

INTRA-BEING: IMPLICATIONS FOR EARLY CHILDHOOD EDUCATION

by

SHARA CHERNIAK

(Under the Direction of Stephanie Jones)

ABSTRACT

This dissertation names Cartesian binary logic underlying early childhood pedagogical encounters (Davies & Gannon, 2009) from my experiences with one early childhood education state standard and two lesson plans. Thinking with theory, I analyze these encounters with what feminist and decolonial scholar María Lugones calls *non-modern* philosophies in order to name how this logic connects to logics of control and domination. In the final chapter, (In)Conclusions, I explore possibilities for logics in ontologies of relationality instead of logics of separation and hierarchy and offer tools that could be used by teachers and teacher educators.

This dissertation is guided by the following research questions: 1) How is Cartesian logic operating in each pedagogical encounter? What might be its impacts? Towards what? For whom? 2) How is Cartesian logic connected to colonial logics? 3) What are some possibilities for living ethical relationality in pedagogical encounters?

In this study, pedagogical encounters are thought of not as teacher-centric designs but as moments having materialized through multiple dynamic (non)sentient forces.

“Thinking with theory” (Jackson & Mazzei, 2012, 2013) is a research process that begins

with theory and lets theory guide it. The theories that guide this research (e.g. René Descartes, Susan Bordo, María Lugones, Thích Nhất Hạnh, Karen Barad) emerged through material-discursive forces in my experiences in different spaces (e.g. graduate school early childhood education and feminist theory courses; reading on my own). These theories guide my inquiry and analyses of the pedagogical encounters' underlying assumptions of colonial, hegemonic logic and guide exploration of intra-being pedagogical possibilities or pedagogy assuming always already existing logics of relationality. I do this as an abolition and justice project-- a moment to moment practice-stance of naming and abolishing hegemonic practices in early childhood education with the goal of naming and living more ethical practices for our reciprocal well-being for all of us in our interdependent relations.

INDEX WORDS: decolonial, Cartesian logic, interbeing, non-modern philosophies, early childhood education

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DEDICATION

I write this dissertation for children like my brother, so that schools may see and honor your brilliance that doesn't show up on standardized tests or even on the day-to-day assignments. I also write this dissertation for all current and future teachers, may you have a resource like I had wanted when I was struggling to figure out how to teach in loving and holistic ways. May you feel empowered in your own quest for self-care and self-actualization and in supporting your students in the same, while cultivating a loving community.

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May all beings everywhere emerge from this crisis with more ethical material-discursive ways of being that honor and care for one another and our Mother Earth in our mutual co-becomings.

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CHAPTER 1

INTRODUCTION

The future is Indigenous.
-Nahko Bear

This dissertation is conceived as a project of naming and as a justice and abolition project (Tuck & Yang, 2018). It has two purposes, first, to name and problematize Cartesian binary logic and the unethical ways in which Cartesian logic may be operating in elementary schools and secondly, to foreground the commitment to learn from *non-modern philosophies* (Lugones, 2010), and inquire into how they “can be engaged to create more fair and just societies, more meaningful social movements, and robust approaches to decolonization” (Tuck & Yang, 2018, p. 150). As such, this dissertation argues that it is colonial logic and practice that has systematically worked to delegitimize always already non-modern knowledges and practices. As a foundational step in abolishing unethical practices, I seek first to name colonial logic operating in three early childhood curricular practices--which I call *pedagogical encounters* (Davies & Gannon, 2009). The concept of pedagogical encounters re-frames pedagogy from being a solely human-directed endeavor to a moment emerging through a combination of many (non)sentient forces. The pedagogical encounters I examine here are moments that stuck with me when I was working as a graduate assistant in an

early childhood teacher education program. They seemed unethical and ontologically inaccurate. I undertook this analysis to better name why.

My method of analysis has been called “anti-method” by feminist scholar Elizabeth Adams St. Pierre (2018) who is an expert in poststructural theories and post qualitative research, because it “break[s] the habit of rushing to preexisting [qualitative] research methodologies” (p. 603). Rather than trace the pre-established humanist system of qualitative research considered valid only if one follows the established protocols of collecting and analyzing data, anti-method draws on the works of French philosophers Michel Foucault, Jacques Derrida, Gilles Deleuze and Félix Guattari and describes research that begins inquiry *with theory* and lets the theory guide it. Feminist scholars have long critiqued scientific practices presenting themselves as objective and unbiased (Harding, 1991; St. Pierre, Jackson & Mazzei, 2016, St. Pierre, 2018). No knowledge is unbiased or objective. Everything is filtered through human bodies which include conditioned ways of seeing and framing. Feminist scholars such as Sandra Harding (1991) and Patricia Hill Collins (1990) then deem it more ethical to name (as much as we can) the standpoints influencing us and the ways of focusing we are choosing.

Post qualitative inquiry rethinks humanist ontology (Lather & St. Pierre, 2013; St. Pierre, 2017). While qualitative research methodology assumes a self/other binary and makes the human center and prior to established categories of qualitative research (i.e. problem, questions, literature review, methods of data collection and analysis and representation), post qualitative researchers

acknowledge that in entanglement (Barad, 2007), the researcher cannot separate themselves to be a self that makes anthropocentric decisions to linearly and systematically study the world outside of her. Instead, post qualitative researchers take the stance of early childhood education scholar Hillevi Lenz Taguchi's (2010) question, "how can we think of learning if we are not outside observers of the world but, as [feminist theoretical physicist Karen] Barad suggests, if we are rather part of the world in its ongoing intra-activity?" (p. 18). Or in other words, what does research look like if we acknowledge humans are entangled with the world in all its continuous dynamism?

The methodology for this study draws from education and qualitative research scholars Alecia Youngblood Jackson and Lisa A. Mazzei's (2012; 2013) concept "thinking with theory." Jackson & Mazzei (2012) say that thinking with theory doesn't necessarily mean we give up on qualitative methods, but rather, "make very specific assumptions about data, voice, and truth...we work the limits (and limitations) of such practices" (viii-ix). They describe this work as "plugging one text into another" (Jackson & Mazzei, 2013, p. 261) and take the concept "plugging in" from Deleuze and Guattari (1980/1987): "when one writes, the only question is which other machine the literary machine can be plugged into, *must* be plugged into in order to work" (p. 4). Jackson and Mazzei (2012) think of 'plugging in' as engaging research with many other literary machines (i.e. data, theory, previous texts they had written, conventional qualitative research books, etc.). They describe it not as a concept but as a process—a "putting to work," "a process of making and unmaking," an "arranging, organizing, fitting

together” (2012, p. 1). They say, “so to see it at work, we have to ask not only how things are connected, but also what territory is claimed in that connection” (2012, p. 1). Thus, I am interested in what happens when I read these pedagogical encounters with theories specifically euro-western philosopher René Descartes’s (1637/1998) *cogito*, feminist philosophy scholar Susan Bordo’s (2008) analysis of Descartes, feminist scholar of ethics, political philosophy and philosophy of race and gender María Lugones’s (1987, 1994, 2010) analyses, Barad’s (2007) concepts *intra-action* and *diffraction*, and Vietnamese Zen philosopher-monk and peace activist Thích Nhất Hạnh’s (1988/2009) concept *interbeing*.

Finally, I commit to learning from non-modern logic-practices as a justice project and ethical commitment-practice. Lugones (2010) uses the concept non-modern, drawing on work from Language and Cultural Studies professor Juan Ricardo Aparicio and Aboriginal Studies scholar Mario Blaser (unpublished) to refer to “such ways of organizing the social, the cosmological, the ecological, the economic and the spiritual” that resist the hierarchical oppressive logic of capitalist modernity (743). Non-modern, Lugones makes clear, is not *pre-modern*. While the logics of coloniality want to name something “past,” “ancient,” “old,” “outdated,” in order to reinstate hegemony and become the “better” thing, Lugones acknowledges that non-modern logics are always already existing alongside the colonial, just delegitimized by it. I recognize that colonial logic separates ethics, ontology and epistemology but that logics outside of the colonial recognize that those distinctions are false cuts (Walker & Cherniak, 2019) and that ethics, ontology and epistemology are intricately intertwined and

can't be pulled apart. Thus, ideologies are lived— actions always embed theory and have ethical implications— to use Nhất Hạnh's (1988/2009) phrase, knowledge and practice “inter-are,” they materialize one another. Therefore, I do not mean to present non-modern philosophies as another binary dichotomy opposite Cartesian colonial logic but rather as one of many possibilities of logic-practices that might assist us in the everyday work of decolonizing elementary education. To do so, we need all kinds of different logics, policies and practices that can do the justice work of decolonization. Ultimately, my personal offering is a focus on relationality, based on the non-modern logic-practice of living *yoga*.

Yoga is a Sanskrit word meaning “to yoke” (Bryant, 2009). The philosophy-practice of yoga intends for compassionate connection with the whole of who we are, both aspects of our own individuation and aspects of ourselves seemingly beyond our own individuations. Yoga practice often utilizes awareness of the breath as a path for yoking our attention and concentration with our interdependence on the air moving inside and outside of us, also for connecting concentration and attention with our bodies-- bringing mind, body, focus, energy and presence back together. Finally, the concept yoga connects us with the whole of who we are beyond these bodies, with the material world we can sense around us at this moment in this space, beyond this space, and with people who have come before and will come long after. Hence, I wish to inquire into living-thinking ethical ecological connections with-in “ourselves,” with “other” (non)sentient individuations (relational beings) and with our earth home, living yoga, as one justice project in public US elementary schools.

This project of naming, justice and abolition is titled *Intra-being: Implications for Early Childhood Education* because it takes an arc of naming colonial logic in early childhood education in order to abolish it and open to other pedagogical possibilities for justice-- to matter *intra-being* in early childhood pedagogy. My research questions inquire into ethical relational possibilities by drawing inspiration from Nhất Hạnh's (1988/2009) concept interbeing, and putting it in conversation with Barad's (2007) concept intra-action, to work with create a third concept, *intra-being*. While other scholars have used the term intra-being before me (e.g. Pitts-Taylor, 2016), the way I conceive of the concept has grown out of the research in this study. Specifically, I am arguing for a relational way of being in educational spaces that are encapsulated in this concept.

My use of intra-being, takes Barad's stance that we are always beings in process, intra, or "in-formation," to use in relational art and philosophy scholar Erin Manning's (2013) terminology drawing from French philosopher Gilbert Simondon., "in-formation." That is, we, and all entities, are *phenomena* being created by forces and reconfiguring in each nanosecond, as we intra-act with "other" entities doing the same (Barad, 2007). None of us are *fixed* beings merely *interacting*. The prefix "intra" denotes the dynamic forces within each presumed "entity" as well. Rather than interaction which assumes $A + B = C$, or that two distinct entities come together to form something different or move something around as a result of their bumping into one another, intra-action denotes processes upon processes. Each presumed "entity" is no more than a dynamism of forces and seeming "objects" and "subjects" emerge through forces

overlapping; entities do not pre-exist forces (Barad in Dolphijn & van der Tuin, 2012). Rather than being essentialized, “subject” and “object” do not pre-exist interactions but emerge through dynamic forces. Thus, the prefix “intra” emphasizes the continual movement of energy. In an interview with Humanities professor Rick Dolphijn and professor of Theory of Cultural Inquiry Iris van der Tuin (2012), Barad states, “Materiality itself is always already a desiring dynamism, a reiterative reconfiguring, energized and energizing, enlivened and enlivening” (p. 59). That is, materiality is itself continual movement and change, becoming, of energy mattering the material world. This is important to the study because while Cartesian logic assumes separate autonomous fixed individuals and propagates hegemonic logic, the ontology of intra assumes relational co-becomings, dynamic and fluid individuations always in flux and materializing through forces in relationship with one another. This ontological difference has different ethics-- relational beings in flux imply a response-ability (Barad, 2007) to their collective interdependence-- and also open infinite possibilities of change for justice, of which I am particularly interested in when considering pedagogical possibilities for abolition and justice in early childhood education.

The concept *interbeing* refers to the codependent web of life and materiality. Nhất Hạnh (1987/2005) writes that in Buddhist philosophy, “there is no such thing as an individual” and “Just as a piece of paper is the fruit, the combination of many elements that can be called non-paper elements, the individual is also made of non-individual elements” (p. 51). Here materiality (the paper or an individual human) is merely an emergence made possible by many

forces. For example, Nhất Hạnh describes how a piece of paper would not exist without a cloud. Because without a cloud there is no water and without water there is no tree and without a tree there is no paper. So it could be said that in fact the paper is only made up of “non-paper” elements including the cloud, water, tree, sun, logger, food the logger ate, the logger’s ancestors, and the perception of the person gazing at the paper in this moment, among others. Interbeing refers to the codependent origination of all entities. The paper and the cloud *inter-are*, says Nhất Hạnh.

I conceive of intra-being as an amalgamation of Barad’s prefix “intra” with Nhất Hạnh’s concept *interbeing* in order to center the interconnectedness of all entities and also to emphasize the dynamic forces forming all of these entities in order to see what this exploration might open up for ethical pedagogical possibilities. It is my intention that the word intra-being will create multiple possibilities for envisioning and living yoga, or ethical, nurturing and holistic connection, with all of the forces constituting us as individuations and collectively.

Living yoga is an abolition and decolonization project. Critical Race and Indigenous Studies scholar Eve Tuck and Ethnic Studies scholar K. Wayne Yang (2018) write, “neither abolition nor decolonization are philosophies. They are practical routes. Abolition and decolonization are practices” (p. 10). Of Buddhism (and speaking of his particular lineage of Vietnamese Zen Buddhism) Nhất Hạnh (plumvillageonline, 2015, September 29) says it is not a philosophy but a practical route to relieve and transform suffering. In both regards, ethics,

everyday lived processes, and wellbeing are centered. Here the ethical focus is Ethics for the ontological-- lived justice and wellbeing. According to Tuck, Yang and Nhất Hạnh, decolonizing, social justice and Zen Buddhist projects are not intellectual exercises but real life, day to day-- or moment to moment-- actions towards abolishing current systems, policies and practices that are unjust and the re-making of different systems, policies and practices toward ethical possibilities. It is within this same commitment that I situate this dissertation project, as a discourse-practice towards abolishing pedagogical moments assuming Cartesian binary logic in early childhood education and towards curating and cultivating complex, nuanced, and multifaceted and symbiotic relational discourses-ideologies-practices.

Summary of the Chapters

This first chapter provides an introduction to each chapter and an overview of the entire work. It situates this study as an abolition and justice project (Tuck & Yang, 2018) and details a personal account of my journey to this work, my commitments, and my “why” fueling this work. Specifically, I begin my inquiry into the overarching research. In the following chapter I describe the intellectual history and influence of Cartesian logic on the social sciences. Thinking with Bordo (2008), I analyze the problem of Cartesian binary logic. The next two chapters name Cartesian logic operating in three examples of early childhood education pedagogical encounters. Analyzing with feminist (Bordo, 2008), decolonial (Lugones, 2010), and non-modern (Nhất Hạnh, 1987/2005, 1988/2009a, 2001/2009b) scholars, I problematize Cartesian logic in these

encounters and connect it to colonial logic. In the final chapter, *(In)Conclusions*, I open up possibilities for alternative logics of learning theories and practices to the colonial, a logic I call differ-action-ings after Barad's (2007) concept *diffraction*. I do not position this as another binary in opposition to colonial logic. But rather, in alignment with my commitment to practices of pedagogy for justice and in the spirit of privileging non-modern ethico-onto-epistemologies (Barad, 2007), I offer it here as one playful mattering of infinite possibilities.

My Personal Journey of Desiring Holistic Education, or, 'Living Yoga,' in Schools

The Problem

This dissertation grew out of a feeling that something was amiss. As part of my work as graduate assistant in the field of Early Childhood Education, I was standing in a local public school kindergarten classroom. Students had been given a T-chart and asked to put items from the playground onto either side, to put "living things" on the left side and "non-living things" on the right. At this time, I had been studying Nhất Hạnh's lineage of Vietnamese Zen philosophy-practice and one of his quotes jumped out to me. Nhất Hạnh (1988/2009a) writes,

if you are a poet, you will see clearly that there is a cloud in this sheet of paper. Without the 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. (p. 3)

I wondered, why are we teaching young children to simplistically divide the world up into living and non-living things when, as Nhất Hạnh shows us, a

“non-living” thing like a piece of paper is intricately dependent on “living” things, like a tree. What then, are the ethical implications of teaching children to just label this piece of paper as “nonliving?” Why ask children to do this? How is it functioning? Towards what? For whom?

Simultaneously, I was in a Feminist Theories course at my university reading feminist scholars philosophizing the ways in which ideology built on Cartesian binary logic fueled the colonial project (see for example, Alcoff, 2008; Bordo, 2008; Lugones, 2010). My reading in this course animated my above analysis of my lived experiences in early childhood education settings where I saw lesson plans assume a kind of Cartesian colonial logic. I wanted to further analyze these experiences. This inquiry was the initial spark for the research investigation that is this dissertation.

Also, because in an ontology of intra-being, the “old” and “new” intra-are (Cherniak & Walker, in press), that is, the “I” that I consider myself to be is only converging dynamic forces, some that I may consider as “past.” For certainly “I” am only an emergence of the forces my various lived experiences. Thus, I narrate some of the encounters that have in-formed my becoming and my commitments to ethical, decolonial and abolitionist education, my ethico-onto-epistemological (Barad, 2007) image of thought (Patton, 2000; St. Pierre, Jackson, Mazzei, 2016) and these scholarly and pedagogical inquiries. To do this, I tell the differing tales of who my brother and I became through schooling.

Why begin a dissertation about the “more-than-human” (Taylor & Giugni, 2012; Taylor et al., 2012; Wright et al., 2012) by centering humans-- myself and

my brother? Two reasons. First I wish to show that an approach that isn't anthropocentric doesn't mean it never names the "human." Rather, what I intend is to focus on reconceptualization of agency-- not as *centered* in or initiated by the human-- but agentic forces intra-acting (Barad, 2007) differently via the dynamics of pedagogical encounters and narratives *materializing what we take to be humans*, stories, and (other) discursive and material beings. That is, I would like to examine "ourselves" and "our stories" as combinations of forces that materialize, matter, and *become* human beings, stories and lived experiences and felt affects. I wish to emphasize that ethics are always wrapped up in these processes. And so I also begin here because it roots my journey to this work and my commitments-- reminds me why I am doing it and fulfills my desire to share that transparently with the reader.

Nhất Hạnh's (1987/2005, 1988/2009a, 2001/2009b) articulation of interbeing, emptiness and *skandhas* are central to the ethico-onto-epistemological image of thought of this dissertation. Interbeing is Nhất Hạnh's illustration of the concept emptiness. Emptiness means that there is no essentialized thing in and of itself. Nothing is an independent, autonomous being. Rather, flows of rivers of energy seemingly materialize into impermanent physical and ethereal forms, that are not under human control and are dependently originated (plumvillageonline, 2015, September 29; 2018, October 5). One of the monks working with Nhất Hạnh, Brother Pháp Dung (plumvillageonline, 2019, Nov. 4) discusses the exercise of trying to find one thing that's not connected to anything else. In this way, everything is empty of an independent existence. The concept skandhas

explains the dynamism that arises as the physical and ethereal matter we see, hear, smell, taste, touch, think and of which we are aware. Skandha is a Sanskrit word often translated into “heaps” or “aggregates”—referring to combinations of forces “that make up the personality, that make up our ‘I’” (Nhất Hạnh, 2001/2009b, p. 26). Nhất Hạnh describes them as flowing rivers: “our body is not a static thing—it changes all the time” (p. 27). While he delineates five skandhas as physical form, feelings, perceptions, mental formations, and consciousness, he reinforces that no skandha can exist alone, it is intertwined with and constituted by the others—it only exists in interbeing. The imagery of rivers is important. Rivers flow, are dynamic, ever-changing currents. Thus, Nhất Hạnh says that what we consider to be a “human” is actually a river, a movement. Skandhas have also been likened to a fire, that in and of itself is impermanent- the flame will eventually seem to “die out”- but really it has transformed into ashes, smoke and the ignition of “another” spark of fire that continues the energy and so on and so forth (Siderits, 2007). I will now illustrate some material-discursive (Barad, 2007) forces through pedagogical encounters that constructed myself and my brother in different ways in our schooling experiences. I do this to illustrate why pedagogy matters, in Barad’s (2007) sense of the word, it literally becomes people, our experiences, and has ethical implications.

The Material-Discursive Forces of Schooling Constituting My Brother and I

I now wish to narrate my journey of desiring holistic education, or living yoga in schools, by analyzing how forces, in the form of pedagogical encounters, intra-acted to in-form my own and my brother’s body-minds. Over time, forces

constructed a dominant idea that my worth and value needed to be connected to external evaluation. This manifested in my performance as a straight A student all through high school. Prior to that, it manifested in anxiety pouring out of me as I cried before a spelling text out of fear I would fail in 1st grade. It also became my experience as a crisis in undergraduate school when I got my first B.

My brother, on the other hand, got C's, D's and even an F once on tests during high school and dropped out of college but I was always seeing his brilliance. From building a bowling alley with a ball return system out of our dad's scrap wood in our basement at the age of five to then creating elaborate motorized roller coasters out of K'nex as he grew older and also setting up production of his own version of a *Men in Black* (Sonnefield, 1997) video shoot with the neighborhood kids. He was alive, vibrant and creative at home but in second grade he would cry in his morning waffles dreading going to school. I perpetually wondered why the school system couldn't see and nurture my brother's talents and shine. Using my stories about myself and my brother's schooling, I analyze how the stories we tell about ourselves are connected to the stories institutions tell us. They inter-are. Nhất Hạnh (2001/2009b) writes "when conditions are sufficient, something manifests. That is what we call a formation" (p. 30). Or, in deconstructing the fabricated binary between pedagogical theory and practice, Lenz Taguchi (2010) says it this way,

Practice can be understood as a dense material-discursive mixture of events that are folded upon each other... materialisation is thus to be understood as an active ongoing process where specific notions and ideas

are not only performed but have become an embodied routine and habit in our daily practice, rendering them into a state of ‘naturalness’ and taken-for-grantedness. In these materialising processes matter and meaning are intertwined to a state where we cannot distinguish what notions shaped our bodies and motions, or how the material preconditions of our bodies, architecture or organisation of practices shaped our notions and beliefs. (p. 21-22)

In other words, the material-discursive practices of schooling became embodied in my brother’s and my material-discursive bodies and the taken-for-granted meanings we created about school and about ourselves.

Finally I describe my experimentations as a teacher desiring education via living yoga for myself and my students but feeling like I didn’t have support or quite know what to do or how to do it. From all of this is born a desire to engage in a conversation and inquiry around the ideas of a practice of seeing more and seeing more deeply, children in holistic and powerful ways and how schooling practices and policies can invite educators to recenter worth and value inside the dynamic creative nature of one’s individuation and in interbeing (Nhat Hanh, 1987/2005).

