

Portland State University

PDXScholar

---

Education Faculty Publications and  
Presentations

Education

---

2022

# Plastics, Birds, and Humans: Awakening and Quickening Ecological Minds in Young Children and Their Teachers

William A. Parnell

*Portland State University, parnellw@pdx.edu*

Julianne Cullen

Michelle A. Domingues

*Portland State University, aldama@pdx.edu*

Follow this and additional works at: [https://pdxscholar.library.pdx.edu/edu\\_fac](https://pdxscholar.library.pdx.edu/edu_fac)



Part of the [Curriculum and Instruction Commons](#)

Let us know how access to this document benefits you.

---

## Citation Details

Parnell, W., Cullen, J., & Domingues, M. A. (2022). Plastics, Birds, and Humans: Awakening and Quickening Ecological Minds in Young Children and Their Teachers. *Journal of Childhood Studies*, 54-73.

This Article is brought to you for free and open access. It has been accepted for inclusion in Education Faculty Publications and Presentations by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: [pdxscholar@pdx.edu](mailto:pdxscholar@pdx.edu).

## Plastics, Birds, and Humans: Awakening and Quickening Ecological Minds in Young Children and Their Teachers

Will Parnell, Julianne Cullen, and Michelle Angela Domingues

Will Parnell, EdD, is a professor in early childhood education, department chair of Curriculum and Instruction, and a pedagogical liaison to the Helen Gordon Child Development Center at Portland State University, Oregon. His specialty areas are rethinking readiness in the early years, disrupting traditional early childhood research, creating learning designs, and documenting and making young children's learning visible. Will cofounded the Inventing Remida Portland Project and currently serves as past-president of the National Association of Early Childhood Teacher Educators and consultant for the International School of Beijing Early Years. He has coedited and authored three books: *Making Meaning in Early Childhood Research*, *Disrupting Research in Early Childhood Education*, and *Rethinking Readiness in Early Childhood Education*. His other scholarly research articles and book chapters focus on children's, teachers' and parents' lived experiences. His background includes work in lab schools, parent cooperatives, and public school settings, and he has started many schools for young children, working with architects on place making, space planning, and pedagogy in architectural design. Email: [parnellw@pdx.edu](mailto:parnellw@pdx.edu)

Julianne Cullen is a parenting education coordinator for child and family development programs in northwest Oregon. She graduated from Portland State University in 2010 with an MS degree in curriculum and instruction. Her passion is teaching staff to reveal to children and new teachers ways that we can reuse waste materials and at the same time preserve the natural environment for generations to come. She loves spending time with her four grandchildren. Her paid positions are to encourage parents' development in their various stages of parenting.

Michelle Angela Domingues' (she/ella) educational background includes a post-bac in Chicano/Latino studies, a master's in sustainability education and a doctorate in educational leadership with a specialization in constructivism in early childhood studies. She serves on the board of the Inventing Remida Portland Project and is currently a lead teacher at Helen Gordon Child Development Center, where she belongs to an antibias committee and is chair of the Just Sustainabilities committee. Michelle's research focus is leadership in early childhood ecology, culture, and learning. Her work as an adjunct instructor supports ECE practitioners to critically examine and resist historically constructed, normative views of young children, their families, schools, and communities.

*Working with educators, artists, young children, and materials to make meaning with place affected by human environmental impacts, this study zooms in on a documentary of dying birds who've swallowed plastics. The birds' habitat is an eye-opening 2,000 miles from the nearest continent and is infested with trash and plastic. The birds ingest many shiny plastic bits and slowly die. This research paper focuses in on experiences of sharing this documentary with teacher educators at an international conference, then educators in our own context, and then with early childhood artists working in reuse materials. The research captures a series of dialogues and materials interactions at each of the three gatherings about possible ways to research with young children on daunting ecological issues in perilously turbulent times.*

Working with educators, artists, young children, and materials to make meaning with place affected by human environmental impacts, this study zooms in on a documentary of dying birds who've swallowed plastics. The birds' habitat is an eye-opening 2,000 miles from the nearest continent and is infested with trash and plastic. The birds ingest many shiny plastic bits and slowly die. This research paper focuses in on experiences of sharing this documentary with teacher educators at a reconceptualist conference, then educators in our own context, and then with early childhood artist-educators working in reuse materials. This study captures a series of dialogues and materials interactions at each of the three gatherings about possible ways to research with young children on daunting ecological issues in perilously turbulent times.

**Key words:** early childhood; ecology; ethical care; reuse materials; Remida Centre Reggio Emilia

## Contexts and weaving together: Inventing Remida Portland's ethical, political, and pedagogical ethos

The context for this research study with plastics, birds, and humans is nestled inside of our Inventing Remida Portland Project (IRPP). There is a long history and making of many Remida centres around the world (Reggio Children, 2005)—the initial centre is a repository for discarded materials in Reggio Emilia, Italy, and a place for learning with reuse materials in schools for young children. Now, there are 17 named Remida centres worldwide, each with their unique point of view on bringing young children, community, culture, and families together with discarded materials to embellish and fashion works, create something together, look closely at the former and new life of tossed-away items, find and make deeper meaning in projects, locate ourselves in and through materials and their stories (Domingues, 2019), and on and on. Our IRPP centers on an early childhood master's program, an unconventional and reconceptualist full-day and full-year laboratory preschool, and our community. IRPP is reconceptualist as we attempt to refuse human exceptionalism, push out past traditional developmentalism, and attend to ethical mindsets and political actions. Our reconceptualist approaches manifest an orientation toward inquiry and questioning as we think and labour with scrap materials. With IRPP, we undertake a cultural project with the aims of reclaiming and repurposing industrial discards and educating ourselves, community, and young children on possibilities for reusing invaluable materials in classroom, school, and community projects to reduce, reclaim, and reimagine as well as reconfigure our worlds.

Our IRPP work was born out of an ethos of care: caring with planet, human, and more-than-human others. Situating ourselves in an ethos where Maria Puig de la Bellacasa's (2017) "speculative ethics" guide us, we are recalled to her pressing idea that "relations of thinking and knowing require care and affect how we care" (p. 69). Puig de la Bellacasa continues by saying, "In tune with a nonnormative approach to care as a speculative ethics, the grounds of this premise are ontological rather than moral or epistemological: not only relations involve care, care is relational *per se*" (p. 69). Activating this commitment to rigorous caring *with*, we, as early childhood teacher educators, began to question more and more whether environmental collapse was imminent. We reached for hope through asking our community to reconceptualize early childhood practices with us.

Thus, our Inventing Remida Portland ethos and practices were ignited through offering innovative and ideological community engagements—workshops—to crack open changes in our educational community's practices and foster a mindful moderation of earthly resources. IRPP conceptualizes educational projects as community based, hands on, eco-politically oriented, mind expansive, and relational with place, care, culture, questioning, and rethinking.

Our first major IRPP research project looked at connecting place culture with reuse materials and education for young children (see Parnell, Downs, & Cullen, 2017). In this study, we engaged with freshwater, farm-raised, and genetically modified fish located in our Pacific Northwest culture. We asked community educators to curate old, shiny, unused, perhaps even unloved objects from garages, drawers, shelves, and from around their homes to bring to our workshops. We referenced fashioning our shiny objects as depictions of fish in a way to honour the complex and difficult lived experiences of fish and waterways, which activates our pedagogical commitments, because, for us, to honour means to bring shape to an ethos of care and affects how we care.

This shiny fish educational project became a widely known workshop and was repeated for many years in various places around the world. Across the years of our Inventing Remida Portland Project reimaginings, we held many workshops ranging from loose-parts play with materials and a big idea topic such as engaging extended family in school reuse (Parnell, Justice, & Patrick, 2018); wind, water, and reuse; light, ice, and reuse; and so on. This labour has had many twists and turns as we have kept learning and relearning, and unlearning, in order to enact local and relevant changes in our own living, doing, and being, breathing in life to our ethos of planetary, human, and

more-than-human care.

