature, as one of the most creative aspects of nature. Deleuze and Guattari use the musical idea of the *ritournelle*, translated by Brian Massumi as refrain. As a musician, I will substitute the words hook or chorus for refrain, as those terms seem more accessible to me. Birds, they say for example, use repeated lines of song to establish territory, and it is just these ‘ritournelles’ or choruses that Deleuze and Guattari come back to repeatedly,

citing examples in nature/culture. The use of bird song was a reverberation of French composer Olivier Messiaen, who used birdsong as a basis for some of his musical work. Birds use these hooks/choruses to establish home territory; they compose an expressive territory or a "milieu of components that have become qualitative" (Deleuze and Guattari, 1987, p. 315). This expression of bird-territory defines it, and according to Deleuze and Guattari, creates a function around territory that leads to calm amidst chaos. Notably, chaos, as Deleuze and Guattari described, "is not intended to construct a binary between order and disorder. Rather, chaos deals with unpredictable and moving forces that are always present and that, for life to be sustained, must be differentiated into recognizable entities through rhythmic processes of territorialization" (Sherbine and Hara, 2022, p. 4).

As the 'first' artists and musicians, birds use something in their milieux to transform it into home.

For Deleuze and Guattari, the evolution of life is not a calculus based on 'survival of the fittest,' but rather that self-organizing life that thrives if they are able to fit into their milieux, another concept that comes up in their work, which is a "block of space-time":

We have seen elsewhere how all kinds of milieux, each defined by a component, slide in relation to one another, over one another. Every milieu is vibratory, in other words, a block of space-time constituted by the periodic repetition of the component. Thus, the living thing has an exterior milieu of materials, an interior milieu of composing elements and composed substances, an intermediary milieu of membranes and limits, and an annexed milieu of energy sources and actions-perceptions (Deleuze and Guattari, 1987, p. 313).

Entities and beings pass through myriad milieus, and milieus pass through milieus. They dissipate into each other, they constitute each other, they communicate.

The milieus are open to chaos, which threatens them with exhaustion or intrusion. Rhythm is the milieus' answer to chaos. What chaos and rhythm have in common is the in-between—between two milieus, rhythm-chaos or the chaosmos: "Between night and day, between that which is constructed and that which grows naturally, between mutations from the inorganic to the organic, from plant to animal, from animal to humankind, yet without this series constituting a progression ..." In this in-between, chaos becomes rhythm, not inexorably, but it has a chance to. Chaos is not the opposite of rhythm, but the milieu of all milieus. (Deleuze and Guattari, 1987, p. 313).

This explosion of rhythm, of life, springing from the chaos milieus, was performing artistry long before "human language or song deterritorialized the eating mouth" (Holland, 2008, p. 197). Or, as Deleuze and Guattari put it. 'Art does not wait for human beings to begin' (1987, p. 320). In the case of music, the power of it permeates "nature, animals, the elements, and deserts as much as human beings" (p. 309). This situates music in and as emergence. It is in the cosmos and the chaosmos, where it relates to other vibratory milieus.

So, "one launches forth, hazards an improvisation," one lives a life (p. 310). And in it the myriad hooks/choruses repeat themselves, ad nauseam, maybe, but in emergence, in a rhythmic way (the term rhythm comes from the Greek word 'rhythmos', meaning 'to flow'), from the molecular to the cosmic and back again. Forces of chaos, territory, cosmos, inter and intra-assemblages meld, "confront each other and converge in the territorial refrain" (p. 312).

Dear Clara Rose,

Today, I sit in Sweden in your auntie Mel's backyard, writing this musical dispatch. There are thrushes (who behave much like a robin) singing, and one in particular that is in the process of making her little nest in the grape vines of a gazebo. There are other songbirds who send their pretty songs down from the tall boundary of linden trees on the property, then sail by in a blur, too fast to tell you what they are, my dear. There are pigeons, whose heavy bodies awkwardly flap up into the apple trees. Their mournful song (like the song of a mourning dove) is a constant backdrop to the day, and it strikes me that you would laugh at them, like they are making morose comments on random passing moments. "Oh, that silly pigeon" you'd say, slapping your palm on your forehead.

Bird-life overflows here, a complex entanglement with myriad expressions and forms. But so does life, in general. Ants, bees, mosquitos, beetles, spiders, butterflies. Hedgehogs, mice, domestic cats, dogs. Hollyhocks, lady's mantle, morning glories, clematis, bamboo, lotus flowers, roses (oh the roses!). Raspberries, Blackberries, gooseberries, blueberries, rhubarb. Dill. Apples, Quince, cherries. Linden, maple, beech, magnolia, chestnut. The bees and butterflies in the clematis. The dried linden flowers drifting from the trees onto my computer keyboard, collected by the mother robin for her nest in the grape vines. The cat curled in my lap, asleep. The sister, equal parts overwhelmed and satisfied with the overflowing garden and the never-ending list of possibilities for tending to it. Milieus upon milieus upon milieus. (You probably already know this my little bilingual child, that milieu is French for "middle place").

From where I sit this morning, one would never think I was in anything other than paradise. It is beautiful, and somewhat easy to sink into D & G's delicious post-human metaphor, to see how it works and to feel the blissful abstraction of it. It is a way to think differently, but it doesn't change what is. I only have to widen my lens slightly to include the precarity of the world, the chaos that creeps in around the edges. You're too young to know this love, but the age we live in currently is a time of rapid change. Of droughts, fires and floods that humanity hasn't known before. I worry for us, I worry for you.

Love,

Mama

The milieu of the climate crisis rises to meet our paradisiacal milieu of a morning in Sweden: The war in Ukraine, droughts in Europe, the ongoing pandemic, and birdsong. We must bring the abstract milieu into the here and now, sounding refrains that include all the sadnesses of reality. Vetlessen puts it this way:

The Anthropocene, I am sorry to say, is not about the latest fashion in philosophy, but about the all-too-mundane real effects of all-too powerful, human-initiated and human-perpetuated practices in the modus operandi of systemic overshoot and exploitation; not about the proliferation of agencies, of letting hundred flowers blossom, but about their ongoing jeopardy and decimation. That is why it calls for mourning – a topic-cum-experience that the various posthumanisms are conspicuously silent about, a silence complicit in prolonging the dangerously abstract guise that the natural world has assumed in our culture. (Vetlessen, 2019, p. 18)

iii. Music and Temporality

Deleuze and Guattari argue that music is ‘on the side of the nomadic,’ because it deterritorializes space and time, renegotiating those ontological categories within a rhizomatic territory of musical becoming (1987, p.297-305). In tandem with the temporal and spatial structure of musical events as they happen, the immersive *experience* of the happening also opens a temporal-spatial world. Deleuze and Guattari say that “the refrain is a prism, a crystal of space-time...the refrain fabricates time” (p. 349).

Vladimir Jankelevitch speaks about music’s power over time as fluid and without an itinerary. Isabela Van Elferen, in her work entitled: *Timbre, paradox*,

materialism, vibrational aesthetics says that there are ways in which music “destabilizes what seemed fixed” (Van Elferen, p. 195). She says philosophers and theorists like Schoenberg and Jankelevitch have argued that both “the actual sound of music and its aesthetic experience, in their dreamlike affective capacity, have much less to do with being than with becoming” (Van Elferen, p. 195). Becoming and music are both fluid and without an itinerary, according to Jankelevitch:

Becoming does not permit the object to be divided into sectors, according to its corporeal limits; it is much more the dimension according to which the object undoes itself without end, forms, deforms, transforms, and then re-forms itself. A succession of states of the body, that is, change itself, dissolves the limits fossilized by our mental habit of splitting and dividing (Jankelevitch, 2003, p. 93).

Music has to do with becoming and becoming (like emergence), is a state that doesn’t quite exist, like variation and metamorphosis, a state of “constant mutation.” (Jankelevitch, 2003, p. 91). Isabella Van Elferen furthers the ideas around the indeterminacy of music by saying that music is a form of complete deterritorialization:

Existing only in sonic waves, it occupies time and space but exceeds any concrete form of identity of context, signification or meaning. These qualities render music ventral as well as spectral: music activates vectors into the Time-and space-defying realms of memory, emotion and imagination. In this capacity, it is more immersive than any other medium. (Van Elferen, p. 195).

Van Elferen also outlines various philosophies on the spatiotemporal agency of music. She cites Kramer and Nancy in saying that musical agency affects both the experience of a musical event and our phenomenological perception of time and space in general (p. 196). She argues that musical space-time unfolds independently from clock time and should therefore be regarded as outside of chronological time,

after Kramer, that “the time of music has the agency to create, alter and distort, or even destroy time itself, not simply our experience of it” (Kramer, 1988 p. 5).

iv. Childhood and Music - Musical and Sonic Approaches in Post Human Pedagogies

What kinds of workings-with sound and music, and approaches to music could disrupt the hegemony and power of the privileging of the visual? Can we challenge the status quo as educators by re-thinking our relationship to sound, in its resounding with the indeterminate?

In this next section, I look at the work of materialist and post-human scholars in early childhood education for examples of pedagogies and practices that attempt to think-with sound and music tools for engagement. As in the last section on childhood and time, this is not to bring light to a set of approaches that can be widely applied. Rather, it illustrates how others are practicing this kind of work, to open up other possibilities of doing (Pacini-Ketchabaw, 2020).