“This School Did Some Damage”

“This school did some damage,” my colleague (Walker, 2020, Feb. 21) quoted a previous student of hers. This statement tears at my heart and makes me wonder, how might schools be doing damage to different children in their stead? Material-discursive practices in school did damage to me and my brother, albeit in

different ways. Though I couldn't have necessarily articulated it at the time of pursuing my bachelor's degree in elementary education, these material-discursive becomings have been fuel for my desire to do things differently in the classroom and have inspired my journey as I was studying to become a teacher of young children and then, teaching for six years and pursuing graduate degrees. They continue to flame my fire today.

Early Childhood Education scholar Peter Moss (2014) wrote,

...I believe the stories we tell ourselves are important. It is through stories- with their images and assumptions, their hopes and fears- that 'we weave reality,' giving meaning to the world, making sense of our experiences.

Stories are highly productive in other ways, too. Not only do they shape what we think of as problems, but also how we respond to these problems, including the policies, the provisions, the practices we adopt and work with; 'they determine our direction and destination.' (p. 1)

Moss suggests that stories make up the tapestries of our personal onto-epistemologies, and I am also drawn here to think with Barad (2007), and with Lenz Taguchi's use of Barad's work, about how we are literally mattered by the material-discursive phenomena flowing through and in-forming our body-minds. So in this chapter, I tell stories, through my interpretation, my own experiences of schooling and watching my brother in his. I analyze how material-discursive practices of society and school matter our body-minds.

My Schooling Experiences

I remember in first grade, my stomach felt so sick I asked the teacher to call my mom to go home. When the teacher got my mom on the phone, my mom requested to speak with me. “Shara,” she said, “you are not sick, you are just nervous about the spelling test. Just do the best you can.” So I stayed in school and took the spelling test but something made me think, already at the age of six, that my worth and value was somehow tied to this spelling test and I made myself sick to my stomach about it. From there on, I tried to, and did, get all A’s all through my schooling years including high school, when I graduated with thirteen others at the top of our class.

We have a page with our senior pictures in the yearbook to prove it.

By the age of six-years-old, material-discourses had materialized by being in a way that associated my worth and value to depend on doing well according to external measures. I even remember attending a two week overnight horse camp for five summers during my elementary and middle school years. As I lay in the cabin’s bunk bed at night, I would say to myself how I didn’t do so well at the riding lessons that day and how I needed to do better the next day.

Then I would tell myself, “Shara, this is camp! This is supposed to be fun. You’re not supposed to get yourself worked up about how you’re doing in the riding lessons.”

But that was my onto-epistemology. Lenz Taguchi (2010) writes, Children and students can be understood to be materialised and materialising themselves into existence... We *do* our gender, class, ethnicity, etc. as a continuously ongoing process of being constituted and

constituting ourselves by a social world of discursive ideas and notions that we do not fully choose ourselves. (p. 22)

I was being constituted by multiple forces in society and in schooling that were telling me to value “getting things right” over expressing myself, just trying things, and enjoying them. I would work hard and I was most always met with my desired results until I was 19-years-old and in my first semester of the undergraduate program at the University of Michigan when I got my first B in a Spanish class.

I had loved the Spanish classes I took in high school. They were by far my favorite classes and I took courses all four years of high school, intrigued that I could understand and express myself in what seemed to be a secret code that I was learning to decode. I loved learning about the art of Salvador Dalí and Pablo Picasso and I was intrigued by the practice of going to the *discoteca*.

I loved reading surrealism literature.

The material-discourses of my Spanish classes opened up other worlds to me and I was intrigued with wanting to learn more about all the different ways people create and design systems for how they live their lives. I recognized that human beings socially constructed their worlds and experiences from the ways we design roads and traffic policies and practices, to the ways we design what clothes we wear, what we eat and when and how we play. I wanted to learn more and more about all the different possibilities of experiencing this human life and I wanted to continue my studies in Spanish. I passed out of any foreign language

course requirements I needed to take and immediately began more advanced level Spanish courses.

Then we began writing entire papers in Spanish and I got my first B.

The material-discursive phenomena of society and schooling materialized in my body-mind the onto-epistemology that because I didn't get an A, I wasn't good at Spanish. If I wasn't good at Spanish, it was no longer for me and so I should drop out and switch majors. After completing the course, I switched majors to elementary education. Lenz Taguchi (2010) suggests, "power is produced through collectively constructed discursive notions and meaning making" (p. 25). Years of dominant notions that if I got good grades, I was good, and if I got bad grades, I was bad, produced a power dynamic that made it seem "right" to switch careers. Lenz Taguchi also notes, "The individual subject cannot 'free' herself from the language and culture she is inscribed in and through her daily life continues to reinscribe herself" (p. 257). Putting Lenz Taguchi in conversation with Nhất Hạnh's concept skandhas, societal and schooling material-discursive practices inscribed the skandhas (streams of physical forms, feelings, perceptions, mental formations and consciousnesses) becoming what I took to be my sense of self and I continued to "water" them, or reinscribe them in continual in-formations of myself. In an interview with Dolphijn and van der Tuin (2012), Barad says that "... agency is not about choice in any liberal humanist sense; rather, it is about the possibilities and accountability entailed in reconfiguring material-discursive apparatuses of bodily production..." (p. 54). In a humanist scene, "I" "chose" to change majors from Spanish to elementary education. In an

intra-active sense, the material-discursive enactments produced the phenomena of the major being changed. The important point here is that the material-discursive enactments of institutions matter us. They literally enact the becoming of individuals in those spaces. We turn now to see the material-discursive becomings of my brother via narratives, policies and practices of schooling.

My Brother's Schooling Experiences

While I was a straight A student, my brother got C's, D's and even an F once on tests during high school and dropped out of college. I remember when he was in second grade, he cried in his waffles every morning dreading going to school, an institution we nicknamed Cedar¹ Penitentiary, to play with the word "elementary" because it made him feel like he was in prison. My mom, herself an early childhood educator, advocated for him and eventually moved him out of that school and to another elementary school in the district that she and my brother loved. But in high school, material-discourses continued to shape his being as someone who "was not successful" in playing the game of school. I couldn't understand why the school system couldn't recognize the brilliance I saw in him at home.

At the age of five, my brother surprised our parents by building a bowling alley with a ball return ramp system out of our dad's scrap wood in our basement.

We all went downstairs to play.

All through elementary, middle and high school, he constructed elaborate motorized roller coasters out of K'nex, converting our whole basement into a mini

¹ Pseudonym

² For more on Cartesian logic, please see Chapter 2 .

amusement park. He also built digital amusement parks on the software *RollerCoaster Tycoon* (Chris Sawyer Productions, 1999), where he had to design and run the entire property, determining which trees to cut down, which rides to build where, determining how much they would cost and if he had enough income from what he was charging guests to finance new building as well as the maintenance and upkeep of the roller coasters he already put in the park.

He determined food sales and janitorial systems.

The *Harry Potter* series (Rowling, 1997, 1998, 1999, 2000, 2003, 2005, 2007), and books about roller coasters and *Disney World* were the only books he read. But he read each thousand page *Harry Potter* book multiple times and if you asked him about any roller coaster in the world, he could tell you the name of the company that built it, what country their headquarters were in, how fast it went, how high its highest ascension was, how steep of an incline on the drop, how many loops it had, what was the fastest speed it got up to and how many G-forces it produced. I was always stunned by how he was a walking encyclopedia and how he knew so much in-depth, behind the scenes knowledge about roller coasters, way more than any average person, including, probably, the majority of his classroom teachers, had any inkling about.

Also during his middle-school-years, his interest in film and video picked up and he got the neighborhood crew of kids together and directed a project on filming his own version of *Men in Black* (Sonnefeld, 1997). They ran around the neighborhood in their black kid-sized suit jackets and pants and aimed water guns at threatening aliens. He filmed the whole production.

It was lucky that our high school could support my brother's interest in film and video via a local news station that had part of its broadcasting studio stationed at our school. It was a course one could enroll in. In this course, my brother practiced designing sets, presenting the current local news as newscasters filmed for the school and for the local residents who got this channel, to learn. He switched roles, sometimes writing the scripts and designing the sets and other times, being the newscaster, while at additional times, he was behind the scenes filming and editing the clips. He loved this class and as I see it, it was his saving grace. The material-discursive practices of the class configured in enactments that defined success in broader, and more creative, ways, that involved my brother being in relationship with people (fellow students and the community's viewing audience), materials (video camera, editing software, set production equipment) and ideas (creating scripts for telling the news) in ways that were more open-ended and expansive rather than narrow and restrictive (such as the "right" answers on a math test). We can see how the material-discursive nature of this course was more in alignment with the material-discursive nature of ways of being as a child that constituted my brother as an animated and joyful being-- the creating with scrap wood and K'nex in our basement, the creating of worlds on the computer software program, the creating of video productions with his friends. This was one of the classes in which he got an A but the real success was his sense of thriving, aliveness and wellbeing.

My brother went on to college for film studies but dropped out because the vast majority of material-discourses were too much like the material-discourses of

K-12 traditional schooling that he hated and had never found easy success or joyful willingness to play that game. When he dropped out of college he found a job contracted with a large corporation in their film and video department where he uses his interest and skills in filming and editing. Though a college dropout, my brother is now in a financially secure position and working in a job he enjoys,

Witnessing the inability of much of school to see my brother's talents and abilities and witnessing his suffering sometimes along the way, had a profound impact on me. I didn't want my brother to not like school or to not see himself as successful at it. I wanted more of school, like the news broadcasting course, to offer access to a wider range of material-discourses that allowed my brother's brilliance to shine. And I didn't want this just for my brother, I wanted this for students like him for whom the material-discourses in schooling were damaging.

The potentiality of material-discourses that allow for more possibility towards shaping our holistic wellbeing, creativity and care in our interconnected relationships, fill me with much hope and possibility. For Barad (as cited in Dolphijn and van der Tuin, 2012), "agency is not held, it is not a property of persons or things; rather, agency is an enactment, a matter of possibilities for reconfiguring entanglements" (p. 54). . Agency is the ever-changing flows of energies emerging and enacting into "subject" and "object" in intra-action. While agency is more-than-human, and more than any one discourse or material body, humans can play a role in the "refiguring [of] material-discursive apparatuses of bodily production, including the boundary articulations and exclusions that are marked by those practices" (Barad, 1999, p. 7). That is, we can notice how things

are *matter*ing (Barad, 2007)-- or what ethical effects are becoming materialized, and respond accordingly. Barad (2007) writes

each intra-action matters, since the possibilities for what the world may become call out in the pause that precedes each breath before a moment comes into being and the world is remade again, because the becoming of the world is a deeply ethical matter. (p. 185)

Ethics are embedded in the material-discursive unfoldings of life. While not having agency in Barad's sense, and while still being the enactments of intra-action, teachers and policy makers do speak and write certain discourses (and not others) and we also do put certain materials in our classrooms and lesson plans (and not others). These doings reconfigure material-discursive apparatuses of bodily production and enact different boundaries, possibilities and ethics.

This is a tale of two students both from the same family and with the same parents, the same middle and high school but numerous material-discourses, some similar and others unique, enacted our body-minds in different ways. Multiple material-discourses over time emerged in my body-mind to privilege external evaluation and being judged by others as "good" over other material-discourses enacting towards possibilities of full-bodied excitement, expression and wellbeing. . Material-discourses enacted in my brother a being who "was not school material" but nurtured his creativity ultimately through material-discourses of the field of film and editing.

A significant implication of this analysis then, is for those of us involved in education: teachers, teacher educators, policy makers, and young people, to be

in a practice of awareness of material-discursive forces and how they may be shaping ourselves and our world. This is not a one-time thing but an ongoing process of challenging material-discourses that stifle young children's evolving and expressive fullness by privileging narrow views of "success," standardization, external validation or the many other ways material-discourses may emerge children's bodies in damaging ways. The material-discursive practices of schooling are literally mattering children's and teachers' lives and our material world. In the next section I reflect on material-discourses and some ways in which they have mattered in my experimentations as a teacher.

My Experimentations as a Teacher

When I was in my studies to become an elementary education teacher, I wanted to teach in really powerful ways with progressive and holistic education but I wasn't quite sure how to support myself in doing so. When I was student teaching, I felt that the overwhelming material-discourses of the space produced a stringent and cold military-like atmosphere; privileging silence, sitting still and the completion of paperwork. I had hoped to experience material-discursive forces shaping us into active, creative expressive beings, celebrating and building on knowledges and ways of being with which we were entering the classroom (Jones et al., 2016; Moll, Amanti, Neff & Gonzalez, 1992) and enhancing diversity. I was hoping to learn ways to cultivate these material-discursive forces to center the emergence of well-being in our individuations and collectively.

When I went on to teach second grade at a public elementary school in a mountain resort town in Colorado, I was eager to try to implement powerful

reading and writing pedagogy that I was fortunate to have experienced in my undergraduate courses at the University of Michigan. The material-discourses of our elementary education English Language Arts class developed our identities as readers and writers via participating in readers and writers workshops. One of these material-discursive practices was keeping a writer's notebook. This was a small notebook that was easily portable. I carried my little square notebook and a mechanical pencil in my purse. I remember once, writing about the thin layer of fresh snow on my car and the tall wall of shoveled soot-stained snow flanking the road while I was stopped at the gas pump. In that moment, I was living yoga, yoking with the “beings” of snow around me.

Nhất Hạnh (1987/2005) writes that “interbeing” is composed of two Vietnamese words of Chinese origin: *tiếp* and *hien*. The meaning of “tiếp” is “to be in touch” and “to continue” or to make something last longer (p. 87) and *hien* can be translated into “the present time” and “to make real, to manifest, realization” (p.88). In that moment, in looking at the snow *in a certain way* I was “touching it” and in doing so, making it real in my experience. I saw how the snow and I inter-were in the experience of that moment.

I also got in touch with the paper of my notebook and the firm pencil in my hand as I wrote down what I was experiencing. This practice of living yoga -- or more holistic connection in multiple ways-- with my pencil, paper, snow, eyes, body, car, road--was a decolonial practice that put me in touch with these larger parts of myself even though we call them “individuations” of “other” “beings” “outside” of “me.” Being in this way and writing in this way are both ethico-

onto-epistemological material-discursive practices that mattered my body-mind in intimate connection and aliveness. These material-discursive pedagogies of writers workshop constructed my body-mind as an empowered writer enjoying the process of “mattering” or materializing on the page what I was “mattering” through “touching deeply with my intention” through living life.

I wanted to curate material-discursive pedagogical practices such as the one I illustrated above as I embarked on my journey as a teacher. In my second grade class, then, to cultivate yoga with the joy of reading, each student had their unique book box, just as I had experienced in that English Language Arts course. In their book box, each student had a few “just right” books that they could read most of the words and work through just one or two of their own. They also had a few “easy” books where they could read all of the words fluently and without hiccup, and finally, a few “hard” books which they couldn’t decode but which were about topics that the particular student was interested in. The student could investigate them, tell stories with pictures and practice visualizing and embodying growing into reading these books.

Each book box also had some laminated copies of familiar rhymes and poems that we had read as a group so students could reread them on their own. Also, as I was taught through the material-discourses of the scholarships of early childhood educator Debbie Miller (2002) and Early Literacy scholar Irene Fountas and co-author Teaching and Learning scholar Gay Su Pinnell (2001), my students chose their own reading spots. These were special places in the

classroom where they read from their book boxes either alone or with a partner. These might be under their desks or at the horseshoe shaped table or on the carpet.

The material-discourses of this reading practice that fostering “being in touch” with books, with the possibilities of the written word, with a peer, and with the classroom, weren’t always easily intelligible and at the time, I didn’t have the language to articulate this practice of “living yoga.” I soon learned that the school privileged other material-discursive practices of reading and writing to a workshop model, including a practice of students sitting at their desks while I met with a small group of students at the horseshoe table for guided reading instruction. Not long after, the school bought and implemented the *Literacy by Design* (Hoyt, et al., 2007) reading curriculum for grades K-5. This program included scripted curriculums for teachers. Material-discursive practices for implementing the scripted lessons included being policed to ensure we were adhering to the script.

No more reading under tables with partners.

Now, I am not sure how much children were actually decoding their books in their special places. I am not trying to say that in my second year teaching I was wonderful at curating readers workshop. I could have used a lot of support in my pedagogical practice. I wanted help to *better* facilitate readers and writers workshop. What I did not want was students to be thrust back into their seats bombarded with a scripted curriculum detached from my their lives and from my own. I wanted our pedagogical encounters with books, stories and the written word to be grounded in our shared and unique lives, to be meaningful, to be

inspired by our lives- from what we were living, what more could we delve into, question, experience, explore, inquire about? I wanted school to be like this and I was inspired by the pedagogies I had experienced in my undergraduate studies. I knew this way of connecting with literacy, with each other and with ourselves was possible.

Instead, the material-discursive practices of the scripted curriculum created cuts that narrowed the scope of possibilities for creative and interconnected becomings for students and myself. In thinking of interbeing as *tiep* (getting in touch) and *hien* (materializing in the present moment), the scripted curriculum provided few material-discursive forces with which to get in touch which limited possibilities of our mind-body becomings. Rather than the vibrant and joyful experiences of intra-acting with a variety of texts, topics, peers, and classroom spaces, the material-discursive forces of the scripted curriculum felt dull and stifling. As Lenz Taguchi (2010) says, intra-active pedagogy acknowledges the kinds of discourses and materials in the environment because they constitute the body-mind becomings of the people in the space and thus, what learning becomes possible. In this ethico-onto-epistemology, “knowledge [is] phenomena;” it is “material-discursive materialisations, that is, meanings negotiated in the material world within a material and discursively embodied being; for example the child or the [teacher]” (Lenz Taguchi, 2010, p. 37). Therefore the material-discursive resources teachers and students have access to matter because they literally create us.

The program script used vocabulary, topics and stories that were not connected to my students' interests, cultures or lived experiences but it was implemented by the school under the assumption that this was the better way to teach students how to read and to measure what they had learned. These assumptions operate on the idea that if the subject matter is narrowed (and the teacher's words are provided for them), then it's easier to make sure students have learned what they are "supposed to." This belief has as its basis an ethico-onto-epistemology very different from intra-action. It assumes learning as a commodity, a fixed thing that can be deposited into children and repeated back (Freire, 1970). But an understanding of learning as material-discursive intra-actions helps us see that learning is not solely a cognitive function within the child, nor is it a commodity that can be deposited from teacher to child to then be reproduced by said child. Lenz Taguchi (2010) writes, "learning does not simply take place inside the child but is the phenomena that are produced in intra-activity" (p. 36) of the child who is of the world. As Barad (2007) writes, "we don't obtain knowledge by standing outside the world; we know because we are *of* the world. We are part of the world and its differential becoming" (p. 185). Thus knowing, being and ethics cannot be separated or pulled apart. While the material-discursive becomings of students in a readers workshop may be vibrant or even messy, the material-discursive effects of a scripted literacy lesson that is distant from your lived experiences may cause a student to feel not enough, as if they "should" be "getting" this dominant vocabulary, culture, way of being in the world. Lenz Taguchi (2010) says it this way,

That which will eventually materialize as learning is dependent on what we say to children, how we encourage them or limit their possibilities to further investigation, how we organize the schedule for play or investigating processes, what materials we offer them, during what timespan and in what environments, etc. (p. 38)

Thus, the material-discursive practices students do and do not have access to literally matter-- they materialize as learning. Readers workshop and scripted curriculums have different material-discursive forces that each engender certain possibilities, potentialities and limitations. If we pedagogues and policy makers are not careful, full of care, and awareness, practices can make realities that marginalize, oppress and cause violence. As Lenz Taguchi (2010) writes, “The child becomes, in a specific sense, what it learns, in a steadily ongoing flow of material-discursive events” (p. 39). The discursive-material boundary articulations of what to prioritize, include, or dismiss matter because they create what the children become. While scripted curriculum may “work” for some students in the sense that they may be able to parrot back to the teacher the “correct” definition of a vocabulary word, for example, pedagogues and policy makers must ask, is this the ethics and ontology we want the youngest members of our society to embody? Do we want the material-discursive processes of a scripted curriculum to create children to embody the idea that this arbitrarily selected knowledge is supreme and if you can regurgitate that on a test, then you are a “good” person, as my own body-mind had learned from the narrative of schooling, and if you can’t, like my brother was told, you are “bad?” And what

about how the scripted curriculum is creating the body-mind of the teacher-- valuing sameness and regulation and regurgitation (Jones & Woglom, 2016)? All of this assumes a Cartesian logic that I discuss further in the subsequent chapter. So even if some students experience “success” with this scripted curriculum, they are being engendered by material-discourses that ultimately may set them up for failure by establishing an arbitrary external locus of evaluation and worth.

Looking for opportunities to teach in a way where a holistic curriculum was valued, I started to apply for positions to teach elsewhere. Right after graduating from college I had lived in Málaga, Spain, hired by Andalucía’s government to co-teach English language classes with the school’s English language teacher as *Auxiliar de Conversación*. Because I had always loved the Spanish language, and had been eager to learn more about different cultures, I had jumped on this opportunity to combine teaching elementary school with my love for Spanish and my desire to learn from different ways of organizing systems and life. I had loved this position but then had come back to start teaching in Colorado after my year contract ended.

During my search, I looked on the *Idealist* website (“Idealist,” 2020) and found a 5 and 6-year-old teaching position open in the Dominican Republic. I didn’t know anything about the Dominican Republic except that the national language is Spanish.

I applied for the job and had a phone interview.

I learned that the administrators of the school valued project-based learning and I told my friend and colleague, “If they offer me the job, I’m going!”

They did offer me the job and I went.

Together, Kimberley Hernandez (the 3 and 4-year-old teacher), and I both valued pedagogical encounters where students could play, explore and create as beings *of* the world. Lenz Taguchi (2007) quotes Barad, “knowing is a matter of part of the world making itself intelligible to another part” (2007, p. 185). So one way we decided to support children in learning through being *of* the world was to construct a play area with and for our 3 to 6-year-old students. This project was rich in generative material-discursive intra-actions for students, families and our community. Young children drew up their own plans for play structures, experimenting with different designs. They wrote a letter to a local business asking for donations of old tires to climb on. A parent of one of the students in the class was a builder, and he agreed to help us with the actual construction. Kids, teachers and families spent a few days building a see-saw, swing set and jungle-gym.

I love this pedagogical encounter because it was school and more-than-school. As beings *of* the world, we wrote, drew, discussed, talked about shapes, measurements, forces, materials, desires. We used the power of the written word to invite local businesses into collaboration and we dug holes with the earth, sawed with wood, and nailed with hammers to construct a swing set and a see-saw, that we could continue to play on and learn about forces and motion via the intra-being of the swing and our bodies. We changed our schoolyard and the material-discursive pedagogical encounters changed us as individuals, a classroom community and a larger town.