This IRPP work has been a long and slow 10 years in the making, thus we have kept *inventing* in the name of what we do—*Inventing Remida Portland Project*. Building a conceptual framework around RE words has also helped us to foreground attitudes of care we hope to proliferate. We resist the stale, commonplace, and neoliberal words of reduce, reuse, and recycle, like postfoundational scholars around us (Liboiron, 2019; McDermott, 2016; Molloy Murphy, 2020a). Thus, we more carefully selected re- words to think with because they are more grounding and grounded in our IRPP ethos of care. For example, we continue to search and re-search material reduction, reconsumption, redemption, reclassification, rebuilding, reidentifying, reclaiming, relieving, and so on. Through these re-searching efforts, we can embody a continuous cycle of inquiry to raise awareness, change habits and practices, and remake our ecological efforts.

### Meeting the Midway Atoll islands, birds, plastics, life, and death

Travelling along side our ongoing IRPP work, we undertook a particular RE line of study that came to us via an IRPP member, meeting a documentarian of bird deaths and sharing the documentary encounter with us (explained in more detail later). The Midway Atoll islands' plastic besiege resulting in bird deaths asked us to engage this trouble—to seek to understand reawakening and *quicken*ing young children and their teachers' ecological considerations. We deliberately say reawakening because we recognize that we all already live with death, change, plastic waste, and so on, but we wondered how to put these ideas together to study with children and with the messages our planet and the more-than-human are evoking. We also add the word quickening to evoke the pregnancy sense of the word rather than the capitalistic logics of acceleration or constrained and forced time commitments. In pregnancy, quickening is the moment when fetal movements in the uterus are felt for the first time. This can be a precious and gifted moment that, here, symbolizes the pregnant mind drawing what Deleuze and Guattari (1987) aptly named “lines of flight”—that is, we hope to draw lines between our interconnected actions and the resulting degradation and death on Midway Atoll back toward a change and perhaps a rebirthing in our interconnected actions.

Further, Lorraine Tamsin (2010) informs us, “a ‘line of flight’ is a path of mutation precipitated through the actualisation of connections among bodies that were previously only implicit (or ‘virtual’) that releases new powers in the capacities of those bodies to act and respond” (p. 147). In this work, we are creating ebb and flow dialogues of actions by taking lines of flight to release new powers—searching for new entanglements. For example, for us, the concepts of developing ecological minds and experiencing quickening are such close accomplices, even as quickening seems body-embedded and primal whereas a mind evokes lofty intellect; these can be disassociated in a Cartesian sense of the mind/body divide. Releasing the powers of Cartesian dualism and humancentric thinking by seeing into lines of flight offers new tensions in the world. Early childhood scholar Candace Kuby (2017) demonstrates this concept between children and materials, saying, “Our experiences with children indicate that often it is in the moment of playing-with, becoming-with that something appears. The speaking back-and-forth-between child-and-the-materials produces newness” (p. 883). We associated this child and materials production with our IRPP workshops and resulting research.

This reawakening and quickening research was threaded through three particular venues where we collected a variety of thinking, ideas, and photography. The outpouring of data offered us an opportunity to see various narrative expressions of experiences with Chris Jordan's *Albatross* video documentary—the film that first brought the high-stakes ecology of plastic and birds in the Midway Islands into proximity with our educational ethos—and the admittedly complicated content the film raises for thinking about ecologies and care with children.

Coming across Jordan's YouTube video by way of a close friend of an IRPP member who is stationed and working

in the Midway Islands and has met Chris Jordan—an artist and documentarian travelling there—we were brought to a precipice of ecological thinking by connecting our own and our material lives to those on Midway Atoll, a group of islands situated 2,000 miles from the nearest continent. *Albatross* (<https://www.albatrossthefilm.com/>) was written, directed, and edited by Jordan. The video shares footage from within the land and the birds' eye view: birds landing, nesting, eating plastics, suffering, writhing in pain, dying, decaying, and leaving behind the plastic—often plastic bottle caps.

As teacher educators thinking to our own quickening moment, watching this video instantaneously awoke in us a question about whether we could or should share this video with young children: What would happen? What would children think? What might this mean for attuning to care, ecologies, and accountabilities within more-than-human worlds? As educators and artists, we thought we had better open this dialogue up in our own community to more closely consider how to go about this sort of community engagement where we would share such a documentary and ask co-protagonists to think together and with these questions in mind. We imagined offering a variety of venues through which we could draw lines of fight, acclimatize to care in our collective thinking and doing, and share in IRPP's pedagogical orientations together.

### **Working collectively with the birds and plastics with reconceptualist scholars**

At our first venue, a reconceptualist conference (established as part of a much larger conference) that brings together a community of early childhood teacher researchers from various parts of the world to share findings, listen in, and engage with their colleagues, we offered our research discussion engaging in the topics outlined in this paper and the video documentary. Many of the folks at the conference walk with or alongside the word *reconceptualist* as a way of being in practice and research engagement (Bloch et al., 2018). Many scholars who influence our thinking (Hamm & Iorio, 2021; Pacini-Ketchabaw et al., 2015; Taylor, 2017; and so many more) brought with them their own sense making of care and ecologies that enabled us, through IRPP, to toil in the labours of our collective quickening via showing the documentary and entangling our ethos of care through witnessing, questioning, mindful listening, and dialogue.

As a great starting point, we offered a small group of reconceptualists to re-turn to our question “Would you share Chris Jordan's video with young children and why or why not?” We did this huddled in a small corner of a quieter space off a hallway of a big conference hall with colleagues who had answered our verbal call earlier in the conference. For our allotted presentation time at the conference, we chose a public location that was very quiet—nobody passed us during this 35-minute session. After explaining the prompt to our small group of about 12 participants, we then prefaced the video by telling about what we saw inside of the video for ourselves and offered folks an opportunity to engage the video material, inviting them to respond to the video with their emotional reactions. We ended our preface by saying that we felt that the video honoured the birds and Atoll lands and that we could watch and listen in to honour them as a way to build upon our ethos of care. This was important, because we could collectively bring shape to an ethos of care while exploring ecologies; we could also consider our quickening more collectively. After viewing the video on our laptop, we then engaged the discussion openly regarding whether participants would share/show this video to young children and why or why not. Examples of findings follow in our “Exploring Findings” section below.

### **Confronting the birds and plastics with local educators**

The second venue centered on a workshop for local educators in our hometown of Portland, Oregon. At that workshop, we engaged the video, our provocation (Would you share Chris Jordan's video with young children,

and why or why not?), a hands-on activity, and discussion of what might happen if we showed and shared Jordan's documentary with young children and their families. At this venue, we invited local community educators to participate in a workshop on plastics, birds, and humans. About eight educators responded to our call and came to the open community forum we hosted in our local laboratory school's classroom space adjoining the IRPP reuse materials repository. First, as at the reconceptualist conference, we asked the question and prefaced the video showing. Then, we watched the four-minute YouTube documentary. Following this, we offered a hands-on experience whereby our own hands retrieved plastic bottle caps from a tub of water as if our hands were these birds. We reminded folks of how we could honour the birds' memories by engaging in these activities, by reawakening, quickening, and activating our ethos of care together in the process. We finished by discussing the educators' thoughts on sharing this video in their own contexts. Examples of these findings are also found in our "Exploring Findings" section below.