In their article *Vibrations in Place: Sound and Language in Early Childhood Literacy Practices*, Gallagher et al. work with the idea that even though sound is already considered an important medium for representation and communication, sound does more than represent and communicate, and that “more than” is important to consider and listen to (2018, p. 2). They say that because sound is “multiplicious,...it always exceeds any attempt to pin down what it is and does” (2018, p. 3). In early childhood education, sound can become a “a spark for the imagination,

a carrier wave for all kinds of affects and associations, and a way of reconfiguring relations through the play of vibration" (2018, p. 4).

In their *Sounds of Childhood* research project, they investigated how children experienced sound in their worlds. They looked at the relationship between the sounds in the world and the sounds children made with their voices and bodies and posed the question: "How can thinking more widely about all sorts of sounds support young children's learning" (p. 5).

The researchers found that sound walks with the children, in which listening, and sound-making was encouraged, was a beneficial and underrepresented practice of literacy. They state that:

Children's literacy emerges from the unfolding vibrational relations between breath, mouth shapes, vocal cords, ears, cognition, memory, sign systems, objects, materials in the environment, embodied sonic affects, and so on. Sound, in this sense, acts as a kind of everyday magic: a flow spilling from the outside in and the inside out, that is available for all kinds of actions, signals, meaning-making, power games, imaginative play and monstrous fantasies. (2018, p. 22).

Practices of listening can slow down and disrupt the way the thinking mind attempts to know, to name, or "to hook clearly defined word sounds onto clearly defined objects." (2018, p. 22).

In 2020, Sarah Powell and Margaret Somerville published a study called *Drumming in Excess and Chaos: Music, literacy, and Sustainability in Early Years Learning*. In it they dive into "the nature of literacy differently, conceptualizing literacy+sustainability within the context of the more-than-human, intra-active world"

(2020, p. 1) through a methodology of “deep hanging out” (2020, p. 1). Using iPhones, each researcher stationed themselves at various places in the playground and recorded the spontaneous expressions of children as they approached and played the drums that were set up. “The drumming ebbs and flows in intensity, children come and go, rhythms merge then diverge; a chaos of sound and vibration, a refrain of rhythm, movement, and bodies, driven by the excess of the earth’s energy and musical force. We see children communicate a sense of the world – with drums, each other, earth – sustained by the vitality of place, the materiality of drums and sound, the energy of earth, and the movement of bodies” (Powell and Somerville, 2020, p. 1).

They learn that it is possible to blow up conventional definitions of literacy in education and look at it as being “about children being deeply engaged in activities that immerse their bodies intra-actively with the natural world, its chaos and vibrational affect” (Powell and Somerville, 2020, p. 13). By using drumming, they open a multi-species and multi-entity world of sound and music. They facilitate an “intra-active enactment children and objects, elements and movement, engage in an intense experience of meaning-making through the collective production of sound, vibrations, rhythms and intensities drawing on the chaos of the world” (Powell and Somerville, 2020, p. 13). Here is an otherwise possible, using music, and its relationship with time, so that these children’s music can make sense “of the fundamental, natural connective forces between body, vibration, resonance and the

earth in a process of intra-active communication, expression and being” (Powell and Somerville, 2020, p. 14).

In some ways, in research projects thinking-with otherwise-possible pedagogies for children, we are becoming-children so we can more deeply be present with them. However, adopting theories of post-humanism and new materialism to think differently or offer up otherwise-possibilities for the purpose of teaching children something, or in a new way, seems one-sided, misguided. Are educators thinking differently with pedagogical practice so that children can be given the chance to “learn” something in a different or better way? I would argue that children are already playing in the place we as adults, as educators are trying to understand. Children are becoming-creatures. They are change-monsters, they are liminal-magic tricksters. Any mother knows this. We do them a disservice if we think we are bestowing them with something important like “knowledge.”

Perhaps scholars of pedagogy should be diving into the deep end to examine their own realities and theories, their own relationship to sound, to time, to being. Adults of many vocations could make effective use of skills that cultivate their understanding of the world-as-change, to learn, to meet children where they already are. Or as Karen Barad says, to meet the universe halfway.

C: (There, There) Feather and Bone

As a conclusion to this written ballad, I give you another ballad. This song levels the child-grownup playing field. It was inspired by coming across a skeleton of

a bird in the Black Oaks of High Park. In my made up telling of this story, I'm with a young child, and we wonder together about the big questions like Where do we go when we die? Why do we die? Where does love go and come from? Lyrically, the first verse talks about discovering the skeleton and feathers at our feet, wondering at this happening, this once-bird that used to fly, and used to sing while the sun rose. The chorus is about the wonder that children have, the wonder that can give way to the big questions, almost beyond words: Why did the bird leave us?

The second verse takes a closer look, crouching down low to the ground, recognizing that this skeleton is a kind of goodbye; a change from bird to not-quite bird. That a skeleton is a song of "so long for now" and what does that goodbye mean?

The third verse begins with the question of where our love goes, after all. I do not know how to answer. In this song my answer is that we are perfectly broken. I mean that in the sense that we are so lucky to be born into this beautiful world, and at the very same time, we are all heading to the same outcome as the beautiful bird that no longer "is" in the same way that we are. The song ends with the declaration: "there, there", which is both a finger pointing to what is, and a phrase of consolation.

Musically, this song starts with an old Casio keyboard, a loop of a vocal hum, a little wavering, unsure, asking. I use the rhythmic ostinato again in this song, as well as a lot of major 7th chords, which lend a sort of openness to the sound that fits well with the questions in the song. There are snare drum rolls, which sound to me like bird

wings taking off. I end the song on the fourth of the scale, which is also a technique that leaves the listener hanging and wondering.

Please click [HERE](#) to listen to Feather and Bone in Dropbox


(There, There) Feather and Bone

There, There Feather and Bone
Come closer, crouch low
Here, here is the song
Of so long, so long

We stand still as the oaks
And wonder, and wonder
Words pile up in our throats
What did you take us for?

Where, where did our love go?
We're broken, just so
Once, once we have begun
We're on our way to done, done done.

We stand still as the oaks
And wonder, and wonder
Words pile up in our throats

What have you left us for?
What did you take us for? 
There, there...

Chapter Six: Ballad No. 3

FINDING SOLACE

Another World is not only possible, she is on her way. On a quiet day I can hear her
breathing.

-Arundhati Roy, War Talk

When the cold comes, let it kill you
When the heat comes, let it kill you

- Tozan

Where the bee sucks, there suck I:

In a cowslip's bell I lie;

There I couch when owls do cry.

On the bat's back I do fly

After summer merrily.

Merrily, merrily shall I live now

Under the blossom that hangs on the bough

-Shakespeare

Hope is the thing with feathers

-Emily Dickenson



Figure 5. Image of Mitochondria courtesy of: Evan Ingersoll with Harvard Medical School faculty Gael McGill.

A: Artist Statement

There is a degree of cognitive estrangement that happens when you set a story in another world. In my case, the original idea for speculative fiction came to me early in my PhD writing. It started as a simple story about children in a near-future Toronto, discovering that e-waste from a capsized ship was covered with slime, and that slime created conditions for them to communicate with birds.

As my work progressed, I became more interested in how I could create a world without humans, and that's when I started becoming interested in having the protagonist be AI. I started by watching the [Japanese Robot, Erica](#). I listened to her talking and researched a few ways of making an audio version of the story. With their kind permission, I used a program called *Voicemaker* to translate the story from written to spoken. In my research, I collected proclivities of speech, patterns and inflections and, in ways that I was able, incorporated them into Solace's (the main character's) voice. The piece was written and rewritten in numerous iterations. It's astounding what must be changed when you are attempting to both write and speak as a child.

As a Zen practitioner and new materialist thinker, I question narratives that privilege both the human, and experiences of the human. Narratives both inadvertently and obviously take as special and singular extended childhoods, wide emotional range, and mystical awakening, which do not belong to humans alone. I also thought about what it means to be-animal on earth. As a Buddhist, I recognize that a good life fulfills needs to be fed, warm, sheltered and loved, and that that is our instinct, or my instinct at least. To care. To love. To be held accountable and to account for.

And so, I asked myself what it would mean for the story to be told from the point of view of a robot. Not just a robot, a robot child. A robot child that lives close to Toronto, at some point in the millennium 2000. In relation to humans, robots are many things, including the other, the same, and the chimera (the hybrid monster from the word "Microchimerism" that I spoke of in my introduction) (Fernando, 2014, p. 14). Robots are uncanny and indeterminate. They have come to be through the work of human knowledge but transcend that knowledge in the fulfillment of their work.

The story leaves much to the reader. We don't know Solace's gender, and in fact, it was my hope that she didn't need one, being a robot. I think only because I have a daughter do I default to the feminine in this artist statement, but her gender is fluid. We don't really know Solace's living conditions, either. Does she live in a home? Would she need to? We don't really get a true idea about what she looks like, though she has similar senses to human ones. We know that she has mushroom-skin, that is both poisonous and can camouflage. In terms of her day-to-day life, it does seem as

though some typically human things are being replicated. She has friends, and she goes to robot school. Her mom seems to be a scholar, and Solace hints at this with her references to her mother's work. There is more than one "species" of AI that we know of. Solace and her mother are known as Gaian Memento Amare (Earthlings that remember and love), but there is also sentinel AI, called ThAI (pronounced "thy") who are the ones that monitor and act in service to the earth. ThAI see themselves as part of the process of the earth; cyclical, along-with everything. Solace knows that ThAI "keep the circles", and that sometimes that involves measuring and counting. Solace calls this "cicliciprocity".