The following year, Kimberly Hernandez and I had the opportunity to open our own small preschool focused on children ages three to six. And so *Puentes Early Learning Institute* was born. At Puentes we co-directed and co-taught the classes, Kim the 3 and 4-year-olds and myself the 5 and 6-year-olds. Now, in our own space, we were completely calling the shots, we were autonomous in our curriculums, we could create projects, we could totally teach the way we wanted. I focused on emergent projects that came from our everyday lived experiences and the children's interests about spiders and hatching chicks. We wrote in our writers notebooks and read under tables and still, I knew I had much to learn as a pedagogue. I felt I could have gone into more depth to have richer experiences and that I could have been more skillful in the structures I was creating that would support this in-depth and rich inquiry. I decided that I wanted help nurturing my pedagogue self and that the nurturing I wanted was to go to graduate school.

Now fortunate to be here in graduate school, this dissertation is my inquiry into learning in intra-being with young children, some support I wish I would have had when I began teaching elementary school. I define intra-being as a continual process of becoming through forces that materialize beings. Intra-being combines Nhất Hạnh's mutually constituting concept interbeing and Barad's dynamic concept intra-action. My commitment in doing this work is as an abolition and decolonial project, work that is done not just through theorizing but through *living* abolition, or the deconstruction of colonization in our schools. I began this process by showing how schools can do damage through material-

discursive forces that affect us in our intra-being. In this chapter, I demonstrated how material-discursive pedagogical forces influence students' becomings, illustrating this through narratives of schooling experiences of my brother and myself. In Chapter 2, I continue my abolition project by living decolonization through naming the scholarly and intellectual history of Cartesian logic and think with feminist scholars to demonstrate how Cartesian binary logic is linked to colonial logic. I do this to set up a space to discuss in later chapters how pedagogical encounters assuming Cartesian binary logic have oppressive material-discursive effects on students' body-minds.

CHAPTER 2

THE PROBLEM OF CARTESIAN BINARY LOGIC: NAMING THE INTELLECTUAL AND SCHOLARLY HISTORY OF THE CARTESIAN SUBJECT AND LOGIC WE'VE TAKEN AS NORMATIVE

Feminist physicist Karen Barad (2003) writes, “Liberal social theories and theories of scientific knowledge alike owe much to the idea that the world is composed of individuals—presumed to exist” (p. 803). We can trace this assumption of a world made up of individuals and its influence on the field of social sciences to 1637 when French philosopher René Descartes (1637/1998) establishes the *cogito* with his phrase, “--*I think, therefore I am*--” (p. 18). Descartes proposes that all he can be sure of is that he doubts, and in this doubting, he is thinking. Thus he philosophizes that the only thing he can know to be true is that he is a thinker. He continues, “From this I knew that I was a substance the whole essence or nature of which is simply to think, and which, in order to exist, has no need of any *place*, or depends on any *material thing*” (1637/1998, p. 19, emphasis added). This independent thinker then, who needs no place or material thing, is separate from the body, senses and emotions; an independent autonomous rational “I” distinct from the materiality of everyone and everything.

Descartes (1637/1998) privileges reason over every other faculty. He writes, “For finally, whether awake or asleep, we should never allow ourselves to

be persuaded except by the evidence of our reason. And it is to be observed that I say ‘of our reason,’ and not ‘of our imagination’ or ‘of our senses’” (p. 22).

Further privileging the thinking mind, Descartes christens it as the top faculty of understanding. This Cartesian logic is what feminist, critical race, decolonial and epistemology philosopher Linda Martín Alcoff (2008) calls the

epistemological tradition that has been dominant in Western philosophy since Descartes or, on some readings, since Plato. This tradition—which has encompassed Cartesianism, mind-body dualism, a mirror theory of representation, scientism, and certain incarnations of positivism-- has had significant oppressive effects. (p. 714)

In other words, it may be argued that Cartesian logic, emphasizing dualism, has dominated social sciences for nearly the last 380 years. In this chapter I do two things, 1) I discuss the intellectual contributions of Descartes in the field of social sciences and 2) I investigate some of the critiques of Descartes made by feminist and decolonial scholars.

Intellectual Contributions of Descartes in the Field of Social Sciences

While psychologist David N. Robinson (2008) suggests that Descartes has been misunderstood and the dumping of blame on Descartes is unfair, nonetheless dominant interpretations of Descartes’s philosophy in the social sciences have been influential to the field. Psychology and qualitative research scholar Svend Brinkmann (2018) situates Descartes’s philosophy in the study of the mechanical natural science that was trendy during Descartes’s lifetime, showing how Descartes himself was influenced by astronomer Galileo Galilei’s idea that

everything in nature can be described in mathematical terms. This set the stage for perceiving a quantifiable reality (ontology).

Robinson (2008) demonstrates that in concluding that the only thing he can trust is his thinking, Descartes creates two distinct substances, *res cogitans* (internal thinking) and *res extensa* (the outer material world) and extends upon Plato's idealism to mean that we really know only what is going on in our internal world, *res cogitans*. Brinkmann (2018) writes, "as such, 'thinking things,' humans are detached not only from the world of extended things, which they know only through their representations of the outer world, but also from their own bodies" (p. 38). Descartes's philosophy separates and isolates thought from materiality and creates a mind/body and subject/object binary. It emphasizes rationalism, that is using reason to arrive at conclusions while rejecting the senses as they were seen to inhibit true knowledge. Descartes also connects this transcendent reasoning mind with God. In the 1600 and 1700s, empirical euro-western philosophers John Locke, George Berkeley, and David Hume also assumed binary paradigms but focused on empiricism- that is, knowing the material world through measuring it with the senses (Brinkmann, 2018). With Descartes, the mind is what created the world. With the empiricists, the external material world exists as truth and can be known via the senses.

Binary logic has a long history in euro-western thought. Psychology and neurobiology scholar Be Pannell (2015) attributes binary logic within the western world not to Descartes or Plato, but first to Parmenides in 550 BC when he positioned "is" and "is not" opposite one another (p. 12). She claims that the

Greek Eleatic tradition espoused by Parmenides later influenced euro-western philosophers Plato, Immanuel Kant and Descartes. Feminist sociology scholar Oyèrónké Oyèwùmí (2008) demonstrates that “The much-vaunted Cartesian dualism was only an affirmation of a tradition in which the body was seen as a trap from which any rational person had to escape” (p. 164). Descartes’s continuation of binary thought in western philosophy, as Oyèwùmí sees it, permeates the larger field of social science.

Philosophy professor Christia Mercer (2017, September) writes that in Descartes’s day many considered his philosophical proposals about the radical difference between mind and body implausible and unoriginal.” Mercer demonstrates that euro-western philosophers Thomas Hobbes’, Baruch Spinoza’s and the now largely unknown, Kenelm Digby’s, ideas of the material body were just as impactful as Descartes’s ideas at the time. Mercer suggests that Descartes was also accused of sampling ideas from other philosophers and demonstrates how future philosophers like Immanuel Kant dismissed Descartes’s ideas. So, Mercer (2017, September) asks, how has a dominant narrative of Descartes as having constructed the modern philosophy we have known for the last almost 400 years been created and sustained?

She credits euro-western philosophers Georg Wilhelm, Freidrich Hegel and Arthur Schopenhauer with initiating this depiction by referring to Descartes as the “father of modern philosophy,” arguing that it was in the 1800s when this narrative of Descartes as having invented “the modern self” emerged and became a dominant story. It was at this time that the so-called “Enlightenment period” of

the 1600 and 1700s became upheld as prominent-- as the “Age of Reason” and highlighted Descartes, Galileo and Francis Bacon as authorities during this socially constructed dominance of scientism, technological advances and capitalism (Cannella & Viruru, 2004). Mercer argues that the narrative attributing Descartes as the “father of modernism” continued to be told and reinforced in the 1900s by philosophers like Ernst Cassirer and Étienne Gilson.

Indeed, Descartes’s intellectual contributions have been significant in the fields of philosophy and social science. His cogito equated knowing with being, created a dichotomy between mind and body, between mind and corporeality or materiality. In the next section, I think with feminist philosopher Susan Bordo (2008) and scholar of ethics and decolonial feminism María Lugones (2010) in order to analyze aspects of Cartesian logic and demonstrate that Cartesian logic is connected to colonial logic- it paves the way for hierarchy and dominance.

Feminist and Decolonial Scholars’ Critique of Descartes

In this second section I break down Descartes’s cogito into different parts, including: 1) Seeking total understanding: Equating knowing with thinking 2) Separation and binary logic, 3) Privileging of thought, 4) Myths of objectivity, 5) Myths of purity, 6) Transcendence and representation, and 7) Practices of control and order. In breaking down the cogito into each of these aspects, I seek to follow Bordo’s (2008) thinking in showing how Cartesian logic becomes a colonial logic-- a logic of oppression, domination and violence.

Seeking Total Understanding: Equating Knowing with Thinking

Bordo (2008) describes how in his work *Meditations*, Descartes (1637) constructs a logic of what she calls absolute understanding, purity, separation and transcendence. Bordo (2008) notes that the “fantasy of absolute understanding, of course, motivated Descartes” along with “the possibility of *pure* thought, of *pure* perception” (p. 672). Because Descartes doesn’t think it possible for finite intelligence to grasp the whole, he determines that knowing requires separating and dissecting. Thus, the invention of an independent autonomous ‘I’ thinker becomes severed from everything and everyone else. Descartes (1637/1998) writes:

Thus what I had in mind was that I was aware of absolutely nothing that I knew belonged to my essence, save that I was a thinking thing, that is, a thing having within itself the faculty of thinking. Later on, however, I will show how it follows, from the fact that I know of nothing else belonging to my essence, that nothing else really does belong to it (p. 51)

Descartes concludes that his thoughts (internal) are separate from the external material world and that only his thoughts are pure. Thus, Descartes’s image of pure perception requires separation from everything that is not the mind, everything that is impure. Bordo (2008) argues that this was a “historical movement away from a transcendent God as the only legitimate object of worship to the establishing of the *human intellect* as godly, and as appropriately to be revered and submitted to -- once ‘purified’ of all that stands in the way of godliness” (p. 676). Learning and knowing becomes synonymous with thought: “To comprehend something is to embrace it in one’s thought; to know something

it is sufficient to touch it with one's thought" (Descartes as quoted in Bordo, 2008, p. 685). Thought as godly and distinct from everything else means that, for Descartes, knowing depends on thinking only; emotions, senses, and intuition are irrelevant and even get in the way of obstructing the mind's clear knowing.

Separation and Binary Logic

For Descartes (1637/1998), "we must have a distinct concept of corporeal nature" because mind and body "truly are that are really distinct from one another" (p. 54). Absolute understanding necessitates purity and purity necessitates separation because nothing can be grasped as a whole, thus mind and body become two separate entities-- a pure mind and an impure body. Bordo (2008) argues that Descartes's quest for purity:

demands the disentangling of the various objects of knowledge *from* the whole of things and beaming a light on the essential separateness of each-its own pure and discrete nature, revealed as *it* is, free of the 'distortions' of subjectivity. (p. 672)

Cartesian logic then necessitates division and categorization, essentialized parts. Descartes grounds this mind/body binary logic in his construct of unextended thinking, which he called *res cogitans*, and opposed it to non-thinking extensions, called *res extensa* (Saez, 1999, p. 306). Only the *res cogitans*, or internalized thinking, is sustained by God (Saez, 199, p. 311) while *res extensa*, the body, as Descartes externalized it, is the "corporeal' passion'" diametrically opposed to the *res cogitans*' "'spiritual' reason'" (Saez, 1999, p. 312). *Res extensa* has been influential in subsequent western theories of matter (Coole & Frost, 2010) and

empiricism. English mathematician, physicist and astronomer Isaac Newton took up Descartes's philosophy in the development of his classical physics, still privileged today:

Descartes defined matter in the seventeenth century as corporeal substance [res extensa] constituted of length, breadth, and thickness; as extended, uniform and inert. This provided the basis for modern ideas of nature as quantifiable and measurable and hence for Euclidean geometry and Newtonian physics.

According to this model, material objects are identifiably discrete; they move only upon an encounter with an external force or agent, and they do so according to a linear logic of cause and effect. (Coole & Frost, 2010, p. 7)

Descartes's res extensa is external, detached matter that can be measured and manipulated. The consequence of this thinking of objects as outside and passive, paves the way for beings to become considered as "not me," objectified "others" to then be seen as "predictable, controllable, and replicable" (Coole & Frost, 2010, p. 8). This leads to "a sense of mastery bequeathed to the thinking subject: the *cogito* (I think) that Descartes identified as ontologically other than matter" (Coole & Frost, 2010, p. 8). Matter is characterized as passive, stable and fixed, while Descartes's thinking subject is ontologically entirely different: "rational, self-aware, free and [a] self-moving agent" (Coole & Frost, 2010, p. 8). This logic of separation and binaries is what Lugones (2010) characterizes as modernity. She asserts, "Modernity organizes the world ontologically in terms of atomic, homogeneous, separable categories" (p. 742). In other words, this is a logic-practice that sees the world as substances consisting of particles and

separates and divides them based on ideas of similarity. Lugones (2010)

conceptualizes what she calls

the modern, colonial, gender system as a lens through which to theorize further the oppressive logic of colonial modernity, its use of hierarchical dichotomies and categorical logic. [She] want[s] to emphasize categorical, dichotomous, hierarchical logic as central to modern, colonial, capitalist thinking. (p. 742)

Thus Lugones names the binary system of gendering bodies as repressive modern, colonial and capitalist logic that creates hierarchies and unjust power dynamics. I argue here that these same practices apply to other aspects of the so-called material world. This material world can only be known by our “pure thought.”

Privileging of Thought

In Cartesian logic, thought is constructed as rational intellect and is considered the only pure epistemological mode at the expense of bodily, affective, emotive and intuitive knowing. Descartes believes the body interferes with the mind’s ability to perceive clearly, as he writes, ““The body is always a hindrance to the mind in its thinking”” (as quoted in Bordo, 2008, p. 681) and, “The mind must be gradually liberated from the body: it must *become* a ‘pure mind’” (as quoted in Bordo, 2008, p. 682). In this sense, it is necessary for the mind to separate from the body in order to become unblemished and to know absolutely. Bordo (2008) sees Descartes’s *Meditations on First Philosophy* (1641/1998) as a sort of instruction manual to obtain this ‘pure understanding’ via disassociation from the body. She writes that *Meditations* “Prescrib[es] rules for the liberation

of mind from various seductions of the body, in order to cleanse and prepare it for the reception of clear and distinct ideas” (p. 682). Bordo (2008) argues that “[Descartes] was offering a program of purification and training- for the liberation of *res cogitans* from the confusion and obscurity of its bodily swamp” (p. 683). She continues,

While dualism runs deep in our traditions, it is only with Descartes that body and mind are defined in terms of mutual exclusivity. For Plato (and Aristotle), the living body is permeated with soul, which can only depart at death. For Descartes, on the other hand, soul and body become two distinct substances. The body is pure *res extensa*- unconscious, extended stuff, brute materiality. ‘Every kind of thought which exists in us,’ he says in the *Passions of the Soul*, ‘belongs to the soul’ (HR, I 332). The soul, on the other hand, is pure *res cogitans*- mental, incorporeal, without location, bodiless: “... in its nature entirely independent of body, and not in any way derived from the power of matter’ (*Discourse*, HR, I, 118).” (p. 684)

Thus, Bordo argues that while other western strands of philosophy separated mind and body, it was Descartes who completely severed them and named them separate autonomous entities-- the mind pure and related to the soul, the body-- savage, inert substance. Alcoff (2008) demonstrates the effect of this severance of the mind from the body and the subsequent legitimization of the mind-- meaning white patriarchal knowledge-- and delegitimizing knowers deemed to be associated with body, emotion or nature:

The mind-body dualism and disembodied conceptions of objectivity found in the Cartesian tradition of epistemology work to undermine women's ability to claim knowledge given their socially constructed association with the body, emotion, and nature-- elements that are considered more of a hindrance than a help in the achievement of epistemic justification. The tyranny of this subject-less, value-less conception of objectivity has had the effect of authorizing those scientific voices that have universalist pretensions and deauthorizing personalized voices that argue with emotion, passion, and open political commitment (p. 711).

This unequal power dynamic denies women, and peoples of other silenced social and cultural groups, the ability to be knowers and presents itself as "universal, unbiased and objective" knowledge. Lugones (2010) acknowledges the implications of this logic not just in devaluing women's knowledge but also the knowledge of colonized peoples. In binary logic, all ways of knowing and knowers outside of Cartesian white european masculine rationalism are rejected. These knowledges and knowers become narrowly represented if not completely silenced.

In this way, Descartes's philosophy has contributed to the euro-western construct of the philosophical binary separation of ontology and epistemology-- ontology becomes *res cogitans* -- or the externalized passive material world that can be observed, measured, quantified and documented. The assumption of a physical world separate and outside of humans gives rise to the practice of empiricism which assumes "A researcher (the subject) studies the world (the

object) to know it (this is the epistemological project called empiricism)” (St. Pierre, Jackson & Mazzei, 2016, p. 102). Empiricism as a theory of knowledge (epistemology), for Descartes becomes a method of purification for knowing.

Myths of Purity

Descartes’s association of the mind with godliness and purity, Bordo (2008) argues, leads him to construct an “entire system [that] is devoted to circumscribing an intellectual arena which is pristinely immune to contamination” (p. 676). She argues that his *Meditations* defines his methodology to purify the mind from all other non-thought sludge:

For the Greeks, then, there are definite limits to the human intellect. For Descartes, on the other hand, epistemological hubris knows few bounds. The dream of purity is realizable during one’s lifetime. For, given the right method, one can transcend the body. This is, of course, what Descartes believed himself to have accomplished in the *Meditations*. (Bordo, 2008, p. 684-685)

This methodology to obtain purification as Bordo (2008) notes requires “a ‘relocation’ of all threatening elements ‘outside.’ They become *alien*” (p. 676). For Descartes, “Error is not extinguished, but excluded; it is conceptualized as belonging outside an inner circle of purity, in this case, the godly intellect” (Bordo, 2008, p. 676). Therefore Descartes upholds the intellect as a clear, pure realm, “a mirror that is impossible to smudge” (Bordo, 2008, p. 676). Error, then is relegated to any faculty other than the intellect (i.e. emotion, body, intuition), to all that is outside of intellectual purity: it is othered, it is ungodly, it is wrong.

This assumes an objective world out there to know -- to either represent correctly, or misrepresent; that is, to know correctly, with the pure intellect, or to error with interference from the body or emotions. The purification of understanding leads to a passivity of the subject to the “correct knowledge” which then leads to transcendence. None of this is imminent, relational, creative or a process of unfolding. Rather, the knower of “correct knowledge” has been purified of all ‘inessential’ spiritual associations and connections with the rest of the universe, the clear and distinct idea is both compensation for and conqueror of the cold, new world” (Bordo, 2008, p. 685). Thus the pure intellect is able to know the static world waiting to be known and also to overcome and take control of it.

Objectivity, Transcendence and Representation

Descartes then makes objectivity essential to knowing. For the knower to be pure in their knowing they must be neutral and rational, free from bias, including any emotional and physical taints:

Devoid of any substantive connection with nature, with others, and with maternal sources of life, the Cartesian human finds its support outside life [transcendent]; after all, the God that conserves me at every moment of my existence is outside life. Conversely, corporeal nature (including the flesh) can be explained, in its nature and its movements, mechanistically, and therefore as being not human. (Saez, 1999, p. p. 311)

Thus the goal is godly, clear, pure, absolute transcendence from the material impure erring world. The cleansed mind now paves the way for the fabrication of “pure” or “objective” knowledge, or in other words, knowledge outside

subjectivity, history and politics. The Cartesian knower, as Bordo (2008) describes,

being without a body, not only has ‘no need of any place’ (Discourse, HR, I, p. 101) but actually is ‘no place.’ He therefore cannot ‘grasp’ the universe- which would demand a place ‘outside’ the whole. But assured of his own transparency, he can relate with absolute neutrality to the objects he surveys, unfettered by the perspectival nature of embodied vision. He has become, quite literally, ‘objective.’ (p. 685)

This transcendent essence then sets the stage for objectivity as it is outside of any place. It is the bird’s eye “view from nowhere.” It serves to perpetuate Cartesian logic which maintains the dominant power structures and therefore reproduces the same colonial, white/Anglo patriarchal agenda. As Bordo (2008) notes,

For these ‘privileged representations’ to reveal themselves, the knower must be purified, too- of all bias, all ‘perspective,’ all emotional attachment. And for Descartes, this necessarily involves the transcendence of the body, not only of the ‘prejudices’ acquired through the body-rule of infancy but of all the bodily distractions and passions that obscure our thinking. The *Meditations*, I propose, should be read as providing a guide and exemplar of such bodily transcendence. (p. 672)

Women, children and colonized peoples who are deemed too passionate, emotional or embodied, are cast outside the ability to be knowers. Bordo (2008) further analyzes how myths of objectivity became the grounds for the privileging of science and mathematics, associating knowledge with the “quantifiable”:

Arithmetic and geometry are natural models for the science that will result; for as Descartes says, they ‘alone deal with an object so pure and uncomplicated, that they need make no assumptions at all which experience renders uncertain’ (Regulae, HR, I, 5). (p. 672)

In addition to empiricism which I have discussed, this logic leads to the rise of scientism and positivism-- research paradigms that deem it possible to control and manipulate the outside objective world in order to “know” it. Feminist, poststructural theory and post qualitative research scholar, Elizabeth Adams St. Pierre (2012, 2015) has long written about how scientism-- social scientists falling into the dominant narrative that “valid” research matches the methods of the privileged “hard” science disciplines, and positivism-- philosophy dismissing metaphysics, deeming that knowledge is only valid through mathematical, logical and observable verification-- have as their foundational assumption Descartes’s cogito- the idea that the mind and body can be separated. Both assume that there is a “natural” “objective” world of laws and properties that an outside observer can come to know through the correct techniques. St. Pierre (2015) discusses how Descartes’s separation and elevation of mind over body “institute[s] science as philosophy’s goal with epistemology at its center (p.140).” The idea of an objective world that can be known by a transcendent disembodied mind and “accurately” represented is now poised to create a human that can manipulate, order and control an inert world. As St. Pierre (2012) writes, “that everlasting mind/body binary enables other violent binaries” (p. 138) and in the next section I discuss the destructive tendencies/potentials of Cartesian logic.

Practices of Order and Control

It has been well discussed by scholars how european, western, modern philosophy in the tradition of Descartes, seeks to control. Feminist (e.g. Bordo, 2008; Mercer, 2017, Sept. 25; St. Pierre, 2015) and decolonial (e.g. Ani, 1994; Fanon, 1963) scholars have theorized the process from binary logic to hierarchization, to control, stemming from Cartesian dichotomies and the ways in which they have been used to rationalize and justify european imperial and colonial projects and the institutions of chattle slavery and capitalism. As Frantz Fanon (1963) writes, “The colonial world is a compartmentalized world” (p. 3). That is, colonization operates on foundations of separating, dividing and hierarchizing.