### **Encountering the birds and plastics with local arts educators**

The final event unfolded through a call to arts educators to explore these same ecological issues with us and examine ways to express the meaning we make of the documentary. We set up this final workshop in our reuse atelier in the Inventing Remida Portland Project. We collected tons of plastic caps and sorted and stored them in a few ways for our child and adult visitors to explore in the lab (see Figure 1).

All these separate but threaded experiences were converging between a group of artist-educators who wanted to connect with our studio, a studio teacher working with our university's sustainability offices on a new plastic bottle cap project, and a research study on plastics, birds, and humans. The bottle cap project was an undertaking on our campus to raise awareness of how the little plastic bits infiltrate our everyday, from waterways travel to ostensibly garbage on our streets. University students engaged our university sustainability movements across our campus and were at that moment preoccupied with the idea that garbage can become something otherwise—something new—if refashioned rather than discarded.

Simultaneously, those of us at the IRPP lab were bubbling up this research project around plastics, birds, and humans. We met with the early learning centre's atelierista (studio teacher), who shared that she was on a campus sustainability committee and could take in bottle caps for the plastics/birds/humans project, furthering the project's momentum by collecting materials to offer to and think with the artist-educators during their workshop. We gathered up many of these bottle caps, and the atelierista and a small group of children in a neighbouring class for 4-year-olds stored a plethora of plastic caps which they sorted as a rainbow of colours. The children wished to offer the caps for the visiting artist-educators who came to express their thoughts and feelings during our upcoming workshop (see Figure 2—the image in this figure is explained in more detail in the data below).

The participants who attended this event and engaged with our project were racially, culturally, and linguistically diverse and valuable early childhood educators, arts educators, and teacher educators. We wanted this variety of perspectives so we could interrogate with a cross-sector of early childhood folks who touch our lives and influence our local ways of thinking back in our context. Our initiative also guided us on how to ignite ecological practices in important ways, coming directly back to the IRPP's commitment to more-than-human, human, and materials' care and building an ethos around us. This perspectives taking also entangles us in the lines of flight that introduce new powers for acting and responsiveness in/through our ethos.



Figure 1. Reuse bottle cap collections.



Figure 2. Artists' rendition.

### Situating ecological problems and finding purpose and meaning

Situated in a much larger problem of planet disregard, waterways are carrying debris toward the ocean; oceans are filling with plastics (see Le Guern, 2019); plastics are being entangled around, and ingested by, animals and marine life (Choy et al., 2019; Vegter et al., 2014); and contaminants infiltrate all of our bodies (the earth, human, and animal), eroding our health and ecosystems to the point of catastrophe (Russill & Nyssa, 2009). This cycle of catastrophic contamination continues even in the face of education, awareness raising, and humans attempting to establish new human habits (Parnell, Downs, & Cullen, 2017; Shotwell, 2016). Some humans refuse to believe that such problems even exist. Many want to do something but do not know where to begin.

Influencing us greatly at the 2020 Colloquium on Responding to Ecological Challenges with/in Contemporary Childhoods in London, Ontario, Alexis Shotwell spoke about the implications of extractivism for early childhood educators. In her 2016 book, Shotwell “champion[ed] the usefulness of thinking about complicity and compromise as a starting point for action (p. 5). Shotwell aligns with Donna Haraway’s “modest yet difficult framing of situatedness as a place to start” (Shotwell, p. 5). It is within the difficult work of inheriting and responding to

complex, inequitable worlds of life and death that IRPP begins to understand the ecological problems we confront daily and in ongoing projects, including our work with Jordan's Midway Islands documentary.

As pedagogical leaders for the IRPP, we take seriously that the seemingly insurmountable tide of larger forces at play—all-consuming capitalism, colonialism, and human exceptionalism—ties to the plastic debris in Portland and in the Midland Islands, and ignites breakdown of the planet's and our own abilities to planet-care and cope with the swirling downward spiral of death and decay, even 2,000 miles from the nearest continent. Jason Moore (2017) reminds us that “the web of life is obviously larger than any one species” (p. 599). He goes on to suggest that

at stake is how we understand capitalism in the web of life—which in turn shapes emancipatory strategies. Philosophy will of course not solve the problem of capitalism's unfolding crisis and the contemporary, horrific, dangers to life. But it will be hard to develop a politics of emancipation for all life without a philosophical commitment to precisely that: emancipating all life. (p. 599)

This problem begs a question: What would happen if the planet, humans, and more-than-humans (and all life) could toil out beyond the old philosophical thinking of duality of humans and nature as separate? How might this activate IRPP's pedagogical ethos of care? How might doing so connect to an early childhood reconceptualist project that refuses universalization, corporatization, and commodification in education? How might we practice staying with the trouble, as Haraway (2016) suggests? The question of what this labour might look like and be moves us to continue to seek the trouble—of how all life might be emancipated and unshackled from neoliberal notions of perfect nowadays and futures so that we can live with the trouble, alongside of it, knowing it is there with us in the now and entangled ... So we can navigate, manoeuvre, and live within it while taking lines of flight and making space for an ethos of care.

Further, as leaders within the IRPP and its communities, we are influenced by early childhood research on place, place making, and disrobing neoliberal notions when considering early childhood in the contexts of global to local (Chawla & Cushing, 2007; Duhn, 2016, Garrard, 2010). Iris Duhn's (2016) notions of place making as political and cultural practices that are locally specific and require Indigenous knowledges and connections encourage our own seeking and working. IRPP is situated on unceded lands of more than eight Native American tribes, including the Multnomah, Kathlamet, Tumwater, Clackamas, Watlala Band of the Chinook, Tualatin Kalapuya, and many Indigenous peoples of the Columbia River. This acknowledgement is doubly important for us for both the pedagogical and decolonizing influences brought through IRPP, which stem from our situatedness. On our advisory board of 16 people, folx have brought their own Indigenous, Black, and Chicana heritages and have influenced IRPP greatly over many years, expanding our ethos of care and lived experiences in entangled and crisscrossing ways. These heritages and knowledges are entangled with one another, and with pedagogy, dialogues, massacres, the ongoing colonial tensions. This makes our work complex in perpetuity; we must interrogate our ethical-political accountability in order to open ourselves to our complicit and “assimilationist assumptions and relations ... to challenge the innocent presumptions that pervade” (Pacini-Ketchabaw & Taylor, 2015, p. 3).

Our members bring many cultural assets, as well as linguistic, cultural, and racial plurality and a multiplicity of identities (Domingues, 2019) that influence our stories, narratives, and ways of thinking, knowing, and doing. IRPP, an educational project in the making (and remaking), allows us access to communities of practice wherein educators desire dialogue and action on issues of environmental degradation, early education, and rehabilitation. We build connections together within our community and place to consider our deep and long-lasting impacts with our kin (Iorio et al., 2017). Perhaps these are ways into staying with the trouble, as Haraway (2016) proposes, as a means for attending to complexity and implication, allowing us to respond in our worlds.



And still, as an IRPP emergent community, we remain disquieted and find that what we do to educate and to foster moderation in material reconsumption and also to engender an ethos of caring means that we are still in deep places of trouble (Iorio et al., 2018). Our core project and research team stay in dialogue weekly, negotiating our space, place, philosophy, and what to do next. For example, our IRPP research team hit a crossroads as we listened to Hess and Hutton's (2019) *The Atlantic* video "Recycling Is Like a Band-Aid on Gangrene." Here we uncovered suggestions that even recycling is unhelpful—we moved to utter despair in a meeting when we walked away to go off and breathe.

Coming back together, we were aptly reminded of a visiting scholar—Natalie Jeremijenco—who presented in our community and once stated that her students came to her and asked her if they should just die by suicide since they had come to the notion that humans are at the root of the planet's sickness. In Evans (2011), Jeremijenco stated,

I've had two students independently come to me and say I care about the environment; I think I should commit suicide. Of course it's the logical extension: They'll have a smaller carbon footprint .... [It's a] whole paradigm of what we can do less of, versus what we can do and how we can make it good. (n.p.)