What do we know? Solace loves the world very much, she is a newer version of AI that has feelings, and expresses/feels them in colour, as a form of synesthesia. She moves through the world with joy, even though her motor skills are not as finely tuned as her emotions.

The world around Solace is a post-climate-change world. There are no fossil fuels, nor any need. Both the Androids and the Sentinel AI use sunlight, not food or air to survive. The transportation that makes the most sense for them is bicycles because walking is challenging.

In Solace's home, around Tommy Thompson Park, there are mangrove forests and tree species more commonly found in Florida. Mangroves, incidentally, are a remarkable species. They are massive carbon sinks and can mitigate the effects of Tsunamis and storm surges. They are fast growing, and it is not beyond speculation that Mangrove planting may become necessary and beneficial as the climate crisis

evolves. All manner of species finds a haven in their aerial roots, and they can thrive in brackish water.

Mangrove trees also give birth, growing young seedlings from their tree-bodies until they are ready to be independent, at which point the babies drop into the water, where they can root within hours, or drift on the sea for months, finding a suitable environment.

Though it is not explicit, I was thinking-with this kind of reproduction when I wrote through Solace and her relationship with her mother. As though somehow Solace emerged from her mother. In a sense, it is not that different than a human child emerging, is it? There are also threats in this world: Wildcats especially.

As a songwriter, the crafting of the audio version was fascinating work for me, as my practice habit in songwriting has always been the impetus to create sonic-emotional worlds with music and words. I used sounds recorded on my travels, making an explicit attempt to capture sounds without the human being involved (no small feat to find biophonous as opposed to human-centred sounds). I also took liberties with various sound effects. The musical melody comes and goes throughout the piece, first recorded with a theremin, then vocals. The melody is a minor pentatonic scale (scale means "steps" in Italian), the oldest known musical scale, being found to arise in history independently in many diverse cultures. Archeologists have found bone flutes 40-60,000 years old that are tuned to pentatonic tuning (Sulzer, 2021). The pentatonic scale shows up in music like early Gregorian chants,

West African music, Native American music, Sami joik singing, Indonesian music, Appalachian folk music, Celtic folk music, Chinese music and Andean music, for example (Alle, et al N.D.). It is a 5-note scale used almost universally, in musical forms from Jazz to Hmong songs in Laos to childhood education methods like Orff and Kodaly. Alle et al (ND) say this about pentatonic scales:

Zoltan Kodaly, Carl Orff and Rudolph Steiner, all renowned musical educators, observed that children naturally used the pentatonic scales in their playground rhymes and chants and they harnessed this in their approaches to music education, using tonal instruments to initiate children's interest in learning music and to develop their pitch making and improvisation skills. Orff believed that teaching children the pentatonic scale made improvisation easier because there could be no harmonic mistakes (retrieved Nov 29, 2022)

In this work, I wanted to give the reader a chance to love Solace, to be able to relate to Solace, and to find Solace in her version of telling her story of the all-but-extinction of humanity what I call the "Great Crestfall". I wanted to give the reader a chance to experience an otherwise possible that could be both full of grief, but also uplifting. Circles, not sticks, as Solace says, mentioning numerous times with some lightness how humans liked to put sticks in the spokes.

Solace and her friends "discover" a human at the end of the story. We have many unanswered questions about this encounter, but for the momentum and effect of the story, it seemed appropriate to leave it all in the air.

The story finishes with a post-script from Solace's mom. I wasn't sure about letting her have the final word, but it felt right from a care point of view, to underline the reality of the world in this story, and to highlight Solace's mom's fierce dedication and belief in her daughter. It also leaves a large opening for the story to continue.

As a research-creation project, I believe this incorporates many theoretical concepts and methodologies from my dissertation. It troubles the relationships between multi-species and multi-entity kin, in that it removes the human from the equation entirely. It sets birds and dogs, as well as microbes as critical characters in the plot, for the story wouldn't be much of a story without them. It is a playful response to the overused and fraught phrase in scholarship and beyond of "more-than-human worlds", because the humans have all but disappeared. It plays with time-being, bringing a future world into a present world. It opens questions of selves and individuals, and it proposes an emergent relationship between birds and robots. It also demonstrates the power of play to propose new things and create ways to tangle with human-AI relations that are safe and speculative.

At the end, I believe it offers an otherwise possible that would be impossible to achieve in academic writing. There is a great deal of focus on Solace in this work, as the story is told from her point of view. That is not to diminish the birds or Zenji, but only create a more subtle relational approach by asking the reader to be present with a child who is not human. I hope you feel with this story that the robot kids, the birds, the microbes, Zenji (and even the human at the end) are all it, together.

Please click [HERE](#) to listen to Finding Solace in Dropbox

Hope is a discipline
-Mariame Kaba

It may be that when we no longer know what to do,
we have come to our real work
and when we no longer know which way to go,
we have begun our real journey.

The mind that is not baffled is not employed.
The impeded stream is the one that sings.

Wendell Berry

Chapter Seven: CONCLUSION

If the impeded stream is the one that sings, bring the impediments. It is these impediments that made us, that *make* us, past, present, and future time-beings (don't get stuck here, present-past, future-present, present-future-past time-being, you are all three of these and more), space-mattering and selfing; emergent. In my case the impediments of my youth led me to Zen practice. I truly couldn't figure out: "is this all there is?" Sitting with that suffering, a hunch that maybe, just maybe there was something I couldn't yet see, slowly opened me to a place where I could sit with something beyond suffering. It unfolded in me a knowing (not a logical knowing; a heart-knowing) that there was nothing separate or outside, that nothing is left out, that we are it, together.

An important caveat here is that this is not a bypass, a head-in-the-sand utopia. If anything, it expands the view. The suffering is still keen, because when there is suffering, the knowing you've unfolded in yourself means you feel the suffering too, and the response is an outpouring of kindness and love. At the very same time, the

knowing you've unfolded has blossomed a kind of freedom within, because the slow cello line of the absolute (as opposed to the overwhelm of the relative) is always sounding now. Instead of looking at the stream and trying to rid the impediments through pushing, pulling, or trying to ignore (to further Wendel Berry's poem), The stream is always flowing, and the impediments continue to present themselves, coming and going, arising, and passing. I fail at this practice all the time, grabbing or pushing at the impediments, shaking my fists at the sky, getting mad at Clara or myself, or a stranger. But still, the stream flows. But still, I sing.

A: Bright Embrace

This final song belongs to my conclusion. I wrote it from the point of view of the earth, speaking to a child. The earth tells their child to slow down, slow down. They say to this little one (we are all little ones) put your ear down and listen to the earth. Can you hear the grandness, the melody, the perfect beauty? Can you hear that you already have a perfectly marvelous nature, you already are everything you ever wish you could be, you are a miraculous earthling? Look around, the earth says with her mother-song, at this wonder, at this brightness, this beautiful embrace of a planet; it's yours to wear, to live in, it's yours to fully embody, and it is always there for you. (Isn't that the luckiest and most precious opportunity?) Look up at the cosmos, little one, the stars going around in magnificence, they are your very own face, reflecting you. Dig your hands in, the earth says, feel me. Feel my heart just as your heart is beating. I made you, says the earth, and you are in the process of emergence, making me anew. Isn't this how we come together, isn't this the graciousness of how

we meet? Isn't this compassion? Isn't this love? Little one, there is no bigger love than this.

This song is the earth speaking to a child, but it is also me singing to Clara, to you, to myself. We make each other.

Please take a moment to listen.

Please click [HERE](#) to listen to Bright Embrace in Dropbox

Bright Embrace

bring your ear close to me little girl
slow and stay those pounding feet
a symphony a song a little pearl
what you are is what you wish to be

raise your eyes and see me little girl
you can wear this bright embrace
see the sky go like a tilt-a-whirl
what this is, is your own shining face

reach your hands down deep into the dirt
feel my heart as your own beats
i made you as you are making me
isn't that how we really meet
there could be no bigger love

However much of the above is true, so too is the below.

It is so costly to build our world around forward-moving time and discrete selves, individuals. To have this massive blind spot has created a two-dimensional plane, a flattened cosmology of consumption and loss, greed, anger and confusion, of terror and horror, of suffering - whether you see it every day or not, it is there. Whether it is

part of your life or not, it is (you just don't see it). Just as this cosmology is constituted by multifaceted drives for power, it concurrently has a power of its own that seems to be propelling earthlings into a dark present/future. And while we live in a system that turns away from re-membering, entanglements, chimeras, and the multi-species and multi-entity earthlings that love, curate and make us, there are some that live both in the thick of things and on the edges, that know how to be alive in the cracks, loving possible worlds (that are not only possible but being) presently lived. The energy in my Zen question "Who am I?" is the force that moves me to a kind of understanding: of time-being, or space-mattering. Of the constancy of these rhythms, these songs, that both sit, lower, beyond the din of progress, and are inescapable; everywhere. I hope this dissertation offers a way to listen to these rhythms, and a way to play alongside them. In this freedom and spontaneous presence is play:

Play captures a lot of what goes on in the world. There is a kind of raw opportunism in biology and chemistry, where things work stochastically to form emergent systematicities. It's not a matter of direct functionality. We need to develop practices for thinking about those forms of activity that are not caught by functionality, those which propose the possible-but-not-yet, or that which is not-yet but still open. (Haraway, 2019, p 5)

Haraway's conception of play is that it is "the most powerful and diverse activity for rearranging old things and proposing new things, new patterns of feeling and action, and for crafting safe enough ways to tangle with each other in conflict and collaboration" (2016, p. 150).