Bordo describes Descartes’s logic as “intellectual separation, demarcation, and *order*” (Bordo, 2008, p. 673). Quoting sociologist Richard Sennett who studies cities, labor and culture, she shows how the concepts of separation, purity and control are related to one another in Cartesian logic: Descartes’s quest for purity causes him to create an organization of order in which

the ‘purification urge’ - toward ordering the world according to firm, clearly articulated categories permitting of no ambiguity and dissonance-- as ‘the desire to be all-powerful, to control the meanings of experience before encounter so as not to be overwhelmed.’ Against any possible threat to that organization, strict rules against mixing categories or blurring boundaries must be maintained. The ontological order must be clear and distinct. (p. 673)

Bordo (2008) further expresses how the Cartesian quest for a purified and godly knower paves the way to become “conqueror of the cold, new world” (p. 685). That is, with an ideology of a “me” that is pure and a “not me” you that is not pure, external, controllable and conquerable.

In this chapter, I do the work of setting up an understanding of the long, impactful legacy of Descartes’s intellectual influence on the social sciences. Thinking with Bordo, Lugones and others, I illustrate how Descartes’s cogito-- equating knowing with being-- creates a binary logic that becomes a colonial logic-- a logic of hierarchy, control and oppression. I also illustrate a feminist and decolonial critique of his work in order to, in the subsequent chapters, name implications of the dominance of the Cartesian subject and logic seeping into all aspects of early childhood education. In the next chapter I use these analyses to make the argument that Cartesian logic is embedded in early childhood education curriculum and pedagogy-- specifically, I analyze a pedagogical encounter (Davies & Gannon, 2009), a Georgia (USA) kindergarten science state standard constructing a living/non-living binary as an example.

CHAPTER 3

CHALLENGING THE LIVING/NON-LIVING BINARY

White supremacy, capitalism, colonialism all work to render the rocks, cliffs, trenches, continents, tectonic plates as things that can be acted upon, claimed, owned, extruded, mined, fracked, and burnt — rather than as beings that act mutually upon us and everything around us, reciprocally stretching through folds of space and time to carve out the very realities that manifest this existence (or existences).

-Zoe Todd (2018, November 7, para. 12)

Oceanographer Samantha Joye (2019) stated, “I’ve always known rocks are alive. They are ecosystems.”

After all, here we are, existing, because we all call a big rock home.

Yet, in schools the idea that matter is separated into categories of living and non-living, such as in a Georgia Kindergarten state science standard (Georgia Department of Education, 2016, March 31), teaches students to fragment and elevate lives over what is deemed as “the non-living.” Thinking with feminist philosopher Susan Bordo (2008), and what feminist decolonial, ethics, political philosophy and philosophy of race and gender scholar María Lugones’ (2010) calls *non-modern* scholarship, I ask what this state standard, grounded in Cartesian binary logic, values, and how it may function in students’ thinking-being and as a reinforcement of logics that undergird capitalist exploitation. As an alternative ontological model, I think with feminist theoretical physicist Karen Barad and Vietnamese Zen monk-philosopher-peace activist Thích Nhất Hạnh to create concept *intra-being* which suggests that the idea of a living/non-living binary is impossible in this relational ontology and more importantly, it offers a different ethical valuation of

relationality with one another and the larger world. I use this standard as one specific example of seeing how Cartesian logic is operating in order to make a larger claim that this logic is underlying many policies, practices and curricular documents in our institutions of early childhood education.

Context

Over the last six years I have been fortunate to be a graduate assistant in the Department of Educational Theory and Practice at The University of Georgia. In my assistantship work, I have gotten to work with pre-service teachers in the Early Childhood program in different contexts, including in university seminars and in K-5 classrooms in local public schools during practicum and student teaching assignments. Over this time I paid attention to pedagogical encounters (Davies & Gannon, 2009), or teaching-learning moments, in which our body-minds are being reconfigured through, and simultaneously reconfiguring, dynamic forces at work in the material-discursive field. That is, we become different through the material-discursive forces we have access to and we also, through our very being, differ the material-discursive spaces we are in. Davies and Gannon invoke the concept of pedagogical encounters in order to recenter the fact that these encounters are not anthropocentric meaning they are not constructed solely by humans and that humans are not at the center, or the superior actants in these events. Rather the events emerge through forces within (in)animate beings becoming materializable, or possible. Throughout this time, I noticed a living/non-living construction emerging in multiple pedagogical encounters. For example, it arose in university seminars with students talking about a unit of study around “living things” in their preschool or kindergarten placements. Some undergraduate students created lesson

plans around the theme and standards. Other times I experienced lessons featuring them in local elementary classrooms. I will introduce key concepts to frame where I am going with my argument and analysis. Then I will illustrate a pedagogical encounter assuming this Cartesian binary logic. Finally, I will have a section at the end about the implications for revisioning an early childhood education space that is more in line with Barad, Nhật Hạnh, Lugones and Bordo.

Binary Logic Assumed in a Kindergarten State Science Standard

My intention in this chapter is to demonstrate how Descartes's binary logic manifests in pedagogical encounters and is connected to colonial logic. To do this, I critique this Georgia Kindergarten state science standard that assumes a constructed "living" and "non-living" binary dichotomy:

Table 1: Georgia Standards of Excellence, Kindergarten Science Standard

SKL1. Obtain, evaluate, and communicate information about how organisms (alive and not alive) and non-living objects are grouped.

a. Construct an explanation based on observations to recognize the differences between organisms and nonliving objects.

b. Develop a model to represent how a set of organisms and nonliving objects are sorted into groups based on their attributes (Georgia Department of Education, 2016)

This standard constructs two categories: a "living" group and a "non-living" group. As we saw in the previous chapter, this binary construction assumes the need for "substances essentially distinct one from the other" (Descartes, 1641/1996, p. 5). This separation gives rise to the mythology that somehow this categorization creates a

disentangling of the various objects of knowledge *from* the whole of things and beam[s] a light on the essential separateness of each- its own pure and discrete nature, revealed as *it* is, free of the ‘distortions’ of subjectivity. (Bordo, 2008, p. 672)

So arises the idea that there is a “living” group that is “pure” and has its own “discrete nature” and a “pure” “non-living” group that has *its* own “discrete nature.” Students are required to identify the “essential” “pure” “differences” distinct in each of these categories. Following St. Pierre (2015), I argue this living/non-living binary becomes another “violent” binary to add to her list which includes such binary divisions such as man/woman, culture/nature, rational/irrational, discourse/material, theory/practice, epistemology/ontology, subject/object, human/non-human. As discussed in the previous chapter, this binary logic paves the way for hierarchical logic-- the valuing of one category of the other which then makes possible acts of dominance and oppression, thus the link of binary logic to colonization.

In this chapter, I critique the binary logic underlying this particular state standard by exploring the following research questions:

- (1) How does this standard maintain and perpetuate binary and hegemonic perspectives?
- (2) What are the ethical assumptions presumed by this standard? What are ethical implications of educational systems that require children to adopt binary/Cartesian thinking?
- (3) What are the pedagogical implications of this binary assumption?

(4) What are implications for re-envisioning an Early Childhood Education space that is more in line with relational logics?

I first revisit my use of the concept *intra-being* that I introduced in the first chapter in order to think with it as an alternative relational logic to the Cartesian. Intra-being combines the prefix *intra* from Barad's concept *intra-action* and *interbeing*, Nhất Hạnh's concept. Intra-action differentiates from interaction because interaction assumes two separate bodies joining and impacting one another. Rather, intra-action assumes the "lack [of] an independent, self-contained existence" (Barad, 2007, p. ix). Individuals do not exist within their boundaries as conventionally thought. Instead, "individuals emerge through and as part of their entangled intra-relating" and are neither fixed nor stable but "are iteratively reconfigured through each intra-action" (Barad, 2007, p. ix). In other words, dynamic forces and energies engender forms of beings we perceive but also that these forms are actually dynamic actions, movements, flows, "reworkings" (Barad, 2007, p. x). In this way, I find the term "individuation" (Manning, 2013) useful, because it emphasizes that the entities we perceive as "individuals" are actually relational beings-- their seeming forms always arising through movements of energies configuring and reconfiguring (Barad, 2007) and are never separate but always entangled. Again, to re-quote Barad (2007), "to be entangled is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence. Existence is not an individual affair. Individuals do not preexist their interactions" (p. ix). Rather, "we" individuations are always in the process of being constituted and

reconstituted, of becoming. And we never arrive. We perceive individuations as individuals with our eyes. But individuations are not separate, complete entities in and of themselves, but are arising through forces that are all entangled, interwoven and interdependent.

Nhất Hạnh's concept interbeing means that everything is in everything else. It describes a Buddhist philosophical idea of dependent origination. Nhất Hạnh (1988/2009a) writes, "everything is in here in this sheet of paper. 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" (p. 4). Any individuation we can name as a manifested entity is in fact only made up of forces that we would classify as other individuations. And if we look into those individuations, we see they are made up of forces constituting we might call other individuations. He continues, "To be is to inter-be with every other thing. This sheet of paper is, because everything else is" (p. 4). Thus being *is* interbeing. I choose being in order to foreground our matter and I combine it with Barad's intra in order to emphasize the dynamism of energies and forces constituting individuations.

Finally, I use the concept ethico-onto-epistemology (Barad, 2007) because rather than make artificial Cartesian cuts severing ethics, being and knowing, a philosophy of intra-being acknowledges that they are inextricably intertwined, they are infused with each other. Being always already is saturated with knowing and knowing is saturated with being. Both are never divorced from ethics. This concept, thus, enables me to point out all are intricately woven together and rather

than a Cartesian ideology which imagines distinct cuts of each “pure” and “homogenous” from the other (Bordo, 2008; Lugones 1994), they intra-are - or are made up of one another.

In the following portion of this chapter, I illustrate my experiences in a kindergarten classroom where students are asked to fill in a T-chart dividing the world into “living things” on one side and “non-living things” on the other. Thinking with feminist, decolonial, and what Lugones (2010) calls non-modern scholarship, I ask how might this state standard be functioning in terms of teaching children binary and hegemonic perspectives connected to logics that undergird capitalist exploitation. Finally, I explore intra-being pedagogical possibilities. I look at other states’ standards to see if they assume a Cartesian binary or relational ethico-onto-epistemology. I explore oceanographer Samantha Joye’s (2019) statement, “rocks are alive; they are ecosystems” through the use of photographs. Lastly, I relate an educational encounter in which elementary aged children are asked to “look inside a cookie” and name all of the beings that make up the cookie. While the cookie would be deemed “non-living” in a living/non-living binary, in an ethico-onto-epistemology of ecosystem, or intra-being, such a binary becomes impossible and we are offered a different ethical valuation of relationality with one another and the larger world.

Living/Non-living Things T-Chart

For euro-western philosopher René Descartes (1637/1998) of the utmost importance is purity and purity in his conception means division and order- clear, hard and fast, distinct boundaries (Bordo, 2008). In this chapter, I argue that this

is the logic embedded in the Science Georgia Standards of Excellence (GSE), SKL1., “Construct an explanation based on observations to recognize the differences between organisms and nonliving objects” (Georgia Department of Education, 2016). This standard attempts to create a “clear” distinction between “living” and “non-living” materials, while in actuality, they intra-are. A flower cannot exist without minerals in the soil and minerals in the soil exist because the flower decomposes into them. The flower is always already inside the soil and the soil is always already inside the flower, even as the flower blooms on the vine (Nhất Hạnh, 1988/2009a). Nhất Hạnh (1988/2009a) writes, a piece of paper cannot exist without a cloud, rain, trees, sunshine, a logger, the logger’s ancestors, wheat the logger eats and more . In fact, Nhất Hạnh continues, the whole universe exists in a piece of paper. The implications are that we must attend to the ethics, the well-being, of each element. For example, the logger must have safe working conditions, health care, a fair wage. The trees must be planted and harvested without pesticides, with consideration of conditions that enhance their thriving including their communication and care for one another (Wohlleben, 2015). We must not overharvest trees or over use paper. We must be mindful of the after-life of the paper- how it impacts the earth after we are finished with it. And more. Exploitation is impossible in intra-being. Everything is in everything else. Everything is well cared for and thriving or harmed and oppressed because of everything else. I am reminded of the poem *In Lak’ech: You Are My Other Me* (Valdez & Paredes, n. d.):

Tú eres mi otro yo.
You are my other me.

Si te hago daño a ti,
 If I do harm to you,
Me hago daño a mi mismo.
 I do harm to myself.
Si te amo y respeto,
 If I love and respect you,
Me amo y respeto yo.
 I love and respect myself.

How we treat the so-called “non-living” parts of ourselves is how we treat the so-called “living” parts of ourselves and how we treat the “living” parts of ourselves is how we treat the “non-living” parts of ourselves. But this kindergarten state science standard tries to pull them apart and cleanly separate them. I will next illustrate material-discursive possibilities arising with this state standard.

In this pedagogical encounter, I am in a kindergarten classroom to check in with the undergraduate teacher candidate placed in this classroom for student teaching. At this moment, children sit gathered together on the large colorful carpet that is placed over the tile floor. The overhead fluorescent lights are dimmed and there is a floor lamp near the carpet casting a warm gentle glow. The sun shines into the classroom window, its rays streaming around the tree outside. The students face a larger wooden easel upon which is placed a large pad of chart paper. In red, lines resembling a large letter “T” traverse the page. The children had just taken a walk around the playground, looking for “living things” and “non-living things” and now they were to write and draw “living things” on one side of the chart and “non-living things” on the other side. Five long wooden tables surround the carpet and in front of each student’s metal chair with a red plastic seat sits their notebook full of large-lined pages. Someone had previously

drawn a large letter “T” across the page in each of these student’s notebooks in pencil and now the wooden pencil was resting on top of the open journal.

Ideas are announced into the space, “the slide is not living;” “the sun is not living.” The students then stand and walk across the tile floor to their tables. They pick up wooden pencils and begin to draw on each side of the page. One girl with a sparkle in her brown eyes says to me enthusiastically,

“Look! I put a checkmark next to the living things and an X next to the non-living things.”

I notice that the peers around her at the table do the same.

Later, in our university seminar, I discuss this state standard with the undergraduate students, pre-service teachers, with whom I am working that semester.

“Look at this kindergarten standard,” I say. “What tensions have you experienced with it?”

“We just did this standard a few weeks ago in my kindergarten class,” one of the teacher candidates offers. “My students were able to be successful with it.”

“What do you mean by successful?” I probe.

“They were able to mention things correctly in each category and accurately explain why they are in each category,” she continues.

The pre-service teachers’ initial responses weren’t to question the assumptions underlying the standard but to evaluate whether their students were “doing it right.” The living/non-living binary is an “unquestioned ontological assumption about the nature of being” (St. Pierre, Jackson & Mazzei, 2016, p.

102) accepted by the students. They had developed a sense of ontology, epistemology, and subjecthood in which this living/non-living “image of thought” (St. Pierre, Jackson & Mazzei, 2016) is taken for granted and normalized.

This Cartesian image of thought normalizes positioning kindergarten students as outside observers, researchers of the studied objects of attention-- “things” “outside of them”-- in this case, either to be categorized as “living” or “non-living.” Thus one binary occurring here is the separation of children from the world around them. They are positioned as the thinking subject and the “living/non-living things” are positioned as the objects of the children’s thinking and manipulation. This positioning of students as outside thinkers of an inert world to be thought about, observed and labeled by them, is a sort of first Cartesian dualism this time about subjecthood.

Students are the subjects and the world around them is the object.

Then, Cartesian *logic*- dividing the material world into simple binaries such as living/non-living- is the second Cartesian dichotomy. I argue that this is so normalized that many of us in the field of education, including the teacher candidates in my class, can’t see it. Furthermore, the fact that dividing the world into living and non-living is a state standard, privileges and legitimizes this binary ontology and epistemology. It must be named, I argue, so that we do not continue to take it for granted and so that we may analyze how Cartesian logic is operating and the possible detrimental material-discursive effects hierarchical, dichotomous thinking-being can have.

In thinking about this pedagogical encounter with intra-being-- the children, teachers and university student teachers become and learn in certain spaces, that is, develop a sense of ontology, epistemology, ethics, and subjecthood based on the material-discursive forces they have access to in those spaces engendering them. The material-discursive effects of the state standard, curriculum, pedagogical practices engender five year olds into conceiving the world in a dualistic sense that can ultimately lead to the privileging of “living things” over “non-living things,” paving the way for practices of control, domination, and exploitation that Cartesian hierarchical thinking (Ani, 1994) makes possible. Though it’s impossible to know what the young girl is thinking when she chooses to demarcate “living things” with a checkmark from “non-living things” with an X, she might be extending knowledge that she has access to around her in the world that checkmarks are “good” and Xs are “bad.” Or, at least, that checkmarks are higher on a hierarchy than an X. If we follow this logic that does circulate in western society, then we might perceive this child’s actions as using an existing hierarchy in the world to construct a hierarchy among “living” and “non-living things”: “living things” are “good,” check. “Non-living things” are “not good,” X.

In any case, a living/non-living binary in kindergarten curriculum merges an image of thought of scientism- practices privileging epistemology of a measurable objective world, and colonization- hegemonic ideology and practice. Feminist, critical race, decolonial and epistemology philosopher Linda Martín Alcoff (2008), citing German philosopher and critical theorists Theodor W.

Adorno and Max Horkheimer, discusses how the rise of scientism goes hand in hand with the rise of colonization and creates possibilities of exploitation:

Adorno and Horkheimer further argued that the ontology of nature as an inert object and the privileging of ‘prediction and control’ as the goal of scientific inquiry are noncoincidentally functional for the capitalist project of maximizing the exploitation of resources and the domination of nature without constraint. This mechanistic conceptualization of nature as inert is correlated with the ontology of truth that involves a detached thing-in-itself, without subjectivity, and thus unresistant to human manipulation. The need to demythologize and desubjectify nature lead to a conception of inquiry as involving an active knower and an inert, passive thing-in-itself. And this conception had the political effect of making it easier to exploit natural resources by making the nonreciprocal relationship of unchecked exploitation between ‘Man’ and nature appear to be a natural one. Moreover, when the object of inquiry is not nature but other human beings, the result of this ontology becomes not only the exploitation of nature but the domination and oppression of large sectors of humanity. (p. 711)

Alcoff makes the critical point that the image of thought of the reality of nature as a lifeless inanimate thing that can be known, anticipated, and manipulated by humans then becomes a justification for humans to dominate, exploit and oppress these “things” deemed lifeless and in no way requiring ethical consideration or to be treated with care. They are also deemed to be disconnected from the humans

who are deciding their fate rather than being understood as intricately connected and an integral part of the so-called “human individuation.” Alcoff notes these logics of scientism and colonization together fuel a “capitalist project of maximizing the exploitation of resources and the domination without constraint” in this way justifying capitalist practices that necessitate oppression and domination because the system of capitalism is built on the low waged, unemployed and exploitation of earth resources-- exploitation must take place in order for *some* to acquire excess- a profit. The Cartesian binary living/non-living fabricates nature and other material beings as passive, detached, objects, with no agency and completely subjected to human (positioned as the subject) domination. Moreover, this binary construct appears to be “natural” and not in need of questioning, placing humans in the thus “justified” position to have free reign to dominate and exploit those deemed “other”--separate, apart, lesser, and objectified. As Alcoff concludes, what becomes even more harrowing is when this same binary subject/object logic is used to legitimize systems of oppression human beings put into place against one another.

The constructed Cartesian living/non-living binary logic as institutionalized and privileged as a state standard has political influence on curriculums and pedagogical practices, immersing young children in a material and discursive space assuming the living/non-living binary to be true and thus normalizing Cartesian logic, and by extension, hegemonic logic, into almost everything that happens in the school space including curriculum and pedagogy. The binary logic becomes normalized because it’s embedded in the ontological

and epistemological “being” in the classroom via material-discursive forces of curriculum and pedagogy.

Subject/object separation and hierarchization become normalized by repeated material-discursive practices re-inscribing these ideas on our body-minds. Lugones (2010) calls this way of organizing the world via Cartesian binaries, in particular the constructed gender binary male/female, “modern capitalist colonial modernity.” She writes:

I propos[e] a rereading of modern capitalist colonial modernity itself. This is because the colonial imposition of gender cuts across questions of ecology, economics, government, relations with the spirit world, and knowledge, as well as across everyday practices that either habituate us to take care of the world or to destroy it. I propose this framework not as an abstraction from lived experience, but as a lens that enables us to see what is hidden from our understandings.” (p. 742)

Indeed, material-discursive forces constituting everyday practices constituting us “habituate us to take care of the world or to destroy it.” Lugones calls us to bring awareness to our everyday practices and to see how they are functioning. This is my hope in critiquing the living/non-living standard in this chapter-- that we may see what is hidden from our understandings in taking this standard as normative. I hope to frame it so what we can bring awareness to the fact that it is imbuing us to divide the world into two categories, one elevated over the other, one deemed actors and the other deemed manipulatable and to see how not seeing the “life” in the “non-living” is unethical and unfactual, for all of us as we are all entangled in

“irreducible relations of responsibility” (Barad, 2010). Similarly, feminist Early Childhood Education scholar Bronwyn Davies (2011) echoes that this awareness of the material-discursive phenomena we are immersed in invites us to cultivate more loving ways of being: “In comprehending this inter-relatedness of ourselves with all being, or interbeing, we can begin to greet the other, both human and not-human, organic and inorganic, not in categorical or hierarchical terms, but with love” (p. 40). Understanding our ontology more as a web, an ecology of individuations, different cells in a single body, invokes a Baradian sense of responsibility. Because ultimately there is no “thing” “entirely separate from what we call the self” (Barad in Dolphijn and van der Tuin, 2012, p. 69), we all intra-are, responsibility means attending to and caring for all parts of ourselves, including those whom we call “others” and it is about tending to the material-discursive realizations and re-tending to them as they emerge and re-emerge in intra-being. As material feminist and Environmental Studies scholar Stacy Alaimo (2012) contends,

Rather than approach this world as a warehouse of inert things we wish to pile up for later use, we must hold ourselves accountable to a materiality that is never merely an external, blank, or inert space but the active, emergent substance of ourselves and others. (p. 563-564)

If things, indeed, are an active, emergent substance of ourselves and others, then holding ourselves accountable to them means we must reconsider material-discursive pedagogical practices for young children reinforcing Cartesian logics that position “things” as separate and apart from them, a warehouse to be

dominated and controlled. In other words when all entities intra-are, then separating them with a simplistic arbitrary cut only functions to order humans to manipulate and dominate other beings. Lugones (2010) details how the idea of simplistic arbitrary cuts to fabricating dichotomies, such as the Cartesian logic of modernity professes, have devastating results including the mattering or the materializing of colonial projects,

the dichotomous hierarchy between the human and the non-human [is] the central dichotomy of colonial modernity. Beginning with the colonization of the Americas and the Caribbean, a hierarchical, dichotomous distinction between human and non-human was imposed on the colonized in the service of Western man. (p. 743)

Lugones argues that colonial modernity imposed a human/non-human hierarchical dichotomy in the service of domination and exploitative gain to the benefit of the colonizer at the oppression of the colonized. I argue that a living/non-living binary operates in the same vein, its material-discursive forces reinscribing hegemony. When we consider the ethico-onto-epistemology of intra-being, we acknowledge that everything is mutually co-constitutive, interdependent and therefore in “irreducible relations of responsibility” (Barad, 2010) to which we must ethically attend. In the concluding section I illustrate some pedagogical possibilities of teaching in responding to our intra-being. I do this not to be prescriptive or dogmatic but to explore only a handful of infinite potentialities that have materialized in pedagogical encounters to which I have been a part. As Barad (2007) contends, justice

is not a state that can be achieved once and for all. There are no solutions; there is only the ongoing practice of being open and alive to each meeting, each intra-action, so that we might use our ability to respond, our responsibility, to help awaken, to breathe life into ever new possibilities for living justly. The world and its possibilities for becoming are remade in each meeting. (p. x)

Thus in intra-being, there are ever possible opportunities for the remaking of ethical living and these will emerge in the specific material-discursive contexts of each pedagogues' teaching-learning encounters. Therefore, I don't offer these intra-being pedagogical encounters as prescriptive, rather to matter, or bring to significance, three of continuous possibilities.

Intra-being Possibilities

I conclude with implications for revisioning an Early childhood Education space that is more in line with Barad, Nhất Hạnh, Lugones and Bordo. I provide two pedagogical encounters as intra-being possibilities. First, I present a series of photographs emphasizing rocks as ecosystems and consider a pedagogical possibility of inviting students to describe intra-being of individuations. Finally, I illustrate a pedagogical encounter of a nun who is a part of Nhất Hạnh's monastery inviting elementary-aged children to identify and draw all of the life inside a "non-living" cookie.

A Photo Series: Rocks Intra-being

In my description of this pedagogical encounter, I intentionally named all of the material entities in the classroom in order to show that the "life" of the

children and teachers depended on these “non-living” “things.” The material-discursive energies, forces and possibilities of becoming would be entirely different if the materiality of the space had been different. For example, had there been no carpet, the children would not have been gathered gazing at the easel. Had there been no trees, there would be no wooden easel, chart paper, notebook or pencil. Thus writing in the exact way the teacher and children had done on this day would have been an impossibility. Had there not been bauxite rock, there would be no aluminum and had there not been any aluminum, a chair would not be possible, and had there been no chair, students would not have been sitting at tables in front of their notebooks writing and drawing and so on. The life of the students and teachers intra-is with the “things” in the space. The students and their ways of being are only possible *because* of the so-called “non-living” things in the classroom.

When I was at Watson Mill Bridge State Park in Comer, Georgia, I couldn't help but see rocks as ecosystems intra-being with mosses, grasses, water, tadpoles and more. And that was without turning the rocks over to see all of the additional beings squirming and thriving in the moist soil protected by the “roof” of the rock. I took many photographs and I showcase some of them here. I offer that young children could be invited in a similar pedagogical encounter: be given a camera and asked to take pictures of, and then describe, intra-being among entities and invited to name how each being has within it the other beings. I would be so interested to see how the world looks through children's eyes. The material-discursive nature of some USA kindergarten state science standards offer

more possibilities for students to be-think in relationality. For example, Alaska's standards document (Fields, et al., 2018) has the heading "Interdependent Relationships in Ecosystems: Animals, Plants and Their Environment" (p. 22). This phrase has material-discursive possibilities of pedagogical encounters that encourage further material-discursive practices of attending to intra-being rather than binary divisions. Please view the following photos with eyes of seeing intra-being.



Figure 1: Rock-moss intra-being



Figure 2: Rock-water-tadpole-sand intra-being



Figure 3: Cement rock-moss-sticks-earth-trees intra-being



Figure 4: Rock-root Intra-being

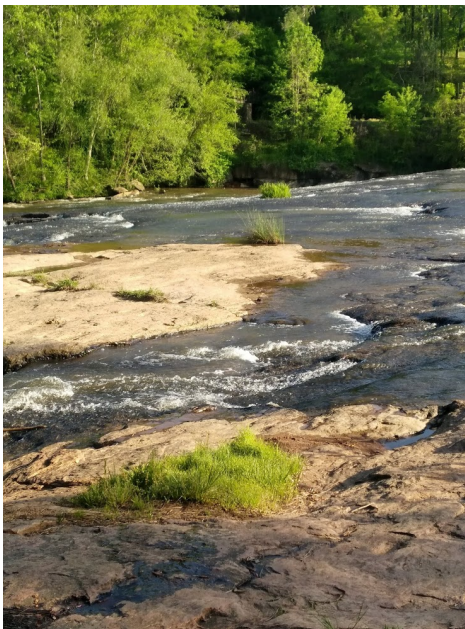


Figure 5: Rock-water-grass intra-being

Each of these images shows rocks interdependent with other beings. The being of the cement rock makes it possible for the being of the moss. Without a fabricated binary, we see how existence is dependent on rocks. Moss and grasses depend on rocks for growing, for being animated with life. Soil is made up of tiny rocks in which little sprouts find nourishment. Sand, also made up of minute rocks, and larger stones provide feeding grounds for tadpoles who forage for the microbials they need for substance. It is a lie to say that these rocks are “non-living” because life cannot exist without them. When teachers provide material-discursive possibilities for students to know and be in the world in this complex and co-emerging way, children learn their existence is co-dependent on the whole. Teaching and learning is not neutral but imbued with ethics, “different [material-] discourses will not just make you understand things differently, but will also make you *value* and *judge* things differently” (Lenz Taguchi, 2010, p. 61).

A living/non-living cut teaches students to not value what is being deemed “non-living,” and, as expressed in the opening quote by Critical Indigenous and Decolonial Métis scholar Zoe Todd (2018, November 7) at the beginning of this chapter, beliefs masking our co-arising make possible the domination and decimation of our fellow humans and earth brothers and sisters through systems of white supremacy, capitalism, and colonialism. Todd names how these systems “work to render the rocks, cliffs, trenches, continents, tectonic plates as things that can be acted upon, claimed, owned, extruded, mine, fracked, and burnt,” (para. 7) or in other words, seen as external objects to be dominated rather than acknowledged as essential parts of ourselves to be honored, appreciated, revered

and cared for. Material-discursive possibilities for seeing and knowing intra-being, help us to live differently, with more care, compassion, and justice. In this next session, I describe a pedagogical encounter in which elementary school-aged children engage in a discussion of intra-being and discuss its potentialities for justice.

“What’s Inside the Cookie?”

In this talk (Plumvillageonline, 2015, September 5) posted on the YouTube channel of Nhất Hạnh’s monastery, Plum Village, in France, Sister Dieu Nghiem, invites a group of elementary school-aged children to discuss and draw their responses to the prompt, “Look inside the cookie. We want to draw on the board, the cookie, and everything we are going to see in the cookie.” Each child and adult in the room is given a cookie and asked not to eat it yet but first to look at it. Nghiem then asks the children to tell her, and draw on the nearby whiteboard, what they see inside the cookie. Children begin,

“Chocolate chips.”

“Cracks [lines in the dough].”

“Dough.”

Nghiem then asks, “What is the dough made of, do you know?”

A child responds, “Wheat.”

“Wheat,” Nghiem reiterates, “So we see wheat. Can somebody draw wheat in the cookie? Do you know how to draw wheat?” she asks a specific child.

“Um, yeah. With stalks?”

“Yes, anything. Whatever you see that wheat looks like.”

“OK,” the child walks over to the whiteboard, picks up the marker and begins to draw to the right-hand side of the image of the cookie that has been drawn in the center of the board.

“I-In the cookie,” Nghiem corrects her.

“What?” asks the child.

“In the cookie,” Nghiem repeats, “we’re looking into the cookie, remember?”

“You see wheat in the cookie?” reponds the girl, incredulously.

“Yes, don’t you?” says Nghiem. And then probes, “Why do you see wheat in the cookie?”

The girl at the board says, “OK, I guess I can draw wheat in the cookie” and begins to do so.

“Yes, OK.” continues Nghiem, “Well let’s have a look. Why do you see wheat in the cookie?”

A different child offers, “Because the dough has wheat in it? I don't know.”

“I meant flour,” another child says.

“Flour, yes, yes” reiterates Nghiem.

“Sugar,” says another.

“What is the cookie made of?” again prods Sister Dieu Nghiem, “How does the cookie get here?”

The children continue with their responses:

“A box.”

“Eggs.”

“Milk.”

“Butter.”

“Soy milk.”

“What else?” asks Nghiem.

“Can I draw people around the cookie about to bite into it like this?” one child imitates getting ready to take a big bite.

“Where does the milk come from?” questions Nghiem.

“Cow,” says a child.

“Grass,” responds another.

“Why do you want to draw grass?” asks Nghiem.

“Because that’s what milk is made out of.”

A child drawing at the whiteboard says, “OK, I don’t know how to draw a cow but can I draw a goat? Just ‘cause there could be goat milk.”

“That’s OK. You can draw a goat,” says Nghiem. “What else? What else do you see in the cookie?” she continues.

“I see, um, I see baking powder” says a child.

“Baking soda,” offers another.

“What do you see in the cookie?” Nghiem asks another nun who is sitting with the children.

“The rain,” the nun answers.

“Why do you see the rain in there?” asks Nghiem.

The nun explains, “because we need the water to make the cookie. When the rain fall down...”

“On the wheat!” exclaims a child.

“Why do we need the rain?” clarifies Nghiem.

“We need the rain for the wheat to grow,” responds a child.

“Or use juice,” offers another child, “if you want to have a sweet tooth, you can put juice or something, I don’t know.”

Nghiem continues, “Before we eat I have one question, can you think of anything that is not in the cookie?”

“Rubber,” a child is quick to respond.

“Are you sure?” asks Nghiem, “why is rubber not in the cookie?”

A child answers, “Because if it was in the cookie it would taste really bad or give you a disease or something because it’s like really toxic.”

Nghiem asks, “Do you think that rubber is something that helped the cookie to come here?”

The child replies, “Actually yes, because rubber is made out of tires so a truck brings the cookie here so then you need the rubber to bring the truck.”

Another child adds, “You also need sun to help the wheat grow.”

Finally a child suggests, “Maybe if we come back [to the monastery] maybe we can have a cake meditation.”

Another child supports that idea, “Yeah we can eat cake and we can draw what’s in the cake.”

With a smile and a promise to make a note of planning a cake meditation, and a whiteboard full of children's depictions of beings, Nghiem concludes, "We have just looked with our eyes of insight."

For the sake of reading feasibility, I did not transcribe some repetitive comments from the recorded dialogue, such as when Nghiem invites the children up to the whiteboard to draw after ideas are shared. For example, after a child names "sugar" as being in the cookie, Nghiem asks, "Would you like to go and draw the sugar in the cookie?" The child responded, "yes," and Nghiem said "thank you!" In order to streamline the dialogue, I also removed additional times Nghiem repeated children's answers or when she repeated her own questions to the children. For this same reason, I also removed some side comments of children speaking among themselves at the whiteboard or times when adults in the room laughed at the children's responses. While an exact transcript and thorough analysis of multiple material-discursive forces at play in this very rich encounter would be quite fruitful, for the scope of my analysis here, I focus on Nghiem's questions and children's responses to the query "what's inside the cookie?" in my representation of their pedagogical encounter in order to highlight some possibilities of such a discursive structure (an *apparatus* as I will call it citing Barad (2007) in Chapter 5). I focus on how this question invites children to name entities in intra-being with the cookie in my brief analysis below.

In this pedagogical encounter, the material-discursive phenomena invite children to look at "what is inside a cookie." While a living/non-living categorization would classify a cookie as "non-living," with this invitation

children identified some of the many entities and energies (wheat, milk, a cow, grass, rain, rubber, etc.), that are the life that make it possible for a cookie to come into being. To have material-discursive pedagogical encounters that move towards justice and abolitionist teaching, we must see the life that *is* in the cookie. We must see how the rubber of the tire is essential to the truck that brings the cookie to the store. Therefore we should be concerned with the working conditions of the manufacturers of the tire, for example workers having safe and healthy factory conditions, fair wages, and health care access. And we should be concerned with the ethical treatment of the resources of the earth, for example, the ethical harvesting and planting of trees and ethical global trading practices, and so much more (i.e. the people and conditions of the systems of extracting and working with natural resources involved with making the roads; the drivers of the trucks, manufacturers of the trucks, truck service maintenance workers, and the material-discursive systems and practices creating the people and things in these spaces and if they are ethical; to name a few).

The implications are not insignificant, they make the difference between creating systems of organizing the world to care for one another or to dominate and exploit.

In this chapter, I use a Georgia state kindergarten science standard that sets up a living/non-living binary in order to demonstrate the dangers of pedagogy normalizing Cartesian logic. Descartes imagines he can know something purely if he distinguishes entities into clear-cut homogenous groups. I think with feminist scholars Bordo (2008) and Lugones (2010) who connect Cartesian logic to

hierarchical practices of domination and exploitation fueling colonial and capitalist projects. In ethico-onto-epistemology of intra-being, Cartesian cuts are impossible as every entity arises because of, and contains within it, every other entity. We early childhood teachers and scholars must investigate the logics underlying pedagogical curriculums and practices and their material-discursive effects. Earlier, I quoted Lugones (2010), “every day practices” “either habituate us to take care of the world or to destroy it” (p. 742). Material-discursive forces of state standards, curricular documents and pedagogical practices in schools either teach students and teachers to take care of the world or to destroy it. As Lugones (1994/2008) says, Cartesian logic co-exists with multiplicity, they intra-are. She professes, “The reader needs to see ambiguity,” to see that those placed into clean cut categories of “living” or “non-living” are simultaneously “curdled,” complex, heterogenous and multiple, “Otherwise, one is only seeing the success of oppression, seeing with the lover of purity’s eyes” (p. 332). We pedagogues must (re)evaluate early childhood pedagogical practices to engage with our complex, contradictory, multifaceted intra-being, not reinscribe binary logic. In the next chapter, I critique two additional early childhood education pedagogical encounters grounded in Cartesian binary logic.

CHAPTER 4

RE-THINKING PEDAGOGICAL ASSUMPTIONS: “FLOWER HACKING” AND “TO KILL OR NOT KILL AN ANT”

In *Purification and Transcendence in Descartes's Mediations*, scholar of feminist philosophy Susan Bordo (2008) discusses how the Cartesian quest for a knower “purified of all ‘inessential’ spiritual associations and connections with the rest of the universe” paves the way to become “conqueror of the cold, new world” (p. 685). In this chapter, I demonstrate how a logic of “dividing and conquering” in order to know is manifesting in these early childhood practices. To do this, I examine two pedagogical encounters (Davies & Gannon, 2009), or teaching-learning moments having materialized through multiple dynamic forces, in Early Childhood Education that ask children to make decisions as a Cartesian subject and to follow Cartesian logic. By Cartesian subject and Cartesian logic I mean that the curriculum and lessons/activities “position” students in a way that the only intelligible response is one that aligns with Cartesian binary, hierarchical logic. And if students are consistently positioned to respond to activities in ways that align with Cartesian logic, then they are in a situation where they are repeatedly positioning themselves as people this way, and thus acting as a Cartesian subject. The first pedagogical encounter analyzes a preschool lesson plan intended to teach about a flower. The second pedagogical encounter is a lesson that requires students to write an opinion piece arguing whether they would

or would not squish an ant. I experienced this lesson in three different classrooms (one 1st grade and two 2nd grade) in two different public elementary schools while supporting undergraduate teacher education students in their field placements.

My research questions include:

- (1) How is Cartesian logic operating in a preschool lesson plan about knowing the parts of a flower and in a 1st/2nd grade lesson plan about writing an opinion on an enforced binary?
- (2) What are the underlying assumptions that inform these practices and the curricular documents relating to them?
- (3) How can we draw on feminist and non-modern philosophies to disrupt assumptions informing these practices?

In my analyses of both encounters, I explain how I see Cartesian and colonial logic operating and I turn to thinking with Zen philosopher-monk-peace activist Thích Nhất Hạnh (1988/2009a) and feminist ethics, political philosophy of race and gender scholar María Lugones (1987/2008a, 1994/2008, 2010) to explore possibilities of disrupting Cartesian assumptions in order to teach as a decolonial project. I then re-consider the two encounters in a context of making decisions as an individuation, a relational being, by thinking with Nhất Hạnh, Lugones and others.

Pedagogical Encounter: “Flower-hacking”

Consider a lesson plan written for preschool students in which the children are given a flower plucked from the earth, use scissors to cut it up, then

reconstruct it by gluing its parts (e.g. the stem, leaves, petal) on a piece of paper and label them. The underlying assumption is that knowing a flower means knowing the *names of the parts of the flower* rather than *experiencing* the flower growing in the ground in relationally in intra-being (e.g. Barad, 2007; Nhất Hạnh (1988/2009a) with the world (e.g. soil, worms, sun, rain, insects, air, etc.) and with the students' eyes-mind-bodies in the garden. The flower must be murdered and dissected in order for young students to label, and therefore, to 'know' it.

The idea that to know something means tearing it apart and labeling it with words can be linked to Descartes's subject/object division. Feminist and post qualitative research scholars, Elizabeth Adams St. Pierre, Alicia Youngblood Jackson and Lisa A. Mazzei (2016), write about how in establishing the cogito (*I think, therefore I am*), the "I," or the subject, comes before the verb ("thinks"), or, said a different way, "the doer precedes the deed" (p. 102). Then, St. Pierre, Jackson and Mazzei argue, this organization of language (doer -> deed) is extended to logic of understanding the world: "man precedes the world and, in knowing it, creates the world- substance, things, objects, self-contained entities- as his object" (p. 102). Thus the human subject is the actant that acts on a passive world and represents it with language. In Cartesian logic, the mind transcends the body and leaves it behind. Here, in this flower hacking example, the mind transcends the imminence of the intra-being flower and "leaves it behind." Instating a logic and politics of purity, the mind hacks up the flower into neat pieces and cleanly labels it. Tada! A three year old now "knows" a flower. St. Pierre, Jackson and Mazzei (2016) name "the *cogito*, the knowing,

epistemological subject, separate from, superior to, and master of everything else in the world” as Descartes’s “foundational assumption” (p. 102-103). They then talk about its tie to representationalism,

Descartes’ foundational assumption works with the *philosophy of representation* that has dominated Western thought for centuries, the belief that language can be transparent and mirror the world for the mind. Here, language does not interfere—it can be crystal clear. In this way, careful, precise, accurate language can replicate, represent, the world. This assumption about language is the basis of the scientific, empirical method of observation, which, of course, is also a textual practice—observe and document. There is a real and then its representation (essence/representation), each on different levels of existence with language in the middle. Such is the nature of the world in the philosophy of representation. (p. 103)

The lesson plan assumes that for young children to learn about a flower, they need to employ a philosophy of representation, that is, the idea that a flower can be accurately represented, and understood, by labeling its parts. The assumption is that to know a flower neatly and with clarity, its parts must be observed and accurately put into the “correct” words.

In her work illustrating Descartes’s intention to find a method for a “pure,” “objective,” “transcendent” knower, Bordo (2008) quotes Descartes as saying, “To comprehend something is to embrace it in one’s *thought*; to know something it is sufficient to touch it with one’s thought” (p. 685). For Descartes,

only thought is necessary for existence (e.g. again the cogito, *I think therefore I am*) and for pure, objective knowledge. Because purity is associated with the mind, *res cogitans*, the mind is severed from the body, *res extensa*. Only the mind is considered necessary (for existing and knowing): “this taught me that I was a substance whose whole essence or nature is simply to think, and which doesn’t need any *place*, or depend on any *material thing*, in order to exist” (Descartes, 1641/2017, p. 15). In fact, Descartes believes *it is* necessary to sever the body from the mind in order to purify thought: ““The body is always a hindrance to the mind in its thinking”” (Descartes as quoted in Bordo, 2008, p. 681). Bordo (2008) argues that this logic of fragmenting and dividing is then extended as a method of “transcendence” in order to know the world “objectively”:

what seizes the Cartesian imagination is the possibility of *pure* thought, of *pure* perception. Such perception, far from embracing the whole, demands the disentangling of the various objects of knowledge *from* the whole of things, and beaming a light on the essential separateness of each—its own pure and discrete nature, revealed as *it* is, free of the “distortions” of subjectivity. (p. 672)

Epistemology for Descartes, then, is about “separating things” from the “whole” in order to focus on the homogenous and distinct nature of each thing in order to have pure thought and pure knowing. This in effect reinforces the subject/object binary I discussed previously-- the thinker is positioned as the subject that is separate from, and superior to, the objective world they are able to know (and manipulate).

In this lesson plan, the subject/object binary that assumes the flower is a passive, mutilate-able object to be known by rational knowers is mis-taking the intra-being of the flower for a representation of lifeless, stable, and predictable parts, rather than the ever differing manifestations of the flower in relational intra-being with the world, for instance, the flower only exists because of the compost, soil, air, sun, water, bees, and many other entities as it comes into present formation from seed and returns to soil. In other words, this lesson plan assumes the Cartesian “Self/Other” binary (St. Pierre, Jackson & Mazzei, 2016, p. 102) and positions the human subject as different from, and outside of, the flower, so that it may “know” it, rather than understand itself “as part of the [flower] in its differential becoming” (Barad, 2007, p. 89). This Cartesian image of thought treats

‘the living like the lifeless’ because the ‘intellect, so skillful in dealing with the inert, is awkward the moment it touches the living,’ finding ease ‘in the discontinuous, in the immobile, in the dead’ or as Foley irreverently asserts, ‘by killing the frog to dissect it.’ (Pannell, 2016p. 96)

The lesson plan, focusing on the labeling flower parts, requires that the flower is killed in order to know it and teaching young children that this way of knowing, being and ethics are normalized is connected to unjust systems of imperialism, settler colonialism, chattle slavery, genocide, capitalism, neoliberalism, global climate change, mass incarceration, incarceration and deportation of underdocumented citizens, and more:

[Cartesian] subjects are not only deemed capable of making sense of nature by measuring and classifying it from a distance but are also aided in such a quest by theories whose application enables them to manipulate and reconfigure matter on an unprecedented scale. (Coole & Frost, 2010, p. 8)

Cartesian logic creates all Self/Other binaries that position human minds as the subject and everything else as object to be observed and calculated from afar. Chopping up a flower to label its fragments assumes a human subject comes to understand nature by distancing “it” from “themselves,” manipulating and reconfiguring it in order to classify it. The material-discursive forces at play exemplify the Cartesian logic quest for purity that assumes knowing requires separation, transcendence and representation. Knowing is equated with “categorical difference” and “illusions of fixity” (Davies, 2011, p. 32). The lesson plan and Cartesian logic assumes the living must be made lifeless in order to “know” it.