Jeremijenko has visited and spoken on our campus on multiple occasions and influenced our IRPP advisors and educational research and projects greatly over time. Her research into biochemistry, physics, neuroscience, and precision engineering mixed with the arts and teaching demonstrate many instances of finding ways through particular ecological problems (see <https://advance.org/meet-natalie-jeremijenko-ao-an-environmental-health-physician/> for more details). While we recognize that some of her ideology stems from and operates out of human-centered performance arts approaches, we still find that her position on encouraging interactive relations with the more-than-human gives us some new layers of hope for our own work ahead, where human actants cohabit with plastic, bird, island, and waterways actants, as we think through the following ideas.

Can we imagine a world without plastic? Max Liboiron (2019) repropose to us that "plastic is our kin, it's our relation. It's from ancestors—organic ancestors from a long time ago" (para. 10). Angela Molloy Murphy (2020b) adjoins this notion, saying, "Even when plastic discards are causing harm, they are not alien beings encroaching on a pre-existing and fixed natural world" (p. 24). Plastic is a huge problem because it takes so long to degrade; it is piling up and is becoming microscopically lodged in our, our kin's, and our planet's veins, creating mass illness. All the while, plastics can store, keep sterile, and preserve goods such as blood for transfusions. This toss-the-ball-back-and-forth perspective taking is essential to our care-building ethos and conversations in order to problematize and veer away from binary and simplistic thinking.

So, where do we go from here? What is our part to play? Oslo naturalist, philosopher, and storyteller Georgiana Keable, who has presented on research projects while in the Pacific Northwest with storyteller and Sami vocalist and composer Torgeir Vassvik, has influenced our IRPP. Martin Mueller (2017) pushes us through his works, especially through *Being Salmon*, *Being Human*. Mueller compels us to reconsider the narrative of Cartesian nature-and-human separation, reconnecting our own animal nature with empathetic understanding to regenerate something more inside of us. For us, we consider this regeneration a part of affecting how we care.

This notion relates powerfully to the thinking of early childhood scholars Fikile Nxumalo and Stacia Cedillo (2017), who state, "Early childhood education is one site where colonialist discourses that bifurcate human from non-human persist" (p. 101). They examine the romanticized ideal of the child with/in nature that implies they were meant to work together seamlessly and effortlessly with no thought to the places where children play or to the systematic erasure of peoples, places, animals, lands, and stories written into the blades of grass, sands, dirt, and the blood of so many. The weight of these atrocities is heavy. Here we believe we find lines of flight and again

more of stories in our worlds that generate complexity. The weightiness and complexity in these lived stories are important to our dialogues because they can open us to our ethos of caring in our thinking, doing, and being. We believe we must look directly at them to engage the conversations meaningfully.

Moreover, the purpose of IRPP's research is to elicit the help of children, adults, place, and birds as co-protagonists and wayfinders to reclaim and reassert alternative conceptions of waste and planet-caring together. As we looked toward professional colearning events and involving children, we planned for inspired experiences, exchanging ideas, and making these devastating and disturbing ideas visible and valued in a way to reignite Mueller's ideas of empathetic understanding in us. Mueller's notion of empathetic understanding connects to our orientations toward care and ecologies, because we can fill up our ethos of care by what Nxumalo and Cedillo (2017) state as putting "forth conceptualizations of place that aim to create movement toward unsettling the absent presences of indigeneity" (p. 103). We dare go on to say absent presences in so many devastating reoccurrences retold in stories across the world, such as in ours of Midway Atoll bird deaths from plastics in their bellies, and on and on.

So, through a series of planning workshops and an ongoing professional development series, we developed questions to begin our inquiry: What will participant-educators learn and think by experiencing how birds, plastics, and humans live and coexist? What if we resist humanist dictates of separating the human from the world and emphasize instead how we are deeply entangled with the birds and plastics? How might we create pedagogies and curriculum if we take seriously that our lives only unfold alongside the precarious lives of birds and plastics?

### **Methodology and research design: Presencing birds and plastics with narrative storytelling**

This research project utilizes a storying design and approach (Quintero & Rummel, 2014) and living *in and with* documentation (Parnell, 2011), taking a page from Burri's work as expressed in Vecchi and Guidici (2004). Narrating experiences connects to the minds and heartstrings of those engaged in the narrative exchange. Storying as an organized research approach offers meaning making and interpretation from one set of contexts and forms relationships of ideas to another set of contexts. In other words, when we hear stories of experiences we tend to think of those stories in relationship and relate them to our own backgrounds, life stories, and daily events. This idea also relates to the more-than-human worlds: When humans narrate in multispecies worlds we can take a different perspective, for example, of *looking with frog to think with frog*. The stories jump contexts, build relationships, and push into our expanding ethos of care.

In our gatherings, educators now have the capacity to share digital video, audio, and photography to strengthen, support, confound, disrupt, and give general or specific meaning (and so on) to learning for participants engrossed in a narrative stream. We often practice this storytelling and meaning-making work in what we reconceptualize as documentation and narration processes (Pacini-Ketchabaw et al., 2015; Parnell, Downs, & Cullen, 2017). David Seamon (2012) calls this deepening of learning through narratives mixed with other mediums "cross-hatching" (p. 1). We find cross-hatching useful as a tool to deepen the meaning of our multispecies narratives and documentation as we entangle photo sets and digital video and narratives. Cross-hatching relates similarly to quickening, which is a way to feel the birth of something new through the narrative, photo, and video entanglements.

### **Researchers as entangled colearners**

As researchers, we are a small group of three concerned early childhood education leaders in a mid-sized west coast city in the United States. We have entangled ourselves in ecological research practices that allow us to come and go, write together or separately, walk down tangential data paths, and forge ahead in threaded research topics

near to each of us. We come through three strands of stories and, when threaded together, find loosely or tightly woven narratives that sustain us in our process of therapeutically cocurating our ethos of care with/in the world.

The lead author of this study, Professor Will Parnell, is a teacher educator at our local state university. He works with master's and doctoral students studying in early childhood education and is currently the department chair of curriculum and instruction, working with over 100 faculty and 12 education degree and licensure programs. He maintains a deep love of RE practice and research, wanting to move in the world through an ethos of care, hospitality, and co-response-ability for shaping and being shaped by life and experiences.

Co-researcher Michelle Domingues describes herself as a mixed-race Chicana feminist. She recently graduated from our university and her doctoral studies in educational leadership focused on the multiplicity of identities through reuse materials. Michelle is currently a lead teacher in the lab school at our university. As a graduate research assistant and central protagonist in the IRPP for a good number of years while studying in her doctoral program, she found herself curious and open to the many ways of thinking, doing, and being in RE work. She also pushed at our comfort zones when she found us complacent. Michelle most always seemed eager for the experiences and open to our shared growth, change, and inquiry.

Another ongoing co-researcher, Julianne Cullen, is a parenting educator coordinator focused on grant writing for evidence-based early childhood parenting education programs through community event planning. Her master's degree at our university focused on ecology and sustainability in early childhood. She is a founding member of the IRPP and maintained very heavy lifting to get the project up and going in its momentum toward research practices. Her passion for RE creates a propelling movement toward our aims.

We all come to this reuse and Remida-inspired work with a shared focused attention on desiring connected and sustainable living solutions, and a commitment to wanting to cultivate, with children, a healthy and vibrant environment rich with more-than-human multispecies life. Importantly, we all choose our writing paths, sometimes together and at times separately depending on the stories we are engaging. Our approach to this research and writing work is collective and threaded while at times taking dissimilar directions.