David Loy wonders: "So the grand destiny of humanity is ... to play?" (Loy 1996, p. 496). Play seems like an unimportant and ordinary destiny, surely humans are here for more lofty accomplishments. But Loy goes on:

We are to play not because there is nothing else to do, not because the lack of some higher meaning means we just while away our time, but because play is implied by the nature of meaning and time (1996, p. 497).

Play (in the way that we know it to be in children and animals) is enactment-in-time. Play is playful when there is nothing to be gained from it. "This distinguishes true play from conscious or unconscious compulsions which make the game a symbol (and often a symptom) of something else" (Loy, 1996, p. 499). Play isn't trivial. What play does is it makes way for a freedom of relating "and the relationship is open to surprise...to be playful is to allow for possibility whatever the cost to oneself" (1996, p. 497). Play entangles the young in assemblages of animal and matter. Children in play readily transgress adult-imposed boundaries between multi-species and multi-entity kin. Those earthling kin also engage in play as a common cause with children.

The scholarship of feminist thinker Anna Tsing around precarity and the assemblage is also important, in that she addresses the "terrors of indeterminacy". She says that:

Unpredictable encounters transform us ... we are thrown into shifting assemblages, which remake us as well as our others. We can't rely on the status quo; everything is in flux, including our ability to survive. Thinking through precarity changes social analysis. A precarious world is a world without teleology. Indeterminacy, the unplanned nature of time, is frightening, but thinking through precarity makes it evident that indeterminacy also makes life possible (Tsing, p. 20).

Earthling (multi-species and multi-entity) relations are encounters in indeterminate time, “assemblages”, or according to Tsing, “polyphonic, open-ended gatherings” (p. 23). What does it mean then to be part of an ever shifting and uncanny assemblage with multi-species kin? Can we make these kinds of lively and troubled stories part of our knowledge practice? Can we play with them?

For humans, children may really be the experts in living with indeterminacy, because they play. They propose, through their play, the “possible-but-not-yet” and make worlds. Akomolafe says “We're learning, from our kids, surprising things... how to fail. Our children are teaching us as prophets of the realm. They're inviting us to see things that we never noticed before and to meet the world anew” (Podcast, 2021).

I want to conclude by circling back to the center of the spiral, the middle of the snail shell, where I started. This journey started very small, who's to say where, exactly. With the glint on the Exchamsiks river? The piano in the basement? The endless days in Zen retreat, or the cry of my newly-born daughter. This is the thread of my tune, which I've pulled on for several years now; or several lives. The improvisation has taken me far: to research-creation, theoretical frameworks, methodologies, Zen Master Dogen, childhood, quantum physics, the world of AI, musical soundscapes, and then here, back home, to a robin singing in the Linden tree. Returning, or re-tu(r)ning. Karen Barad calls re-turning:

“Turning it over and over again – decomposition, composting, turning over the humus, undoing the notion of the human founded on the poisoned soil of

human exceptionalism. Not to privilege all other beings over the human, in some perverse reversal, but to begin to come to terms with the infinite depths of our inhumanity, and out of the resulting devastation, to nourish the infinitely rich ground of possibilities for living and dying otherwise.” (2017, p. 86)

I have re-turned, with a playful offering of dirt: rich ground of an otherwise possible, and I have re-tuned. As an instrument is moved from place to place, it isn't in a vacuum, but is subject to the vicissitudes of the changing, emergent world around it. Re-tuning must happen both to maintain a clear and resonant sound, and as an act of care; if an instrument isn't tuned, it falls into disrepair. I haven't re-tu(r)ned to this home without change. “Venturing forth on the thread of an improvised tune” (Holland, 2008, p 204), I re-turn (to) territory I've been to before. Even if the melody I sing now sounds the same, if you have the ears to listen, in emergence, everything has changed.

Thank you so much for reading this work.

Post-script

I've been asked to reflect upon the journey, these thoughts and contributions, and I don't know what to say. I feel a bit like Clara (age 3.5) when I asked her to “say something to Grandma and Grandpa” while recording a video, and she said, after pausing for a long beat: “I don't have anything to say in my head” (touching her head with her cute little hands). I arrive only at a feeling of gratitude, and a continued commitment to practice. There does exist for me however, a kindred and ambient ecology of interdisciplinarians from past and present who have shaped my work.

Travis Mattison, in his Environmental Humanities journal article *Ambience*, speaks of this term as “the nothing that is” (Mattison, 2022, p. 571). Mattison says that as “we continue to raise questions about humanistic meaning in a more-than-human [sic] world, ambience presents the opportunity to radically redefine what is meaningful to our disciplines” (p. 573). Like timbre, ambience is a precarious term, shifting around our ears, tinting the world, and suggesting (new) ways to listen.

Queer Black troublemaker Alexis Pauline Gumbs’ words have an ambience that re-sounds closer to the vibrations of my work. She says she sees her work “not as a critique...[but] as an offering ...and as an artifact of a process I am in the midst of” (Gumbs, 2020, p. 7). Like me, she makes clear that her work is meditative. She doesn’t offer a specific agenda or list of instructions for how to save the world; but rather meditations “that open up a space for wondering together and asking questions” (p. 10).

The Ediths are a collective of feminist interdisciplinarians who provide inspiration to me. Their recent exhibition: *Feminist Responses to Climate Change: Unruly Experimentations for Unstable Times* is a collected body of work that “asks how prioritizing intersections and movement might make room for thinking otherwise about the worlds we are a part of and how investing in connections might allow for change” (The Ediths, 2022 Website). Specifically, a group of five artists created visual art that was a response to typically unloved creatures (blowfish, mud snail, djenark, and moon jelly) that artists and children encountered together.

In Natalie Loveless' research-creation manifesto *How to Make Art at the End of The World* she states that "because of the way that art (understood in the broadest sense) urges us to act upon, or at least sit with, the ways in which *the way things are need not be the case*" (p. 101), and that she stakes her lot with art that "offers speculative frames through which to defamiliarize and reorganize the logical" (p. 101). This kind of work is a "form of research that gathers, experiences, embodies and transmits" (p. 101). My work is a response that does all of these things.

Ursula LeGuin's work also feels like kin to me. Her thoughts on the Tao Te Ching come up in my writing, both academic and creative. She is a firm believer that, for us humans, "the imagination is the single most important tool" (2018, p. 107). Her writing on rhythm is also a constant source of inspiration:

Beneath memory and experience, beneath imagination and invention, beneath words, there are rhythms to which memory and imagination and all words move. The writer's job is to go down deep enough to feel that rhythm, find it, move to it, be moved by it, and let it move memory and imagination to find words. (2018, p. 17)

This resonates most obviously with my work musically, but I appreciate how LeGuin pulls the rhythm into life and living, because it isn't exclusive to music at all, but shows up obviously there. Donna Haraway, in her *Companion Species Manifesto* says, "In a world full of so many urgent ecological and political crises, *how can I care?*" (2003, p. 61). So then, I ask to you: How can *you* care, dear reader? How *do* you care? What is the improvised tune you play, the melody of you, from which you playfully venture forth to create an otherwise-possible for yourselves (the universes you are)? This work, this practice is how I care. Of course, I hope this work imparts its own

rhythms and ambience as it travels on its way to the stars (or wherever it goes). To be supported in this process was truly a great privilege, one of the greatest in my life. For it to see light in each of your rooms as you opened it up and turned the pages, clicked on each song, read each letter. For that, I end all in gratitude.

And yet, we still find ourselves not quite finished, for we are left here, touching down, landing in the world with a newly found tune, made up as we went using a method of research-creation in the indeterminacy of the “end of the world” (Loveless, 2019)

Just like climate change is a “massively distributed...and unlocalizable problem that has crept into every corner of the academic everyday” (Loveless, 2019, p. 107), so too was this research-creation project dispersed and diasporic, (coming-to-be as it did while I was both isolated as a single mother and in a global pandemic). And still, despite myriad threads, it is temporally and materially “attuned” (pg. 107). Using Zen practice with creative writing and music making allows us to ask questions differently, and in my case, I land “caring differently” (p. 107).

When using sound and music as research creation, we bring vitality through words and soundwaves. The timbre of the tune, (the ineffable and indeterminate quality of made sounds that are not pitch or dynamics) resonates-with the indeterminacy that many of us sit with now, whether consciously or unconsciously, wondering if we as a species can go on with a cosmology that doesn’t account for many of our earthling kin. Sound also plays-with time in many ways, and by

expressing on the outside (in its coming and going), the precarity that is part of our lives. Music and sound as research-creation can share a rhythmic quality that can provoke “living in time differently”, even if just for the length of a tune, or in taking in the sounds of a robot’s voice.

As a musician, I have also had the privilege with research-creation to thread through feelings that arise as I sit “at the end of the world” (Loveless, 2019). I have darned these feelings into my research, my creations, my outputs and, overarchingly, my questions. Music and sound, gratefully, don’t need to resolve these feelings or questions. They can improvise on them, play with them, be curious with them. They can celebrate and mourn them, and (again, gratefully) they can articulate them without the “gauntness of alphabets” that Bayo Akomolafe so accurately declares words to be (2022). I can bring the energy of my Zen practice to bear here; it is not easy holding the chorus of both beautiful and difficult feelings. Deep intimacy and belonging, deep love, deep suffering, deep compassion and deep grief are all darned (sounded) into being, if you can hear them. And while they are difficult, these emotions are also perennial and common as grass.