It makes a difference that the lesson plan *is* an embodied experience (of the young child using its hands and scissors to cut apart the flower) within the intra-being of the classroom-dead flower-scissors-paper-glue – it sets up a potential expectation of ethics-epistemology-ontology, that thinking-knowing-learning takes place inside institutional walls in “clean” spaces (like ‘laboratories’), where thriving beings are taken out of their space of well-being, decontextualized from all of the non-flower elements that makes a flower possible, killed (conquered/dominated), disembodied, and reconfigured to the liking of the human subject.

So while Descartes might claim the separation of mind/body – even the body is engaged in this lesson I present. The students learn in their bodies that cutting up and labeling a flower is what it is to come to know, to be ‘students’, to be human. They’re learning epistemology and ontology and ethics all simultaneously. They’re learning that to know means to stand outside of an object and manipulate it. They’re learning that being means being a separate subject from the objects of study and they’re learning that it’s ethically acceptable for human subjects to dominate those deemed “other,” “The Cartesian-Newtonian understanding of matter thereby yields a conceptual and practical domination of nature” (Coole & Frost, 2010, p. 8). The anthropocentrism (or human-centeredness and human-superiority) of Cartesian logic marks it acceptable for human subjects to dominate, manipulate and demolish beings deemed “outside,” “other” and “less than,” such as a flower. This is distinct from a logic of intra-being that “[insists] on describing an active process of materialization of which embodied humans are an integral part, rather than the monotonous repetitions of dead matter from which human subjects are apart” (Coole & Frost, 2010, p. 8) and dominating. As St. Pierre, Jackson and Mazzei (2016) describe,

Descartes’s foundational assumption works with the *philosophy of representation* that has dominated Western thought for centuries, the belief that language can be transparent and mirror the world for the mind. Here, language does not interfere—it can be crystal clear. In this way, careful, precise, accurate language can replicate, represent, the world. (p. 13)

Thus the lesson plan assumes that using language to label the fragments of the flower makes the “knowing” of the flower straightforward. The words can be seen to serve as an unambiguous way to represent the flower and therefore to know it. After all, it’s “knowledge” that can be quantified, measured and tested (St. Pierre, 2006, 2012). But naming artificially determined (literal) cuts results in a very narrow view of the flower (and of our idea of knowledge) that is entangled with sun, soil, bee, cloud and more--in fact, *with everything*. In intra-being, we could say that there is no essentialized parts of a flower and no essentialized flower itself, but rather the flower is made of only “non-flower elements”--without a cloud, there is no rain, and if there is no rain, there is no flower (Nhất Hạnh, 1988/2009). Without a worm, there is no nourishing soil and without nourishing soul, there is no flower. Without the sun to photosynthesize, there is no flower. So to exist, the flower needs the cloud, the worm, the sun: all these “non-flower” elements. If Cartesian logic says that to know the flower is only to know the labels of its fragmented parts, then the knowing can never be more than a partial knowing, a narrow and limited idea of what it is “to know,” because we are not including in our awareness or experience all of the forces required to bring and maintain the flower in being.

And it could produce the possibility of a colonial hegemonic logic-practice (Cannella & Viruru, 2014; Lugones, 2007, 2010; Todd, 2016, 2018, November 7) in this case, the idea that it is ethical and acceptable to murder a flower in the name of control, order and understanding something we assume is not us. There are consequences to a colonial hegemonic logic underlying pedagogical practices

aimed at young children, as “worldviews are not innocent” (Dillard, 2006, Location 511) but act, along with other material-discursive phenomena in pedagogical encounters that teach and materialize our body-minds to become in certain ways. A lesson normalizing giving children a flower that had been growing in the ground and telling them to cut it apart with scissors can be seen as a kind of “investment” (Tuck & Yang, 2018), that “like a path in tall grasses, choosing one path instead of others, over time, will make that path more obvious. Paths become deep-set grooves and, over time, can appear the only option” (p. 6-7). Material-discursive practices over time reinforce some kinds of logics-practices and not others. This is why it is so imperative that educators and educational researchers recognize and name the colonial logics explicitly and implicitly assumed in pedagogical practices in early childhood education.

Feminist theoretical physicist Karen Barad (2007) offers us the construct of ethico-onto-epistemology, meaning that *ethics, being, and knowledge* are not separate. This is evident in the flower hacking pedagogical encounter as the children engage with their body-mind in a pedagogical space that tells them (explicitly and implicitly) that it is normative and ethical to dominate, kill, and reconfigure nature to their liking; that the way to *be* with non-human beings is to *be* in a dominating and “knowing” relationship over those beings; and that knowledge is produced through the study of *others* in a lifeless form. The investment in such pedagogical practices in school (re)creates and reifies certain hegemonic realities for students and teachers or it can disrupt them and to create more just realities for students and teachers. Barad (in Dolphijn and van der Tuin,

2012) suggests that ethics is “about responsibility and accountability for the lively relationalities of becoming, of which we are a part” (p. 69). Therefore, we must attend to the material-discursive becomings that emerge in our pedagogical intra-beings and respond as necessary- possibly setting the container for different material-discursive possibilities (for example engaging in a practice like “what is in the cookie?” rather than a living/non-living T chart). I matter (materialize and make significant) this paper in a commitment to just and ethical realities for students, teachers and all other beings that make our existence possible. In the next section, I analyze Cartesian logic in another early childhood pedagogical encounter.

Pedagogical Encounter 2: *What’s Your Opinion: “The Boy Should Squish the Ant” or “The Boy Should Not Squish the Ant”*

This pedagogical encounter is based around the picture book *Hey, Little Ant* by authors Phillip M. and Hannah Hoose (1998) and illustrator Debbie Tilley. I have seen this book used in three early childhood classrooms (one 1st grade and two 2nd grade) in two different public elementary schools with the intention of engaging a classroom of 6 and 7 year old children to think about the possible dilemmas of killing an ant.

The book opens with a young boy who sees an ant in a sidewalk crack and declares he will squish it (para. 1). He then enters into dialogue with the ant and the ant tells him that it is needed for its family- it’s responsible for digging the nest and feeding the baby ants; and begs of the boy not to kill him (para. 2, 6). The boy explains that the ant seems so tiny that it doesn’t look real. He also

doesn't think the ant can feel (para. 3). He accuses the ant of "being a crook" and stealing crumbs from their picnic and rationalizes that it's *good* to squish the ant (para. 7).

The ant, on the other hand tells the boy, "you are a giant and giants can't know how it feels to be an ant" (para. 4) but that really the ant is very much like the boy. The ant is strong and needs to provide food and take care of its family. The ant explains that it is not a crook but that sometimes ants need chips and crumbs. It explains that one little chip can provide enough food for their entire town (para. 8).

A key moment in the story is signaled by a change in the book's directional layout. Although the picture book reads horizontally, at one page the image changes direction, occupying the entire spread. Here a vertical image depicts the boy towering over the ant, his shoe hovering just above it, poised to snuff out its life. Then there is a second vertical image where the ant towers over the boy. These images serve as a representation of what feminist Early Childhood Education, Teacher Education, and Critical Studies scholar Stephanie Jones (2006) has described as a reversal of position, perspective, and power dynamics and poses the possibility for the reader to consider a different perspective. In this way the book asks the fundamental question: What if the ant could snuff the life out of the boy?

The book finishes without a conclusion, the boy neither squishes the ant nor decides to let the ant live. In the end the authors ask the reader:

Should the ant get squished? Should the ant go free?

It's up to the kid, not up to me [the authors].

We'll leave the kid with the raised up shoe.

What do you think that kid should do? (para. 11)

In the next part of all three lessons I have experienced, students were required to fill out a graphic organizer giving their opinion of whether the boy should or should not squish the ant. They were to choose one of those sentences (e.g. "I think the boy should squish the ant" or "I think the boy should not squish the ant."), write it at the top of the graphic organizer and then write three or four reasons to support their choice.

The graphic organizer is titled "Hey, Little Ant" and includes a "Name:" field. It presents a choice: "I am making the choice to" followed by "keep you alive!" and "squish you!". Below this, there are three columns labeled "Reason 1:", "Reason 2:", and "Reason 3:", each with four lines for writing. At the bottom of the page, there are several more lines for additional notes. A watermark "Teachers Notebook" is visible diagonally across the page.

Figure 6: Sample Graphic Organizer (Glass-Friedman, n.d.).

Let's consider additional material-discursive factors impacting the space and the people in it. For example, one child says that ants bite and that hurts.

These words, offered into the pedagogical space, linger as children are asked to

“keep their ideas inside of their head.” And told they “will write about them later.”

The last page of the book asks the reader, *What do you think that kid should do?* (Hoose, 1998, para. 11).

To support children in answering that question, each of the three teachers in the classrooms I was in gave each child a graphic organizer that had a box at the top for an opinion and four boxes underneath for supporting statements. The graphic organizer asked children to form one of the following opinion statements: “The boy should squish the ant,” or “The boy shouldn’t squish the ant.” Each child then completed the graphic organizer on their own, drawing on their own experiences to list reasons for supporting their opinion.

This lesson and enacted pedagogical practice is not specific to the three classrooms where I experienced it. On the popular Teachers Pay Teachers website (Teachers Pay Teachers, n. d.), in which teachers can sell their materials to other teachers, there are 213 products featuring this book. While some of the products have a different focus, for example explicitly teaching kindness, honing in on the character, the writer’s craft, narration, etc., 78 of the lessons/products on the website are categorized under “opinion” or “persuasion” writing and adopt a binary frame (i.e. students write a piece about whether the boy should or should not squish the ant or whether they would squish the ant or not). All of the lessons provide material documents (graphic organizers, lined paper) to support the work of the students. One of the packets based on this book is free to download from the website which may make it even more accessible to a wide public. Another

popular site, Pinterest (Pinterest, n.d.), also features numerous lessons related to this same book including craft activities, T-Charts and graphic organizers framing the child's work of determining whether to save or squish the ant. Some of these lessons are framed specifically as "what's your opinion?" or *opinion writing* lessons. In the state of Georgia (USA), this lesson was used to address the 2nd grade state standard, the Georgia Standard of Excellence ELAGSE2W1:

Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section. (Georgia Department of Education, n.d.)

What I want to critique here is not necessarily the practice of stating opinions and supporting them with reasons. What I do critique is the *Cartesian logic* that makes the binary construction of this lesson possible and the possible material-discursive effects of the pedagogical practice of asking students to respond to the story in a dichotomous way. I argue that pedagogical practices that ask students to develop an opinion from their own individual life experience negate multiple possibilities and opportunities to engage with complex nuanced and multifaceted ways of thinking about and being with ethical dilemmas.

For example, the girl's comment that ants bite offered an invitation to explore why, where and when ants may bite and what ethical responses to it and prevention of it might be. For instance, if one is in an ant's home, it may bite trying to defend itself; it might be scared it will be hurt. When outside, humans

can look out for anthills and enjoy being in nature away from them or watch them from a safe distance.

This lesson would have been different had students engaged in a conversation about power dynamics. Students could discuss questions such as: In real life does the ant have power to kill the boy? Does the boy have the power to kill the ant? Does that mean he should kill the ant just because he can? In the story, the ant told the boy about its life. The ant said that it has a family and work to do, just as humans do.

Students also need to know about the many ways ants are important to our lives. Ants till the soil and oxygenate it. They also pollinate fruits and vegetables. We couldn't have fruits and vegetables if we didn't have ants. The idea that it is justifiable to kill an ant because it takes a crumb is absurd. It does not matter to the boy that the ant carries off a crumb. In all likelihood, the boy does not even know the crumb is there, while for the ant and its colony, it is a necessary means of sustenance and nourishment. Now if there are a whole bunch of ants begin carrying off food particulates while a family is picnicking, it would be prudent for the family to realize they may be on top of an anthill and to move their bodies to a different location, particularly if one member of the family is allergic to ant bites.

By positioning the students to claim one of only two stances that are possible within a binary (whether the boy should squish the ant or not) opportunities for complicated discussions such as those around power, perspective and positioning (Jones, 2006) became impossible. It also becomes impossible to discuss intra-being: humans' entangled nature with ants, the intra-arising of all

things and humans' existence being composed of non-human elements. This "kill/don't kill an ant" binary is a too narrow view of the world that is much more complex. It is also a deliberate teaching of anthropocentrism (placing humans at the center and as superior to all other beings), a negation of intra-dependence and a blatant failure of an ethic entangled with compassion. In other words, it is an explicit *making possible* of human oppression and tyranny.

Feminist philosopher of ethics, politics, race and gender María Lugones (1987/2008a) helps us see how Cartesian logic leads to what she calls "a failure to love" (p. 70). By envisioning a "me" and a "not me," Cartesian logic renders all "not mes" as outside of myself and therefore expendable. It is a logic that dismisses, negates, and does not actively see, and focus on, all beings' interconnectedness, interdependence and our mutual co-responsibility. Lugones (1987/2008a) writes her argument of separation, hierarchy, and control not using a human and ant as an example, but rather about white/Anglo women and women of color:

I am particularly interested here in those many cases in which White/Anglo women do one or more of the following to women of color: they ignore us, ostracize us, render us invisible, stereotype us, leave us completely alone, interpret us as crazy. All of this *while we are in their midst*. The more independent I am, the more independent I am left to be. Their world and their integrity do not require me at all. There is no sense of self-loss in them for my own lack of solidity (p. 72).

While not equivalent by any means as humans enacting racism against one another, I suggest that the *same logic* Lugones identifies of white/Anglo women's failure to see her as a woman of color is connected to this logic of should the boy squish or not squish the ant. I am particularly concerned that material-discursive practices that engender the second can lead to or at least start paving the path to the first. I argue that the pedagogical practice of enforcing students to write and think within a binary, in this case, to kill or not kill an ant, is an explicit instruction and reproduction of Cartesian binary logic and a failure to love. As ethics, being and knowing are inseparable (Barad, 2007), it is critical to investigate how such practices centering Cartesian dichotomous, hierarchical logic in early childhood education can be linked to these larger societal issues of justice.

Lugones (1987a/2008) marks the antidote to the failure to love as needing to *see* and *celebrate* women of color "where we [as women of color] become substantive through this celebration" (p. 72). A logic of ethico-onto-epistemology, of intra-beings, is a logic of seeing and celebrating intra-beings, "love reveals plurality" (Lugones, 1987/2008, p. 69). An ethico-onto-epistemological logic would see the "ant" and the "human" in their more complicated inter-connectedness and celebrate it. Celebrating life in its myriad forms, we are more likely to respond ethically with them. Lugones (1987a/2008) writes how Cartesian logic of separate selves is not conducive to love: "white/Anglo women are independent from me, I am independent from them... and none of us loves each other in this independence" (p. 72). Conversely, love

depends on a mutually constituting inter-dependence as she writes, “I am incomplete and unreal without other women. I am profoundly dependent on others without having to be their subordinate, their slave, their servant” (p. 72). Similar to Nhất Hạnh’s (1987/2005; 1988/2009) description of the concept *emptiness* (please see Chapter One), here Lugones (1987/2008a) writes of being constituted by non-“self” “parts.” As Nhất Hạnh (1988/2009a) says that actually a flower is only made of “non-flower” elements, Lugones is saying something very similar: without other women, I don’t exist. I am made of them in our ongoing intra-activity. But in an unjust society, those in privileged positions can live pretending as if others aren’t co-constituting them as Lugones (1987/2008a) states, “Their [white/Anglo women’s] world and their integrity do not require me at all” (p. 72). As seemingly, in *Hey, Little Ant*, the boy’s world and integrity do not require the ant at all.

As Lugones (1987/2008a) expresses, “those who are the victims of arrogant perception are really subjects, lively beings, resisters, constructors of visions even though in the mainstream construction they are animated only by the arrogant perceiver and are pliable, foldable, file-awayable, classifiable” (p. 79). She speaks of her mother, “I came to realize through travelling to her ‘world’ that she is not foldable and pliable” (p. 79). If we explicitly teach young people to have an arrogant [Cartesian] gaze, I argue that we are teaching them to see others as outside of themselves and as foldable, dispensable, murder-able. But when we look deeper, we are aware that everyone and everything is interconnected and

interdependent as Nhất Hạnh (1987/2005) illustrates in this excerpt from his poem titled, *Please Call Me by My True Names*,

I am the mayfly metamorphosing on the surface of the river,
and I am the bird which, when spring comes, arrives in time to eat the
mayfly.
I am the frog swimming happily in the clear pond,
and I am also the grass-snake who, approaching in silence,
feeds itself on the frog.
I am the child in Uganda, all skin and bones,
my legs as thin as bamboo sticks,
and I am the arms merchant, selling deadly weapons to Uganda.
I am the twelve-year-old girl, refugee on a small boat,
who throws herself into the ocean after being raped by a sea pirate,
and I am the pirate, my heart not yet capable of seeing and loving.
I am a member of the politburo, with plenty of power in my hands,
and I am the man who has to pay his "debt of blood" to, my people,
dying slowly in a forced labor camp.
My joy is like spring, so warm it makes flowers bloom in all walks of life.
My pain is like a river of tears, so full it fills the four oceans.
Please call me by my true names,
so I can hear all my cries and laughs at once,
so I can see that my joy and pain are one.
Please call me by my true names,
so I can wake up,
and so the door of my heart can be left open,
the door of compassion (p. 67-68)

What Nhất Hạnh (1987/2005) calls the door of compassion and interbeing,
Lugones (1987/2008a) writes as feminist philosopher Marilyn Frye's concept
loving eye, "my self and the self of the one I love may be importantly tied to each
other in many complicated ways" (p. 72).

The opinion lesson positioned the six and seven year-old students as
Cartesian subjects, as only consulting their individual will, interests, fears and
imagination (Lugones, 1987/2008a) when asked to, "Write what you think, either:

the boy should squish the ant or not squish the ant.” The material-discursive of the lesson forces prevented opportunities for students to see beyond their own will, interests, fears, and imaginations, it prevented opportunities for students to engage in an analysis of intra-being, and it restricted opportunities *for loving* other than the potential stance that children might take if they decided to argue that the boy should not squish the ant.

Cartesian logic encourages us to see arrogantly, as Lugones (1987/2008a) declares that it is impossible to see with arrogant eyes and to love: “the agonistic traveller is a conqueror, an imperialist” (p. 78). She provides the example of traveling to her mother’s “world” with loving eyes, that is, she puts herself in the position of her mother to see how it is to be constructed in her mother’s world. She says that in this traveling to her mother’s world, in other words, in this *awareness* of the ways in which material-discursive factors have formulated her mother’s positions, perspectives and ways of being, that Lugones “cease[s] to ignore her [mother] and to be excluded and separate from her” (p. 73). Ethico-onto-epistemology, Barad’s (2007) and Nhất Hạnh’s (1987/2005; 1988/2009a), would say that even without this awareness we are always already inextricably intertwined. But within this already inextricable interconnectedness, Vietnamese Zen philosophy emphasizes cultivating our awareness to our interconnectedness, called *right knowing*, in order to consistently and incrementally strengthen our compassion. Because ethico-onto-epistemology are all mutually co-constituting, awareness *is* ethics *is* being compassionate beings in the world. This mindfulness, or seeing from multiple vantage points, is what Lugones (1987/2008a) writes

about as “traveling to each other’s worlds,” that she says “enables us to *be* through *loving* each other” (p. 73). Or in a Baradian sense, to literally *materialize* through *ethico*-onto-epistemology. Cartesian logic is, as Lugones (1987/2008a) concludes, an “imperialistic understanding” (p. 75). Lugones (1987/2008a) writes that conversely, in world-travelling, “One does not *experience* any underlying ‘I’” (p. 75), in other words, as in Vietnamese Zen philosophy, there is no essentialized “self,” just mutually co-constituting forces. In world-travelling then, one does not stick one’s essentialized self into a distinct essentialized self. Rather, one *opens* to awareness of intra-constituting forces of worlding (Manning, 2013).

Lugones (1987/2008a) describes how the conventional concept of play has to do with “contest, with winning, with losing, battling,” in essence, she expresses, it is an agonistic sense of play (p. 77). This is the logic of the Cartesian subject at the basis of western ontology and epistemology, as Lugones (1987/2008a) offers: “Western civilization has been interpreted by a white western man as play in the agonistic sense of play” (p. 78). Further, she references Dutch historian Johan Huizinga’s reviews of “western law, art, and many aspects of western culture and [sees] agon in all of them” (p. 78). I argue that this is because western culture has assumed Cartesian logic that is in its essence agonistic and hostile so hierarchies enter all aspects of social, environmental and political life (also see Ani, 1994). I argue that in Lugones’ (1987/2008a) sense, the material-discursive forces of lessons grounded in Cartesian binary logic, such as the kill/don’t kill the ant opinion writing pedagogical practice, are explicitly teaching early childhood students to be

agonistic travellers who “fail consistently in their attempt to travel because what they do is to try to conquer the other ‘world’” (p. 78). Lugones (1987/2008a) says that a failure to world-travel is a failure of compassion, the

western man’s construction of playfulness, is not a healthy, loving attitude to have in traveling across ‘worlds’... for people who are interested in crossing racial and ethnic boundaries, an arrogant western man’s construction of playfulness is deadly... one needs to give up such an attitude if one wants to travel (p. 78).

In contrast to the agonistic world-traveller, Lugones constructs the concept of a *playful* world-traveller. As a playful world-traveller, she offers, we are “*open to self-construction*” and neither “abandon ourselves to, nor are we stuck in, any particular ‘world.’ We *are there creatively*. We are not passive” (p. 78). Much like Nhất Hạnh’s (1988/2009a) emptiness, Lugones’ playful world-traveler is not fixed, rigid or essentialized, rather it is moldable, world-able, continually constituting. It is dynamic. It is becoming. It is expanding. It is creating. And it is possible to engage this ethico-onto-epistemology in early childhood education spaces.

Lugones’ (1987/2008a) call to action is to exhibit “disloyalty to arrogant perceivers, including the arrogant perceiver in ourselves,” as “arrogant perceiving” is synonymous with imperialism and “incompatible with loving and loving perception” (p. 79). I suggest that Cartesian logic perpetuated in schools actively teaches arrogant perception and a failure to love. In naming this Cartesian logic, how it manifests and the effects it is having in schools, I suggest

that we can begin to instead make intentional decisions operating from different, more ethical, logic-practice, perhaps we can try playful world-travelling.

CHAPTER 5

(IN)CONCLUSIONS—EXPLORING INTRA-BEING:

IMPLICATIONS FOR EARLY CHILDHOOD EDUCATION

In this chapter I revisit my use of the concept *intra-being* as phenomena materializing in and through processes of entangled intra-action (Barad, 2007) in the realm of spacetime-matter. Thinking with feminist theoretical physicist Karen Barad, Vietnamese Zen monk, philosopher, and peace activist Thích Nhất Hạnh, and feminist ethics, political, and race and gender philosopher María Lugones, I revisit what intra-being is, how it functions and why it is significant. I talk about intra-being specifically in relation to school by thinking through material-discursive apparatuses (Barad, 2007). I revisit the pedagogical encounters illustrated in this dissertation in relation to material-discursive apparatuses in order to make the claim that pedagogues must pay attention to and attend to materials and discourses teachers and students have access to in schools. Finally, I consider questions and possibilities for the work of pedagogy in an ethico-onto-epistemology of intra-being.

What is Intra-being?

I conceive of intra-being as an ethics, practice and logic, or an *ethico-onto-epistemology* (Barad, 2007), co-existing with, but *diffracting* differently than Cartesian discourse-practices of fragmentation². Diffraction, as Barad (2007) uses it, is a physics concept attributed to waves that overlap, cancel each other out, or in some way interfere to matter something different. She likens it to two

² For more on Cartesian logic, please see Chapter 2 .

stones dropping near one another simultaneously in a still pond. The rippling effect of the water of both stones produces waves that climb over and run into each other, creating differing patterns in each of the rippling waters' vibrations. Thus I invoke diffraction here to mean that different material-discourses produce different effects for our beings and these effects are always already intertwined with varying ethics for people and other earth beings.

Ethico-onto-epistemology denotes the ways in which ethics, being and knowing are entangled, mutually constituting and impossible to pull apart. For example, a lesson plan that gives three and four-year-old students a flower and requires them to fragment its parts by cutting it with scissors, is a material-discursive enactment in which young people *come to know* that it is normal and acceptable to *be* in the world in a dominating way over other creatures for the sake of *understanding* them. The material-discursive diffractions of the flower-hacking lesson plan is an example of the effects of Cartesian logic producing young children to come to know their sense, or maybe even place, as dominant beings in the world. Thus, thinking with an amalgamation of Barad's and Nhát Hạnh's concepts, *intra-being* is a way of diffracting towards justice in our entangled relations. I delve a bit more fully into intra-being in the next section before applying it specifically to early childhood education. Intra-being is 1) dynamic: movement, change and energy itself, 2) an amalgamation of life force energy in ongoing material (de)compositions and 3) creates, or materializes, in the diffractions of the vibration and the (also vibrating) material-discursive apparatus. I will talk about each of these in turn. First, I explain Barad's (2007) concepts of

intra-action and matter, as intra-being is grounded, in part, in these concepts of hers.

Intra-action

In her book, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, Barad (2007) engages physicist Niels Bohr's (see for example pp. 97-131) notion of phenomena, rather than the atom, as the basis of reality. In other words, for Bohr and Barad there are no separate autonomous 'bodies' with distinct boundaries *interacting* with one another. This would assume a Cartesian dichotomous logic that both Bohr and Barad's philosophy-physics reject. Rather, phenomena denotes an *intra-action*: multiple moving, changing forces continuously (re)constituting the seemingly 'solid' 'matter' that we perceive with our senses, which, actually phenomena, *is* moving, changing forces. Barad (2007) further describes intra-action as "*the mutual constitution of entangled agencies*" (p. 33). Here Barad articulates how the many entwined forces in intra-action affect and create, or as she later writes, 'matter,' both in the material sense of the word and in the ethical significance sense of the word. My use of the phrase intra-being centers a relational, dynamic logic different from the Cartesian logic of separation, transcendence, representation, hierarchization and control. Intra-beings are therefore a logic and practice (action) of mutually constituting forces acting and materializing our world.

Three Characteristics of Intra-being

Intra-being is dynamic “*To find the secrets of the universe, think in terms of energy, frequency and vibration*” - attributed to physicist Nikola Tesla in a conversation with Ralph Bergstresser, 1942 (Daga, 2019, p. iii)

In the ethico-onto-epistemology of intra-beings, the three-dimensional forms that we experience with our five senses are not in and of themselves, solid, fixed, immobile. Rather they are continually *in-form*ation (Manning, 2013) but because of the intra-action of forces undetectable by our limited ability to translate only certain wavelengths of vibration with our eyes, nose, hands, ears and tongue, they may *appear* solid and stable. But this is only because we have no way of translating the vibrations that are consistently co-constituting and re-constituting our experienced and perceived material-discursive world.

In *The New Yorker*, non-fiction writer Adam Gopnik (2016, May 16) explains recent studies in haptic science, or the science of touch, that illustrates the human ability to translate a limited range of vibration. Gopnik describes Igor Spetic, who having lost his right hand due to an industrial accident, is participating in studies to explore the sense of touch in that arm and “hand.” Four years ago, surgeons implanted “a set of small translucent ‘interfaces’ into the neural circuits of his upper arm” (Gopnik, 2016 May 16). Spetic had used a prosthetic hand equipped with pressure sensors and an electronic current running through the sensors and into his nervous system in order to be able detect various surfaces and maneuver both fragile and more robust objects. Now, Spetic is undergoing different studies in which he no longer uses the prosthetic hand. Instead he maneuvers a virtual hand in virtual space projected on a screen in front

of him: in an intra-action of his nerves and the current of a vibration in a stimulator, Spetic feels a virtual ball where his thumb and fingers would be. Gopnik (2016 May 16) explains, “Touch is not a one-way deduction of sensation but a constant two-way interchange between what [PI of the study] Tyler calls the ‘language’ of sensation and the raw data of reception” (para. 7). In other words, Spetic's ability to feel a virtual ball with a virtual hand is an interplay between his sense translators and the vibration emitted by the simulator (Gopnik, 2016, May 16). Tyler explains that at first all Spetic was able to feel was a tingle, “We couldn’t make the tingle become touch” (Gopnik, 2016, May 16, para. 8). He continues, “There’s a narrow window within which the body interprets,” which turns out to be “the biological range of rhythm and change” (Gopnik, 2016, May 16, para. 7, 8). Tyler’s team found that if vibration is reduced, touch can be detected: “Tighten the wave and tingle becomes touch” (Gopnik, 2016, May 16, para. 8). This range of vibration that is interpretable as touch, Gopnik (2016, May 16) writes, “is just around the rhythm of a heartbeat, a sort of essential bodily beat” (para. 8). While everything is rhythm and vibration, translatable vibration for humans is in a limited range. Dogs detect smells we humans cannot (Baraniuk, 2015, October 19; Horowitz, 2009, 2015). Bats translate ultrasonic wavelengths humans cannot and whales and elephants use low-frequency rumbles undetectable to humans to find kin (Joyce and McQuay, 2015).

My point here is that no thing is essentialized, fixed, static. Everything is a vibrational phenomena, some of which are perceptible by humans. These vibrations are in a constant state of change and flux. Their very existence arises

in intra-being and thus is relational. Again, it is worth emphasizing that we may not experience life with an understanding of intra-being because we may focus more on the seemingly stable materials rather than the ever-altering flow of movement and difference of vibrations.

But sometimes we do experience life as intra-being processes.

For example, if we were to pay attention, we would realize that our breath never stops moving. It flows in, enters our nostrils, travels through our throat, expands our rib cage and belly and then flows out again, in the reverse direction. If we stop to observe it for a little while, we see that this movement doesn't stop. It is a continuous flow. With a little more sensitivity, we notice that the breath is also differing. The inbreath is not the same as the outbreath. And the next inbreath is not the same as the previous. This one may be shorter, that one deeper into the belly, the next one an audible sigh. The point here is that the breath, which is always with us, offers us one tool to experience this ethico-onto-epistemology of phenomena, as feminist Early Childhood Education scholar Hillevi Lenz Taguchi says, "we are nothing until we connect to something else, even if it is simply the breathing of oxygen" (2010, p. 41). Once we can see intra-being happening on the somewhat gross level with the breath, we can imagine how it's happening on more subtler levels to create our experiences.

Everything is energy in motion.

Intra-being is Life Force Energy in Ongoing Material (De)compositions

Intra-being is dynamic processes of codetermining forces (de)materializing spacetime-matter. Unlike the Cartesian fabrication of disjointed

entities, intra-being does not separate spirit, energy, mind or matter. Descartes's binary logic not only positions entities as distinct from one another but also legitimizes one at the expense of the other. This begins with his mind/body split where he relates himself to mind and decides not only does he have nothing to do with a body but that the body is actually a hindrance to the mind's "pure" knowing (Bordo, 2008). Thus he privileges the mind and chastises the body. And so begins a centuries-long influence of different iterations of this "Self/Other" (St. Pierre, Jackson & Mazzei, 2016, p. 102) binary in ideology-practices in the fields of science (Cannella & Viruru, 2004; St. Pierre, 2012, 2015), social science (Alcoff, 2008; Robinson, 2008; St. Pierre, 2012, 2015), and in capitalist, colonial, imperial and neoliberal projects (Ani, 1994; Cannella & Viruru, 2004; Todd, 2008). The root of injustice in all of these projects can be traced to Descartes's invocation of the intellect as godly, "and as appropriately to be revered and submitted to--once 'purified of all that stands in the way of its godliness'" (Bordo, 2008, p. 676), and his insistence that anything that is not the intellect is fundamentally different from it and impure. On his distinction between mind and body, Descartes (1637/1998) writes:

I knew that I was a substance the whole essence or nature of which is simply to think, and which, in order to exist, has no need of any place nor depends on any material thing. Thus this 'I,' that is to say, the soul through which I am what I am, is entirely distinct from the body and is even easier to know than the body (pp. 18, 19)

Descartes concludes that the mind and body are separate and that he is only his mind. He also concludes that not only can he exist entirely without any “material thing” including his own body, but that it’s easier for him to know, and thus, in his eyes more godly without it. Intra-being acknowledges that what is called “mind” and “body” are energy-material transitionings, iteratively (re)configured through intra-action (Barad, 2007), constantly in motion, changing, differing, arising, falling away and interdependent. Not *interaction*, intra-action, and by extension, intra-being, does not assume separate entities coming together and changing one another. It does not assume already constituted stable bodies. Rather, it conceives of everything as forces, energy and vibration, and describes bodies coming *into being* because of relationalities *within* these forces (Barad, 2007). Thus, there is no essentialized entity “mind” and there is no essentialized entity “body.” They are forces, moving, changing, differing, disappearing, reappearing different. It makes me wonder, even, if mind and body hadn’t been invented constructs, how else might we conceive of these energies? Intra-being always already exists simultaneously and intertwines Cartesian ideology. It is what race and gender, political and ethics philosopher María Lugones (2010) terms *non-modern philosophy*, which is *not* “pre” any “more” so-called “evolved” philosophy, but rather ways of knowing and being that have always already and continue to co-exist with the so-called “modern” philosophy.

One example of non-modern philosophy is Buddhist philosophy which is not a monolith. Multifaceted and varied in itself, Buddhist philosophy, uses different words, and its own specific and diverse ways, to assume an ethico-onto-

epistemology that too is movement, flux, vibration, change, differing and relational (e.g. Mosig, 2011, Nhất Hạnh, 1988/2009a, 2005, 2001/2009b, On Being Studios, 2014, plumvillageonline, 2015, September 29, 2018, October 5, 2019, November 4; Siderits, 2007). I next give an example from Buddhist philosophy about the dynamic connection between energy and matter.

Intra-being as a concept arose from my research of both from Barad's (2007) work and Nhất Hạnh's (1988/2009a). Nhất Hạnh (1988/2009a) writes about the dynamic ethico-onto-epistemology of matter-energy by detailing different life forms of a cloud. He writes,

The cloud in the sky will also not be scared [of losing its existence].

When the time comes, the cloud will become rain. It is fun becoming rain, falling down, chanting, and becoming part of the Mississippi River, or the Amazon River, or the Mekong River, or falling onto vegetables and later becoming part of a human being. It is a very exciting adventure. The cloud knows that if it falls to the earth it might become part of the ocean.

So the cloud isn't afraid. (p. 24)

This quote illustrates how forces are in continual flux, at one moment appearing as a cloud, then a falling raindrop, a river, or a vegetable, and a human being.

Nhất Hạnh uses this example to talk about how there is no essentialized self, just temporary forms appearing, disappearing and appearing differently in everflowing movement of change. Sōtō Zen philosopher and monk Shunryu Suzuki (1987) expresses it this way, "everything becomes real-- not substantial" (p. 103) meaning that entities are indeed real, as in experienced by the senses, affecting

and effected, but nothing is substantial, meaning that nothing has a fixed, stable, permanent, or essential nature. Entities are energies co-arising to take form, decompose, and co-arise into different forms. Different from Descartes, who claims the *res cogitans* to be essential and everything else to be an impure illusion, Buddhist philosophy claims nothing has an essential self. Rather, multiple forces are continuously moving, changing, seeming to arise, stay for a while, and then pass away, *and*, everything contains within it everything else.

During a ten-day silent meditation course in which I participated in May 2017 the teacher repeatedly said, “no ‘I’, no ‘me’, no ‘my.’ Just impersonal sensations arising, seeming to stay for awhile and falling away.” While sitting in cross-legged meditation, we were investigating this ethico-onto-epistemology of moving, changing energies within the field of our body. Without moving, we would scan our body by putting our attention first on the crown of our head and traveling down to the tips of our toes and back again, noticing sensations. The teacher had said it could be any sensation-- it might feel like ants crawling, an itch, a feeling of pain or discomfort, tickling, vibration, perspiration, hot or cold. He said, “don’t limit yourself to these sensations. Just scan your body with an attitude of curiosity; what is here now? And if nothing is there, don’t linger too long. Stay on that spot only a minute and then continue on.”

In doing this, I began to notice how an itch would arise on my upper right earlobe. It would seem to intensify as I watched it. I wanted to scratch but willed myself not to. As I continued to observe, I found that soon enough, the itch passed away. “No itch lasts for eternity,” the teacher pacified us, “And nothing

actually even stays, it is either in the process of arising or falling away, just moving, changing, moving, changing, *anicca*.” The teacher chanted the Pali word for ‘change’ in a raspy, guttural voice that by the end of the ten days I would feel its vibrations reverberating in my whole body.

Changing, changing.

Similarly, in an interview, Nhất Hạnh asks, “When you look at the garbage do you see the flower? And when you look at the flower do you see the garbage?” (On Being Studios, 2014). In these questions he highlights the changing nature of the garbage, the changing nature of the flower, and their mutually constituting forces.

What is movement and change? Energy. It’s not a Newtonian physics of an external force acting on the garbage or the flower but an *intra-action* (Barad, 2007) of forces from within the flower continuously differing until our physical eyes observe it as garbage. These changes are happening continuously, we just might not detect their continuous subtle shifts. In the “flower-hacking” example (e.g. see Chapter 3) though the lesson plan assumes that “knowing” the flower is to name and label its fragments (e.g. stem, petal, roots), understood with an intra-being perspective, a more holistic understanding is to experience the flower with all of its component intra-being forces: sun, soil, air, stem, beetle, pollen, bumble bee, the children’s eyes seeing, the children’s nose smelling, raindrop, and, and, and, and, and, *ad infinitum*. Experienced in this way, the flower is not “pure,” distinct, or in a vacuum. Rather, intra-connected forces co-arise to materialize the aforementioned entities (e.g. sun, soil, air, etc.) and co-arise to materialize into

flower. Then (re)materialize into organic decomposings (e.g. soil) which subsequently (re)materialize into different seen, heard, smelt, tasted and felt forms (e.g. seeds, other flowers, plants, tress, or something else).

As I practiced the body-scan meditation technique, I would notice temporary sensations expressing and fading. For example, I felt the air rush against my arm as another participant walked by my cushion to reach theirs. I also felt almost unbearable pain invade my legs as I sat cross-legged and completely still for an hour. Then as I stood up at the conclusion of the session, expecting to hobble out with achy legs, I was shocked to find that they didn't hurt at all but felt clearer and more at ease than even before I sat down to meditate.

Vibrations arise, express in various “forms” and then pass on to another “form.” Mind and body, energy and matter are different iterations of moving energy. In intra-being entities indeed blossom into unique forms (individuations), but also, these individuations are fleeting, transient and (de)(re)composing with and through multiple forces. That is, intra-being is an ethico-onto-epistemology of process-things; there is no separation between process and thing. In other words, processes material-ize into “things” and “things” are always already processes. In the next section, I will talk about Barad's (2007) concept material-discursive apparatus, how it is implicated in the “things” into which processes materialize and specifically, why this matters for early childhood teachers.

Intra-being Materializes through Diffractions of Vibration and Apparatus

So far I have established that intra-being is (1) phenomena and (2) phenomena-mattering and matter-phenomena-ing, or in other words, process-

things. Now I look at ethico-onto-epistemology, or the ways in which ethics, ontology (being) and epistemology (knowing) intra-are. I argue that what Barad (2007) calls *apparatus* and being, are mutually constituting. I discuss the importance of material-discursive apparatuses in relation to educators and early childhood education.

Barad (2007) describes the two-slit experiment in which when the electrons pass through one apparatus, they have the ontology of a particle and when they pass through a different apparatus, they have the ontology of a wave. She uses this illustration to support her concept *onto-epistemology*, as it demonstrates that the apparatus of measurement and the ontology of the measured are inextricably linked. Barad (1996) describes this entanglement, which she names, *agential realism*, as “participation *within* nature” (p. 176), meaning that there is no separation. Human beings are not different from a nature they observe from afar. Rather, they are together with all in they’re mutually constituting processes. In this way, being is processes of dynamic doing, acting forces moving into, as, and through all entities. In a later article, she elaborates:

According to agential realism, reality is sedimented out of the process of making the world intelligible through certain practices and not others.

Therefore, we are not only responsible for the knowledge that we seek but, in part, for that exists. Scientific practices involve complex intra-actions of multiple material-discursive apparatuses of bodily production.

Material-discursive apparatuses are themselves phenomena made up of specific intra-actions of humans and non-humans, where the differential

constitution of “nonhuman” (or “human”) itself designates an emergent and evolving phenomenon, and what gets defined as an “object” (or “subject”) and what gets defined as an “apparatus” emerges through specific practices. *Intra-actions are constraining but not determining.*

The notion of intra-actions reformulates the traditional notion of causality and opens up a space for material-discursive forms of agency, including human, nonhuman and cyborgian varieties. (Barad, 1999, p. 7)

Much is said here in this passage. First, being “comes to be” through processes of becoming comprehensible via specific practices. These practices are always constrained and their determinations have possibilities and limitations of making the world arise and comprehensible in some ways and not others. Because we always already play a part (we cannot separate our beings from the world) we are implicated not only in what knowledge we focus on and consume, but we also contribute to the specific practices that are responsible for the *arising* of things (and their comprehensibility). Mutually constituting this process means that we are, in part, ethically responsible for what does and does not materialize.

What comes to be is influenced by the apparatus of measuring. These apparatuses, as discussed before, are also in and of themselves, not essentialized things but energy in the same processes of becoming, coming into existence themselves via other material-discursive apparatuses. Barad explains, *intra-actions are constraining but not determining*, which means they take on forms with boundaries that do affect by making some things possible and limiting others (constraining), but these forms are not totalizing and they are not permanent

(determining), but ready to shift again. So it is iterative: material-discursive forces engender humans and things, and humans and things play some role, whether they are aware of it or not, “in reconfiguring material-discursive apparatuses of bodily production, including the boundary articulations and exclusions that are marked by those practices” (Barad, 2007, p. 178). In other words, humans have some role in the reconfiguration of material-discursive practices that then work to constitute the people and other entities in the space and on it goes.

For example, if we recall in Chapter 3, we were able to see three configurations of boundary articulations in which human beings play a part. The first was the Georgia Kindergarten State Standard (Georgia Department of Education, 2016, March 31) that requires children to divide the world into “living” things and “non-living things.” These boundary articulations encourage children to view, and be in the world in an anthropocentric, Cartesian binary and hierarchical manner (Lugones, 2010). These living/nonliving boundary articulations normalize humans to be in a position to dominate, control and manipulate a material world they regard as “non-living.” I am reminded of the “rocks, cliffs, trenches,” named by Critical Indigenous and Decolonial Métis scholar Zoe Todd (2018, November 7, para. 12) “that can be acted upon, claimed, owned, extruded, mined, fracked, and burnt,” in other words, exploited and taken advantage of for the sake of human gain. If young children are taught to negate the life in the rocks, cliffs, trenches, etc., then they might perceive it ethically justifiable to do what they want with them, without consideration of the ethical

role they play in damaging the earth, in desecrating this very “body” of ours that makes our animation here on this planet possible. As we have seen in the last century, this gives rise to humans tearing down whole stretches of forests, displacing animals and insects, murdering plants, disrupting swamps, in the name of progress of the construction of a subdivision of the next line of model houses or the state-of-the-art development of the combined commercial/residential shopping/apartment plaza.

The boundary-articulations in the Rocks Intra-being Photo Series denote the impossibility of calling rocks “not-living” because they inter-are (Nhất Hạnh, 1988/2009a) with the things we call “living.” For instance, the young plant (Figure 4) would not grow right there were it not for the small grain of rocks as a reservoir of nutrients, water and stability in the soil being absorbed by and supporting the structure of the plant. Same with the grasses in Figure 6; the rock provides a home for these patches of grasses so they are able to sun and thrive on their little islands without being washed away by the water gushing around them. These rocks and grasses, intra-are. Nhất Hạnh (2014) writes that when we look deeply into a flower,

we see many other things, like the earth and the minerals. Without them a flower cannot be. So it is a fact that a flower is made only of nonflower elements. A flower cannot be by herself alone. A flower can only inter-be with everything else. You can't remove the sunlight, the soil, or the cloud from the flower (p. 12-13).

This comment could also be made about the grasses in the photos or any other entity. What hubris for humans to fabricate a self/other binary, in this case a living/non-living binary, as if one can be without the other! We are only made of nonself parts. There is no point when “non-life” goes to “life,” it always already is co-implicated. One cannot be without the other. Ultimately, I argue that the boundary articulation of this living/non-living cut as made in this state standard, is only useful in reconfiguring the status quo of setting the stage for humans to regard themselves as superior to those parts of us deemed “non-life” to then give us full reign to manipulate, extract, murder, displace these other parts of ourselves for the purpose of our capitalist profit and gain. That is the only reason I can see for this living/non-living cut. As the photos and Nhất Hạnh’s words display, those cuts are not factual, it is all living, all entities whether rock, water, sun, chair or plant, are only possible because of all the other elements making the conditions possible for it to be. If humans are aware, now we have some additional responsibility in our role in refiguring boundary articulations. We can continue to reproduce this material-discursive apparatus of living/non-living or we can play a role in different boundary articulations like, photographs framing the interplay and inter-necessity of forces co-creating one another such as in Figure 6: Rocks-water-grass intra-being. Other state standards such as Alaska’s (Fields, et al., 2018) speaks to the “Interdependent Relationships in Ecosystems: Animals, Plants and Their Environment” (p. 22) reconfigures boundary articulations to reflect a more ethical consideration of all entities in their mutually intertwined co-dependent nature. As Barad (2007) reminds us, the material-discursive boundary

articulations literally impact what becomes ontology, or lived and materialized, in the process of our continually unfolding existence. Thus it is imperative that humans consider the role they play in these boundary articulations, they are paving the road toward more unethical treatment in our relations or more ethical treatment. Let's consider the boundary articulation of the pedagogical encounter, "What's inside the cookie?" (see Chapter 3).