### **Data collection and processing during the three events**

We kept notes of our experiences in professional and reflective educator journals, used photography and videography during meetings, and collected materials, thinking made visible, and other artifacts in the narratives. Supporting research evidence came from the artists in the form of photography and videography. Photography adds to the narration offering visual stimulus of our collected experiences.

As data is collected of these experiences, we return to how our storying process is constructed. Reminding ourselves of our former lived experiences with the fish research (Parnell, Downs, & Cullen, 2017), we continue to believe that narrating experiences connects to the minds and heartstrings of those engaged in the narrative exchange. Using our bird's-eye view approach of us engaging with the *Albatross* video we described earlier in this paper, we recognized that this narrative building would include actants beyond our participants and that their words would help us build the narratives. These actants would include the documentarian, the birds, the plastics and debris, the decay, death, the video construction, and more.

Our ongoing and collective narrative process allows us to make meaning from one set of contexts to form relationships of ideas in local or unfamiliar contexts. These lines of flight bring us back to the moments of quickening, where we come to a feeling of kicking, moving, and living inside of us. This quickening matters because it leads us to, and

reminds us of, our understanding of care, which expands our ethos. Now, we turn to the data stories and what we found as understandings.

### Exploring findings through data stories

We begin with a recap: In all three venues we hosted as part of this project, we engaged with Jordan's *Albatross*, a documentary centering the lives of birds profoundly entangled with and put at risk by plastic discards. We asked, in each session, what might happen if we shared this documentary with children—what might this open toward in our complex worlds? How might we bring this documentary into our work with children? In venue one, we connected with early childhood educators and scholars at a reconceptualizing ECE conference. In our second event, we worked with local teacher educators. Artist-researchers and artist-educators joined us for the third event.

An initial review of the stories and happenings of our events indicates that teacher educators from a variety of contexts around the globe who engaged in our first venue were more willing to share the documentary with early childhood educators and young children than educators in our own (Portland) context were (second venue). The dilemma for educators in the local Portland context stemmed from their view of the child and their thoughts and perceptions on children's developmental levels. They were unsure that children were ready to engage in and with our documentarian's video of birds dying. The artists' views (in the third venue) of children's capabilities were similar to those of educators from our own context. The artists' thoughts illustrated that they would create lessons with bottle caps and plastics when engaging children but hesitated to share the video, thinking children were too young.

This initial review of the findings points us toward early childhood postdevelopmentalists and reconceptualists who offer us a different purview on children. For example, William Ayers (2015) says that children live with us, always embedded in a messy local world wherein "every child comes to school [education] a question mark and an exclamation point. Her work after all is an assembling not only of a life but of an entire world" (p. xiii). A challenge in seeing the child in their potential can sometimes be in also seeing their power and recognizing their potential as well as the blurry life experiences and circumstances that interact with their (and all of our) being at any given time. Such experiences and circumstances influence who they (and we) are and what they (and we) know and do. This view is similar to how often materials are locked into a single-use perspective as though they cannot morph, change, and become something else over time. For example, can a bottlecap only ever be used to cap a bottle (tick boxing the rubric that says this is its use) or could it change shape, become an embellishment in an artistic rendering or find its use as a water collector for insects (leaving room for something otherwise)? These ideas go on and on into who and how children and humans perpetually become, be, unbecome, rebecome and so forth.

Further, we see developmentalism as conceptualized under the imperial gaze and patriarchal ideologies (Burman, 2017) that lead to neoliberal thinking of the binary or lock step (MacNaughton, 2000; Prioletta, 2020; and Russell, 2011 to start!). This pedagogical gaze harkens to growing toward more and to becoming the next-level version of oneself that is "better," more "sophisticated" or "civilized." But, is that what happens in real and messy life? We know that we can encounter multiple becomings of more and/or less at any given moment along the way. This is an ebb and flow of assembling and reassembling with/in lifeworlds. The roots in decolonizing and postfoundational approaches are in these notions as well (Nxumalo, 2019) and inform our IRPP pathways as well as our ethos of care. These ways of thinking are, in large part, our impetus into this very work on ecology and our particular questions for early childhood educators, artists, and teacher educators in this research study, which interacts with death and dying concepts (Nelson, 2020) and inequities of environmental education (Nxumalo, 2019).

To note, educators and artists in our own contexts asked for tissue and remarked about their own tears, sadness,

anger, and despair when viewing the video. These actions seem quite similar to what Robin DiAngelo (2018) speaks of as “white women’s tears” that stop antiracism conversations. In our context, we can look back and say that we saw this as participants’ opportunity to (re)center the human through human feelings and self-reflection. The content brought up a lot of emotions, and yet we persisted and pressed in on the narrative approaches and workshop research anyway by attending to our ethos of care and pedagogical orientation of staying with the trouble.

### **First venue: Teacher educator conference**

At the conference, which was attended by folks from various places in the world (e.g., Canada, United Kingdom, Denmark, Australia, New Zealand, Kenya, China, Korea, Japan, and so on), we shared the video and asked what these teacher educators thought of the romanticized view of young children. Should they be shielded, we asked, from this video? Why? Why not? Responses passionately poured in. Several wondered if the video was appropriate to share and worried that it was perhaps out of context. One participant stated, “I wonder if this is better shared through preparations at a community and adult level first.” Another interjected, “I think I would want parents to participate first.” Additional folks nodded their agreement. A handful of participants agreed this method would be practical: to approach the parents, guardians, educators, and adults in the lives of the children first and garner their ideas and potential support. Another participant shared, “I would show them [children]! They see this death in their everyday lives ... their lived experiences.” Another said, “Yeah, I don’t see the problem here. In our setting, children may see a dead bird in their play yard even.”

More participants shared that they were moved and felt sad while watching, and that the film not only affects children’s sensibilities but also those of adults. We came to wonder if perhaps this work needs what Peter Moss (2016) terms “a relational ethos, an ethics of care, encounter, and hospitality” (p. xiv). Moss, an emeritus professor in early childhood and longtime editor of the book series *Contesting Early Childhood*, considers relational ethos along deeply ethical lines. We also turned toward more recent works of Indigenous scholar Erica Violet Lee (2020), who shared notions of “reciprocal relationality” at her keynote on childhood climate action pedagogies. Lee’s ideas make us think *with* the connective tissues that require movements among nonhuman bodies, more-than-human bodies, and our human bodies, activating the linked realms of living and blurring experiences to expand hospitality in our encounters.

Reciprocal relationality draws us into Merlin Sheldrake’s (2020) book about fungi, *Entangled Life*, where Sheldrake shares, “Many of the most dramatic events on Earth have been—and continue to be—a result of fungal activity” (p. 4). Sheldrake goes on to explain that fungi connect networks, serving as root systems that proliferate plant life and allowing trees to communicate across networks. “This ancient association,” Sheldrake offers, “gave rise to all recognizable life on land, the future of which depends on the continued ability of plants and fungi to form healthy relationships” (p. 4). Sheldrake reveals our interconnectedness—that of Earth, more-than-humans, and humans—time and again, showing us how we are enmeshed in webs of life, experience, and relationality. We recognized that Lee’s and Sheldrake’s entanglement with/in our research not only produced a quickening in ourselves to understand why we think out beyond the linear models of child development toward relationality, interconnectedness and cooperation, but also strengthening our core ethos of care to pedagogically think and enact otherwise.

### **Second venue: Educators back home**

At our second event, our conversations with educators situated in our own context provided an important narrative thread example. A teacher, Amelia, offered her response to our question about whether she would share the documentary with young children 3–5 years of age. She stated,

In considering Froebel's perspective of the child being ready to live in the world, I think children need more time to feel safe in their own context. And, we may be deliberately altering their development if we push children out of their context of safe world and into a perspective that the world is unsafe. If we do this as educators, the child may not recover into a position of ever feeling like their world is a safe place to live.