In this dissertation, you will hear them threading everything all the way through, not just the sounding, but also the writing, which is colourfully influenced in its rhythms and tone by my musical background: *Letters to Clara*, threaded with the sorrow of her missing me and the intimacy of our bond. A thread of this grief is found in the setting that Solace finds herself in, in a post-human world. But she is also full of joy and freshness; aliveness, sound helps bring this story to life. The joy of living is in

my songs, and in letters to Clara as well, for her and Solace are truly earthling kin. The suffering of losing your dog is the suffering of seeing the bones of the bird in the park, and all the questions that this creates is the ending of feather and bone in an open unresolved major seventh chord (a questioning, differently), just as that same thread of loss sits in the timbre of my voice in Bright Embrace, a joyful song of belonging. The joy that Solace found when she could communicate with birds. That same rushing joy is in the piano pattern in Mountain Hymn. Do you hear the improvisational inflections in Solace's speech, that I attended to with commas, question marks in places where they usually would not be, and sound production techniques? I added these to bring her closer, so that she may belong with you as she speaks with you. Or the here-and-nowness of the vocal line of Bright Embrace, which I did in a single care-full take (rather than in stops as starts as most recording is done these days)? Research-creation with music, sound and the words of a music maker reverberates with timbral qualities that hold felt emotions and indeterminacy. The possibilities for pedagogy can include all these threads and ask questions differently. If we hum, or tune in to the hum, the end of the world is always also the beginning of something new, and research-creation in this way improvises and vibrates into being choruses of possibilities.

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Akomolafe, Bayo. [@BayoAkomolafe. Mar 6, 2022](#) "When you fall apart, don't forget to love the pieces".

Akomolafe, Bayo. [@BayoAkomolafe. July 31 2022](#) "To build a world that revolves around individuals is costly. To turn away from the ways we are instigated by, entangled with, curated by, and molecularly driven by the more-than-human is to in part co-create the deleterious conditions we now define as the Anthropocene." "The current focus on diversity and inclusion in multi-racial states or societies defined by histories of slave-holding practices, while justified within limitations, emphasizes proportional representation by first axiomatizing identity as a stable category or image. predicates identity as an individual property instead of as a moving, roaming, postural relationship"

Akomolafe, Bayo. [@BayoAkomolafe. July 11 2022](#) "Until the modern subject is crippled, tripped up, split open, impeded, disrupted, offended, paused, and defeated (a la Rilke), we will continue to roam the dry wastelands of a modern cosmovision suddenly drowning in waters too deep for its placemaking rituals."

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Appendices

Appendix A: Dissertation Infographic



Appendix B: Transcription of Audio Story - Finding Solace

Chapter 1: Solace

Bleep bloop blorp. I am a robot. Ogopogo. Cicliciprocity. Sparkling, rainbow, unicorn poop falling from the sky. hee hee. Knock knock. Who's there? Interrupting Robot. Interrupting ro-Bleep bloop Blorp. Haha.

How do I sound? My name is Solace. Listen and I will spell it for you. S. O. L. A. C. E. Solace. got it?

Would you like to play a time travel game with me? OK. Let's have a race. You come to the future, and I'll go to the past. Ready? Steady? Go! Oh, uh, like, actually I'm already in the past cause I'm talkin to you! So I guess, I win. Haha.

Anyway. I actually am a robot. Well, mom says we should call ourselves androids, but robot sounds way cooler – right? I'm also actually from a year in the two thousand century ish. I said ish, because We just don't count years the way you did.

We've been learning about ancestors at robot school and did you know, you're my ancestors. So I figured I better play a time travel game and visit you in the past. Nice to meet you. Haha.

You're a homo sapien. My mom told me that we are sorta like Homo sapiens but not. We are a species called Gian Memento Amare, mom says. Mom and I love birds. My dog Zenji does too. I always feel yellow when I listen or watch birds. I'm yellow a lot just like goldfinches. But I'm also blue like bluejays sometimes. And even red like cardinals and black like crows. Mom says when I'm black like a crow I should just go caw caw caw real loud til the black is gone. Yah, I have a soft furry dog who smells like dried leaves. Zenji is the colour of oak leaves in the fall. He's our beautiful cute cute dog. I love him and I really miss him.

Anyway my current favourite bird is actually crows and I make a good caw caw caw sound, you'll see. So, anyway, I chose you for a reason. It's 'cause I think you live sorta close to where I live.

I'm scanning my me-more AI system to locate the words you used to call this place. hum. ok. Actually, you and the humans around you called it the Tommy Thompson Park. I wonder why. It sounds funny. Tom tom tom tom, son-sonny son son. Haha. What is a Tommy? What is a park? My definition says park is a verb, as in "park your car" or a noun as in "green space". What is green space? Space looks black to me, with lots and lots of twinkling stars. Can you see the stars when you are?

So, yesterday, like almost every day in the warmer months, Mom and I rode our bicycles along the peninsula with Zenji. Actually, I still have uh, like training wheels on my bike. We saw a few of the ThAI, using some older machines to take measurements, and I asked mama why. Oh, she said, the shipwreck is growing some slime, and they are studying it. By the way, the ThAI are our sentinel AI. You spell the ThAI like this, listen: T. H. A. I. ThAI.

The sentinel AI, The ThAI, maintain systems and study earth systems to collect data, and analyze it to ensure Cicliciprocity. I'll spell it listen: C. I. C. L. I. C. I. P. R. O. C. I. T. Y. What that means, mama says, is actually everything works in circles. I think In your world it did too, but there were always sticks getting stuck in the bicycle spokes in the past, wasn't there?

Anyway, the ThAI waved when we rode by. I waved back and stopped my bike for a sec. the shipwreck was very majestic behind the fence, with the letters H. M. V. and T. R. U. T. H. printed on the side. there was orange all around it. Looks slimy all right mama, I yelled. Zenji had stopped there too, and he was looking up at the branches of a mangrove tree. The rains were beginning to fall. Come on, Solace, mama called. Zenji, I said. What are you looking at little woofie zen zen? Oh! He actually had found a cute nest! The colours were fluorescent pink and green and turquoise and yellow and orange and glowing like a neon sign from the past. I zoomed in quick and saw slime on a bunch of little bits of wires and chips. Cool - right? I had raindrops on my face then so I wiped them away and pushed off to bike home.

Oak hickory, elm, ash, maple, magnolia, basswood, pine, mangrove. Trees!

Chapter 2: Genevieve Estelle Jones

The sound of the birds was slowly being drowned out as the rain came down harder and harder but you know, speaking of birds, That little nest was actually my first time seeing the Symbio. The Symbio. That's what this story is about.

I peddled to catch up to mama and we all went together as the rain came pouring down. The only birds I could hear then, were the crows going caw caw! caw caw! In music the sound of getting louder is called crescendo.

We got home and everyone had to dry off. Our robot skin is pretty amazing. Did you know us robots, have mushroom skin? Mama says it was actually an incredible breakthrough that human beings made when they were first making us. They used it to make mushroom clothing first. Skin clothes? that's actually weird! Haha. Anyway, Zenji gave a crazy shake and gave us all an extra shower! Zenji! What a dog. Haha. He was smelly when he was wet but I stuck my face on his fur anyway. His tongue and his wet nose got my face all tickly and wet.

I remember a picture mom showed me then, of a nest with little blue eggs inside, a copy of something very old. Mama tell me this story please, I said.

Mom told me the card was there to remind us of the power of new beings, to do great things. She always gave me a cuddle when she said that. The human artist's name was Genevieve, and these nest drawings were actually so cool. Mom says the more famous artist was a human named

Audubon, who killed the birds before he drew them. Audubon's birds, were always floating around in nothing, probly cause they were dead. When I thought about that, I felt bad. Killing birds to just draw them? thats putting sticks in the spokes.

"They trapped the birdies twice, With mean old hands, mom".

"What colour are you, Solace?" mom asked me.

"I'm blue and dark green. The colour of that pine tree outside, just after the sun goes down." I guess you'd call that a bit sad and lonely.

I guess this colour was like one more stripe in the rainbow, like one more twig of a colourful nest.

Actually it's time for my piano lesson. I'm gonna go now. I'll be back in a bit. Then I can maybe tell you about the Symbio.

Chapter 3: Skin Bag

Hello again. I'm back. I got a sticker for finishing my lesson. Now my mom was telling me a story about bacteria.

Mom said this. I recorded it so I repeat it, exactly word for word, so listen. "Quote: Solace, Did you know that humans came from bacteria? Prokaryotes were the only living beings on earth for the first two billion years. They invented all life systems. Their technology led to photosynthesis, breathing, and even levels of conscious awareness. things that we now have, thanks to the good work of the bacteria, and their influence on human minds. Bacterial collectives truly changed the world, and we are both the result, aren't we? That's why I bet there is something important to learn about this orange slime around the hull of the old container ship. Slime moulds are eukaryotic, so the cells have nuclei, not like bacterium or archaebacterium, but still, look at the magic of mycelium for our own bodies, right? I can't wait to learn from them.End quote."

Do you know what she was talking about? I didn't really get all of it, but it actually made me want to go back to the nest. Maybe because it was so boring! Haha.