In this discussion, facilitated by Zen nun Sister Dieu Nghiem (Plumvillageonline, 2015, September 5), children are invited to explore a boundary articulation that illustrates that a cookie doesn't just "magically come to be." When we stop to think about it, actually, it is quite a miracle. A cookie becomes because of the co-creation of unquantifiable multifaceted life forces, in their processes, over time converging via different boundary articulations to become a cookie. The children name many of these boundary articulations: harvested milk, eggs, wheat, flour, dough, cow, grass, sugar, rain, chocolate chips, a box, rubber tires, that are part of the life of the cookie. Thinking in this way, we must consider our ethical obligations to each of these beings that are part of the conditions with which the cookie arises. For example, do the cows live in ethical conditions as they are milked? How is the wheat farmed and harvested? Do the workers along the way make a fair wage, have access to healthcare, enjoy their time spent efforting in these endeavors? These questions are essential in considering the ethical implications of our responsibilities to one another. This is one critical implication of this research for practicing teachers, teacher educators and policymakers: the importance of centering relationality and intra-being.

Implications for Educators, Policymakers and Teacher Educators

As discussed in Chapter 1, the philosophy-practice of yoga (meaning “to yoke”) intends for compassionate connection with the whole of who we are, both aspects of our own individuation and aspects of ourselves seemingly beyond our own individuations (Bryant, 2009). This dissertation problematizes Cartesian binary logic taken as normative and centers our relational intra-being being. As St. Pierre (2012) writes, Descartes invented Cartesian ethico-onto-epistemology at the age of 23. Questions we can ask ourselves, and to which I start to inquire into in Chapter 2, are, how has Cartesian logic become so influential and how has it persisted since 1637? How does it now operate “hidden in plain sight” as underlying assumptions to so many of our ways of being? An ethico-onto-epistemology set up to know things as “essential,” autonomous, fragmented things to be hierarchized, and labeled in order to control and dominate them, is an ethico-onto-epistemology established to maintain and perpetuate systems of exploitation such as capitalism, neoliberalism, and exploitative relationships with the earth. As discussed previously, when we teach young children such as preschoolers, lessons like the flower-hacking one (see Chapter 4) and 5-year-olds, to label the world as living/non-living (see Chapter 3) rather than understanding that everything, including what we refer to as “non-sentient” beings, are organic in that they are of the earth, we are reproducing an ethico-onto-epistemology normalizing exploitation and dominance. We are normalizing being in the world in a way that is not acting-being in relationality of “sacred reciprocity” (Hazelbaker & McGrew, 2019).

Descartes's ethico-onto-epistemology has allowed and allows humans to dominate, master and control each other, other beings and our earth home. Today, it allows us to exploit the earth for our gain (e.g. cut down massive amounts of trees to construct houses, retail stores, trendy "novel" living/commercial/community plazas while, in the same town, many houses are on the market for sale, many retail spaces are "for rent," and many indoor malls and strip malls are losing business). These living/commercial/community spaces will be just the latest iteration of a trend that will also become empty buildings, as humans build out, killing more trees and animal habits to create the next "trend" and regarding this as normative, desirable, progress. It is Cartesian logic that allows us not to care about capitalist exploitation-- for instance, if we teach children this piece of paper is non-living, then we teach them they can embody beings who are not concerned with many ethical situations with which they are entangled. For example, that they don't need to be conscientious of the "afterlife" of the paper-- how many sheets they use, how they use them, if they crumple them up, where it goes after they use it. Or with the "life" of the paper: all of the people, places and systems necessary to put the paper into their hands, including the logger's living wage, fair, ethical and safe working conditions, the tree's conditions for being planted (e.g. germinated in rows, trees communicate and support one another less than those that grow in undisturbed forests (Wohlleben, 2015), fair, safe, and ethical working conditions of the people employed at the paper factory, and safe and fair working conditions of people packaging and transporting the paper, including, for example, a living wage, access to health

care, and consideration that the fossil fuels we use for transportation today are in fact trees that died 300 million years ago (Wohlleben, 2015). We are implicated in all of these systems because without all of the institutions, practices and people involved, we would not have this piece of paper. Pre-service teachers, in-service teachers, and young children can engage with similar critical thinking and questioning in varying degrees, if we are to create more equitable ways of being with one another.

Learning as Differ-action-ing: Implications for Educators

Playing with Barad's (2007) concept *diffraction*, I like to think of learning in an ethico-onto-epistemology as *differ-action-ings*, or active processes of movement, change and becoming different. Teachers, children and other beings in education spaces are continually becoming different in the world's ongoing becoming. This has many implications for early childhood education, including the need to pay attention to the material-discursive forces involved in shaping these becomings, for example:

- Attending to how space is always already political and ethical in ways human and childhood geographers have long argued (e.g. Jones et al., 2016; Kraftl, 2015). Therefore, the spaces in early childhood education and teacher education that are created for – and with – learners will reflect and produce practices and ways of being and knowing, and such spaces should be created with much care and intention.
- Attending to, as Lenz Taguchi (2010) says, what we can do now at this moment, because of what is happening in this exact instant, how it is

affecting us and how we can affect. Thus, educators might embrace ambiguity and uncertainty in their planning and expectations as they become with the material-discursive entanglement of a lesson, intra-action, and otherwise intra-being in the classroom.

- Reimagining and reconfiguring many normative educational policies and practices. For example, “classroom management” is a typical topic in teacher education programs and constant material-discursive production in schools that might be reimagined as shifting material-discursive relations rather than practices of discipline, punishment or control. Assessment is another dominant material-discursive production in both teacher education and early childhood education settings that must be reconsidered and reimagined through a lens of *becoming different*. For example, how are children’s (and teacher education students’) continual becomings “assessed” when standardization and “right” answers are not goals of intra-being pedagogy? Rather there would be an emphasis on creation, expression, difference, inquiry, expansion, critical thinking, and being, in ethical, symbiotic relationality.
- Challenge and change the way epistemology operates in the material-discursive practices of early childhood and teacher education. For example, “knowledge” is embedded in being(s), for instance, my hands “know” something as they type on this keyboard and the keyboard “knows” something from its collaboration with my hands. In intra-being pedagogy, knowing is not something to be transmitted, represented or

regurgitated. It is not “outside” of “us” but rather it is co-constructed within and between us. It is in our joint process of becoming and differing.

- Challenge and change the way ontology operates in the material-discursive practices of early childhood and teacher education. For example, while knowledge (epistemology) is privileged in teacher education spaces via discussions of how students learn, different learning modalities, what is considered “developmentally appropriate” when, to name just a few, how many teacher education programs discuss ontology, or ways of being, with their students? How many students have a frame of analysis of how ethics, learning and being are co-implicated? I argue that for students to not just reproduce dominant, hegemonic material-discourses of schooling, they need to have a framework of analysis of ontology, of seeing what assumptions of being are embedded in different material-discursive practices, such as the ones that operate centering Cartesian and intra-being logic that I illustrate here.

Each of these implications could be elaborated much more fully and even mark areas for potential research, theory, and pedagogical projects in the future. Below I focus more explicitly on two additional implications that I will develop more fully: (1) Teaching as Curating Pedagogical Apparatuses (micro) and (2) Attending to the Ethico-Onto-Epistemologies of Space-Making (macro).

Both are characterized as engaging with a material-discursive frame of analysis, on a micro and macro scale. One implication for teacher educators

interested in centering intra-being pedagogy is to create space for students to engage with a frame of material-discursive analysis for both individual lessons and in regards to attending to larger issues of sociopolitical and spatial justice (Jones et al., 2016). This includes teachers analyzing curriculum materials, and common practices of early childhood education (e.g. routines, ways of traveling through the hallway, ways of organizing furniture and children in the space, materials children have access to or not, practices of “behavior management,” to name just a few) with a framework of considering how material-discourses might be functioning to shape the people and other beings in the space. Teachers can consider what values and ways of being are privileged, normalized or marginalized and silenced, and how the materials and discourses may be producing beings and their relationship to one another. [For example](#), teachers [might](#) ask themselves: [Are](#) relationships centering mutual well-being or positioning some beings in dominant positions over others? For instance, a lesson such as identifying all of the forces engendering people and beings co-creating a cookie, privileges material-discourses shaping students’ body-minds towards foregrounding ethical and just conditions for each individuation and their relationships.

Teaching as Curating Pedagogical Apparatuses

Feminist Early Childhood Education scholar Hellevi Lenz Taguchi (2010) quotes Barad: “How can we think of learning [and teaching] if we are not outside observers of the world but, if we are rather part of the world in its ongoing intra-activity?” (p. 18). As part of the world in its ongoing intra-activity, we have an

effect on our collective unfolding based on the material-discursive apparatuses of which we are a part. In this section, I discuss the relationship of teachers and material-discursive apparatuses.

I have laid the foundation to recognize that in our intra-being we are energy-in form, continually moving, changing and differing. As part of the changing, differing movement as a whole, the roles we play in bringing material-discursive apparatuses into a space is not insignificant. In ethico-onto-epistemology, the apparatus implicates the reality that is produced. Each has possibilities and limitations, mattering certain ethico-onto-epistemologies and not others. Our wave-forms are continuously intra-acting, diffracting, interfering, and creating with all other wave-forms. If we take these arguments that I have made across this chapter as assumptions, then there are certainly implications for how teaching might manifest differently. So what might this mean for pedagogy of diffracting intra-active matterings? Barad (1999) suggests,

Agency is a matter of intra-acting; it is an enactment, not something someone or something has. Agency cannot be designated as an attribute of “subjects” or “objects” (as they do not preexist as such). Agency is about the possibilities and accountability entailed in refiguring material-discursive apparatuses of bodily production, including the boundary articulations and exclusions that are marked by those practices. (p. 7)

As Barad (2007) goes on to say, agency is a doing. It is not held by certain bodies designated as “subjects” or those designated as “objects.” Rather, agency has to do with what becomes possible in each moment due to how material-discursive

forces are co-arising into phenomena-things. It is also about how everything is implicated in everything else. Finally, Barad (2007) says that agency is about responsibility for paying attention to the material-discursive effects of phenomena and to see the small but existent role they humans play in boundary articulations, that is, in what way their own doings contribute to the material-discursive apparatuses that then create possibilities and limitations of being which then influence the next material-discursive forces that co-arise and so on.

As everything is energy-material, I suggest that one role of the pedagogue in a logic-practice of ethical-onto-epistemology is to *curate*. That is, to consider the ways in which the pedagogue plays a part in refiguring material-discursive apparatuses in the classroom. While humans are never entirely responsible for what happens in a space, the materials and discourses they have access to and choose (unconsciously or otherwise) and bring through their beings into a space, make a difference. These material-discursive opportunities in the classroom make agential cuts that contribute to possibilities of certain ways of becoming for the students and teacher and limit others.

My use of the idea of *teaching as curating* comes from Education scholars Antero Garcia and Cindy O'Donnell-Allen (2015) who describe, "The word 'curate' originates from the Latin word *curare*, which means 'to care'" (p. 89). The term curator is applied to individuals who carefully arrange exhibits in museums, galleries and exhibits. Here I suggest that taking into account material-discursive apparatuses as pedagogy, the concept of curating becomes a very useful analytical frame for teachers. As Barad (1999) asserts:

We are responsible for what exists not because it is an arbitrary construction of our choosing, *but because agential reality is sedimented out of particular practices that we have a role in shaping*. Which material-discursive practices are enacted matters for ontological as well as epistemological reasons: a different material-discursive apparatus of bodily production materializes a different agential reality, as opposed to simply producing a different description of a fixed observation-independent world. Agential realism is not about representations of an independent reality but about the real consequences, interventions, creative possibilities, and responsibilities of intra-acting within the world.

(p. 7-8, emphasis added)

I have already named some particular practices that teachers have a role in shaping that impact the becoming of students in the classroom. I will now discuss some additional examples of how pedagogical encounters in this dissertation help us to see the importance of teachers' role in material-discursive apparatuses.

First, material-discursive effects due to the apparatuses of testing being used to matter what it means to be a "good student" in my brother's case, negated to see the creative, intelligent boy that he was. The apparatuses of the news broadcasting studio complete with production equipment, software for video editing and set with props materialized material-discursive effects for mattering my brother as a "successful student" because the pedagogical apparatuses contributed to the conditions possible for my brother's creativity and sense of aliveness to flourish.

For my own early childhood schooling, repeated material-discursive apparatuses emphasizing the importance of grades created in me a being that has believed and acted as if my “goodness” depends on validation from others.

The material-discursive apparatus of the flower-hacking lesson plan teaches children’s body-minds that humans can just dominate, manipulate, detach and kill things considered not “us” in the name of science or to “knowing” them. It teaches children to be hegemonic subjects, that it is normalized to enact violence for their own gain.

Similarly, the binary construction of the opinion writing lesson which positions students to consider a world where it is an equally ethical choice for them to decide they will kill or not kill an ant, also teaches young children that we can be in world in hegemonic way and make decisions as an individuation rather than as relational beings. The boundary articulations, or the material-discursive framing of these pedagogical practices, recreates ways of being in the world that are Cartesian, and thus hegemonic and linked to our colonial history. We must also play our part in disrupting these material-discursive apparatuses and in the creation of others that make possible our being and our world in more loving, healthy, just and ethical ways. This world is possible and we pedagogues can be part of its unfolding.

Attending to the Ethico-Onto-Epistemologies of Space-Making

The “environment” of learning has long been recognized as an active teacher in early childhood education settings (e.g. Malaguzzi, 1994; Rinaldi, 2006) and this work can be built upon and elaborated through an ethico-onto-epistemological lens of intra-

being *with space*. As Early Childhood scholars Jones et al. (2016) express, thinking with theories of critical human geographies (eg. Soja, 1984; Gibson-Graham, 2006a, 2006b) and childhood geographies (e.g. Kraftl, 2015), the spaces we find ourselves in are always-already political and ethical in their becomings. In other words, they're influenced by specific "pre-existing spatio-temporal conditions" (Jones et al. (2016), p. 1130) such as physical landscape and climate, systemic frameworks for access to transportation, food, businesses, fair wage jobs or not, and legacies of social, civil and political injustices. They write about "place-making as a social and political act" (p. 1126) and argue for educators to perceive place-making for and with young children as a practice towards spatial justice. They also argue for teacher educators to help pre-service teachers pay attention to and produce language to describe how space shapes us in the sense of what it makes possible and what it limits in the ways we can be, think, and relate to one another. Jones et al (2016) suggest it is important for educators to 1) affirm and build on children's spatial practices and 2) to see how making space for and with children matters. Educators can consider how spaces "Normaliz[e] and privileg[e] particular spatial practices over others" in order for educators to co-produce or co-create more ethical spaces with children and with other material beings and socio-political-temporal forces in the space. I echo Jones et al.'s call for educators to better understand "the shaped and shaping forces of both the material and discursive in sociopolitical relations (p. 1129) and the material-discursive forces of "social practices [that] produce space just as space produces social practices" (p. 1129). Pre-service, in-service teachers and policymakers can consider the ways in which "Political, social, material, and discursive agents all play a role in the way spatiality is being produced as well as the ways in that

spatiality is simultaneously producing political, social, material, and discursive realities within spatio-temporal structuring” (p. 1130).

Specific to this dissertation, this material-discursive frame of analysis is similar to the one above on curating pedagogical apparatuses, but while our attention in the first is focused on a micro scale (the lesson plan), here it is focused on zooming out a bit and analyzing the macro (classrooms and schools). For instance, findings from my dissertation would argue that classrooms and schools are important spaces for practices of intra-being in that geopolitical, affective, institutional, and other forces are shaping young people and adults in these spaces. For instance, in Chapter 3, I talk about the materiality of the classroom space where the living/nonliving lesson takes place. I describe the inviting warm light of the lamp, the colorful carpet, the windows, the tree outside the window, the easel and chart paper, the red marker, the metal chair and wooden tables. All of these materials enact life in the space, make some ways of being possible and others impossible. While it might be possible to have one lesson on ‘separate living things from nonliving things’ other material-discursive elements in the space allow for other ethical possibilities, such as a space that feels more homey and less institutional. Similarly, the material-discursive forces of a lesson such as “what’s inside the cookie?” that attends to intra-being and disrupts Cartesian binaries and logics, could still be with material-discursive forces in the space of the classroom or school apparatus that itself reinforces adult/child binaries of domination, or sets up children in competitions in reading, or displays a classroom behavior chart to indicate “winners” and “losers” in the “behavior” game and thus power, ethics, ontology and knowing are produced in oppressive ways that have a greater impact than any one lesson.

For example, I will return to the analyses I provide in Chapter 1 to talk about the importance of attending to the ethico-onto-epistemologies of space-making. I begin this dissertation narrating the material-discursive forces of the broadcasting studio which provided a space of refuge in school for my brother. The dominant material-discursive practices in that space nurtured creativity, collaboration and active connection with materials (eg. video cameras, editing software, set furniture) while the rest of schooling predominantly produced quiet individuals sitting at desks. It reproduced power dynamics of teaching as depositing knowledge, of students as docile bodies (Foucault, 1979) to regurgitate the correct answer. These material-discourses engendered a schooling environment that was alienating and oppressive to my brother whose fullness was engendered by material-discourses of *yoga*, connection and co-creation with other world bodies, in his case, the camera and fellow students. In fact, I argue fullness for each of us is engendered by material-discourses of *yoga*, or connection and co-creation with these other “parts” of ourselves-- as we are in intra-being with the becoming of the world (Barad, 2007; Lenz Taguchi, 2010). Material-discourses of the spaces of *my* K-12 schooling were also largely alienating and oppressive as they engendered in me a desire to be liked and live up to external standards-- to be a “good” docile body, rather than a full, co-creative, vibrant, expressive being. The implication here is the importance of not just cultivating a frame of analysis for looking at how material-discursive forces of individual lessons are operating but also to zoom out and inquire into how material-discursive forces are operating on the classroom and school levels.

If we zoom out a little more, we can see other geopolitical material-discursive forces impacting my brother’s and my schooling including dominant practices of

privileging standardization, such as standardized testing and scripted curriculums. Also in Chapter 1, I talk about the material-discursive forces enacting in scripted curriculums and in practices of policing teachers to its adherence in comparison with potentially more messy, and potentially more vibrant, practices of readers workshop, writers workshop such as cuddling up with a book and a pillow under a table and reading with a friend. Teachers and administrators in all of these cases are being engendered by material-discursive forces of larger geopolitical spaces including the billions of dollars being made by publishers of scripted curriculums and testing corporations putting pressures on schools and state governments for business. [These](#) material-discursive forces of practices [have tied – or entangled -](#) test scores to the “success” of the school and the “success” of the teacher and also attaching teacher’s pay to test scores, all material-discourses additionally engendering administrators and teachers to enact standardized practices. Zooming out further, geopolitical-spatial material-discursive forces engendering standardization are also being shaped by geopolitical material-discursive forces materializing the 2001 *No Child Left Behind* legislation (No Child Left Behind Act of 2001) which privileged, and normalized, positivism and mythology that children and teachers could be measured with a single test score, engendering the testing craze. Zooming out again, we can see impacts of other geopolitical-spatial forces impacting schools and classrooms such as the practice of drawing school zones using property taxes to fund public schools which contributes to the unjust power dynamic of economically affluent areas having more money and resources in their public schools than areas of lower property taxes within the same school district. All of these larger geopolitical forces shape schools, classrooms, administrators, teachers and young people and

contribute to the production of inequities and oppression. Centering intra-being is a call for educators, teacher, educators and policy makers to look at and attend to macro-level material-discursive forces contributing to oppression and to participate in the apparatus of systems, practices and policies that decolonize and abolish unjust systems and create ways of being that are ethical and just for the well-being of the students, teachers and other earth beings.

Jones et al. (2016) write, “Specifically, we perceive our work to be political in the sense that we assume space is political and the ways that children’s bodies and place produce space is political and constitutive of how children and young people are perceived and perceive themselves and others as spatial beings” (p. 1130).

Simultaneously, I assume that space is also ethical, in that the unfoldings [and active configurations](#) of spatiotemporal moments embed shifting power dynamics (e.g. certain values are being normalized or privileged over others, individuals’ beings are positioned in orientations of power or marginalization) operating towards relations of wellbeing for all beings in the space or towards relations of dominance or oppression. As material-discursive forces of teachers and children are “both shaping their spaces and being shaped by their spaces” (Jones, et al., 2016, p. 1131), it is important for teacher educators to engage with pre-service teachers in analyses of the spaces made for, with, and by young people with whom they are in collaboration, as well as experiment with space-making that aligns with an abolition and justice project in early childhood education.

Conclusory Remarks

In this chapter, I review my concept intra-being based off Barad’s (2007) concept intra-action and Nhất Hạnh’s (1988/2009a) depiction *interbeing*. I

explore its significance in relation to knowing and learning. I discuss Barad's (2007) concepts intra-action and matter and I describe three characteristics of intra-active matterings: 1) they are dynamic, 2) they are a conglomeration of matter-energy influx and 3) they are ethico-onto-epistemology as apparatuses that make "real" some experiences and not others. I think with Barad's concept material-discursive apparatus to show why the pedagogical encounters explored in this dissertation matter to the field of early childhood education.

It is my hope that this dissertation offers examples of ways of seeing other material-discursive pedagogical apparatuses and their ethical effects in children's becomings and thus adds to our understanding the importance of attention to these material-discursive apparatuses in early childhood pedagogy. As Lenz Taguchi (2010) states,

Our instruments, tools or apparatuses for meaning-making *matter*, not least in relation to how we think that children learn. Consequently we need to ask ourselves what kind of knowledge we produce with the tools or 'apparatuses' we use in our learning activities with children and students" (Lenz Taguchi, 2010, p. 63).

As we are a part of the world's ongoing becoming (Barad, 2007; Lenz Taguchi, 2010), we participate in the material-discursive apparatuses that make up the ecosystem of learning for early childhood students, as well as our own reconfigurations. We are ethically implicated in the creation of such apparatuses and their ensuing consequences. These instruments are significant for possibilities and limitations of our own and children's learning-becoming. They

can create habituations of normalizing dominance, aggression and exploitation toward other, more vulnerable or less aggressive, entities in our intra-being for the sake of human profit, or they can normalize being with one another out of deep respect, care, attention and consideration in our interdependence and mutual responsibility for our co-arising in our co-becoming.

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