As one of the researchers noted in their own journal writing when working with the teachers, "there were many points of view in the room and the discussion became heated after Amelia's expression." Instances such as this can be seen throughout our narrative data, indicating the different pedagogical orientations and divergent views of child development, developmentalism, and postfoundational approaches. Moreover, in reply to Amelia, one participant suggested,

Perhaps you are more of a developmentalist. This is not a philosophy I have ascribed to because, as a gay person living in a context where I was told my whole life what my sexuality should be—based on "developmental ideology"—I never fit. Is this how we *should* think about children? Are they capable of hard truths? What *does* that do to them?

Our research notes reveal that "the conversation [took] a pause and silence linger[ed] in the room for what seemed long." Hanging onto the silence, we asked folks to dig into the recycled materials at the tables, prompting them to create something to express their thinking—to make thinking and feeling visible with our material kin.



Figure 3. Making a wing to fly away.

Bird wings formed as one group discussed how to help the birds fly away (Figure 3). One person noted that she could "see the birds dive to pick up the shiny and colourful objects thinking of them as something to eat." This participant wanted to fill a bucket and have us pretend our hands were birds flying toward the water to pick up the shiny objects. She suggested that we could "teach through doing" about "how these materials may seem attractive so we would want to better care for them rather than throw them on the ground or into waterways and sewers." These kindnesses expressed

about birds flying away and teaching by doing brought us directly back to coconstructing our social ethos of care. This storyline centered on *caring for* by taking action (doing). In this particular narrative stream, we found ourselves wondering about the complexity material-reuse offered as an entanglement of thinking *with* the life of the birds' ecologies, materiality, and children. These conversations brought the room into a space held with hope for potential ways of working with young children on such difficult topics.

At this second venue, the tension rose quickly and abruptly created a silence in the room. When we turned to the materials, the tension broke, allowing for a different sort of vision to come through—a way back into working with young children. As our time continued and participants engaged with the materials, we noticed more agreement

emerge about not feeling quite ready to embark directly on sharing the video with children. Folks shared ideas such as, “I would share with the parents and ask them first.” Or, “I would share photos rather than the video to start and as a way into the discussion—a provocation, if you will!”

Such commentary in the research data led the team to reflect back on the experiences we had together with these local educators thinking with how we could cultivate children’s awareness of human and nonhuman effects of climate change. We talked about dipping our toes in big waters, where we were only part and partial, and how we could only be *part of* change agency. So many of our research and literary influences, such as Shotwell (2016), Haraway (2016), Puig de la Bellacasa, (2017) and more, also think with being partial. There is a certain aesthetic quality in relativity and in only being partial; this state of mind-being places us directly in community, engaging our ethos of care and our desire to live with and alongside nonhumans, more-than-humans, and other humans, forging connections along the way.

As we neared the end of our session, a participant encapsulated many of our narrative streams: “It seems we wax and wane between feeling powerful to make our living circumstances better and feeling powerless to make no effect at all. We probably live somewhere in between?” Puig de la Bellacasa (2017) most aptly reminds us that we care for “by situating in-between (inter-esse), not to divide, but to relate” (p. 79). In the moment of our waning time together at the workshop, we told folks of this reminder, and we decided to let that paradox of feeling simultaneously powerful and powerless linger between us as we got ready for our third set of events.

### Third venue: Artist educators

At our third venue, we worked with artists and bottle caps after a brief viewing of the video and a discussion of what we had found to date. The artist educators wished to recast the images of plastics in a way to “honour the birds,” as they determinedly stated to us. Honouring the birds became an overarching point of discussion with the artist group especially. They explained that their desire to honour stemmed from wanting to share a publicly constructed artwork that would “evoke and possibly awaken an emotional response in onlookers.” For us, this desire was another element in our ethos of care to work alongside of materials, which then would carry messages to inspire quickening. Further, knowing more fully what the pathways of our bottle caps really meant actually made us want to change our practices of doing. Our awakening here harkens us back to our friend who went to Atoll islands to enact cleanup, then met Jordan and discovered the documentary to bring back to us. Our friend’s quickening prompted us to share the documentary and inquire in our community in order to build toward an ethos where mindfulness and care center our knowing, doing, and being—creating a cyclical journey into this work.

A journal entry from a participant in this session noted that “a sense of mixed emotions and loss hung in the air. People were deeply moved, and I began to stream tears. How would we face this problem? It feels head on and headlong all wrapped into one.” Such narratives of emotional distress and sadness, confusion, and questions of what to do next bubbled to the surface. Our ability to address this question does not come through neoliberal human exceptionalisms, so instead, we asked the artist-educators to create with the bottle caps that had been purposefully prepared for them by the children in the lab as a way forward, to persist with and to live inside of these narrative experiences. We noted that, similar to the second venue, offering the materials to guide our process transformed moods, conversations, and the energy of the group’s work.

In small groups, the artists discussed, picked up materials, and moved their arms around, their voices going up and down. We, as documenters, watched, took photos, and madly wrote down some of their thoughts. The experience felt full of possibilities and weighty, both in the room and afterwards when we all looked at what we had collected along the way, almost as if trails and traces of our thinking were made visible. This expectancy brought us back to

the feeling of quickening and pushed into our thinking and feeling in the ethos of care arena.

As we hovered over each of three small groups' artistry and expressive works, we came to understand that the artists felt "deeply and catastrophically moved" as one stated while sharing a green and white skull made of bottle caps (Figure 2). "This is our death!" one exclaimed. "The skull shows us so." They had moved into despair and anger. As one reminded us, "We are these birds. The birds are us!" This declaration broke a tension, piqued our curiosity, and allowed us to think together about places of relational living—where we live in and through what one artist educator termed "hard life stuff."

We look to Robin Wall Kimmerer's (2013) thinking on this matter of living in, with, and through. Self-described as a scientist, botanist, mother, professor, and founder of the *Center for Native Peoples and the Environment*, Kimmerer influences our thinking as we come alongside her knowledge in a multiplicity of ways. Here, she counsels us:

Our elders say that ceremony is the way we can remember to remember. In the dance of the giveaway, remember that the earth is a gift that we must pass on, just as it came to us. When we forget, the dances we'll need will be for the mourning. For the passing of polar bears, the silence of cranes. (p. 383)

Kimmerer moves us toward what she terms "the moral covenant of reciprocity" (p. 384) whereby we spread out our blankets and give our gifts "of mind, hands, heart, voice, and vision" (p. 384) in order to give back to Earth and renew the world. She also moves us toward notions of hospitality, allowing us to open our hearts and minds to what can be seen as a paradox both too simple and vastly complex simultaneously in a participant's notion that "we are these birds. The birds are us!" We realize that we can carry this message forward, as Kimmerer declares, "in return for the privilege of breath" (p. 384).

### **Building understandings: Awakening and quickening**

The documenters could also feel a great sense of emotion as they looked back through the pictures and read through the documents to continue making sense with narratives. We were committed to thinking *with* and living *in* the documentation as continued relational living. One participant reminded us that "out of death can also come a new beginning. Maybe we get to be the new beginning?" This sense not only gives us hope to want to go on living but reminds us, as researchers, of a great quote from Barbara Marx Hubbard (1997). She recounts that the ocean wave comes crashing down and creates tremendous new energy at the end of its life cycle. The wave's entropy (the random disorder and deterioration) eats itself and in this process becomes something wholly different. Hubbard goes on to share that she sees this crash of the wave as the place where we can move, too.