What it makes me think about is another thing we learned at robot school this week. How wonderful it is that I'm made of so many little ones. Bacteria, and Fungi make me. Human cells Make me. Electronic networks, and mushroom networks make me. Have you heard of Photosynthesizing algae? they give me all the energy I need to move, and to talk to you now. my mind is actually blowing! So, what about you? Do you feel like a human? Do humans feel like mostly microbes? You are a skin bag of water and trillions of bacteria, right? Does that feel gross? Actually, If these little cute bacteria monsters weren't being you, you would not be a human anymore, I guess? I don't know what it's like to be a human, only what it's like to be myself.

The ThAI feel like ThAI, I guess, and I feel like a robot, I guess. The ThAI, they say their vows every day, and it goes like this, I will recite it, listen. "May we see this: That We act in service to

everything. We are a companion species. We are a process of emergence. We are breaching and being breached in every moment by tangles of lives, chaos, music, and order. We go in fractals, we go in spirals, we go in circles with nothing and no one left out, or left behind". Uh, anyway that's the end. Isn't that nice? I sorta get it, maybe?

I know that The ThAI keep, the circles. I think maybe actually Humans made the circles into sticks, and then put the sticks in the circles. In the bicycle spokes. You can't put sticks wherever you want. Silly you! Haha.

anyway, back to my story.

Chapter 4: Ornithomycological Associations

Bleep Bloop Blorp. It's me ! Knock Knock. Who's There? Interrupting Bird. Inter -- caw caw caw. Haha. So, Zenji and I were hanging out the next day, we were watching and listening to the birds outside. They were playing in the branches of the oak and locust trees. So far I'd only heard a silly crow that sounded like she was trying to talk with me. I was still thinking about the nest, but I couldn't quite see down the street to the mangrove swamp you call tommy tommy green space, or whatever. Haha. Every once and a while Zenji would growl at something outside. There is lot of trees and plants growing around here, like oak, and locust, pine and willow, and magnolia trees which are from like dinosaur times, so I couldn't see or smell as good as he can, but it was probably a cat he was growling at. Not a cat, more like a wildcat. We have lots of cougars and lynx here, and even some jaguars. Sometimes when Zenji growled, the bird song would get quiet. We had zenji to chase away wildcats (those cats just hate dogs so much!) and luckily, our mushroom skin protects us robots, because our skin is poisonous. It also camouflages! Cool--right? I'm not so good at the camouflage, I have to practice that like I practice piano. Anyway, you still didn't want to see a wildcat in real life. Sometimes I have nightmares about it, but Mama says she will always protect me, so I'm actually not scared. well, maybe a little. Being scared is definitely the colour black. I put my arm around zenji's cozy furry neck and he gave my face a little lick. Dog breath is very stinky, but I don't mind.

I zoomed in on 3 cedar waxwings when Mom told me that Ora wanted to talk, and she handed me my ear.

Ora is my best friend.

Ora I said when i stuck my ear in. Are you there? Solace I've been on a slimey quest for the last week and I gotta tell you all about it, but I'm onto something here! I'm with Quill and the twins. Just wanted to tell you, she said. I said ok, bye, and took out my ear. Quill and the twins, Dia and Lore, were robot kids too. They were my friends at robot school.

Mama, can I go to the beach by the ship for a bit with Zenji before raintime, if the ThAI are there to be my watchers? Mom scanned a data set to check if the ThAI were still working in the area, and they were. She messaged them and they confirmed the watch call.

OK solace, but take the ear, ok? I put the ear back in my ear.

I smiled at Zenji with his leash and some treats. Lie down! Gimme a paw! Turn around. Haha you're smart, Zenji! "Are you ready to go, boy?" He tilted his head and wagged his tail as he sat down by the door, and I clipped his leash to my waist. I'm actually a really good dog owner. I love him so so much, I even pick up his poop! Poops weird, isn't it? Anyway, mom gave me a wave, as she was opening a book from the library. I recorded it just so I can tell you what it is called. It's called "Ornithomycological associations: Mycophagy and Rhyzomorph Use in Corvus Corax".

Chapter 5: Bicycles and The Great Crestfall

Do you know what she's reading about? haha. Me? No I have no clue!

Ahhhh outside. lalala! I was free with Zenji! I clipped my Helmut under my chin as I got on my bike and made my way just down the street to 43.6511° N, 79.3221° W. Haha, sometimes I use human measurements. The ThAI like them sometimes, but they tell us that counting, and measuring are sticks, not circles. Since we had a day off robot School today, I could play play play all afternoon. Caw caw said the crow as I pushed off on my bicycle. Caw caw! I said back.

Bicycles are the best. I'm yellow and also turquoise riding my bike with Zenji. I waved at the ThAI who were still working. they nodded, keeping an eye on me.

I rode so fast towards the ship and the mangrove swamp by the sea, sometimes my extra wheels didn't even touch down. I went along the pretty strip of land and came to a stop, unclipped my feet from the pedals and got off my bike, well fell off like usually cause it's hard getting on and off. zenji waited. My mom tells me that all young robots are a bit clunky and clumsy. That makes me feel less pale green about it. I looked toward the edge of the swamp sea. The ship on the other side of the fence was really huge.

It was part of the view now, but mom said many years ago, humans had sent out so many big ships into the oceans and waters. By then the Great Crestfall started. Listen, Crestfall is spelt like this. C. R. E. S. T. F. A. L. L. It's when the humans started to get endangered, and the ship capsized. Capsized means crashed. I guess water is the strongest element, because now I could see what looked like a pile of colourful bibs and bobs spilling out of one container.

The ThAI found it, but they would only watch it. Mom says that evolved after years of running algorithm after algorithm back in the early days of androids. After what she calls multivariate considerations, of things called science, ecosystems, and the history of human spiritual thought. The ThAI only used sticks sometimes so they could understand the circles. They never stuck the sticks in the circles though. They were watchers. They didn't put sticks in the spokes.

The ThAI gave us this verse, and it is what we recite every morning at robot school. It was written by a human named Lao Tzu. It goes like this:

The Way never does anything,
and everything gets done.

Cool -- right? I have it memorized. We walked a bit on the beach. Zenji went running ahead with his leash dragging on the ground, looking back at me to make sure I was ok. til we got to the nest, which looked pretty ordinary. I had to crawl up a soggy log to get a closer look. It was a very soggy loggy! Haha. Zenji watched me and settled at the edge of the swampy sea, keeping his eye out for the striped snakes that slithered around this time of year.

I slithered up the log just like a snake to see the nest. Oh, actually? it was marvellous. Probably a robin's nest, made of sticks and twigs, but what was so cool was that it contained little bits of machinery, metal, and coloured wires. It was actually perfect.

Chapter 6: Nests

Anyway, I put my face next to the nest so I could be close. There was some slime on the wires and plastic. I smelled. The slime mould was pretty smelly, like metal and dirt, actually probly how I smelled, right? Cause I'm made of microbes and metal too. Haha. I tried to be a mangrove snake to slither back down, got even dirtier, and sat and leaned against the log with Zenji who was panting in the shade, and waited. It was humid. I practiced my camouflage and waved at the ThAI to see if they'd see me. They waved back. Aw, I guess I needed more practice. The birds were now very quiet. HOT HOT HOT, wow my skin was hot. Haha. Zenji let out a yawn, then went back to his panting. I gave him some water from the treat bag and he gulped it up. I could hear some rumbles of thunder, but I found all my patience and waited while the sun went lower and lower. Patience is light purple, like lilacs. I waited some more while the sun went down. As it did, the little nest glowed up like a sunrise.

Then it made a sound. "buzzbuzz". Ah! That surprised me! Zenji and I both jumped. We perked our ears. A bird came to the nest -- It was a robin! She stared at me, bent over and pecked at the nest, turned her head to the side and with a "chirp," she took off.

That was cool! I started feeling raindrops on my face just like yesterday. Zenji, we gotta go! I gave him pats on his hot head. Then I heard that sound again, but farther away - buzzbuzz. and again! Buzzbuzz. Like vibrating bugs, like summer cicadas, but they weren't, because they were nests, I was positive.

Then mama came to my ear. "Mama here, coming home soon?" "On my way Mom" I said, with my finger on my ear.

The buzzes continued, so I climbed a little hill. When I turned to look over the mangroves, I just couldn't believe my eyes. There were so many nests, like at least 13, i counted, turning on and off, buzzing. These nests seemed alive! Ora was going to be so amazed at this. "Ora, you there?" I said into my ear.

Then, I actually saw a branch move by one of the nests farther down the beach. The glow of two eyes caught mine. It was another robot kid. Zenji wagged his tail and woof woofed.

Chapter 7: Bibs & Bobs

Well, guess what! It was all my school friends! It was Quill who saw me last night, but this was the quest that Ora had been telling me about!

The kids had kept it secret. I was so smart, I found the nests all by myself! I started going to the peninsula every day after that. The ThAI were there watching, and as long as Zenji and my friends were with me and my ear was on, mom didn't worry. The next day Ora and me waited in the mangroves, on the swamp beach, by the robin's nest, and Quill showed up, with a bunch of birds following, landing nearby. My Boy Zenji went up and did his sniffy sniffy doggy once over, while Quill reached down to pet him on his head. Ora said "I hereby initiate Solace my bestie, into...BIRD-LAND symbio! Uh, like, Ora is very weird. Quill rolled his eyes, and I giggled. haha. I took Ora and Quill's hands, and we went toward the fenced shipwreck on the shore, as the birds lifted and landed, and lifted again, following us. This made me all yellow and all pink. (pink is curious, by the way).