Like through pedagogies of hope, where hope can bring lines-of-flight ways of thinking and regenerative powers for persistence, we can find an expansive sense to Puig de la Bellacasa's speculative ethics, where "relations of thinking and knowing require care" (p. 69). Significantly, in this moment of refinding care, of quickening too, we see that these relations of thinking and knowing "affect how we care" (p. 69) through persistence.

Our caring comes through the crash of the wave—which creates new energy—reminding us of Jeremijenco's potential for perseverance, and learning with and from more-than-human and human encounters. Rather than believing there is some sort of magic pill or saviour plan that will sustain us all, we seem to be embarking on a journey that *is* bigger than us and *will remain* bigger than us as we pass along our ideas and research. Thus, we become conduits of energy and ideas: actants who persist in living *in* the land and *with* one another and the more than human.



The late anthropologist and founding editor of *Environmental Humanities* Deborah Bird Rose (2017) declared for us, “At the very least, we who have not yet been drawn into the vortex of violence are called to recognize it, name it, and resist it; we are called to bear witness and to offer care” (p. G56). These are ideas that can be passed along from one to another, adult to child, child to adult, child to creek, creek to bird, and so on.

As a part of our practices of living in and with complex worlds, we can pay attention to and bring forward an ethos for caring through our workshops and a narrative-building approach whereby we bring one set of narratives to another context as hopeful and generative ways to construct moments of quickening and illuminating lines for flights. Thus, we can work to curtail our planet-disregard and perhaps find ourselves toiling at the precipice of entropy inside the cycle of the wave. This notion positions us in a place where we remember how slowly and methodically we move together with the planet—to enact reciprocity and to more authentically and purposefully engage in our work with young children and in our communities of practices.

All the while, there is a tension that asks us to pay attention to the quickening inside of ourselves—a feeling of life within us—to act as leverage, pushing us to ways of thinking, doing, being in our ecologically relational and reciprocal actions. Further, in *listening, walking side-by-side, and being with Earth, Sky, Rock, Creek, Bird, and on and on*, we can find relational footing. With relational footing, we can take more steps toward the narrative-building process that guides our research and pushes us toward places in deep care.

## Implications

Can teacher educators, families, teachers, and children work with and through our entangled meanings of birds, plastics, deaths, and humans? We do not ask this question lightly. We want to think with nonhuman, human, and more-than-human endurance and perseverance rather than with human exceptionalism.

Educators and artists in our own context searched for alternative ways to explore “the plastic problem,” as one of the artists reminded us. We found that, across our three contexts, participants wanted to thread their thinking, doing, being, and ethos of care with ours so that children could relate in solidarity with our material planet-disregard and engage with planet caring. Care matters to IRPP work because we feel there is no other way to persist in living with, through, and alongside our nonhuman, human, and more-than-human kin.

As we look *with* these findings, we stay with the care-filled question of whether this work and ethos-establishing does good in the paradigm of hyper-consumerism and planet disregard? We ask: What does it mean to reengage materials over and over (reimagine and moderate consumption) and care for and with the planet (help clean and clear waterways, and so forth) one day and one step at a time? *Living in and with ... like the documentarian with the birds, plastics, and camera.*

In reviewing this research data, we wonder if side-by-side research projects involving teacher educators, educators, artists, young children, plastics, and the more-than-human would shift the romanticism of the images of us (humans and world) as fragile and offer a new resiliency of planet-regard, helping us to stay with the trouble, as Haraway (2016) asks us to do. What will we do to be proactive together—to live in and persist in time and space when material consumption, our actions, and the presence of the materials still cause death, decay, and destruction?

We are in an unavoidable position, so how we act, teach, lead, and live are important to the IRPP ethos of care and ongoing dialogues, narratives, and work. Our threading narratives remind us of Affrica Taylor’s (2017) feminist, queer, decolonizing perspectives. She states, “The challenge now is to learn how to inherit and inhabit damaged worlds by pursuing recuperative responses *in tandem with other species*” (p. 1454, italics in original). Taylor calls

for a “low-key, ordinary, everyday kind of response that values and trusts the generative and recuperative powers of small and seemingly insignificant worldly relations” (p. 1459). This call quickens in us a message to keep the work going—to persist! Our research also replies to Taylor’s provocations by suggesting we might continue to build an ethos for caring with the more than human, children, families, educators, teacher educators, and nonhumans. Our research offers many possible avenues for investigating and fostering what Puig de la Bellacasa describes as a “speculative ethic” and our expansive ethos of care in nonhuman, more-than-human, and human contexts, connecting one story to the next in learning to inquire narratively. This is a narrative pathway that actively presences the documentarian, the birds, their lives, plastics, deaths, decay, and what is left over.

If we keep our eyes, ears, and minds open to what is possible in the narratives that animate our worlds, then our heart-centered work of planet care can lead us toward possible stories that narrate the world otherwise, paying attention to what can be considered in the worlds we inherit and create for children. This research offers a re-turning in ways of relational living with our lands, rocks, waters, Earth, and with humans, birds, and nonhuman kin.

## References

- Ayers, W. (2015). Ready or not: Learning and living [Foreword]. In J. M. Iorio & W. Parnell (Eds.), *Rethinking readiness in early childhood education: Implications for policy and practice* (pp. xi–xv). Palgrave Macmillan.
- Bloch, M. N., Swadener, B. B., & Cannella, G. S. (2018). *Reconceptualizing early childhood education and care: Critical questions, new imaginaries, and social activism—A reader* (2<sup>nd</sup> ed.). Peter Lang.
- Burman, E. (2017). *Deconstructing developmental psychology* (3<sup>rd</sup> ed.). Routledge.
- Chawla, L., & Cushing, D. F. (2007). Education for strategic environmental behavior. *Environmental Education Research*, 13(4), 437–452. <https://doi.org/10.1080/13504620701581539>
- Choy, C. A., et al. (2019). The vertical distribution and biological transport of marine microplastics across the epipelagic and mesopelagic water column. *Scientific Reports*, 9(7843). <https://doi.org/10.1038/s41598-019-44117-2>
- Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. University of Minnesota Press.
- DiAngelo, R. (2018). *White fragility: Why it's so hard for white people to talk about racism*. Beacon Press.
- Domingues, M. (2019). Identifying with Remida: Early childhood educators' experiences with reuse materials in Reggio Emilia inspired identity studies. Dissertations and Theses. Paper 5492. <https://doi.org/10.15760/etd.7366>
- Duhn, I. (2016). Making “place” for ecological sustainability in early childhood. In A. Reid & J. Dillon (Eds.), *Environmental education: Critical concepts in the environment* (Vol. 3; pp. 514–527). Routledge.
- Evans, S. (2011, January). *The most influential women in technology 2011—Natalie Jeremijenko*. Fastcompany Compass. <https://www.fastcompany.com/3016997/the-most-influential-women-in-technology-2011-natalie-jeremijenko>
- Garrard, G. (2010). Problems and prospects in ecocritical pedagogy. *Environmental Education Research*, 16(2), 233–245. <https://doi.org/10.1080/13504621003624704>
- Hamm C., & Iorio J. M. (2020). Place in early childhood teacher education. In M. Peters (Ed.), *Encyclopedia of teacher education*. Springer. [https://doi.org/10.1007/978-981-13-1179-6\\_300-2](https://doi.org/10.1007/978-981-13-1179-6_300-2)
- Haraway, D. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Duke University Press.
- Hess, T., & Hutton, N. (2019). Recycling is like a band-aid on gangrene [Video]. *The Atlantic*. <https://www.theatlantic.com/video/index/591640/recycling-plastics/>
- Hubbard, B. M. (Narrator). (1997). *Conscious evolution: The path of the co-creator* [Cassette recording]. LEC Productions.
- Iorio, J., Hamm, C., Parnell, W., & Quintero, E. (2017). Place, matters of concern, and pedagogy: Making impactful connections with our planet. *Journal of Early Childhood Teacher Education*, 38(2), 121–135. <https://doi.org/10.1080/10901027.2017.1306600>
- Iorio, J. M., Parnell, W., Quintero, E., & Hamm, C. (2018). Early childhood teacher educator as public intellectual. In M. N. Bloch, B. B. Swadener, & G. S. Cannella (Eds.) *Reconceptualizing early education and care: Foundational debates, new imaginaries, and social activism—A reader* (2<sup>nd</sup> ed.; pp. 299–312). Peter Lang.
- Jordan, C. (Director, writer, & editor). (2018). *Albatross* [Documentary film]. The Midway Project.
- Kimmerer, R. W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge, and the teachings of plants*. Milkweed Editions.
- Kuby, C. (2017). Rhizomes and intra-activity with materials: Ways of disrupting and reimagining early literacy research, teaching, and learning. In J. M. Iorio & W. Parnell (Eds.), *Meaning making in early childhood research: Pedagogies and the personal* (pp. 146–165). Routledge. <https://doi.org/10.4324/9781315297378>
- Lee, E. V. (2020). *Fish and the future: Reciprocal relations in the Lake Winnipeg watershed and beyond*. Keynote presented at “Responding to Ecological Challenges with/in Contemporary Childhoods,” London, ON, January 31.

- Le Guern, C. (2019, November). Where the mermaids cry: The great plastic tide. <https://plastic-pollution.org/>
- Liboiron, M. (2019, January 9). Anti-colonial science and the ubiquity of plastic. Reprinted from *Franknews*. <http://www.smart-development.org/news/2019/2/5/anti-colonial-science-amp-the-ubiquity-of-plastic>
- MacNaughton, G. (2000). *Rethinking gender in early childhood education*. Allen & Unwin.
- McDermott, K. L. (2016). Plastic pollution and the global throwaway culture: Environmental injustices of single-use plastic. *Environmental Justice*, 7. [https://digitalcommons.salve.edu/env434\\_justice/7](https://digitalcommons.salve.edu/env434_justice/7)
- Molloy Murphy, A. (2020a). *Animal magic, secret spells, and green power: More-than-human assemblages of children's storytelling*. Dissertations and Theses. Paper 5445. <https://doi.org/10.15760/etd.7318>
- Molloy Murphy, A. (2020b). Plastic city: A small-scale experiment for disrupting normative borders. *eceLINK*, 4(1), 14. [https://www.researchgate.net/publication/343425399\\_Plastic\\_City\\_A\\_Small-Scale\\_Experiment\\_for\\_Disrupting\\_Normative\\_Borders](https://www.researchgate.net/publication/343425399_Plastic_City_A_Small-Scale_Experiment_for_Disrupting_Normative_Borders)
- Moore, J. W. (2017). The Capitalocene, Part I: On the nature and origins of our ecological crisis. *The Journal of Peasant Studies*, 44(3), 594–630. <https://doi.org/10.1080/03066150.2016.1235036>
- Moss, P. (2016). Foreword. In W. Parnell & J. M. Iorio (Eds.), *Disrupting early childhood education research: Imagining new possibilities* (pp. xiii–xvi). Routledge.
- Mueller, M. L. (2017). *Being salmon, being human: Encountering the wild in us and us in the wild*. Chelsea Green.
- Nelson, N. (2020). Rats, death, and Anthropocene relations in urban Canadian childhoods. In A. Cutter-Mackenzie-Knowles, K. Malone, & E. Barratt-Hacking (Eds.), *Research handbook on childhoodnature*. Springer International Handbooks of Education. Springer. [https://doi.org/10.1007/978-3-319-67286-1\\_45](https://doi.org/10.1007/978-3-319-67286-1_45)
- Nxumalo, F. (2019). *Decolonizing place in early childhood education*. Routledge.
- Nxumalo, F., & Cedillo, S. (2017). Decolonizing place in early childhood studies: Thinking with Indigenous onto-epistemologies and Black feminist geographies. *Global Studies of Childhood*, 7(2), 99–112. <https://doi.org/10.1177/2043610617703831>
- Pacini-Ketchabaw, V., Nxumalo, F., Kocher, L., Elliot, E., & Sanchez, A. (2015). *Journeys: Reconceptualizing early childhood practices through pedagogical narration*. University of Toronto Press.
- Pacini-Ketchabaw, V., & Taylor, A. (2015). *Unsettling the colonial places and spaces of early childhood education*. Routledge, Taylor & Francis Group.
- Parnell, W. (2011). Experiences of teacher reflection: Reggio inspired practices in the studio. *Journal of Early Childhood Research*, 10(2), 117–133. <https://doi.org/10.1177/1476718X11407982>
- Parnell, W., Downs, C., & Cullen, J. (2017, June). Fostering intelligent moderation in the next generation: Insights from Remida-inspired reuse materials education. *The New Educator*, 13(3), 234–250. <https://doi.org/10.1080/1547688X.2017.1331094>
- Parnell, W., Justice, E., & Patrick, L. (2018, September). Engaging extended families in schools for young children. *Young Children*, 73(4), 20–27. <https://www.jstor.org/stable/26783656>
- Prioletta, J. (2020). Patriarchy in the preschool classroom: Examining the effects of developmental ideologies on teachers' perspectives and practices around play and gender. *Contemporary Issues in Early Childhood*, 21(3), 242–252. <https://doi.org/10.1177/1463949119831461>
- Puig de la Bellacasa, M. (2017). *Matters of care: Speculative ethics in more than human worlds*. University of Minnesota Press.
- Quintero, E., & Rummel, M. K. (2014). *Storying. A path to our future: Artful thinking, learning, teaching, and research*. Peter Lang.
- Reggio Children. (Eds.). (2005). *REMIDA day*. Reggio Children. ISBN: 8887960402.
- Rose, D. B. (2017). Shimmer: When all you love is being trashed. In A. L. Tsing, H. A. Swanson, E. Gan, & N. Bubandt (Eds.), *Arts of living*

*on a damaged planet: Ghosts and monsters of the Anthropocene* (pp. G51–G63). University of Minnesota Press.

- Russell, J. L. (2011). From child's garden to academic press: The role of shifting institutional logics in redefining kindergarten education. *American Educational Research Journal*, 48(2), 236–267. <https://doi.org/10.31020002831210372135>
- Russill, C., & Nyssa, Z. (2009). The tipping point trend in climate change communication. *Global Environmental Change*, 19(3), 336–344. <https://doi.org/10.1016/j.gloenvcha.2009.04.001>
- Seamon, D. (2012). *Challenges for qualitative approaches in environment-behavior research: Ideology, ethics, and understanding phenomena*. Paper presented at the annual meeting of the Environmental Design Research Association, Seattle, WA, June 2.
- Sheldrake, M. (2020). *Entangled life: How fungi make our worlds, change our minds, and shape our futures*. Random House.
- Shotwell, A. (2016). *Against purity: Living ethically in compromised times*. University of Minnesota Press.
- Tamsin, E. L. (2010). Lines of flight. In *The Deleuze dictionary* (revised ed.; pp. 147–148). <https://works.swarthmore.edu/fac-philosophy/504>
- Taylor, A. (2017). Beyond stewardship: Common world pedagogies for the Anthropocene. *Environmental Education Research*, 23(10), 1448–1461. <https://doi.org/10.1080/13504622.2017.1325452>
- Vecchi, V., & Giudici, C. (2004). *Children, art, artists: The expressive languages of children, the artistic language of Alberto Burri*. Reggio Children.
- Vegter, A. C., et al. (2014). Global research priorities to mitigate plastic pollution impacts on marine wildlife. *Endangered Species Research*, 25, 225–247. <https://doi.org/10.3354/esr00623>