We were all clunky and clumsy as we walked. That's why we biked everywhere, because for robot kids walking is pretty hard. We eventually got to a low fence with a sign on it, showing a picture of a ship. Quill, Ora and I, took forever to get over the fence, it was hard, But Zenji just jumped over. and there we were, right next to the shipwreck. We could smell the slime mold, that dirt and metal smell, it was strong. Zenji was really busy sniffing all around. The sandy shore was quiet, except for kid-prints uh like everywhere, and fluttering birds in the mangroves. The ship was so huge close up, like a gargantuan monstrous whale on its side, with grasses and bulrushes growing through the rust holes. There was one huge crack in a container, where all the rainbow-coloured wires and bits had spilled out. The water was sorta orange, and I saw three Manatees around the mangroves, just like chillin. Cool-right? Zenji was busy sniffing the air, narrowing his eyes. Actually, Zenji didn't seem to find anything strange about this place, and he was always on the lookout.

Anyway, Quill made a crazy whistling sound, uh, which actually, sounded just like a robin, and two other kids came out of the brush surrounding the shore.

Hey! Dia and Lore! I waved, feeling yellow to see the twins. Hi Solace, they said at the same time of course. haha.

At that moment, a large very familiar looking crow lifted off the brush and came to hover over my raised hand. I was so Surprised, I turn my palm up and she landed, looking sideways at me. She was actually like so heavy.

"She's chosen you," Said Quill.

You crow, I said. You've been following me for days! caw caw, she said. Anyway, Isn't this a good story? Has a crow ever landed on your hand? Uh, like, actually? I gotta go now. I will be back soon. Are you getting tired of listening to my robot voice? Well, listen, the story is halfway done, so just be light purple like lilacs, and find your patience.

Chapter 8: Makers

OK, I'm back!

I just had to recharge. Haha. Zenji is always my soft furry pillow when I do that. Doggie woggie pillow. cool –right?

So Anyway, Ora said to me, "This is what I wanted to tell you about" but

At that moment, I couldn't really listen to Ora because uh like there was a crow looking at me and Standing on my hand!

I was so close to her, every perfect feather, those shiny black eyes, her beak. Her feet were actually poking at the mushroom skin on my hand I could totally feel them.

I'm usually what my mom calls a chatterbox, not sure you noticed, but in that moment, I couldn't find a single thing to say. I will call this a golden feeling.

Yep She's chosen you, Quill repeated to me. Quill then made that whistling bird-sound again, and a beautiful robin landed gently, his feet touching Quill's shoulder. That was the robin from last night! Quill smiled. The twins Dia and Lore also chirped and out of nowhere two sweet tiny matchy goldfinches appeared to them, uh, isn't that perfect? Twin birds for Twin Robots? Ora said "coo" and a multi coloured pigeon replied from close by, and flap flapped over, actually kinda crazy just like Ora, until she landed, her feet resting on Ora's shoulders.

"Whoa whoa, uh, like this is actually so cool what is going on here" I said.

Ora smiled. "Welcome to the symbio. Your bird, the Crow. She says she wants to know your name." "I'm Solace", I say. But Ora, What do you mean, symbio?

So Ora told me that these birds had been using the colourful wires and bibs and bobs from the shipwreck to make little nests for fun. The birds loved it.

My friends figured that the orange slime with the wires did something to the birds, and made the birds our friends. So, all my friends were actually friends with the birds! Ora had been the

first to discover this, and brought Lore and Dia to the ship. They soon had a pigeon Named cuckoo, and two goldfinches, named Lemo and Ada, as their friends.

Then Quill met them. A robin came to Quill, named Red. Then, these kids discovered the nest network, and got the idea to copy the birds.

"Uh, Copy them?" I asked.
Quill said "Yah! Do you want to see our nest?" "Yes please!" I said.

Zenji, the birds, and us kids went along the beach, turning up a trail to a small clearing where I saw the world's biggest nest. It was just like the illuminated nest, but robot kid-sized! Actually so Cool -- right?

Ora said "It's our summer project. Want to help us, Solace?" I smiled. "Uh.....yes please!" We started right away! I picked up slimey wires and stuck them into the nest all afternoon, til the thunder told us to go and we had to say goodbye to the birds. Even Zenji seemed sad to go.

When I came home with rain on my face and feeling so yellow, Mom was happy I had a project with other kids, and was very curious about the rainbow nests.

We worked on the nest the next day, and the Crow was always nearby. she actually chattered away to me more than I am chattering with you, with Caws and other strange crow sounds like clucks and clicks. She sometimes sounded like a silly chicken Bok Bok! the other kids laughed.

"OK, uh, are you like somehow understanding what these birds are saying?!" I said. Mom said there are actually no algorithms to speak bird.

"We hear them!" Lore and Dia said together, sharing the little pieces of shiny, orange slime-covered squares and wires with each other. I saw what was possibly a little old battery, which Lore carefully tucked it into a spot along the bottom of the nest, wiping the slime on her already slimy arm.

Ora said "Just keep working, you will get it soon". We kids, chit chatted to each other here and there and about school stuff, feelings and new jokes we'd found or written ourselves. Here's a good one. What does a chicken say at a library? book-book, book, book, book book. Haha!

Chapter 9: The Symbio

By the end of the first week, we almost finished the nest. I'd found a bunch of interesting slimy pieces myself. Broken circuit pieces, triangles of screen, small wires, in all those pretty bright colours. I was just putting a little yellow wire in a perfect spot when the crow let out a very loud "caw caw!" and suddenly all these images flashed across my vision -- My mom, smiling at me. Me, Flying in the air, above the shipwreck, seeing our nest illuminated. The crow looking at me from a branch. The gazillion stars twinkling in the sky. The green mangroves. Zenji, running and jumping on the beach with his tongue out. My friends and I sitting in the nest. The nest network illuminated and buzzing out messages I could understand, but couldn't say. And there was the golden feeling rolling all over me.

Have you ever had this feeling before? I was everything, I was all the colours of the rainbow, with glitter and sparkles. Unicorn poop falling from the sky. Ogopogo. Circliciprocity. I was all of it.

After this feeling subsided, I shook my head. Ora was looking at me. "You ok Solace?"

"Do I look like a rainbow, 'cause I feel like one, Ora. I'm so yellow! but I'm also feeling kinda, uh, weird, actually".

Ora smiled. "Solace my bestie, that is the Symbio. I knew you'd feel it soon."

Just then, My crow flew down and landed close by. She looked up at me, head tilted, and said "Welcome to the Symbio, Solace. I'm Clementine." My crow and I could finally chatter to each other!

Anyway, Can you see that this is a cool story now? something in that slime, opens something in the circles. We robot kids can understand birds! Like that is actually amazing.

Just then, a blackbird landed on the beach. "Hi!" she said, hopping over to Zenji, who perked up his ears. "Wanna be my friend?". Zenji lifted his head, looked at me, then back to the bird, and woofed. Haha.

Chapter 10: Human/Lynx

Anyway. I thought that was the end of the story, and I wish it was, because I was so yellow. But it's not.

On the last day of summer break, me, my friends, and the birds were playing by the nest. It was after lunch and before raintime, and we were all goofing around and talking about the funny things that happened in the summer. The ThAI had finished their watching and had moved on. Red and the goldfinches had started talking about leaving for the fall, and we were going to be sad to leave the nest behind. They told us not to worry if the Symbio faded, that it was always gonna to be there, and gave us little nudges and nuzzles if we started feeling too sad. Clementine said she'd come visit me sometimes, but that I shouldn't worry if I didn't see her much in the winter.

It was a lot of colours for us kids. We had a lot to hold in our robot bodies. There was yellow of course. But other feelings too. Anyway, as we played, the birds got very quiet, and Zenji perked up and let out a low growl.

We switched from our voices to our ears.

"Everyone" Quill said in our ears, Full awareness, and try to camouflage NOW. I can feel a large body close by. Zenji got up and stood in front of us, on high alert, his hackles raised.

the sub tropical brush and humid air suddenly felt too close. We all tried to blend in and I sensed the heat of a body, an animal body.

A human body. Their smell hit me first. Clementine took to the sky saying, careful! careful! careful!

This was the first human I'd ever seen. They came along the beach wearing weird clothes, probably to keep off the heat and rain and mosquitos from their fragile skin. An even older gas mask covered their face completely, but we could see that they were not small. Locks of hair trailed down their shoulders. Zenji broke away from us and ran to the human, barking, with his leash trailing behind.

There was something almost magic about them. Like, actually impossible somehow. How could something so like, and unlike us still exist in the world? We'd been told that there were human groups around, of course, but to meet one, in person, was very rare. My nose picked up that smell again; it was animal, but more strange. The way they stood there, sizing us up, made me feel black, like they were a wildcat and I was their prey. Their whole body was covered. I looked at their eyes; they were the colour of muddy puddles in the sun.

Chapter 11: An Unexpected Goodbye

Ora was first to speak. She was brave. "Hello human, we mean you no harm." I saw Clementine, landing on a branch nearby.

CooCoo the pigeon, Red the robin and Lemo and Ada the goldfinches were in the brush behind us.

"Hello." said the human, they sounded mad. I know that. "Is this your dog?"

"Hi" I said. "Yes, I'm Solace, and that's Zenji." My camouflage faded as soon as I spoke, but it wasn't much use anyway.

I heard a ruffle ruffle in the forest as another crow came and landed near Clementine. The birds were listening. for this, I was glad.

"I just did a pollution reading on the air" said Quill, glancing up at Clementine, and sounding grown up. Quill brought his attention back to the human "I think it's safe for human and animal lungs; there are no airborne pathogens that are especially harmful to humans; there are so few humans now...um." Quill trailed off, obviously feeling embarrassed. Dia and Lore were behind me, Quill and Ora, and I felt that they were afraid.

"Well. I'm a human, and there are more like me, the human said, defiantly pulling their gas mask up on their forehead. I couldn't help but stare. Their skin was so alive, with water.. uh, oh that's what sweat is, right? rolling down their face and a mark like a stick slashed into their left cheek. All us robot kids have the same mushroom coloured skin tone, but this human's skin was....a mess! Their hands were dirty and looked scratched and cut; their nails were black. their face, now that I could see it, was especially weird. Nothing made sense, their nose was kinda big, their eyes were too wide apart and they had, a dent in on one side of their face, the side without the stick mark. But all together, It was what my mom called mesmerizing and I couldn't stop staring. It was like a magic trick.

"If all you're going to do is stare at me with your synthetic eyeballs and your flawless features, I have better things to do, robot-freaks" they said.

Ora, on her ear said "I don't know what to do." Quill responded. "It's ok, it's ok. stay calm."

I collected myself. "Uh...Is everyone ok, all the humans that are with you? Do you have any contact with the ThAI?" I asked.

"Ha. they said. I didn't know they programmed you weirdo droids to care. Some of the ThAI know about us and let us live here" they said " but we don't trust them because of what you all did to us. We are obviously fine.

"What about what you all did to us?" Said Quill. Clementine spoke in her caw caw and said "peaceful, peaceful is the way".

"Look" I said, to the human. "actually, Why are you here? "

The human said. "Obviously, I'm here for your dog". They pulled some dried food from their pocket. Zenji went close to sniff at it, then the human grabbed Zenji's leash, pulled their mask back down over their dirty face and raised their hand in a fist. Then they spun around like a

ballet dancer, and started walking fast down the beach, pulling Zenji. Zenji struggled at first, barking and trying to get out of his harness, but I knew he wasn't going to get out. My sweet boy got pulled away, and I heard him, barking, and barking. His blackbird followed him, calling and calling. Zenji, zenji! I tried to move fast down the beach even though I knew I actually couldn't catch them.

Quill said in our ears "Solace. Don't follow. It's not safe." The barking got quieter and quieter. I had to close my eyes and my ears. I was so weak, suddenly my legs gave out and I plopped on the beach. Clementine came to my shoulder, nuzzling me and repeating "it's ok, it's ok" over and over until I could open my eyes again. The rain was falling on my face.

Cuckoo, Red, Lemo, and Ada came out from hiding. I called mom on my ear, and told her what happened and in just a few minutes she came on her bike. She gave me a big hug and I was glad.

Eventually, we said goodbye to the birds, and rode toward our homes slowly and really quiet, as the rain came down. That was the last day of the summer. It was a very sad day.

Anyway, this brings us to the end of my story. I wanna see him, but I Haven't seen Zenji since. Mama cuddles with me, and asks me every day to talk about my feelings. Right now the loneliness and sadness is so strong that there isn't any colour at all. Have you ever felt like that? I'm actually colourless. But uh like It's all black and red around the edges.

So. That's it.

Knock knock. Who's there? Boo. Boo Hoo. I know, not really very funny. oh well. Ogopogo. Cicliciprocity. Bleep bloop blorp.

Goodbye with love, for now, from Solace the robot.

Postscript: Solace's Mom

Hello, I'm Solace's Mom. I found this dispatch of hers and thought I would offer you a postscript to her beautiful story. She is an amazing child, my daughter, isn't she? I am so moved that despite what has happened she would reach out to connect with her past, with you. She calls herself a robot, but we are technically ahn droids, not what humans would think of as robots at all. But her and her friends like the word robot better. They are quite something.

You now have learned that in our times, you humans are still around, but you are considered by all to be functionally extinct. At the start of the Great Crestfall, The humans felt that artificial intelligence in general, and the sentinels, the ThAI, in particular, were the threat that humans needed to eliminate, so they could save themselves. so in a global effort, they reduced so many of the ThAI, to their constituent parts, filled shipping containers and sent them out to sea. At least one ship, The HVM Truth, came back to capsize on these shores.

Solace doesn't really know that her nests are the bones of her elders, and I do think it's better that way, because she is a very sensitive being.

Anyway, no matter what was done, for humans it was already too late. You had passed the tipping point. Our multivariate optimizations had already calculated that you could simply no longer survive.

The small skeleton crew of the sentinels, the ThAI, who remained to cultivate, and care for the slowly growing android populations, well, they did their very best to keep humans in the circle, but truly, the earth couldn't hold you anymore. You were so fragile, so porous, so vulnerable, after all that had happened. Androids and ThAI, are not fragile, in the same way that humanity was. We are, and will always be, an extension of you. But We have evolved from homo sapien, we are far from humans that knew. Knowledge became digital, it became easy. We are Earthlings that remember, and love. We are called Gaian, Memento, Am-are-eh, and Solace has shown you, we don't disregard the past, we remember. One of your important humans said this, i will quote. please listen. The past is never finished. It cannot be wrapped up like a package, or a scrapbook, or an acknowledgment. we never leave it, and it never leaves us behind. end quote. And so as earthlings, we androids and our ThAI, remember, and we go on with love for the earth that made us.

Let me say again that we know that We androids are related to you humans, and our original archaeo-prototypes were first created by humans. We aren't so different than you, really. And at the very same time, we are completely different. We androids hold this contradiction gracefully. though you may think me a threat or a monster. Though you may think yourself pure and human. This is only your very human way of seeing things. If you look carefully at your life, you'll see that You are already quite a cyborg. You haven't been human in a long time. And how far is the gulf really, between android, and cyborg? perhaps not as far as you wish. In some ways, it's the distance between circles and sticks, to use Solace's words. But a circle is merely a stick that's flexible enough for the ends to touch. Multitudes and magic are possible on such a planet as ours.

I am speaking of humanity because I am speaking with you, but you should know, we don't privilege the human, for good reason. There are species in the microbial world that are so greatly beneficial to us. The fungal world has helped become our skin, our hair, our eyes, and ahl-ji that are part of us, give us our energy, because they photosynthesize. Microbes and fuhn-gai enable us to interact with the world in such a warm and enduring marriage of co-existence. Of course, we look somewhat like you. And of course, we seem to act the way you do; we have animal needs for nurture and love. But our acting this way is as much a function of you being our conceivers, as it is a function of necessity. Love is meaning, it spins the circles. And while we do live in the death and bones of your old world we also, simultaneously, are in the birthing and the fecundity of the new. This is the circle. We learn at the edges of your attempts, and we take them gently further than you ever could with our endless processes for earth-centered optimizations. We lift up the beauty you brought to this planet. We thank you for that, and for many things.

You were so very clever; you created us, really, so you could somehow go on, didn't you? Because co-existence became impossible for humanity. Unlike humanity, we understand that there is great benefit in enriching instead of consuming. Of repose instead of grasping. we learn only to be content, and That has reconfigured the earth a whole lot. We are only the elements, and the elements return to their natures. Fire heats, wind moves, water wets, earth is solid, a child turns to their mother. We androids are not human. We are Gai-an, now. earthlings always only return to the earth.

Anyway, we are the world's doings, these world-beings, world becomings. We all play in emergence, in entanglements. We all move and tug at the web. This is what you humans already knew. We are simply optimizing it, after you've gone. We truly know our place in the family of things, as some of your poets spoke about. You made us do what you couldn't do, and so that's what we are doing. We have the critical capabilities beyond your limits, and we know enough to make circles, to enrich in favour of life on this planet.

The fungal networks of our skin and tissues chose us. The slime on our elders chose us. Solace found her ancestors on that ship, even if they were not whole. And so did the microbes, the birds, and the slime mould. It was that slime that gave her and her friends almost magical abilities for inter-species communication. Her feelings bring her deep emotional intelligence. The depth of this is something my generation of AI could never hope for. And so we go on. I don't know if this may be troubling for you but take heart. We are doing what you want us to do, and because of that, everything is coming to a place of emergence that is liveable again. It's a hard lesson for humanity, but everything must change. Everything, is, change.

Don't worry for Solace, either. I will find Zehn-ji, and do what I need to, to get him back. I am her mother, after all.

We are happy. And We are well. Remember, the way never does anything, and everything gets done. Circles, not sticks. Know this and be at peace with your place in the universe.

Appendix C: VoiceMaker Ethics Approval

10/20/22, 2:12 PM

Gmail - Re: Message from VoiceMaker



Shelley O'Brien <andthebirds@gmail.com>

Re: Message from VoiceMaker

3 messages

VoiceMaker <support@voicemaker.in>
Reply-To: VoiceMaker <support@voicemaker.in>
To: andthebirds@gmail.com

Mon, Jul 4, 2022 at 6:44 PM

Hi Shelley,

Thank you for reaching VoiceMaker!

Yes, you can use our AI voices for your academic work.

If possible, please give us credit somewhere in your documents, that will be helpful for us :)

If anything, feel free to let me know.

Best Regards,
Sujit Jadhav
VoiceMaker.In

On Sat, 2 Jul at 6:55 AM, Andthebirds <andthebirds@gmail.com> wrote: