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The Exertion of a Choice: An Ecofeminist Vision ~ Aesthetic, Embodied, and Connected Learning

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THE EXERTION OF A CHOICE: AN ECOFEMINIST VISION ~ AESTHETIC, EMBODIED, AND CONNECTED LEARNING

by

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(Under the Direction of Delores Liston)

ABSTRACT

In this dissertation, I build upon Darwin's (1859/1964) metaphor of the complex biological tangle of a river bank - plants, birds, insects, and earth - to paint a picture of transformative learning as aesthetic (Dewey, 1934/2005; Eisner, 1998, 2002b; Greene, 1995, 2001; Liston, 2001), and embodied (Dewey, 1958; Johnson, 2007; Shusterman, 2006), and thereby connected to the learner's life experience, including his/her/their ecological, cultural, and historic situatedness. I call this complication of Darwin's metaphor the ecofeminist tangled bank. For my purposes, an ecofeminist theoretical framework provides a means of analyzing oppressive conceptual frameworks that perpetuate hierarchy and domination, and which lack an appreciation for meaningful difference (Chircop, 2008). Such oppressive frameworks, I argue, characterize much about the current approach to learning. Transformative learning, or learning which leaves the individual changed, seeing the world differently than before, and "willing to act in accordance with those differences" (Girod, Twyman, & Wojcikiewicz, 2010, p. 804), may be fostered through aesthetic learning. Investigating the impact of aesthetic learning experience (Dewey, 1934/2005; Eisner, 1998, 2002b; Greene, 1995, 2001; Liston, 2001), I theorize that such experiences inscribe themselves on the body, becoming the impetus for the individual's passionate desires (Garrison, 1997). Ultimately, I paint a picture of learning as the subjective "exertion of a choice" (Darwin, 1871).

INDEX WORDS: Learning, Aesthetics, Embodiment, Ecofeminism, Neuroaesthetics, Metaphor, Body-mind, Feminism

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DEDICATION

This dissertation is dedicated to my husband Bill and my daughter Augusta who gave me encouragement and support throughout my doctoral journey, and who KNEW that I could do it – even when my own confidence flagged.

I also want to thank all the students I have taught over the past 36 years. This dissertation is the result of my experiences with you --- it represents what you have shown me.

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PREFACE

"Courage, pugnacity, perseverance, strength and size of body, weapons of all kinds, musical organs, both vocal and instrumental, bright colors, stripes and marks, and ornamental appendages, have all been indirectly gained ... through the influence of love and jealousy, through the appreciation of the beautiful ... and through the exertion of a choice."
Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (1871, pp. 794-795).

In many ways, this dissertation represents a reflection on the educational experiences that have shaped my self-understanding as well as my conception of what constitutes meaningful learning. Within this process, my students, teaching colleagues, professors, and the many writers listed in my references comprised my learning community (Liston, 2001; Palmer, 2007). At the outset, I reflected on the story, which I share at the beginning of chapter one, of my student, who came to understand abstract expressionism by *doing* abstract expressionism; I realized I found it very moving to witness the moment when the pieces came together for him. As I observed, such learning transforms the individual, enabling him or her to see the world differently than before and to act on those differences (Girod, Twyman, and Wojcikiewicz, 2010). I argue that transformative learning is aesthetic, embodied, and connected to the learner's previous experience.

I entered the conversation around transformative learning through the door of aesthetic experience and John Dewey's (1934/2005) ideas of *an* experience. From there, Greene (1995, 2001), Eisner (1998, 2002b) and Liston (2001) helped me situate aesthetic learning within curriculum studies. Realizing that patriarchy's inherent oppositional hierarchy prevents a complete understanding of learning, my 'heart' then suggested that ecofeminism, which has always resonated with me, provides a powerful means of critiquing patriarchy and therefore, it

provides a robust framework to support my thoughts on learning. Therefore, rather than beginning with my theoretical framework, my readers will note, my initial thoughts and readings suggested ecofeminism to me. The threads I create in each chapter, weave together in chapter six where I propose a new conceptual metaphor that I entitle, the ecofeminist tangled bank, a complication of Darwin's (1859/1964) biotic tangle of plants, birds, insects, and earth, on a river bank, to which I add interhuman and intrahuman tangles.

At first glance learning, aesthetics, the body, and ecofeminism seem disparate, so essentially different that each can have nothing to say to the other. I see them as interconnected by the ability of aesthetic experiences of the body, understood within an ecofeminist frame, to inform a holistic vision of learning. My dissertation utilizes an ecofeminist lens to consider learning from a viewpoint that recognizes knowing as embodied and thereby connected to an individual's environment and culture (Harvester & Blenkinsop, 2010). Such a viewpoint incorporates an ethic that is care sensitive and rooted in the aesthetic; it engenders an analysis of oppressive conceptual frameworks and offers insights into mitigating those current approaches to education which are unsuccessful (Harvester & Blenkinsop, 2010). Ecofeminism allows me to weave ideas of connection, growth, and holism throughout my dissertation as a foil to the binary oppositions embedded within K-12 education today.

I frame a vision of learning as transformative experience which leaves the individual changed, which unfolds as the individual exerts a choice to approach, to learn, and to be changed; such exertion is not inspired by utility, but by the aesthetic in the form of subjective sensory experience. Such learning becomes part of who we are. We accept the idea that trauma lives in the body, subconsciously affecting what we choose to approach or avoid (van der Kolk,

2014). In my dissertation, I theorize that the aesthetic does the same; giving impetus to those passionate desires (Garrison, 1997) that become the focus of our lives.

Today, in the United States, a market model, in which knowledge is seen as a commodity that is owned by the consumer and the state, characterizes the general understanding of how education works (Hohr, 2013; Liston, 2001; Ravitch, 2016). In such a model, high-stakes testing is a sensible means of holding students and teachers accountable for commodified knowledge (Hohr, 2013; Liston, 2001; Ravitch, 2016). When accountability is front and center, those aspects of education that are easily measurable quickly overshadow those that are aesthetic even though, in reality, as this dissertation highlights, the aesthetic qualities are responsible for the development of both meaning and skill within the individual (Hohr, 2013). For students in the K-12 classroom, the view of learning as an easily measurable commodity, so removed from their lived, embodied, reality, is detrimental to their love of meaningful learning and to the passion that is the motivation for truly educative experiences. Stated another way, the view of learning as a purely cognitive process that is disconnected from the student's lived experience can be characterized by the split of the mind from the body (Garrison, 1997). An ecofeminist framework (Besthorn & McMillen, 2002) helps me to critique the oppression inherent in this mind-body split.

The power of ecofeminism can be seen in its ability to illuminate the manner in which systems of oppression interlock and "feed off each other" (Tong, 2009, p. 278). An ecofeminist framework integrates experience and personal expression in order to acknowledge and coalesce "rational, emotional, visceral, imaginative, and intuitive ways of understanding" (Stephens, 2013, p. 39). For my purpose, ecofeminism can illuminate ideas of aesthetic experience as

transformative and embodied, to lay the groundwork for a holistic vision of transformational learning arising from dialogue between mind and body.

As I previously stated, in U. S. schools today there is heavy focus on rote learning, test preparation, and test scores, which are seen as true evidence of student learning above all other representations (Liston, 2001; Ravitch, 2016). This view sees knowledge as fixed and eternal as exemplified by Plato's belief in a hierarchy of fixed and eternal Forms or metaphysical truths (Garrison, 1997). If knowledge is fixed, then the teacher is a kind of midwife who ushers in knowledge that already exists (Garrison, 1997). Within such a paradigm, teachers are directed by those who set policy to work harder to stuff more information into students' heads in ways that are efficient yet do not elevate or empower students, nor does such an approach meet students where they are, or enable them to find their own passionate desire for knowledge (Garrison, 1997; Ravitch, 2016).

According to Jim Garrison (1997), John Dewey offers a solution. For Dewey, all reasoning begins with need and with a desire to secure some value, and learning is a creative and artistic activity that seeks an elegant, beautiful, and harmonious solution, and where aesthetic values emerge with those solutions (Garrison, 1997). For Dewey (1934/2005) the aesthetic qualities of learning are key to fostering the type of experience that results in the individual seeing the world differently than before, in becoming transformed.

Dewey and Plato were similar in their belief that the beautiful, the harmonious, and the well formed are one (Garrison, 1997). But, according to Garrison (1997), Dewey's ideas differ with Plato's in at least two important ways. First, Dewey disagrees with Plato's supernatural epistemology, which advocates that we are all trying to discover an ultimate truth, one that may have been revealed to us supernaturally, perhaps even before we were born (Garrison, 1997). As

a naturalist, Dewey rejected any separation between natural and supernatural; for him, existence is a single whole (Garrison, 1997). So, while Plato adhered to a static supernaturalism, Dewey believed that the beautiful, harmonious, and well-formed are the result of rhythmic growth (Garrison, 1997). "Beautiful forms are produced by practical reason, and constructive practical inquiry bestows value" (Garrison, 1997, p. 15). In this way, as the individual manipulates the material of her own sensory experiences, she imaginatively glimpses possibilities to create meaning and values (Garrison, 1997).

Another dualism Plato embraced that Dewey rejected, was the separation between theory and practice. As a holist, Dewey's belief was that practice involves theory and is in fact, the outward manifestation of theory (Garrison, 1997). Plato's transcendental Ideas became *ideals* for Dewey. That is to say they were desired possibilities, values, or what he referred to as "ends-in-view" (1938/1997 For Dewey, the ideally possible, replaces ultimate Ideals or Forms. Similarly, "the relationship is not between the natural and the supernatural: It is a naturalistic dialectic of the actual and ideally possible. Creativity and genesis characterize the cosmos for Dewey" (Garrison, 1997, p. 22). Imagination can help us to see from the vantage point of another, and by sharing perspectives, finite humans can grow wiser; dialogues across differences are a growth medium for the individual gaining a more complete picture of reality (Garrison, 1997; Greene, 1995).

Ecofeminism goes a step further critiquing dualisms, such as between theory and practice, since it reveals "a logic of interwoven oppression" (Plumwood, 1996, p. 211), supported by hierarchical power which acts to provoke and enlarge the thinking that splits man and woman, humans and nature, and so forth. In a hierarchical, dualistic, oppositional world-view, oppression is inseparable from value based, tiered ranking (Besthorn & McMillen, 2002).

Ecofeminism proposes thinking of social and natural systems in a way that marries "the complexity of … difference with an understanding of relationships of dominatory power" (Cudworth, 2005, p. 13), in order to provide for the analysis and mitigation of relations of power within and between social and natural systems.

Throughout my dissertation, in order to render my ecofeminist vision of learning as aesthetic, embodied and connected, I draw heavily on Delores Liston's (2001) conception of Joy, as she describes in *Joy as a Metaphor of Convergence: A Phenomenological and Aesthetic Investigation of Social and Educational Change*. In her view, Joy is not the same as happiness, which depends upon external events, instead Joy, arises from self-reflection and is not dependent on circumstances (Liston, 2001). Fulfillment and justice define this interpretation of Joy revealing the beauty and ethics that is at our core as beings (Liston, 2001). Because Joy brings attention to interrelatedness, it has no space for hierarchy or oppression; it reveals a greater understanding and experience of our world. Additionally, when we understand our interrelatedness, the awareness of our connection encourages us to behave in a way that is caring (Liston, 2001). As Liston (2001) describes, Joy is a metaphor of convergence, meaning that it results when "fields of study that seemed previously to be unrelated" (p. 2) are experienced as interrelated, helping us radically change the way we "experience and interpret" the world. I embrace this thinking and weave threads of Joyful convergence into my work.

In order to further illuminate how aesthetic, transformative learning is embodied, in this dissertation I investigate how, as our "tool of tools," the body is necessary for thinking, taking action, and perceiving (Shusterman, 2006).

> As human thought would not make sense without the embodiment that places the sensing, thinking subject in the world and thereby gives her thought perspective

> and direction, so wisdom and virtue would be empty without the diverse, full-bodied experience on which they draw and through which they manifest themselves in exemplary embodied speech, deeds, and radiating presence (Shusterman, 2006, p. 17).

Our Western conception of the superior rational self provides the impetus for marginalizing anything to do with the body (Plumwood, 1996).

Pleasure plays a key role in how we experience the world with our bodies since pleasure is deeply rooted in our evolutionary past as well as in our integration with the natural world, (Chatterjee, 2014b; Gopnik, 1998). Pleasure drives us to beauty and beauty produces different responses within us for different reasons; it engages our sensations, emotions and meaning flexibly (Chatterjee, 2014a; 2014b; Shimamura, 2013). Our reactions of pleasure cause us to continually seek out those objects and experiences that we find aesthetic (Chatterjee, 2014a).

Aesthetic pleasure is rooted in basic appetites, but it also extends beyond them since the same brain system that guides us in choosing what to eat is utilized as we evaluate something abstract like fairness or another person's reputation (Chatterjee, 2014a; 2014b). Our reward system allows us to experience pleasure, to evaluate that pleasure, to plan how to get more pleasure, and to modify and restrain our methods; in other words our reward system helps us learn (Berridge & Kringelbach, 2008; Chatterjee, 2014b). So the pleasure we find in subjective, aesthetic experience becomes an important piece of the puzzle for understanding learning that is transformative. As my title suggests, "the exertion of a choice" (Darwin, 1871, p. 794-795), whether by a female bird or a student in a classroom, springs from aesthetic experience.

Organization and Purpose

Each chapter of this dissertation begins with a story of learning that relates to the topic of the chapter. Some of the experiences I describe come from my own teaching, others do not, but each offers a springboard for the thoughts in the chapter. The stories I relate have enabled me to reflect on what I believe about learning and to give those beliefs a shape; they paint a powerful picture for me and my hope is, they do the same for my readers.

In Chapter 1, I investigate historical understandings of the aesthetic, including how these understandings have evolved over time; incorporating the nature of pleasure and beauty within the aesthetic, as well as feminist aesthetic viewpoints. Finally, I examine the aesthetic within education, particularly as approached by educators John Dewey, Maxine Greene, and Elliot Eisner. In Chapter 2, I explore the qualities and contexts of aesthetic learning as engaged by educational researchers, with particular attention on aspects of such experiences from the point of view of the learner. In Chapter 3, I outline an ecofeminist theoretical framework. As I stated, I chose this framework because of ecofeminism's ability to make interrelated systems of oppression visible. This ability assists me in shining a light on how these oppressions are brought to bear on our approach to learning (Selam, 2006). An ecofeminist theoretical framework lays the groundwork for an epistemology that recognizes knowing as embodied and connected to the learner's lived experience (Harvester & Blenkinsop, 2010; Selam, 2006). It paves the way for an ethic that is care-sensitive and rooted in the aesthetic; and finally, since it provides a means of analyzing the oppressive conceptual frameworks that shape educational practice, it can also offer insights into mitigating current, largely unsuccessful, approaches to education (Harvester & Blenkinsop, 2010). In Chapter 4, I illuminate an ecofeminist vision of learning as embodied by exploring the role of embodied, aesthetic experience within learning. Ecofeminism reveals how the 'logic of domination' (Warren, 1996), invigorates the Western proclivity for placing the

head, where logic and reason reside, over the body, from which emotion and subjectivity emanate. Chapter 5 explores the field of neuroaesthetics and what neuroscience reveals about learning. In this chapter I propose that aesthetic learning has the ability to inscribe on the body becoming the source of an individuals life's work and passionate desire (Garrison, 1997). In Chapter 6, I look at possibilities for the future. Pulling all the pieces together, I unite ideas of emergent growth and holism with embodied, aesthetic, educative experience to propose a different metaphor for learning: the ecofeminist tangled bank.

By converging many seemingly disparate threads, I expand the present understanding of learning held my many, as simply a score on a test, to encourage a vision of cognition as one piece of the whole. An ecofeminist vision, which honors individual experience, engenders a fuller appreciation of the embodied, aesthetic nature of learning experiences. By presenting a holistic picture of what constitutes educative experience, I paint a Joyful (Liston, 2001) vision of learning as aesthetic, embodied and connected; offering insights into understanding why a one-size-fits-all approach to learning, rigidly focused on standards and accountability, is detrimental to students who would benefit from being introduced to the beauty of subject matter.

In the field of Curriculum Studies we see curriculum in its broadest sense, as an emergent force in education that we seek to reveal and to understand (Flinders & Thornton, 2009). In today's school settings, where knowledge, that has nothing to do with their own lived experience, is forced upon students, this dissertation provides me an opportunity to offer a shift in focus from knowledge as disembodied property, to knowledge as a natural result of lived, aesthetic experience. It adds to the conversations of those who seek to reveal the qualities of learning that are harmonious, resonant, and beautiful, and to consider why human beings learn.

All organisms, even amoebae, are driven to either approach or avoid other organisms (Chatterjee, 2014a). If this instinct is at the root of our aesthetic drive, then it shapes our desire for food, for each other, and even for abstract ideas like fairness, and as such, this drive is basic to our desire to exert a choice and to learn (Chatterjee, 2014a; Darwin, 1871). The primordial urge to approach or avoid is experienced in shades and degrees and with limitless possibilities of combination in order to assist individuals in forming an understanding of the world. My dissertation follows this line of thinking to uncover an ecofeminist vision of learning as aesthetic, embodied, and connected.

CHAPTER 1

IDEAS OF THE BEAUTIFUL: DEFINING THE AESTHETIC

The students in my fourth grade art class had just learned about Jackson Pollock (1912-1956), an Abstract Expressionist painter. The Abstract Expressionist movement began in the United States after World War II, emphasizing dynamic, energetic gesture, and thoughtful focus on color (Jansen & Jansen, 2001). In terms of a fourth grade understanding, Jackson Pollock wanted to paint things we cannot see with our eyes, like ideas or feelings, rather than things we can see like a tree or a bird. On this particular spring day I was observing my student, Christopher, through the window as he created his own Abstract Expressionist piece on the patio, outside my classroom. Covered in old shirts to protect his clothing, he was having a wonderful time slinging the paints of his chosen color scheme at a giant piece of paper. I could tell he was singing to himself as he painted and I was curious to know what music he had chosen to express his experience. As I made my way outside, I could hear that it was Beethoven's Symphony #5. I watched and listened to him and after a moment he stopped, turned to me and said, "You know, Mrs. Eswine, I used to think this stuff was just drips and splashes, but now I see that it's about *energy*." I was stunned. He had it. Christopher *owned* the words that reflected his understanding of Abstract Expressionism. His statement was not the result of something he memorized and yet, prior knowledge had a place. I knew that he understood the concept deeply.

I recognize the results of the 'ah-ha moment' when the proverbial light bulb goes on in my student, and my belief is, that moment is encouraged by something elemental, within the learner that compels him or her to strive for a deep understanding – to connect the dots. Christopher had constructed his learning from pieces of information he had gotten from me and from his music teacher. Additionally, even though he had never met Jackson Pollock or

Beethoven personally, he knew enough about them that they were real to him and the knowledge he had of them was useful.

I theorize that Christopher's putting-together-of-pieces sprang from a need for clarity; a need that explains why, at least in part, certain things please us and we find them aesthetic, a need that Liston (2001) terms epistemic hunger. In the first two chapters of this dissertation, I focus on the aesthetic aspects of learning. In order to bring into focus what I mean by 'aesthetic aspects of learning,' an investigation of the term 'aesthetic' is useful. For most people the term evokes a vague sense of the beautiful. In this chapter, I look at historical understandings of the aesthetic; aesthetic as beauty and pleasure; aesthetics from a feminist perspective; and aesthetics in the work of educators John Dewey, Maxine Greene, and Elliot Eisner, in order to hone a useful definition.

Historical Grounding of the Aesthetic

The term "aesthetic" is derived from the Greek, *aisthetikos*, meaning sensitive or sentient. The philosophy of *aesthetics* is concerned with ideas of the beautiful and the ugly and with the study of the mind and emotions in relation to the sense of beauty or the beautiful ("Aesthetics", 2016). Though conceived by the ancient Greeks, extensive philosophical reflection in aesthetics began to emerge with the increasing of leisure time in Europe in the eighteenth century (Seung, 2010). This is why many texts begin discussions of aesthetics with Alexander Gottlieb Baumgarten's use of the term, "aesthetic" in his thesis *Aesthetica* (1750); a reaction to the rational philosophy of Descartes (Inwood, 1993; Sheppard, 2009). Baumgarten contended it was a mistake to fail to link sensations and perceptions with knowledge since perception and sensation provide an equally valid conception of reality (Baumgarten, 1750).

Though Baumgarten had first used the term, it was Kant's *Critique of Judgment* (1790) that linked aesthetics with a philosophy of art (Inwood, 1993; Sheppard, 2009; Shusterman, 2003). Writing in the later part of the 18th century, Kant became the most influential of the early aesthetic philosophers (Seung, 2010). He held the human ability to reason in the highest regard, believing the ability to judge, enables human beings to experience beauty (Seung, 2010). Aesthetic judgments of beauty, or judgments of taste, as he sometimes called them, have four key features according to Kant. True beauty is free from concepts; true beauty is disinterested; true beauty is necessary; and true beauty is universal (Seung, 2010). As meanings shift in more than 200 years, these terms require some explanation.

To be free from concepts means that beauty should be free from purpose or intent; similar to appreciating sand patterns on a beach without naming those patterns. As Kant sees it, the arts are impure because they involve concepts (Dickie, 2015; Seung, 2010). He also believed that a certain amount of distance or disinterestedness was necessary for aesthetic judgment in order that one might critique without the interference of emotion or desire (Scruton, 2011).

> [T]aste in the beautiful is alone a disinterested and free satisfaction; for no interest, either of sense or of reason, here forces our assent...Taste is the faculty of judging of an object or a method of representing it by an entirely disinterested satisfaction or dissatisfaction. The object of such satisfaction is called beautiful. (Kant, 1790/1987, p. 43)

Even today, Kant's views on the idea of disinterest continue to receive the most attention (Seung, 2010). Kant's understanding of disinterest is not the same as 'uninterested', but instead it indicates freedom from self-interest; there is no desire to possess true beauty (Seung, 2010). Disinterestedness helps the one who perceives to recognize those objects that are good or

beautiful in themselves (Dickie, 2015; Stolnitz, 1998; Zangwill, 2014). Though clearly, beauty comes to us through our senses, for Kant, it does not follow that a sense of beauty is a non-cognitive process, since, rising above one's sensual nature is a key measure of moral goodness (Dickie, 2015; Seung, 2010). For Kant *true* beauty pleases in an intellectual way (Dickie, 2015; Seung, 2010).

Kant differentiated aesthetic judgment from moral judgment (Seung, 2010). In his view, if we say that something is "good," the goodness is relative to some purpose; a judgment of the beautiful (a judgment of taste), is purely contemplative (Seung, 2010). Though judgment of beauty is initially subjective because of its relation to feeling, the aesthetic relies on cultivation and "disinterested contemplation" and thus is not sensual (Kant, 1790/1987; Seung, 2010).

Kant's third key feature of beauty, it must be "necessary," indicates that true beauty is a product of the human mind though it manifests itself as if it were a real property of an object, like weight or chemical composition (Seung, 2010). For example, there is no objective property to a sunset that makes it beautiful, human minds determine it so. Closely connected to true beauty as "necessary" is true beauty as "universal" (Seung, 2010). While human minds determine the sunset is beautiful, those minds also agree it is so (Seung, 2010). Similar to common sense, true beauty is commonly accepted (Seung, 2010).

Kant and other Continental Rationalist aesthetic philosophers, who included Baumgarten, were considered formalists because they judged the formal aspects of art rather than the content as most important (Dickie, 2015; Seung, 2010). For these philosophers, beauty had more to do with rational ideas like harmony, balance, and scale (Scruton, 2011).

During the same period, British philosophers, who included Lord Shaftesbury (1671-1713), Francis Hutcheson (1694-1746), David Hume (1711-1776), and Edmund Burke (1729-

1797), investigated the aesthetic through a slightly different lens (Dickie, 2015; Scruton, 2011). Rather than distance and disinterestedness, these British philosophers utilized an intuitionist/analytic dichotomy for the philosophical structuring of aesthetics; with intuitionists believing that beauty is a sensory version of moral goodness and analytics believing that beauty is determined through the dissection of conceptions (Dickie, 2015; Stolnitz, 1998; Zangwill, 2014). British eighteenth century philosophers are known for three main ideas regarding the aesthetic. First, human nature is universal (within limits) and therefore studies of beauty can be universal (Dickie, 2015). Second, our responses to beautiful objects are of the senses or feelings and are not cognitive; this is a "natural" response (Dickie, 2015). And third, a natural response is overlaid by the individual's communal experiences, habits and customs (Dickie, 2015).

Both Hutcheson and Hume maintained that judgments of beauty are judgments of taste and not of reason; taste nevertheless operates according to general principles, which might be discovered through empirical investigation (Dickie, 2015). For Hume, delicacy of taste is not merely "the ability to detect all the ingredients in a composition," but also our sensitivity "to pains as well as pleasures, which escape the rest of mankind" (Dickie, 2015, p. 17). Thus, for the analytic-intuitionists, sensory discrimination is linked to a capacity for pleasure (Dickie, 2015). This thinking differs from Kant's, who separated beauty, pleasure, and moral goodness, believing that though a perception of beauty might begin with the senses, such perception could only result from thoughtful reflection (Seung, 2010).

The period from 1685-1815, sometimes called the "long" eighteenth century, is also referred to as the Enlightenment (Beardsley, 1966; Seung, 2010). In the nineteenth century, or the Romantic era, the scope of what was considered great art was widened to include works whose lack of attention to form was offset by the presentation of emotions (Beardsley, 1966).

During the Romantic period, the enjoyment of feeling and emotion through cultivation of "a more intense awareness of felt quality" (Beardsley, 1966, p. 247) was the norm. The Romantic epistemology was "a kind of emotional intuitionism" (Beardsley, 1966, p. 246) which was a reaction against ideas of rationalism and empiricism. Romanticism embraced metaphor and myth, finding that "poetry can still be the medium through which we know the nature of reality and the inwardness of each other" (Beardsley, 1966, p. 259). One of the major ideas in Romanticism, in addition to the elevation of emotion, was the idea of the organism (Beardsley, 1966). Organicism embraced a deep sense of the unity of all things in nature, and humanity's ability to produce art, grew out of this sense of connection with nature (Beardsley, 1966). Organicism relates to what is known as holism today.

Since these beginnings, aesthetic thinking has tended to shift between the rational/empirical and the emotional/subjective ends of the spectrum (Beardsley, 1966; Dickie, 2015; Stolnitz, 1998). What the early aesthetic philosophers held in common was the view that the rational/cognitive aspects of experience are in opposition to the sensory/emotional/affective portions of experience. As Garrison (1997) notes, such thinking descends from Plato, who embraced dualism between reason and emotion. I agree with Garrison (1997), reason and emotion, working together, provide creative tension; thus experience, enriched by creative tension, is a single whole (Garrison, 1997).

Thinking back to the story, at the beginning of this chapter, of my student Christopher, rather than employing either a rational/cognitive or an emotional/sensory approach to Abstract Expressionism and the painting he was creating, Christopher relied on reason *and* emotion to give meaning to his experience; thus it was an *experience*. In *Art As Experience* (1934/2005), Dewey wrote:

> It is not possible to divide in a vital experience the practical, emotional and intellectual from one another and to set the properties of one over against the characteristics of the other. The emotional phase binds parts together into a single whole: "intellectual" simply names the fact that the experience has meaning; "practical" indicates that the organism is interacting with events and objects, which surround it. (p. 61)

I think this holistic view of aesthetic experience best describes Christopher's experience; he emotionally enjoyed the physical aspects of the 'action painting' process, and the experience had "meaning" because he had an understanding of Abstract Expressionism and Jackson Pollock, he even wove a little Beethoven into the mix. This cognitive knowledge added to his experience. As I see it, the cognitive and emotional are continually in dialogue. They function together, holistically. The desire to give the cognitive aspects of experience hierarchy over the affective, emotional aspects is part of the Western thinking we have inherited from Plato.

The next part of this chapter springs forward from these early roots to look at the nature of pleasure and beauty in the aesthetic, as well as the aesthetic from a feminist viewpoint. I also investigate the views of three educational theorists John Dewey, Maxine Greene, and Elliot Eisner.

The Nature of Pleasure and Beauty in the Aesthetic

Stemming from Kant's two uses of the term "aesthetic" in his several *Critiques*, there is still a "wrenching duality" within the field of aesthetics (Shaviro, 2007). "On one hand, [aesthetics].. designates the theory of sensibility as the form of possible experience; while on the other hand, it designates the theory of art as the reflection of real experience" (Shaviro, 2007, p. 1). Contention between aesthetics as an objective philosophy of art versus aesthetics as a

philosophy of subjective sensory experience contributes to confusion surrounding the term “aesthetic” (Shaviro, 2007).

Beautiful objects frequently *do* possess an objective quality that can be understood when compared to standards of beauty, but for Korsmeyer (2004) what these beautiful objects share, more importantly, is a capacity to evoke a response in a subject. Rather than some quality of an object itself, finding something "beautiful" is a "subjective effect involving the arousal of feeling" (Korsmeyer, 2004, p. 38). As Scruton (2011) defines it, “the judgment of beauty orders the emotion and desire of those who make it. It may express their pleasure and their taste: but it is pleasure in what they value and taste for their true ideas” (p. 164). In this view, the pleasure an individual finds in beauty is personal, an extension of their life experience and culture. Pleasure in beauty is also intentional, meaning it can be “neutralized by argument and amplified by attention” (Scruton, 2011, p. 26), therefore, pleasure in beauty is more connected to the intellectual than pleasure in eating or drinking, which arise from sensations. For British philosopher, Roger Scruton, (2011), to discern the presentation of the form of the beautiful object and the type of pleasure it presents is important, in order to determine if that pleasure is purely sensory or if it includes intellectual.

Art critic, Arthur Danto (2006) finds that beauty is but one mode of artistic presentation, the others include: disgust, horror, sublimity, and sexuality. Since art is embodied meaning, beauty should not be left out of the conversation though he does not see it as a useful means for judging good art from bad art (Danto, 2003). Philosophy professor, Carolyn Korsmeyer (2004), also finds beauty implicated in the link between the aesthetic, pleasure, and desire since what is beautiful gives us pleasure and therefore, we want to possess it. I explore the neurology of pleasure and desire, or what neurologists call liking and wanting, more fully in chapter five

where I investigate neuroaesthetics, but at this point I wish to note that the connection between beauty and pleasure also has implications for goodness and moral virtue because all of these utilize our brain's neurological pleasure responses (Chatterjee, 2014a; Korsmeyer, 2004). While there is a physiological connection between pleasure and beauty, Korsmeyer (2004) sees tying the aesthetic to a feeling of pleasure as problematic since pleasure is idiosyncratic and individual.

As I have described, the term "aesthetic" is often ambiguous. Aesthetics can be an objective philosophy of art, or art criticism; it can be a subjective exploration of sensory experience, or even what it means to live a good life (Lintott, 2010; Servomaa, 1997). We can see it in terms of theories of beauty or in the pleasure beauty imparts. For my purpose, which is to understand the role of the aesthetic in learning, I must gather more threads before weaving the cloth. Therefore I will gather a feminist viewpoint on aesthetics in the next portion of this chapter.

A Feminist Aesthetic

I propose that a ecofeminist perspective offers insights for critiquing the hierarchies that pervade Western thinking, which I investigate in greater depth in chapter three, as I shape my theoretical framework, but within an investigation of aesthetics, a feminist aesthetic becomes an instrument for reframing questions; where issues that spring from hierarchical thinking, such as disinterest, or distinctions between craft and art, no longer matter (Hein, 1990). In a feminist aesthetic, even ideas that are usually seen as oppositional such as the cognitive versus the affective nature of aesthetic experience can coexist because they are viewed as a matter of context, or, of where we place the frame, rather than as opposing (Hein, 1990). Feminism helps us appreciate that the position of the observer is always situated (Zimmerman, 2011).

Experience is central to feminist thought, but what is meant by experience is not mere empirical observation, as much of philosophy tends to construe it (Lintott, 2010). Instead, feminist experience is what art, literature, and science deal with; the lived experience of feeling as well as thinking, of performing actions as well as receiving impressions, and it includes an awareness of our connections with other people as well as of our own sensations (Lintott, 2010). Aesthetic theorizing and feminist theorizing share a concerned with the immediate and experiential. Within both, there is an inherent pluralism that prohibits any ability to be separated from experience and both are dedicated to the understanding of the essence of a thing (Hein, 1990).

Feminism aims to overturn what many consider the most entrenched hierarchy there is: the hierarchy of gender (Hein, 1990). "Feminists accept gender, not as a metaphysical or biological reality, but as an analytic category like class or race, a tool for understanding complex relations" (Hein, 1990, p. 281). Gender is not simply a descriptive qualifier; instead, intertwined with all other qualifiers such as age, ethnicity, or sexual orientation, gender highlights the understanding that all knowledge is situated knowledge (Hein, 1990; Zimmerman, 2011). Historically, art practices have perpetuated the subordination of women by ignoring the work of women artists, objectifying women's bodies, romanticizing sexual exploitation, and labeling women's work as ‘craft’ rather than ‘art’ (Hein, 1990; Korsmeyer, 2004). Placing importance on context, feminist aestheticians also investigate social, political and ethical issues (Hein, 1990; Lintott, 2010). The resulting feminist aesthetic theorizing can have a practical result, since revealing the essence of a thing can expose the underlying metaphors we uncritically accept, which have a powerful influence on society's understanding of the world (Hein, 1990; Lintott, 2010).

In Plato's epistemological hierarchy, the intellectual world of *forms*, where ideas such as beauty, truth, and goodness supposedly reside, is superior to the sensory, natural realm (Tong, 2009). Arising from this thinking, Western philosophy has prompted a hierarchy which places men, who are associated with the mind and ideas, in a position superior to women, who are associated with nature and the body (Griffin, 1987; Tong, 2009). In this thinking women are viewed as naturally emotional and men are essentially rational (Tong, 2009).

A feminist aesthetic becomes a useful tool for critiquing hierarchical assumptions that have come to us from Western philosophy. As Allen (1992) states, "musing on the circumference of experience" (p. 102), enables the questioning of underlying binary constructions. Because it honors the experience of the viewer and participant, the idea of multiplicity finds a home in feminist aesthetics (Hein, 1990).

Aesthetics in Education: John Dewey, Maxine Greene, and Elliot Eisner

In my field, curriculum studies, three figures are prominent for their work surrounding ideas of the aesthetic as it impacts education in general, and curriculum in particular. Each stands in a different place and time, thus providing a slightly unique point of view; yet all express recognition of the role of the aesthetic, be it beautiful or sublime, in experiences that shape the educational process. Elliot Eisner began his career as an art teacher, which is my own field and therefore, his application of the ideas of Dewey and Greene are particularly important to me. For this reason he receives a lion's share of attention in this chapter.

John Dewey

John Dewey explored ideas of aesthetics and experience in his book *Art as Experience* (1934/2005), which he dedicated to Albert C. Barnes with whom he had innumerable discussions surrounded by Barnes' extensive art collection. The Barnes Foundation Institute's collection

consists of more than 2,500 paintings by such artists as Renoir, Cezanne, Matisse, Picasso, Rousseau, Seurat, Degas, and Van Gogh (The Barnes Foundation, 2016). I can only imagine how proximity to so much beautiful and expressive art would inspire thoughts of what constitutes aesthetic experience.

According to Dewey (1934/2005), many times, the physical art product is confused with the aesthetic object. We see this in the example of a statue, which is in actuality, a piece of marble. The artist's action on that marble with his or her 'form' is what makes it aesthetic. "The artist has the power to seize upon a special kind of material and convert it to an aesthetic medium of expression" (Dewey, 1934/2005, p. 208). Accordingly, "art is not nature; art is a human endeavor. Nature must be transformed to become art " (Dewey, 1934/2005, p. 82). When the Greeks formed the idea of art as reproduction, this did not mean they reproduced nature but that they reproduced ideals associated with the society (Dewey, 1934/2005). Their art reflected and reproduced what they valued: order, proportion, and symmetry. Thus, engagement with art produces aesthetic experiences "by reducing the raw material of that experience to matter ordered through form" (Dewey, 1934/2005, p. 138). The individual's experience, which could stop short with a kind of noticing, becomes transformative when he or she engages with the art form and allows him or herself to be changed by that engagement (Dewey, 1934/2005). For Dewey, experience is primarily a way of living in the world. Not wholly mental or even conscious; instead, experience is "a relation between doing and undergoing" (1934/2005, p. 48). What Dewey describes transcends either sensory or cognitive engagement alone to include both and to become transformative.

If we imagine experience on a continuum, then at one end we would find those things we do on autopilot, like brushing our teeth or taking out the garbage; the mundane. These are

activities that we have difficulty recalling whether we did or not. Such experiences are necessary and useful to our wellbeing despite being forgettable. On the other end of the continuum are those events that are transformative. These are activities that once they are done, we are never the same. Experiences such as becoming a parent fit on this end of the continuum and they exemplify what John Dewey (1934/2005) called *an experience*.

As Dewey (1934/2005) describes, *an experience* embodies certain qualities: it satisfies an impulsion; is receptive and perceptive; it causes the one engaged to reflect; and it achieves consummation. When we are open to receiving rather than functioning on autopilot, we are made available for *an experience*. "The aesthetic or undergoing phase of experience is receptive and results in greater perceptibility" (Dewey, 1934/2005, p. 55). This perceptibility goes beyond recognition, which is satisfied when a label is applied. When something is perceived, emotion pervades the perceiver and takes the form of outgoing energy in order to receive; there is a willingness to be changed; perceiving therefore, is not passive (Dewey, 1934/2005). Since perceptibility is the product – or even the by-product of "continuous and cumulative interaction of the organic self with the world" (Dewey, 1934/2005, p. 229), an activity that inspires greater perceptibility has the potential to become *an experience.* Additionally, *an experience* feeds, satisfies or answers an impulsion. An impulsion is similar to an impulse but more active, more akin to a hunger or demand and it carries with it an urge toward action (Dewey, 1934/2005). Reflection is also important to *an experience* because when we reflect, we draw a distinction between form and substance (Dewey, 1934/2005). In other words, through the perceiver's thoughtful consideration, the chunk of marble is distinguished from the marble sculpture. In terms of the one engaged in *an experience,* her sensibilities and understandings are ordered or changed through her form's engagement with the matter of the experience. Through reflection

the one engaged becomes cognizant of a shift in understanding, as she draws a distinction between her old and new understanding, a new awareness dawns and she is transformed. This drawing of a distinction marks *an experience* that has been carried to consummation (Dewey, 1934/2005).

Describing the shift from a traditional toward a more aesthetic, progressive education in the early twentieth century, Dewey (1938/1997) was dismayed to find that many times an either/or, oppositional point of view served to guide progressive schools. For example, expression and cultivation of individuality were placed in opposition to imposition from above; external discipline was opposed by free activity; learning from texts and teacher was opposed by learning through experience; acquisition of isolated skills by drill and practice was opposed by acquisition of skills because of their vital appeal; preparing for a remote future was opposed by opportunities at the present; and static aims and materials were opposed by understand the world as changing (Dewey, 1938/1997). Dewey was distressed that so many progressive schools and teachers felt that moving from a traditional to a progressive philosophy meant that all that was previously embraced, which was construed as traditional, must be thrown out. Instead of being grounded on what is opposed, Dewey (1938/1997) supported a philosophy of experience. In this vision, the focus was placed on the quality of the experiences provided to students. Such a philosophy, built on constructive development, ensured experiences that were both educative and worthwhile (Dewey, 1938/1997).

> An experience is always what it is because of a transaction taking place between an individual and what, at the time, constitutes his environment, whether the latter consists of persons with whom he is talking about some topic or event, the subject talked about being also a apart of the situation; or the toys with which he is

> playing; the book he is reading (in which his environing conditions at the time may be England or ancient Greece or an imaginary region); or the materials of an experiment he is performing. The environment, in other words is whatever conditions interact with personal needs, desire, purposes, and capacities to create the experience, which is had. Even when a person builds a castle in the air he is interacting with the objects which he constructs in fancy. (Dewey, 1938/1997, p. 43-44)

Educative experiences do not occur in a vacuum but instead they have both continuity and interaction (Dewey, 1938/1997). The principle of continuity holds that when an experience is connected to all previous experiences it becomes available to be useful – to be continued – giving preparation for future life experiences (Dewey, 1938/1997). When the school considers the "power and purpose of those …[being] taught", it understands the needs and capacities of the students, and it will design experiences that are interactive and continuous (Dewey, 1938/1997, p. 45).

Along with continuity and interaction, educative experiences encompass freedom. Freedom in education involves the learner in active cooperation in the construction of the purposes involved in his/her studying (Dewey, 1938/1997). Freedom is the power to frame purpose or an end view. In some progressive schools in the early twentieth century, allowing the students freedom to construct experiences equaled the teacher abandoning responsibility for the design of those experiences. Dewey (1938/1997) describes the formation of purpose as a complex intellectual exercise involving: "1) observation of surrounding conditions; 2) knowledge of what has happened in similar situations in the past; and 3) judgment which puts together what is observed and what is recalled to see what they signify" (p. 69). Without

observation, knowledge, and judgment there is no purpose, only impulse (Dewey, 1938/1997). Most K-12 students do not possess skills, judgment, or the sophistication to create interactive and purposeful experiences for themselves without creative guidance from the teacher.

When he wrote the essays compiled in *Experience and Education* (1938/1997), Dewey's aim was to encourage progressive teachers to embrace the purposeful design of educative experiences for students, avoiding the mindset that saw an embrace of experience as a wholesale rejection of old-style didactic teaching. He wanted them to sit in-between.

Maxine Greene

For educator Maxine Greene (1995; 2001), the point of learning the skills and rudiments of any academic discipline is so they may contribute to one's ability to discern, or to see and name. Accordingly, education's duty is to make the aesthetic experiences embodied in the arts, available to students by teaching them the language, skills, and rudiments of those various fields (Greene, 1995). "The encounter with the truth of art happens in the estranging language and images which make perceptible, visible, and audible that which is no longer, or not yet, perceived, said, and heard in everyday life" (Greene, 1995, p. 27). Greene places herself at neither one end nor the other of Shaviro's (2007) "wrenching duality." Instead she sits in the midst of both where subjective aesthetic experience is informed by the understanding of the objective qualities of a given art form. The objective forms are made meaningful within sensory experience, and sensory experience is given shape and meaning through the clarity provided by the objective forms (Greene, 1995, 2001)

Teaching educators the importance of learning to be fully present to art and to impart that understanding to their students was Greene's mission as philosopher in residence at the Lincoln Center's Institutes for the Arts in Education each summer. "We are fully present to art

when we understand what there is to be noticed in the work at hand, release our imaginations to create orders in the field of what is perceived, and allow our feelings to inform and illuminate what is to be realized" (Greene, 1995, p. 138). Learning about art and aesthetics should imbue the student with a sense of agency, even power (Greene, 1995). Paintings, literature, theater, and film can open doors and provide transformational experiences for those who are empowered to engage with them. "We can enable all sorts of young people to realize they have the right to find works of art meaningful against the backdrop of their own lived lives" (Greene, 1995, p. 164). To "realize" a work of art requires effort. Yes, there is an initial response but there is a deliberate balance between the spontaneous response and what is communicated on deeper reflection (Greene, 1995). "We are all helped to see what the artist tries to oblige – to obligate the percipient to create what the artist discloses, to become an accomplice in freedom with the artist, an accomplice in releasing possibilities" (Greene, 1995, p. 149).

Imagination, or the "ability to look at things as if they could be otherwise" (Greene, 2001, p. 122), is an important result of aesthetic engagement. As human beings we look at the world through the crust of our own constructed domain; through imagination we are able to decenter ourselves (Greene, 1995, 2001). Engagement with the arts and the aesthetic opportunities they provide supplies a medium through which individuals can engage their imaginations to envisage a different, better world (Greene, 1995). For Greene, engagement with the arts is a necessary piece of the educational puzzle. Painting, poetry, music, literature, and drama are each endowed with objective bodies of knowledge that comprise the milieu for enriched subjective experience; for Greene, providing learning opportunities within the aesthetic realm is key to a complete education (Greene, 1995).

Elliot Eisner

For my purpose, Dewey and Greene lead to Elliot Eisner. I see Dewey's ideas of experience and Greene's thoughts on imagination reflected in practical ways in Eisner's writings. Though, of the three, I was most familiar with Eisner before beginning my program in Curriculum Studies, Dewey and Greene have brought me to an even greater appreciation and understanding of Eisner's work. Since my field is arts education, and visual art in particular, Eisner, who was also a visual art teacher, is a hero of mine. During my master's program at Georgia Southern University, Eisner's book, *The Educational Imagination: On the Design and Evaluation of School Programs* (1979), was a pivotal text, influencing my practice by encouraging me to teach my students not only to create art, but look at art critically in terms of its place in history, the aesthetic theory to which it ascribes, and to discuss and justify their judgments about its nature, merits, and importance (Eisner, 1979). Given the name, discipline based art education (DBAE); this approach enabled me to build a successful visual arts program. I am indebted to Elliot Eisner.

As Elliot Eisner (1991) relates, the arts saved him. The son of Russian, Jewish immigrants, Eisner was born in Chicago, Illinois, in 1933. Elementary school was particularly challenging for him, as Eisner (1991) describes:

> …arithmetic was problematic and frustrating, my handwriting was and is at present not particularly good, spelling was a relentless bore, and English grammar – the diagramming of sentences whose features remain before me as vividly now as they were then – was largely meaningless, even when I was able to correctly indicate the difference between a direct and indirect object. But art – ah, that was another story. (p. 34)

Eisner (Inside the Academy: Elliot Eisner, 2012) still recalls his third grade teacher, Eva Smith, who recommended to his mother that young Elliot attend the Junior School for elementary and high school students at the Art Institute of Chicago. Referring to the paintings which line the walls of that institute, he says, "all my friends are hanging on the walls of that building" (Eisner, 1991, p. 34). From such inauspicious beginnings as a student, Eisner went on to earn an art degree from the Art Institute of Chicago, and then undergraduate and graduate degrees from the University of Chicago (Inside the Academy: Elliot Eisner, 2012). Until his death in 2014, Eisner was the Lee Jacks Professor of Education and Professor of Art at Stanford University (Inside the Academy: Elliot Eisner, 2012).

The three goals of education according to Eisner (1997) are first, for students to understand those ideas that are important, beautiful and powerful, and second, to be able to think critically and analytically and to utilize their imaginations in order to see connections. Additionally, they should use their understanding and ability to critically analyze and enhance their own lives and the lives of others (Eisner, 1997).

All knowledge is not cognitive but instead much is tacit; thereby, much knowledge is intuitive, experiential, personal, and secured in action (Eisner, 1998). According to Jerome Bruner (1990, as cited in Eisner, 1998), there are two ways of knowing; these include paradigmatic knowledge and narrative understanding. Narrative understanding is fostered through stories while paradigmatic knowledge is generated through scientific explanations (Bruner, 1990). Important though the skills of reading, writing, and computing are, they are not the only means of representing human understanding; schooling privileges written and spoken communication along with the ability to utilize mathematics and the language of numbers (Eisner, 2002b). In Eisner's (2002b) vision, students must learn to 'read' important ideas that

are rendered nondiscursively so that they may understand those ideas. In order to engage in this type of reading, students require experience and instruction, enabling them to realize that ‘smartness’ may exceed the limits of language arts and math (Eisner, 2002b). According to Suzanne Langer (1957/1976):

> The arts, like language, abstract for experience certain aspects for our contemplation. But such abstractions are not concepts that have names. Discursive speech can fix definable concepts better and more exactly. Artistic expression abstracts aspects of the life of feeling which have no names, which have to be presented to sense and intuition rather than to a word-bound, note-taking consciousness. (p. 94-95)

When curricula in any discipline utilize aesthetic properties, thereby generating aesthetic experiences, they engender aesthetic learning for the student (Eisner, 2002b). In any artistic medium, how forms relate is critical (Eisner, 2002b). Within the arts we learn to attend to relationships through questioning and thereby develop judgment. Eisner (2002b) says this about judgment:

> One of the interesting and important features of … judgment is that it cannot be reduced to rule, recipe, formula, or algorithm. There is no chart that one can consult, no prescription that one can follow. Judgment depends on feel, and feel depends on a kind of somatic knowledge that enables one to determine if the form at hand has what Nelson Goodman [(1978, p. 169)] once called "rightness of fit". When the body is engaged, the source of information is visceral; the sensibilities are employed to secure experience that makes it possible to render a judgment and to act upon it. (p. 201)

Eisner (2002b) finds it important for those in the field of education to look to the arts to reveal possibilities for approaching student learning in order to enable students' abilities to effectively form judgments. The arts can teach that intrinsic satisfactions matter (Eisner, 2002b). For anyone who loves what he or she does, the joy is in the journey, rather than simply the destination. In my work, I have seen a fourth grade student hide an illness from her parent in order to be allowed to attend school, because the class was "doing a time machine" that day. Allowed to attend school – what a remarkable concept! The satisfaction, for that student, was not in the actual history that was learned that day, as was the teacher's goal, instead, the satisfaction was the journey... in this case, the journey in a fake time machine! According to Eisner (2002a) intrinsic satisfaction is the best predictor that the learner will pursue the activity voluntarily, later in life, when the choice is theirs. I would go a step further to theorize that these aesthetic moments of intrinsic satisfaction form the basis of our passionate desires, or *eros* (Garrison, 1997). "The capacity of an art form to touch us depends on the relationships that are composed by artists" (Eisner, 2002b, p. 201). If we can alter the wording slightly it sheds light on my thesis, that learning itself can be aesthetic: "[t]he capacity of a subject matter to touch us depends on the relationships that are composed by teachers." To leave out, erase, or even avoid the influence of a skilled, passionate teacher on the aesthetic quality of the subject for the student is impossible. For both teacher and students, intrinsic satisfactions matter.

Another lesson the arts can teach education is the "what" and the "how" cannot be peeled apart; in other words, form matters. The *way* we say something (the form) impacts *what* is said (the content); demonstrating how "form and content interpenetrate" (Eisner, 2002b, p. 199). Additionally, the ability to be flexibly purposive (Dewey, 1934/2005), or opportunistic, by cultivating the ability to shift goals and avoid becoming rigidly pinned to aims, is something

education can learn from the arts. The arts can teach how to employ a process of assessing one's own progress to achieve purpose when the trajectory is not linear (Eisner, 2002a). The arts can teach that finding more than one answer is not a sign of failure and all outcomes need not be identical (Eisner, 2002a). Finally, the arts can teach us all to savor the ride; to see the beauty in whatever medium we employ (Eisner, 2002b) and as I previously stated, the journey matters.

For an additional answer to the question of why the aesthetic is so important, we only need look as far as our own sensory systems (Eisner, 1998). Humans have a low tolerance for homeostasis or equilibrium; we are easily bored and we like the stimulation of varied experience (Eisner, 1998). Rather than seeking to reduce it, human beings actually seek stimulation; aesthetic experience is a source of stimulation and problem solving is a source of aesthetic experience (Eisner, 1998). By exploring and then solving problems, whether building a sandcastle or a skyscraper, humans enjoy the aesthetics of active problem solving (Eisner, 1998).

When we leave the aesthetic out of the curriculum, we teach students that we do not value what it teaches (Eisner, 1998). The neglect or absence of a subject communicates its unimportance to the student (Eisner, 1998). Our educational system's embrace of ideas like accountability means that curriculum is broken into small bits, making it difficult for students to see how each portion is part of a larger whole (Eisner, 1998). There is no big picture, "no larger conception or armature" upon which the small bits of the curriculum can be placed (Eisner, 1998, p. 41). Our need for stimulation is not the only motivation human beings have for seeking the aesthetic; our need to give order to our world is similarly motivated. We want the world to make sense and aesthetic order helps the world fit together; it creates harmony (Eisner, 1998).

According to Eisner (2002a), there are five assumptions about knowledge that currently serve as a foundation for both research and practice in the field of education. What I call the

epistemology of the art-less. First is the assumption that knowledge of the world is based on truth rather than on any kind of belief systems. Second, knowledge is predictable, orderly, and formal, because of its basis in patterns (Eisner, 2002a). Knowledge shines a light on "the permanent structures underlying all the changeable phenomena of Nature" (Toulmin, 1990, p. 34, cited in Eisner, 2002a, p. 377), situating it as universal, not local (Eisner, 2002a). For example objects in China fall to the ground in the same way they to in the U.S. Further assumptions include the belief that knowledge does not express values but instead is value neutral (2002a). Finally, knowledge is testable, and verifiable, and necessarily declarative (Eisner, 2002a). In other words "the limits of cognition were very much defined by the limits of language... what you could not say, you could not know" (Eisner, 2002a, p. 377). This view of knowledge, called episteme, continues to impact our educational system in profound ways, coming to us from the ancient Greeks, episteme refers to true and certain knowledge (Eisner, 2002a).

Though such thinking began with Plato, it did not die with Plato; instead these ideas continue to inform our deepest beliefs about intelligence and what counts for knowledge. Eisner (2002a) offers an example in the utilization of the terms ‘intelligence’ and ‘talent.’ Talent is used to describe someone who is good at things related to the body: the arts or sports. Our current idea of intelligence describes those who are good at rational thought, rather than those who are good at abstraction (Eisner, 1998). In our culture there is a contradiction between the terms aesthetic and knowing, which stems from Plato's conception of the hierarchies of knowledge (Eisner, 1998). For Plato (as for Kant), episteme, or true and certain knowledge, could not be dependent upon the senses (Eisner, 1998). Dependable knowledge is gained, not through the empirical world of the senses, but through exercise of our rationality, by abstraction (Eisner, 1998).

We see Plato's ideas of episteme found in our conceptions of what it means to be intelligent (Eisner, 1998). The idea of knowledge as something out there, waiting to be discovered, prevails (Eisner, 1998). Not a techne, or, something that is made, instead knowledge is a universal (Eisner, 1998). "Mathematics, the queen of the sciences, is the apotheosis of human intelligence" (Eisner, 1998, p. 39). This is seen as true because mathematics does not require empirical evidence, only rational comprehension (Eisner, 1998). The idea, that rational comprehension is the true understanding of knowledge and intelligence, is woven so deeply into Western consciousness, that we hold it as a truth, rather than a view. Eisner (1998) offers the example of the rod placed in a glass of water. Our sense of sight tells us the straight rod is bent - evidence that our senses cannot be trusted.

> Given these assumptions, the aesthetic becomes a casualty in American education. It is embedded in a historical context that has underestimated the role it plays in [humanity's]… effort to know. The aesthetic aspects of human experience are considered luxuries. And luxuries, as we all know, can be rather easily foregone in hard times. (Eisner, 1998, p. 40)

When episteme is embraced and the aesthetic aspects of learning are ignored, there is a profound effect on the understanding of what constitutes knowledge. In such a setting, knowledge is seen as: revealing regularities not uniqueness; separate from belief; universal, not local; separable from values; and dependent on language for its very existence (Eisner, 2002a).

Unlike Plato, Aristotle called attention to a more pluralistic conception of knowing; advancing the idea that there are many ways that understanding is enlarged (or that people learn) and, therefore, there is a constructed character to knowledge (Eisner, 2002a). A different type of knowledge, according to the Greeks, was phronesis. Phronesis is knowledge that is wise and

practical; "contingent rather than necessary" (Eisner, 2002a, p.375), or, even more to the point, it is knowledge arising from lived experience. Deliberation, when we metacognitively explore possibilities with others, is a way of securing phronesis (Eisner, 2002b). Additionally, phronetic knowledge is gained through experience, it addresses distinctive situations in which a person decides on action that is morally framed and serves the greatest good (Eisner, 2002a). As one example, developing wise, practical reasoning, or phronesis, is a portion of what an individual needs in order to be a great teacher; artistry is another (Eisner, 2002b).

Eisner understood that the research engaged within a field shapes the field's practice. When he wrote *The Enlightened Eye* (2002c), his goal was to change the focus of educational research, away from a heavy reliance on social science paradigms toward more qualitative approaches. He made strides in achieving his goal, and today, educational research can take many qualitative forms. This has helped to shift attention toward phronesis and away from episteme, but there is still work to be done.

When we decide the content and tasks to include in the curriculum, we are also deciding on the mental skills we wish to cultivate in our students (Eisner, 1998). In this way we can see that, indeed, "curriculum is a mind altering device" (Eisner, 1997, p.1). When the aesthetic is ignored, the sensibilities are ignored with devastating effect since through our sensibilities, our perception and awareness are secured (Eisner, 1998).

> Attention to the aesthetic aspects of the subjects taught would remind students that the ideas within subjects areas, disciplines, and fields of study are human constructions, shaped by craft, employing technique, and mediated through some material. Works of science are, in this sense, also works of art. (Eisner, 1998, p. 42)

Including the aesthetic aspects of subjects within the curriculum helps students to avoid concluding that knowledge is fixed and discoverable rather that created (Eisner, 1998). As the story of my student, Christopher, at the beginning of this chapter revealed, his experience creating an abstract expressionist painting, combined with the information he had read about Jackson Pollock and his life, helped him discover that a painting can express and idea like "energy." Thus through his sensibilities, his perception and awareness were secured (Eisner, 1998).

Today, test performance is the basis for rewards in schools, resulting in a laser focus by teachers and students on something that is short-term and instrumental (Eisner, 1998; Liston, 2001; Ravitch, 2016). Frequently left in the dust in the American educational system is the aesthetic piece (Eisner, 1998). An approach that includes the aesthetic would foster within students, a willingness to imagine possibilities that are not now, but which might become; a desire to explore ambiguity; a willingness to forestall premature closure in pursuing resolutions; and the ability to recognize and accept the multiple perspective and resolutions that works in the arts celebrate (Eisner, 1998; Greene, 1995).

While there are certainly basic requirements for some skills, such as the ability to express ones self in writing or the ability to utilize mathematics skillfully, only through the talents of unique individuals is our culture is enriched (Eisner, 1998). Rooted in the assumptions of fairness, standards offer the feel-good presumption that uniform expectations regarding student goals is a good idea. In addition to encouraging a problematic focus on testing, standards create a stumbling block in today's educational system by obscuring the effects of difference among students on school success. While the damaging effect of low teacher expectations on student achievement, must be considered, differences in interests, goals, aptitude, and even in region of

residence do matter (Eisner, 1998). "[T]he education reform movement, in its anxiety about quality, wants to rein in our diversity, to reduce local discretion, and to give everybody the same target at which to aim" (Eisner, 1998, p. 180). A rigid adherence to standards leaves no room for innovation, nor does it allow for the passion of the teacher or students to enter the equation.

Process and content are the "what" and "how" of education. What is included and how that is taught provides a doorway to information. A student must first pass through the door before they can partake of learning opportunities. The kind and shape of doorway, provides for and limits the means of access for learners. Additionally, educational doorways exist within a cultural foundation. Culture can indicate a shared way of life and a medium for growth. Both meanings have application when we consider that a culture, which provides opportunities for growth for the greatest number of citizens, enhances our shared way of life, and our democracy (Eisner, 1997).

Decisions regarding the forms of representation selected for use within a school's learning environments impact the process, content, culture, and equity of individual's experiences in that environment. In this case, *forms* can be understood as products made by artists and scientists that have aesthetic features which appeal to others (Eisner, 1997, 1998; Greene, 1995). The form of representation a teacher utilizes restricts possibilities by imposing the limits of the form on the thinking of the students (Eisner, 1997; Greene, 1995). Forms of representation develop different cognitive skills, in the same way that exercising different muscles develops those muscles and not others. Forms of representation are mediated through materials required for that form, and different cognitive skills are employed in order to manage them (Eisner, 1997; Greene, 1995).

When the teacher selects a form a representation, it frames the experience for the students, constraining what they are able to see as well as how they can represent it (Eisner, 1997). "Tools are not neutral. Forms of representation are tools and they are not neutral" (Eisner, 1997, p. 4). Forms of representation can be combined to enrich the array of resources that students can respond to. Though sometimes it can be helpful to focus attention on specific tasks in mathematics or language, enriched learning environments can expand the sensory modalities and thus expand learning opportunities for students. Additionally, an expansive learning environment better mimics the real world in which a multitude of overlapping representations are required. Additionally, "(e)ducational equity is provided not merely by opening the doors of the school to the child but by providing opportunities to the child for success once he or she arrives. The provision of a resource-rich environment is an extremely important way in which genuine educational equity can be achieved" (Eisner, 1997, p. 5). Each form of representation can be utilized in a multitude of ways that call students to exercise different combinations of skills and forms of thinking (Eisner, 1997). In this way, the arts influence our experience by providing the languages that inform different ways of knowing that are non-discursive (Eisner, 2002b). We need to educate children to understand and to use for themselves the forms of representation available in our culture. "…forms are what enable us to make our ideas public...we can't have musical idea without thinking and representing what we have thought musically" (Eisner, 1998, p.1). How we choose to represent knowledge or learning affects both what we are able to say and what we are able to see (Eisner, 2002b; Greene, 1995).

Eisner, (1997) suggests inspecting culture for "cognitive artifacts" or products of thought from which we may come to understand the forms of thinking that lead to each (p. 2). Since humans create meaning through generation of these artifacts, investigation of the kinds of

meaning that humans are capable of creating, and the forms of thinking used to create them, is possible and necessary if we wish to make informed decisions about what and how we teach.

Inclusion of a wide assortment of forms of representation within learning experiences can expand the minds of the learners involved in those experiences. Understanding the forms of a particular discipline and the aesthetic properties they possess can render clearly to the competent percipient, those aspects of the world that may not be communicated directly. As Eisner (1998) relates, "…different forms of language make different forms of knowing possible. What we can come to understand through literary forms cannot be revealed through the propositional discourse of science. Conversely, what science can help us understand cannot be disclosed through literary form" (p. 11). Thus, learning involves acquiring the ability to read the forms of a discipline (Eisner, 1998).

Resolving problems that students and teachers care about, while utilizing the disciplinary structures of biology, history, art, and mathematics is a way to overcome the problem of the fragmentation of learning (Eisner, 1998). In other words, by utilizing a convergence of disciplines, teachers can encourage Joy for learning within their students (Liston, 2001). For the student, a robust learning experience must also include gaining ability to utilize the tools of expressiveness. According to Herbert Read (1943):

> Education is the fostering of growth, but apart from physical maturation, growth is only made apparent in expression - audible or visible signs and symbols. Education may therefore be defined as the cultivation of modes of expression - it is teaching children and adults how to make sounds, images, movement, tools and utensils. A man [sic] who can make such things well is a well-educated man. If he can make good sounds, he is a good speaker, a good musician, a good poet; if he

> can make good images, he is a good painter or a sculptor; if good movements, a good dancer or laborer; if good tools or utensils, a good craftsman. All faculties of process, and all… involve art. (p. 10)

We should not interpret Read's statement to mean our educational system should produce artists whose sole purpose is to become expressive; instead, Eisner (2002b) advances the idea of helping students "form purpose to guide their work" (p. 51). Where a focus on expressiveness alone could result in every endeavor becoming utterly exploratory, instead, encouragement to become flexibly purposive (Dewey, 1934/2005) encourages a student toward mastery of form, and dedication to matters of intention.

The focus on learning as aesthetic requires a change from the idea of teaching as "applied social science" (Eisner, 2002b, p. 282), toward an idea of teaching as an art. As an example, knowing when to lead and when to allow the learner to lead, or feeling the right moment to improvise, are aspects of the art of teaching. If artistry in teaching becomes the ideal, then tools that artists use to hone their craft can be helpful to teachers. According to Eisner (2002b), a teaching studio in which teachers can perform and then receive reflection on that performance could enhance the artistry of teaching. In most schools there is not a system set up to allow for critical and helpful feedback for teachers. This highlights the difficulty of how to know what you don't know; what Eisner (2002b) refers to as "secondary ignorance" (p.49). Primary ignorance involves knowing that you don't know which is much easier to overcome, but secondary ignorance is impossible to overcome without feedback (Eisner, 2002). Good educational criticism can mitigate secondary ignorance and also assist teachers with awareness of their strengths (Eisner, 2002).

Rather than leaving out the social sciences all together, Eisner (2002b) promotes the consideration of teaching as an art form that is informed by, but not ruled by, the social sciences (Eisner, 2002b). Learning to see and reflect on one's practice as a teacher/artist is enhanced with informed criticism that illuminates noteworthy aspects of the one's practice (Eisner, 2002b). Teachers shape the environment they share with students through their interactions with students both through the experiences they design and also through their timing, manner and tone as they speak to students (Eisner, 2002a). Additionally, the teacher's own passions translate to students. For Eisner (2002b) teaching is an art. As he describes, "By artistry I mean a form of practice informed by the imagination that employs technique to select and organize expressive qualities to achieve ends that are aesthetically satisfying" (Eisner, 2002b, p. 49). What person who has ever taught, would not agree with such a definition. In *The Art and Craft of Teaching* (1983), Eisner describes teachers as more like orchestra conductors than technicians, and as such "they need rules of thumb and educational imagination, not prescriptions" (p. 6).

Effects of a teacher's practice may not manifest themselves until long after students leave school and in ways the teacher can never imagine. The way we assess most learning in school is by asking students to perform at a certain time. Yet what students have actually learned may not come to the surface until years after they have finished the course. During the various stages of a person's life, lessons that the individual was not aware of learning may emerge. Maturity can promote appreciations never before experienced. As Eisner relates:

> [W]hen I was in the fourth grade my teacher, Miss Purtle, asked me to have a "one man" show of my paintings in the classroom. It was an experience that made a difference I will never forget. A nine year-old having a one man show of his paintings? What matters is that such occasions, occasions whose importance may

> be unknown to the teacher, do matter, and may continue to matter long after the child has left the classroom. (Eisner, 2002b, p. 50)

Eisner (1998) suggests an aesthetic education engages what psychologists term the conative part of the brain, which guides how one acts on thoughts (cognitive) and feelings (affective), in order to "frame the world as an object of enjoyed perception" (p.98). Various situations in teaching require particular, rather than general, solutions. Such solutions require artistry, which involves "sensibility, imagination, technique, and the ability to make judgments about the feel and significance of the particular" (Eisner, 2002a, p. 382). Such judgments involve the teacher's understanding of how their own lived experience impacts with those of their students (Clandinin & Connelly, 1988b). Through socialization, which includes school experiences, we come to see the world through a frame of reference that is common to the culture in which we are socialized (Eisner, 2002b). These frames of reference not only include, they also exclude; students learning is affected by the frame of reference placed around them by their culture, which they bring to each educational situation and which includes the culture the teacher creates within the classroom (Eisner, 2002b). Eisner makes a compelling case for inclusion of aesthetic principles within the curriculum, teaching, and learning.

Final Thoughts

When I watched my student, Christopher, create his own abstract expressionist painting I knew I was witnessing something significant because it caused a reaction in me. I have come to view this dissertation process as a journey to attach words to that event. For me, as a painter, words can be pesky and hard to pin down. How I felt watching and listening to my student, cued me to the significance of how Christopher felt; it encouraged me to notice. This dissertation is my effort to inform that noticing.

What comprises the experience for the one engaged in learning, if, as Emily Dickinson states:

> …I read a book and it makes my whole body so cold no fire can ever warm me, I know that is poetry. If I feel physically as if the top of my head were taken off, I know that is poetry. These are the only ways I know it. Is there any other way? (Bianchi and Dickinson, 1924, as cited in Schubert, 2009a, p. 150)

The embodied experience of learning is what I seek to theorize around. Within this document, I have used metaphors of weaving and a journey to describe my own process. Journeys and weavings are orderly, and predictable with obvious beginnings and endings. I am afraid to think that an Abstract Expressionist painting is probably a better fit as a metaphor. A linear approach is orderly, even peaceful and apparently, quite out of reach for me. I can think of no better description for emergent growth (Garrison, 1997) than my own process: load up with color and feeling, and see where it goes.

Let me attempt to be somewhat linear: My goal for this chapter was to hone a useful definition from which to consider the aesthetic as a key to learning. With roots in ancient Greece, aesthetic philosophy owes much to eighteenth century European philosophers and Immanuel Kant in particular, for starting the debate on what comprises "the aesthetic". Stemming from Kant's uses of the term aesthetic, today aesthetics can be both an objective philosophy of art and a philosophy of subjective sensory experience (Shaviro, 2007). As an artist I find both useful. With Greene (1997) and Korsmeyer (2004) I recognize, when it comes to aesthetic awareness, where I place the frame is key.

A feminist aesthetic contributes to my understanding of subjective sensory experience because it helps to critique the hierarchies inherent in my desire to place Christopher's

intellectual experience above his emotional, affective experience. A feminist aesthetic helps me see them as connected. According to Korsmeyer (2004) the pleasure an individual finds in beauty is personal, an extension of their life experience and culture. For Maxine Greene (1995, 2001) objective forms are made meaningful with sensory experience, and sensory experience is given shape and meaning through the clarity provided by objective form. My student, Christopher, required both sensory experience and objective form to cement his learning.

Christopher's experience also reflected John Dewey's ideas of *an experience*. He began with an impulsion to create an action painting in the manner of Jackson Pollock. As he began the experience, I surmise there was a sense of identifying how wonderful it felt to be allowed to sling paints at something while as school. Then, perhaps he identified with Jackson Pollock, whom he had studied and he experienced a perception, or awareness, of all the pieces that constituted his environment; the art materials and the cognitive bits of knowledge. Within that context, and with a desire to tell me what was in his mind, Christopher reflected out loud on the experience. This required receptiveness on his part as his experience achieved consummation when he drew a distinction, "I used to think this was just drips and splashes, but now I see it's about *energy*!" The receptiveness involved a willingness to let go of the old thinking. The experience was also educative, in that it was connected to previous experience. It enabled his previous ideas about action painting to being useful because they were a foil for his new understanding of action painting. In this manner, his previous experience was continued, preparing him for future interactions with works of art. The experience constituted a transaction between Christopher and his environment, which I had helped to construct, consisting of my pedagogy, the curriculum, the setting, and materials available within the art room.

Christopher's experience also demonstrates what Eisner means when he says, "form and content interpenetrate" (Eisner, 2002b, p. 199). Observing this experience we cannot separate the "what" from the "how," they were in dialogue, each responding to the other. Also, it demonstrates the importance of intrinsic satisfactions and the journey.

The arts provide a good starting point for thinking about aesthetic engagement. We have all been transformed by literature or a play and we easily discern the ability of the arts to allow us vicariously to reap the benefits of *an* experience (Dewey, 1934/2005). I believe while the arts can make such transformative experiences readily assessable and obvious, they are not the only purview of such experience. Deep learning is an aesthetic experience and we miss an important piece for understanding what drives us to learn when those learning experiences that answer a need, inspire reflection, and cause the individual to be perceptive are ignored.

In this chapter I have traced the historic roots of the idea of the aesthetic. With Korsmeyer (2004), Greene (1997), and Polyani (1966), I place the frame over the spot where subjective experience is informed by objective qualities of a given form or discipline. For the purposes of this dissertation, I define the aesthetic as subjective sensory experience, informed by an objective understanding of the entity or experience at hand. Sometimes, we characterize this subjective sensory experience as "beautiful," though perhaps affecting or stirring are more accurate. Within aesthetic learning, there is a relationship between both subjective and objective experience and form.

In the next chapter, I investigate classroom practices that engage aesthetic learning opportunities for students, including research on the topic.

CHAPTER 2

INVESTIGATIONS OF AESTHETIC LEARNING EXPERIENCES

"A person who truly learns exists transformed, not just of mind, but of heart, eye, and body. Education should leave us different, understanding more, seeing differently, and willing to act in accordance with those differences" (Girod, Twyman, and Wojcikiewicz, 2010, p. 804).

The science teacher towered above his elementary students as they made their way into the surf. The students, ages 6 through 12, were wearing personal flotation devices (PFDs), and assisted by the teacher and several high school students, they utilized ropes and poles to pull a 100-foot beach seine through the coastal waters. As they finished and dragged the net onto the beach, the "catch" began to flip and move about. Wide-eyed, the young students moved closer and one-by-one, the teacher released each fish, crab, and stingray from the net, handed it to a student to return to the sea and offered them some kind of encouragement or instruction as they assisted in the process: "Hold it this way." "See, it's not going to hurt you." "This fish likes to swim fast, you can tell by his body shape and fins." At last, only one aggressive crab remained. The student whose turn it was, seemed very unsure about her ability to wrangle it back into the surf. "Here, let me show you how to put it to sleep," said the teacher. Together they flipped the crab onto his back and the student began to rub the crab's belly. Instantly it became docile and the student carefully placed it back into the sea.

In this *experience*, which I have seen repeated over many summers, each student comes away empowered. This empowerment springs from understanding and respect for the creatures that live in the sea, and also for each individual's place within a larger whole. The students look at the teacher and think, "Yes! I want to be like you. I want to know what you know. I will care

for and about these creatures just like you." Even though an understanding of some of the more complex layers of ecosystem dynamics will not be intellectually available to them for several years, the students firmly grasp what I am calling the aesthetic piece; the subjective sensory experience, which is brought into focus by their cognitive understanding; there is a symbiosis between the cognitive and subjective aspects of experience in such moments. It has been my observation, watching 100s of these students over 30 years, such experiences never leave them and for many students, they shape what becomes their life's work. In this chapter I examine investigations of aesthetic learning in order that my theorizing may add to the conversation around this topic.

Learning and Knowing

In chapter 1, I refined a definition of "aesthetic," that is helpful to my investigation of an ecofeminist vision of learning as aesthetic, embodied, and connected. 'Subjective sensory experience, informed by objective understanding,' is useful for my purpose because it comprises the dialogical nature of the aesthetic that I wish to develop in this dissertation. In this chapter, I look closely at the idea of aesthetic experience and aesthetic learning. Before I proceed, I present some thoughts about what constitutes learning, in a general sense, and how learning is manifested in practice.

Learning As Meaning Making

According to the Oxford Online Dictionary, learning is "the acquisition of knowledge or skills through study, experience, or being taught" or "knowledge acquired through study, experience, or being taught" ("Learning", 2017). We can see the multiple understandings of learning revealed as the process of acquiring knowledge, or the knowledge itself. According to Carol Leaman (2016), "If learning is a recipe, then knowledge is the cake" (p.1). This definition

equates learning with the act of acquiring knowledge or skill, rather than the knowledge or skill itself.

In *The Meaning of Learning and Knowing* (2010), Van Rossum and Hamer, interviewed college students to investigate attitudes towards learning. They determined five conceptions of learning, which they deemed developmental. The first, most basic level, *learning as the increase of knowledge*, involves individuals who "equate knowledge with … discrete units of information, or simply 'facts', and learning is consequently the transfer of these discrete units into the head of the learner" (Van Rossum & Hamer, 2010, p. 3). At this first level, the responsibility for the learning/knowing process is on the teacher. Level two, or *learning as memorizing*, involves the learner committing to memory the contents narrated by the teacher for the purposes of making a good grade (Van Rossum & Hamer, 2010). Here, more responsibility is placed on the learner yet still learning is understood as memorizing facts. Level three is *learning as the acquisition of facts and procedures*, which can be retained and utilized in the future, as opposed to those acquired for a test (Van Rossum & Hamer, 2010). In each of the first three conceptions on Van Rossum and Hamer's scale, the concern is with information committed to memory and the information is highlighted, though used in different ways at each level. Level four takes a leap because now *learning* [is seen] *as the abstraction of meaning*, in which the individual no longer conceives of learning as an activity of reproducing, but instead as a process of abstracting meaning; the objective of reflection here is to understand the subjects studied (Van Rossum & Hamer, 2010). Level five is *learning as an interpretative process aimed at the understanding of reality*, in which the learner has the expectation that what he or she learns should help him or her interpret the reality in which they live; such learning secures personal meaning (Van Rossum & Hamer, 2010). In their conclusion, the researchers were surprised to find graduate students who did not

report a level five approach to learning. After completing their research, Van Rossum and Hamer (2010) later added a sixth category, entitled *self-realization*, which they defined as "changing as a person" (p. 7). This same idea is found in Dewey, (1934/2005) as a willingness to be changed.

I find their research helpful but limited. Reflecting back on the story of Elliot Eisner's (2002b) one-man show in his fourth grade classroom, as he relates, what students have actually learned may not come to the surface until years later, when lessons of which the individual was consciously unaware emerge. This can also include what they have learned about 'learning.' In *Autocrat at the Breakfast Table* (1891), Oliver Wendel Holmes offers a helpful description of such a learning process:

> Put an idea in your intelligence and leave it there an hour, a day, a year without ever having occasion to refer to it. When, at last, you return to it, you do not find it as it was when acquired. It has domiciled itself, so to speak, - become at home - entered into relation with your other thoughts, and integrated itself with the whole fabric of your mind. (p. 134)

I think of it as percolating; some lessons must percolate before they are learned or before we are aware of knowing them. As Parker Palmer (2007) relates, learning that results in knowing, emerges best from "a complex interplay of the inner and the outer" (p. 207).

Van Rossum and Hamer's (2010), conception of the levels of learning as developmental is troubling for me; even the conception of levels, which implies hierarchy is troubling. As illustrated in the story at the beginning of this chapter, the young children with the science teacher were able to interpret the reality in which they found themselves and thereby secure personal meaning from their experience of fish at the beach. Based on my own experience as a teacher, I surmise that attitudes about what type of learning to employ vary with the task at hand,

rather than being strictly developmental; they are in part dependent on prior knowledge and ability which are developmental. Malmberg, Jarvela and Kirschner (2013) concur that task-type does matter for students' strategic learning. What if Van Rossum and Hamer are partially correct, and the ability to interpret reality and secure personal meaning is situational and frequently held by the very young? What if infants can and do operate at level five? This is an interesting question though not within the purview of my dissertation.

Perhaps the study's college-aged participants rarely reported learning as a means of securing personal value and interpreting reality, because of the heavy focus schools place on the intellectual operations of learning such as the acquisition of facts, problem solving, and deductive thinking. I would argue that securing personal meaning and interpreting reality require imagination and also what I would call subjective energy; Van Rossum and Hamer's (2010) study allowed for neither. According to Harry Broudy (1994), the raw material for all types of reasoning is the imagination, which is neglected in schools. The imagination, Broudy (1994) says is wild and difficult to tame, it does not naturally impose limits on itself nor are all its products constructive or creative. The goal of what Broudy (1994) calls "value education," is to help learners maximize the power of imagination in partnership with physical, spiritual, and cognitive abilities. Accordingly, within the individual learner, life experience and prior knowledge interact with new learning uniquely, therefore, while the structure of teaching, learning, and knowing can be understood discretely, as they function, they are intertwined. My dissertation attempts to peel out the learning portion, while appreciating that learning functions within a system of interaction. Human beings bring both the objective and the subjective to their knowing, though affective knowledge is difficult to measure and frequently eludes our cognitive understanding, learning that is completed in knowing requires the total experience; the subjective and the objective, to

make meaning. For Liston (2001), when we view learning as meaning-making, we begin to see that we cannot learn outside of community with others (Liston, 2001). The space between my self as separate and the other, who is also separate, is where meaning making occurs (Liston, 2001). This space, Martin Buber (1947/2002) describes as a narrow ridge. With recognition of the narrow ridge comes a responsibility to myself and to my students to create a world "in which beauty and Joy is recognized and present" (Liston, 2001, p. 100) and where we meet the other and yet maintain our unique separateness. When I preserve the alterity of whatever I place at the other end of my personal binaries, I can allow that Other to change, entangle, and educate me as I traverse "the narrow ridge, where I and Thou meet, …[in] the realm of 'between'" (Buber, 1947/2002).

The Community of Learning

Historically, in what is characterized in physics as the Newtonian era, the metaphor of community that predominated was atomistic (Palmer, 2007). This conception considers separate particles as the basic nature of reality (Palmer, 2007). In our current understanding, we acknowledge that subatomic particles are altered even as they are observed, demonstrating that relationships create the substance of the sub-atomic community (Palmer, 2007). Today, "nature is understood to be relational, ecological, and interdependent; …[in such a setting], reality is constituted by events and relationships rather than separate substances or separate particles" (Palmer, 2007, p. 100), and yet, the power of the atomistic metaphor to shape educational culture persists.

According to Parker Palmer (2007), three models characterize the majority of communities found in the current educational landscape. What he names the therapeutic, the civic, and the marketing models for educational communities have qualities that prevent their

ability to animate a vigorous culture for educating students (Palmer, 2007). The first, or what Palmer (2007) calls the therapeutic model for community, demands a high level of intimacy, which sounds close-knit and accommodating, however, when intimacy is the norm, the group cannot connect with the strange, or the other. Since in civil society, we deal with disagreements through mechanisms of democracy: negotiation, bargaining, and compromise, the second, or the civic model for community sounds worthwhile. However, in any sort of group, we live within relationships, which are not determined through democratic means but through the give and take of dialogue, so the civic model does not build a strong or nurturing learning community (Palmer, 2007).

The third model of community that Palmer critiques is the marketing model. The norms of this model are straightforward: "educational institutions must improve their product by strengthening relations with customers and becoming more accountable to them" (Palmer, 2007, p. 95). This model also fails because good education is always more process than product. If the student receives a packet of information at the end of their education, has the school been accountable? No, because we want learners who are producers as well as consumers of knowledge and who are able to critically analyze information from those who claim to know (Palmer, 2007). Additionally, "it can take take years for a student to feel grateful to a teacher who introduces a dissatisfying truth" (Palmer, 2007, p. 97), and as I expressed earlier, it can also take years for the worth of some lessons to be revealed to the student (Eisner, 2002b).

Liston (2001) utilizes metaphors of the factory, the journey, and the garden for defining the discourse in the field of education in *Joy as a Metaphor of Convergence: A Phenomenological and Aesthetic Investigation of Social and Educational Change*. The first metaphor of the factory relates to Palmer's (2007) marketing metaphor. As Liston (2001)

describes, the purpose of the educational factory is to "mass produce competent workers for business and industry, [since] the development of skills requisite to maintaining a job is the paramount purpose of schooling" (p. 200). Ideas such as customer relations and accountability weave into this model. The factory model feels reassuring in its efficiency and because it offers a sense of equity, since all students must meet the same standards, therefore this model may be considered fair (Liston, 2001). Though, as teachers understand, treating every student the same is the antithesis of fairness, since what is required is an understanding of each student's unique needs. Liston's second metaphor, the journey, describes an educational setting that has more flexibility yet, even so, only certain destinations are acceptable; "high school diploma, vocational-technical school, college, or university study" (2001, p. 202). In a sense the journey is taken over by the factory, allowing for only minor detours and not taking into account, the modes of transportation students engage are not equal (Liston, 2001). In the garden model, which evokes images of individual growth, such qualities are actually left behind in favor of mass production (Liston, 2001). Thus, the corporate farm displaces the garden, and once again we note the overwhelming presence of the factory model (Liston, 2001). For Liston (2001) a metaphor of Joy transforms education by allowing a shift from a focus on skill and knowledge development to the exploration of ideas, thereby making students' experiences meaningful and allowing for interpretation of their unique worlds.

Rather than embracing a therapeutic, civil, marketing, factory, journey, or garden model of community for learning, Palmer (2007), proposes instead an ecological model in which the subject is placed at the center. When we move away from the thinking which frames learning as linear and hierarchical, we begin to see that the roles of teacher and student can be interchangeable (Liston, 2001); offering a shift from the idea of the learner as a passive recipient

of knowledge. Palmer (2007) agrees such a shift is required. For Palmer, centering the subject of attention transcends both the student-centered and teacher-centered approaches to education. Modeled on the community of truth, this approach "holds both me and thee accountable to something beyond ourselves" (Palmer, 2007, p. 119). A genuine learning community does not collapse under the weight of the egos of the students or the teacher. Since the subject at hand is at the center, students and teacher are accountable to the subject (Palmer, 2007). Liston (2001) finds a metaphor of Joy helpful for describing what is created within such a setting. As I related in chapter 1, Liston's (2001) vision of Joy "provides experiential understanding of the non-dualistic interrelatedness of each of us to each other of us, along with the continual exchange of matter and spirit incorporated within our living selves" (p. 14). Joy appears as we experience connectedness; which can transform education by allowing a shift from a focus on skill and knowledge development to exploration of ideas (Liston, 2001). Liston's (2001) vision of Joy as "non-dualistic interrelatedness" fits nicely with my ecofeminist vision of learning as non-hierarchical and interconnected which I will explore more fully in the next chapter.

For Liston (2001), learning communities provide us with a vision of Joy as a metaphor of convergence. Some examples of learning communities within the educational setting and beyond are: learning circles, support groups, friendship networks, and consciousness raising groups (Liston, 2001). Within these groups, individuals discover as they learn about each other, they learn even more about themselves (Liston, 2001).

I offer two glimpses of exemplary learning communities, one from Liston (2001), who relates the experiences of a group of educators who "engage in self-reflexive dialogue about education, learning, and … *being* together" (p. 211), as related in the book *Toward Curriculum for Being: Voices of Educators*, (Berman, Hultgren, Lee, Rivkin, Roderick, & Aoki, 1991). The

second is from Palmer (2007) who describes the work of the "clearness committee" where members practice "the discipline of only asking questions … [in order to] open an inner space to receive another person" (p. 159).

Citing the example of a learning community offered by Berman, Hultgren, Lee, Rivkin, Roderick, and Aoki (1991), Liston (2001) highlights the authors' exploration of curriculum and education in the context of being and meaning-making. For these authors the use of metaphor had a profound effect on the creativity of the group, allowing them to sharpen and extend their thinking. According to one group member, Mary Rivkin, "What we name the world shapes how we see it. As women gain more power to name, we will gain new visions" (Berman et. al., 1991, p. 74) illustrating the importance of metaphor in shaping an individual's consciousness of their own experience.

In Palmer's (2007) example, the learning community created within the clearness committee allows for a relational space where members meet themselves as well as the other. Those engaged in a clearness committee may opt for a questions only approach, which involves members of the group asking questions of the "focus member." In such a case all the individuals involved delve more deeply into their own truth by providing no advice, no overidentification (e.g. "I had that problem once"), and no agenda on the part of the questioner. The focus member can also ask for mirroring which involves the group reflecting back things they said in the course of the conversation. This offers the focus member the opportunity to "retrieve verbal and non-verbal clues to the resolution of … [his or her] own dilemmas from a text of … [his or her] own making" (Palmer, 2007, p. 160).

For Liston (2001), learning is meaning-making which arises from within a community of learning. For Palmer (2007) as well, the learning community is key, offering a shift from a

previously atomistic view in which the idea of separate particles forms the basis for the conception of community, to a view of community as "relational, ecological and interdependent" (p. 100). Though, as I previously stated, I found the developmental aspects of Van Rossum and Hamer's vision troubling, they point out useful and varied conceptions of learning. As their research indicates, learning occurs at a variety of "levels" from *learning as memorizing* to *learning as an interpretative process aimed at the understanding of reality* or even *learning as self-realization* resulting in a willingness to be changed (2010, pp. 3-7).

Knowing- The Heart of Understanding

To "know" according to the Oxford Online Dictionary (2017) is to "be aware of through observation, inquiry, or information." To become aware of something whether we observe it, seek answers to questions about it, or receive information in some form, requires that we learn about it. Learning and knowing are so connected in function; only as we consider them intellectually can appreciate their separateness (Van Rossum & Hamer, 2010). With that in mind, in this section I explore knowing.

Epistemology is branch of philosophy devoted to knowing, specifically, "the study of the nature and scope of knowledge and justified belief," concerned with the necessary and sufficient conditions of knowledge, its sources, its structure, and its limits (Oxford Online Dictionary, 2017). Van Rossum and Hamer (2010) suggest what they term an ecological epistemology which advances the view that how an individual comes to "know" is the result of a complex interplay of a logically consistent, interrelated set of beliefs and conceptions about knowledge. These beliefs and conceptions are manifested in behaviors of the students and teacher and include: the teachers' epistemological perspective, the culture of the educational institute, the conceptions held by students and teachers of a particular discipline, the assessment practices, the students'

self-concept, students' motivation, and study strategies of students, to name but a few (Van Rossum and Hamer, 2010). Thinking of these as aspects of an ecology of epistemology offers an explanation for why change strategies within schools result in such diverse effects and why researchers offer such diverse suggestions for educational improvement (Van Rossum & Hamer, 2010). Van Rossum and Hamer suggest that often, choosing to change only one aspect within a particular educational setting upsets the local balance, resulting in trauma, rather than improvement.

For Parker Palmer (2007), to know a thing is to form a relationship with it. In order to enter into a relationship with what we want to know, be it corn DNA or another human being, we must be open to what that organism has to say; this is a form of love that allows for "intimacy without the annihilation of difference" (Palmer, 2007, p. 57); such knowledge cannot be achieved through objectivity. According to Palmer (2007) there are two problems with objectivism, first by distancing the self from the thing known, it deforms the relationship that defines the knowing, that is the relationship between the self and the object (person, thing, or feeling) (Palmer, 2007). Secondly, objectivity fails to take into account how knowing actually happens. "Knowing of any sort is relational and animated by a desire to come into deeper community with what we know" (Palmer, 2007, p. 55). Such relational knowing that seeks community sounds very much like Liston's (2001) vision of Joy.

Often, when we are presented with new information, it feels dangerous, so we either attack the new idea, or run away, before it can leave us vulnerable. Palmer (2007) suggests, instead, adopting the aikido practice of "soft eyes," which requires training in order to defeat the reflexive fight or flight action and involves turning toward the stimulus, taking it in, and being changed. This quality is reflected in "the marine biologist who can pick up a seashell and,

through careful listening, learn much about what happened in the lifetime of its inhabitant and in the evolution of its species" and additionally in the ability of "the geologist who hears the rocks speak, telling tales across gaps of time far wider than recorded history, stories we would not know if human vocalizations were the only speech we could hear" (Palmer, 2007, p. 113).

Liston (2001), agrees the ability to take in what is offered by the "other" is found in the paradox of distance and relation:

> The primal setting at a distance is a prerequisite for entering into relation. Establishing both distance and relation are necessary in order to meet …[the other]. It is only by establishing and maintaining the distance between one's self and the other that one is then able to choose to enter into relation with the other. (p. 55)

If I am not separate, then I cannot have a genuine relationship with another. Rather than offer a sacrifice of my unique selfhood, I must prize it in order to then have a relation with another. Eastern thinking provides a platform for understanding this reasoning as Liston describes with the idea of the empty space inside a clay pot.

> We shape clay into a pot,
> But it is the emptiness inside
> That holds whatever we want (Carter, 1989, p.11, cited in Liston, 2001, p. 69).

Western thinking focuses on the external pot and does not consider the emptiness (Liston, 2001). Eastern thinking sees the "void as definitive to the pot" (Liston, 2001, p. 70). Exemplifying the power of metaphor, the Western mind can utilize the metaphor of a pot's simultaneous emptiness and solid form to assist it in accepting the human need for distance and relation as part of the same wholeness. Without community, solitude becomes loneliness and without solitude,

community becomes an alienating crowd of too much noise (Palmer, 2007). Thus we find another example of paradox in action within the human need for both distance/solitude and relation/community (Liston, 2001; Palmer, 2007). For both Palmer and Liston, the ability to embrace life paradoxically is key to knowing.

> We split paradoxes so reflexively that we do not understand the price we pay for our habit. The poles of a paradox are like the poles of battery: hold them together, and they generate the energy of life; pull them apart, and the current stops flowing. When we separate any of the profound paired truths of our lives, both poles become lifeless specters of themselves - and we become lifeless as well. (Palmer, 2007, p. 67)

When we 'wrap our life around' unresolved tensions, either within our lives in general, or within teaching specifically, we grow in our ability to hold paradoxes together (Palmer, 2007).

> When we can love the contradictions and love the tension they create, then we can tap their energy as a creative force. When we separate head from heart, the result is minds that do not know how to feel and hearts that do not know how to think. (Palmer, 2007, p. 68)

This vision of existence as at once individual and collective is what Liston (2001) names a self-contradictory unity. Joy is an example of a self-contradictory unity; it is separateness in unity.

In *The Heart of Understanding: Commentaries on the Prajnaparamita Heart Sutra* (1997), Thich Nhat Hanh explains self-contradictory unity through what he terms “inter-being.” He utilizes the oppositional concepts of immaculate and defiled to show how each is a part of the existence of a rose:

> Defiled or immaculate. Dirty or pure. These are concepts we form in our mind. A beautiful rose we have just cut and placed in our vase is immaculate. It smells so good, so pure, so fresh. It supports the idea of immaculateness. The opposite is a garbage can. It smells horrible, and it is filled with rotten things, but only if you look on the surface. If you look more deeply you will see that in just five or six days, the rose will become part of the garbage. You do not need to wait five days to see it. If you just look at the rose, and you look deeply, you can see it now. And if you look into the garbage can, you see that in a few months its contents can be transformed into lovely vegetables, and even a rose. If you are a good organic gardener and you have the eyes of a bodhisattva, looking at a rose you can see the garbage and looking at the garbage you can see a rose. Roses and garbage inter-are. Without a rose, we cannot have garbage; and without garbage, we cannot have a rose. They need each other very much. The rose and garbage are equal. The garbage is just as precious as the rose. If we look deeply at the concepts of defilement and immaculateness, we return to the notion of inter-being. (p. 31-32)

As individuals and teachers, we have gifts and limits. The idea is not to fixate on correcting our limitations, but to understand and accept both our gifts and limits and to live gracefully within our wholeness (Palmer, 2007). This gracefulness involves the ability to embrace the paradoxical idea of wholeness within oppositions. If we could interpret the information received from our senses through the metaphor of Joy, then we could see in a way that is nonlinear and nondualistic (Liston, 2001). To that end, Liston (2001) suggests some ways to incorporate Joy into the educational setting: we should recognize that there are many ways to interpret experience; Joy must be recognized as being always already present - it cannot be forced into being; nondualistic

Joy resists hierarchy and oppression - I am at once independent and dependent; each learning environment must be continually reinterpreted by those who create it; making meaning together requires a sharing of the self with others – this is what constitutes a learning community; meaning-making is purposeful, helping those who engage it to create and interpret their worlds; and a learning community is created by individuals with shared interests, no other notable characteristic is necessary for inclusion except for a desire to participate (Liston, 2001, p. 216)

Looking back at the science teacher and students on the beach, we see these qualities of Joy exemplified. Each student was free to interpret the experience for him or herself. Each individual learner was unique and discrete yet also a part of the learning community and additionally, connected to the greater community of creatures on the planet. The students were encouraged to experience the web of connection and absorb the value of respect for the earth's systems, resisting the impulse to dominate other creatures. In such a setting, a sense of connectedness mitigates the Western impulse toward hierarchical thinking. As the students and teacher made meaning together, they engaged with and through each other to interpret their natural world. Such an engagement continues past the actual time of being together as, upon reflection later, each revisits their own experience through the other within their imaginations (Eisner, 2002b; Greene, 1995).

Being torn by the tension between the poles of a paradox (such as discipline and freedom) does not break the heart; instead, it makes it larger (Palmer 2007). For Palmer (2007), in the educational setting, paradoxes are held together in the teacher's heart, and the inability to do so is not a failure of teaching technique but results from a gap in the inner life of the teacher (Palmer, 2007).

Embracing the self-contradictory unity (Liston, 2001) of inter-being (Hanh, 1997) and understanding the self as at once individual and connected to community (Liston, 2001; Palmer, 2007), frames an ecofeminist epistemology that honors knowledge as structured by the conditions created within communities of learning. In the next chapter, I frame these ideas into what I call an ecofeminist vision that unites environmental and human interactions. It informs an understanding of learning as meaning-making, in which the learner is able to interpret the reality in which they live and embrace change, resulting in self-realization. As John Dewey (1934/2005) relates, through reflection the one engaged becomes cognizant of a shift in understanding, and by drawing a distinction between the old and new understanding, the individual is transformed. The students and teacher on the beach made meaning together within the experience. The students moved from a mindset of fearful anxiety toward the "other" creatures that live in the sea (which had the capacity to injure them), to a new understanding and respect for those creatures. This was aided by a heartfelt sense of empowerment that sprang from their ability to physically and intellectually be in community with the sea and its inhabitants.

For me, this type of learning and knowing can be approached and understood through an ecofeminist lens as aesthetic, embodied, and connected. In the next sections, I explore the research that centers on aesthetic experience as it applies to learning.

The Field of Aesthetic Learning

The research into learning aesthetics grows out of philosophy, culture, psychology and even learning styles (Austring & Sorensen, 2012). Traditionally, we associate aesthetic experiences with works of art, but Dewey (1934/2005) argued that aesthetics taken from the term *aesthetikos* (capable of sensory perception) refers to sensory experiences had in all aspects of life—including learning (Moroye & Uhrmacher, 2009).

We have an innate human need to discern structure, order, and coherence, which Ross (1984) describes as the "restless seeking after meaning" (p. 145), and Liston (2001) characterizes as "epistemic hunger." Our aesthetic sense is the basis for all our perceptions of coherence (Ross, 1984). Additionally, we have a “mind-brain imperative to detect pattern and connect those patterns generating more complex or novel models or metaphors” (Liston, 2001, p. 129). In this way we relate to all we meet, the delightful and the disgusting, in order to understand them and assimilate them into our own personhood (Ross, 1984).

According to Liston (2001), the rational mind understands a thing or concept by distinguishing it from other things. These distinguishing qualities are not inherent in that which is known, rather they help us to know by differentiating one thing from another (Liston, 2001). As the individual acts on the world, the world acts on the individual and accordingly each is changed by the other (Hohr, 2002). Conceptual knowledge is incorporated into aesthetic learning in a way that holistically impacts the learner by integrating emotions and values with the conceptual knowledge and skills (Girod & Wong, 2002). Consequently, when learning includes the sensory and enlivened we can say learning is aesthetic (Hohr, 2013; Uhrmacher, 2009). For Hohr (2013), the ability to engage such holistic, aesthetic learning is dependent upon cultivation. Naming this type of aesthetic learning ‘enliving’, Hohr (2013) describes it as “the object of continuous negotiation and struggle in art, play, rite and celebration, just to name some of the areas of meaning production, which holds our lifeworld together and develops it” (p.37); such learning is a mode of experience within which moral choices are made.

Contexts of Aesthetic Learning Experiences

Whether in the classroom, on the stage, or at the art museum, the situation and circumstances of the experiential environment are important. One group of educators looking at

the application of John Dewey's ideas within educational settings at the K-12 and college level, is known as The Dewey Ideas Group, at Michigan State University. Some members of the group whose research is highlighted in this section are David Wong, Kevin Pugh, Mark Girod, Todd Twyman, Steven Wojcikiewicz, and Shane Cavanaugh. The Dewey Ideas Group examines Dewey's work in aesthetics to conceptualize what they termed "transformative experience" in the educational environment (Wong & Pugh, 2001). In order to investigate the contexts and qualities that invite transformative learning experiences Girod, Twyman, and Wojcikiewicz (2010), compared two approaches to teaching science. The first, which they termed a 'cognitive rational approach', involved students learning to use the tools, terms, and methods of scientific inquiry, was compared with a second approach, which they termed a 'Deweyan aesthetics pedagogy' that sought to spark imagination, and insights, and to inspire fruitful action. The traditional approach included student goals of building vocabulary and conceptual models, utilizing inquiry skills, and utilizing science process skills like measuring and graphing. In the transformative, aesthetic approach the teaching focused on science's powerful and important ideas, helping students re-see the world in order to see it differently than before, creating a sense of wonderment, emphasizing personalized experience which included asking students to "try on" ideas, the teacher modeling passion and enthusiasm for the subject of science, and scaffolding the aesthetic experiences in a meaningful way (Girod, et al., 2010)

The researchers found that in the traditional, cognitive approach, the student outcomes, as hoped, included conceptual understanding, along with a greater proficiency with the tools, terms and method of scientific inquiry. In the aesthetic, transformative approach, students did learn to see the world differently, and to act differently as a result of the new learning. Additionally, they

gained a conceptual understanding of the content that matched that of the students in the first group and interestingly, they seemed to forget less over time (Girod, et al., 2010).

The big ideas of any field are not dry facts but instead, they are those ideas that are compelling and motivating (Hohr, 2002). To that end, the teacher's use of metaphor can be a tool for enabling students to engage with science topics in effective ways (Girod & Wong, 2002; Cavanaugh, 2014). As noted earlier in this chapter, metaphor acts as a lens through which learners can make sense of what they are learning (Girod & Wong, 2002); it assists understanding by explaining something complicated using the likeness of another thing that is familiar. Our perception of the world is accessed through our senses- sight, sound, touch - and these perceptions are interpreted through metaphors (Liston, 2001). The act of constructing metaphors is a mark of our humanity, since through those constructions we ascribe meaning to the world, define its boundaries and endow symbolic interpretation on all we encounter (Liston, 2001). When utilizing metaphor as a aesthetic learning tool, the teacher must "unpack" the metaphoric image by deciding where it fits and where it falls short as a descriptor for a subject (Girod & Wong, 2002). In the classroom setting, the metaphor used by the teacher to ascribe meaning to the subject must be sufficient to engage the students' attention and interest, and the teacher must "formalize the language" which is to translate the metaphor into the formal language of field of study being engaged (Girod & Wong, 2002). Metaphor's ability to engage the subjective, sensory properties of experience is what gives it power within an aesthetic experience.

Just as a metaphor paints a mind picture, the still and moving images found in photographs and videos can also be helpful (Cavanaugh, 2014). According to Cavanaugh (2014) powerful images can highlight what she calls the scientific sublime by "calling attention to what

is astonishing, terrifying, or unifying about the content" (p. 66). As a result of experiences of the scientific sublime, which draw heavily on Dewey's explanations of aesthetic and educative experiences, the learner begins to see with new eyes and therefore be in the world differently (Cavanaugh, 2014; Dewey, 1934/2005). In an aesthetic experience, the learner is driven forward by anticipation, which leads to a sense of drama or excitement that is a natural motivation for learning (Cavanaugh, 2014). Through anticipation "learners get a sense of what might be and are inspired to move forward. Thus, learning not only results in understanding, it is also compelled by it" (Girod & Wong, 2002, p. 204). Additionally, according to Cavanaugh (2014), the teacher must model the affective qualities of the material, allowing herself to be swept up, eager, moved, appreciative, and inspired.

Utilizing the professional art world as their setting, Csikszentmihalyi and Robinson (1990) interviewed fifty-seven art curators about encounters with works of art. They found the responses described could fit into one of four categories: emotional, sensorial, intellectual, and communicative reactions (Csikszentmihalyi & Robinson, 1990). In similar research into museum experiences Latham (2007) and Falk (2010) found that rather than dull the emotions, frequent repeated exposure to works of art seemed instead to evoke a high level of emotional response. This confirms the strong connection between the intellectual or cognitive dimension, which includes the viewer's understanding of the work and its cultural and historical significance, and his or her emotional response (Csikszentmihalyi & Robinson, 1990; Falk, 2010; Latham, 2007). Further, the researchers noted that communication with a work of art could involve all the dimensions previously mentioned: emotional, sensorial (in this case visual) and intellectual, or it could rest more heavily on one (Csikszentmihalyi & Robinson, 1990; Falk, 2010; Latham, 2007).

Our interactions with art objects epitomize what it means to undergo *an* experience (Pugh, 2002). “The arts do more than provide us with fleeting moments of elation and delight. They expand our horizons. They contribute meaning and value to future experience. They modify our ways of perceiving the world, thus leaving us and the world itself irrevocably changed” (Dewey, 1934/2005, p. 33). In *an* experience, a person comes to see some aspect of the world in a new way, to find meaning in this newly realized aspect of the world, and to value this new way of seeing (Pugh, 2002). To enable museum visitors to approach art works through multiple doorways, Latham (2007) envisions museums providing tools to highlight the perceptual and emotional aspects of works, rather than solely providing historical information.

Paralleling museum visitors’ multifaceted approaches to engage with works of art, Moroye and Uhrmacher (2009) found that learners approach a body of knowledge in similar ways. While some may be engaged in a topic intellectually from the start, others need to be emotionally engaged. Still others need to bond by feeling a communicative connection with a person, a particular time period or a cultural style, or some combination of these (Moroye & Uhrmacher, 2009). In addition, many students require a sensory connection (Moroye & Uhrmacher, 2009). So, whether they are emotional, intellectual, or sensorial, aesthetic learning experiences require attention to multiple modes of connection with the topic (Moroye & Uhrmacher, 2009). According to Pugh (2002) and Uhrmacher (2009), the use of themes provides an additional context that can enhance the ability of learners to connect with concepts through emotional, intellectual, and/or sensory experience.

As the research indicates, pedagogy and the situations and relationships engendered in the educational space structure many of the important frameworks for aesthetic learning. Within the individual, where the boundaries of self and society are permeable exists a space that can

present an equally important context for aesthetic learning (Hohr, 2013: Austring & Sorensen, 2012). This space is known as the potential space (Winnicott, 1971).

According to Winnicott (1971), when an infant is born, his or her external experience begins in play, expands into creative living and from there into cultural life. Between inner psychic reality and the actual external world is the potential space, where experience is located (Winnicott, 1971). Potential space is highly variable and individual and in this space, each person gradually acquires the norms and characteristics of a culture (Winnicott, 1971). The potential space can also be thought of as an oasis in which the individual can develop an understanding of the self, the other, and the world that we are all a part of, while learning to share inner, subjective experiences with the other (Hohr, 2002; Winnicott, 1971). Thus, play and aesthetic expressions becomes an arena for development of experiences that help the individual establish her or himself in a balance between the inner and the outer world (Hohr, 2002; Winnicott, 1971). A relationship between the self and the other is the basis of all forms of knowing (Hohr, 2002; Winnicott, 1971). The potential space is not reserved for the small child, but accompanies the individual throughout his or her life (Hohr, 2002; Winnicott, 1971). Rather than simply describing polarities, the space between is that which defines our humanity (Hohr, 2002; Winnicott, 1971). Human beings are natural and spiritual; they are individual and simultaneously part of a community (Hohr, 2002; Liston, 2001; Palmer, 2007; Winnicott, 1971). This is why different ways of knowing have a synergistic, dynamic effect when they are brought together; they utilize the potential space (Hohr, 2002; Rasmussen, 2014; Winnicott, 1971).

Just as within lived, three-dimensional spaces we can explore contexts for aesthetic learning, within the potential space we can explore imagination as a context for aesthetic

learning (Hohr, 2002). “The potential space between baby and mother, between child and family, between individual and society, depends on experience that leads to trust. It can be characterized as something sacred to the individual, as this is where the individual experiences its creative force” (Austring &. Sørensen, 2011, p. 110). This location of symbolic play is where all creative activities are founded, and where the individual establishes him or herself in a balance between the inner and the outer world (Austring &. Sørensen, 2011; Hohr, 2002;Winnicott, 1971).

In a child's development, the emergence of play signals a leap from actions that are reflexive to those than indicate an ability to formulate a reasoned response (Hohr, 2002). Through play, the child develops a passion for rules because by suspending morality within play, the child may then try out moral law and thus see its usefulness (Hohr, 2002). Utilizing mind and body, imaginative play can take many forms that allow for communication and reflection (Hohr, 2002).

As the research I have shared indicates, aesthetic learning is fostered within both educational and cultural contexts. Additionally, the potential space is an intermediate, congruent space in which boundaries are permeable and which serves as an important context of aesthetic learning.

Qualities of Aesthetic Learning Experiences

Aesthetic learning is emotional, and situated; it engages the whole person and it arouses a willingness to be changed or transformed (Biscotte, 2015; Csikszentmihalyi & Robinson, 1990; Moroye & Uhrmacher, 2009; Uhrmacher, 2009; Wong, 2007). A sense of emotion arises from aesthetic learning experiences since within them there is passion, sensation, and an anticipation of what is to come that cannot be separated from the doing or making (Biscotte, 2015). According to Dewey (1938), emotion is what holds the aesthetic learning experience together as

first the learner becomes excited to do or know something and then feels anticipation, which acts to carry the experience along (Biscotte, 2015; Dewey, 1938). These experiences are non-dualistic in that they involve the whole person as exemplified by the way that wonder and interest involve the senses and the intellect working in tandem (Biscotte, 2015; Wong, 2007). Aesthetic learning is at once rational and irrational, cognitive and emotional, individual and collective (Biscotte, 2015; Wong, 2007).

By enabling the learner to weave together a rich network of conceptual knowledge with appreciation for the beauty and power of subject matter, aesthetic learning experiences lead the student to engage further and more holistically in the world (Girod et al., 2010; Girod & Wong, 2002; Moroye & Uhrmacher, 2009). "A person who truly learns exists transformed, not just of mind, but of heart, eye, and body. Education should leave us different, understanding more, seeing differently, and willing to act in accordance with those differences" (Girod et al., 2010, p. 804). The result is the metamorphosis of the learner's perceptions of the world and of self (Girod & Wong, 2002).

Educative, aesthetic learning experiences are framed by anticipation, continuity, and consummation (Dewey, 1934). As previously stated, emotion is what holds aesthetic experience together as the learner decides that she is excited to do or know something and feels anticipation. She then utilizes prior experience and builds upon that with the new experience; this is continuity (Dewey, 1938/1997). The aesthetic experience is consummated when she reflects on what has transpired (Biscotte, 2015; Dewey, 1938/1997; Wong, 2007). Embedded in the transformation is a willingness to be changed or transformed (Csikszentmihalyi & Robinson, 1990; Falk, 2010; Latham, 2007; Moroye & Uhrmacher, 2009; Uhrmacher, 2009), and finally, there is a sense of venturing into the unknown, of opening oneself to something new or to understanding the

experience of another (Moroye & Uhrmacher, 2009; Uhrmacher, 2009). Aesthetic learning experiences reside on a continuum from short but memorable to life changing (Biscotte, 2015). For my purposes, I am referring to those experiences that are generative rather than destructive as aesthetic experiences.

Rasmussen (2010) uncovered the qualities inherent in aesthetic learning experiences through utilization of the unfolding of the ‘good enough’ drama within a practice-led research paradigm. This research design allowed qualities to develop and be revealed in a way that overcame the deductivist, empiricist ideal. It also offered a way around a black and white, 'following-a-prescribed-route' type of thinking, allowing both researchers and participants to hold many truths or perspectives in mind (Rasmussen, 2010). Divergent problems, as exemplified in the many paths available within an unfolding drama, force participants to strain themselves to arrive at a place that feels beyond themselves; holding many truths at once allows opposites to be reconciled in the living situation, and thus seen as parts of the same whole (Rasmussen, 2010).

This type of applied theater research builds on the relation or reconnection of sensuous experience and propositional knowing that historically has been marginalized by the dominance of a perceived split between the two (Rasmussen, 2014). Such an approach embraces a radical epistemology in which knowledge is not a given, but instead is generated through encounters with practice, participants, and materials (Rasmussen, 2014). Through applied theater research, Rasmussen (2014) sought to answer the question: “What epistemological thinking is embedded in the arts and how do we understand such thinking as it relates to an embodied form of sensory thinking/knowing?” (p. 22). He found that generated knowledge exemplifies the qualities of aesthetic learning inherent in Dewey’s (1934/2005) concept of experience, which stresses the balance between doing and undergoing.

Hohr (2002) also finds “balanced interaction between doing and undergoing … makes the aesthetic quality a prerequisite of true experience" (p.59). For him, beauty is the bridge that connects doing and undergoing, characterized by a working together of instinct and spirit (Hohr, 2002). This idea of beauty is revealed in the way that aesthetic activity softens clear-cut concepts, making them fluid and open to revision, and allowing for the integration of subjectivity and will (Hohr, 2002). When reason and feeling are reconciled, the result is a state of grace, wherein the individual has achieved the beautiful soul (Hohr, 2002).

Final Thoughts

The fine arts hold no exclusive rights to aesthetic learning as it can be found in many different contexts. In fact, rather than ascribing the context of aesthetic learning to any “where” it may be more appropriate to assign it to the potential space which characterizes the acceptance of the connection between the subjective inner self and the external other (Austring & Sørensen, 2012; Hohr, 2012; Winnicott, 1971). As I stated previously, this space, the space between, defines our humanity (Buber, 1947/2002; Austring & Sørensen, 2012; Liston, 2001; Palmer, 2007). As human beings, we are simultaneously natural, spiritual, individual and connected to others (Hohr, 2002).

While the physical spaces that surround aesthetic learning experiences may vary greatly, the pedagogical context is impactful since presenting the powerful ideas of a subject, helping the student re-see the world in order to see it differently, creating a sense of wonderment, emphasizing personalized experience, modeling passion and enthusiasm for the subject, and scaffolding the aesthetic experiences in a meaningful way all help create the setting that encourages aesthetic learning (Girod, et al., 2010; Pugh & Girod, 2007). Tools like metaphor and visual images add to the teacher’s ability to communicate the beauty and power enfolded within

a body of knowledge (Cavanaugh, 2014; Csikszentmihalyi & Robinson, 1990; Latham, 2007; Girod & Wong, 2002).

Though Liston (2001), Palmer (2007), and Van Rossum and Hamer (2010) were not theorizing about aesthetic learning per se, I claim their thinking as threads in the fabric of what constitutes such experience. Meaning-making, generated within the learner's community of learning, resonates as subjective sensory experience. Even when the learning takes place completely within the imagination, as when a learner "builds a castle in the air" (Dewey, 1938/1997, p. 44) the sensory effect can be the same as with a physical experience. Parker Palmer (2007) offers the example of his own mentor, his college philosophy professor whose gift for narrative was so great, he was able to bring Marx, Hegel, Durkheim, Weber and Troeltsch to life for his students:

> The passion with which he lectured was not only for his subject but also for us to know his subject. He wanted us to meet and learn from the constant companions of his intellect and imagination, and he made those introductions in a way that was deeply integral to his own nature...
>
> Through this teacher and his lectures, some of us joined a powerful form of community marked by the ability to talk with the dead. This is not a mark of madness but of an educated person. Learning to speak and listen in that invisible community of history and thought makes one's world immeasurably larger and forever changes one's life. (p. 140)

A direct physical experience is not mandatory for an aesthetic learning experience to result. Through a medium of some sort, we can learn through the experience of others. The arts - drama, dance, music, poetry, prose, architecture, and the visual arts – can provide such a medium. In

Palmer's example provided above, the teacher's use of dramatic narrative brought historic figures to life for his students. In the same way, music, art, and performance have the ability to translate the artist's experience to others in a way that is more sensorily direct than if that experience were simply described. In my own life, books have provided me with an understanding of human nature that eluded me in direct experience. In my work as an art teacher, I appreciate the ability of students to communicate, through their own art, ideas for which they lack verbal skills. Whether the art of a skilled adult or a young student, to one who is open to receive what the work communicates about the experience of the artist, there is an opportunity to be changed.

We access this radical epistemology of generated knowledge (Rasmussen, 2014) or meaning making (Liston, 2001) through aesthetic learning. Aesthetic learning has the ability to access symbolic modes of expression that enable communication about that which is unspeakable, or less dramatically stated, at least difficult to put into words (Austring & Sørensen, 2012). Aesthetic learning is engaged throughout our lives, building on our primary, empirical experiences by providing a medium for those experiences to dialectically interact with symbolic learning (the learning we acquire once we have language) (Austring & Sørensen, 2012). "Aesthetics are a sensuous symbolic form that contain an interpretation of ourselves and the world and which are particularly capable of communicating from, to, and about emotions" (Austring & Sørensen, 2011, p. 68). Standing in contrast to conceptual learning, aesthetic learning embraces anything that can be sensed or experienced and through which a type of sensory knowledge is gained, (Austring & Sørensen, 2012).

Interactions with works of art can provide aesthetic learning experiences but they are not the only catalyst of such experiences. As the science teachers in the Dewey Study Group at

Michigan State University discovered, a teacher can provided aesthetic learning opportunities by modeling passion for their subject, creating a sense of wonderment, connecting the experience to other cognitive knowledge, presenting the powerful ideas of the subject, and helping students to re-see the world in order to see it differently (Girod et al., 2010). As my story of the science teacher and students on the beach at the beginning of this chapter illustrates, the teacher's understanding of the intellectual and emotional situation of the students worked in dialogue with his conceptual and emotional knowledge of marine ecology to frame the experience for the students. He shared his passion for the subject through word and action, demonstrating that human beings can interact without fear with such fearsome creatures, inspiring a sense of wonderment. Communicating love and respect for the sea and its inhabitants in a way that the children could "read" more effectively than spoken language, the teacher presented the powerful ideas of the interconnection of all creatures, with the formidable, generative forces within our vast oceans. As a result, the students could re-see the world and were changed in the re-seeing. The subject was centered in that small community of learning and webs of connection and circles of living and dying became metaphors to shape the students' understanding. This exemplifies the radical, ecofeminist epistemology in which students and teacher made-meaning together and which I characterize as aesthetic, embodied, and connected.

It seems that in today's educational climate, those aspects of learning that are easily measurable, like skill development, overshadow those aesthetic qualities which increase emotional engagement and thereby increase the meaning for the learner. In an ironic twist, because of the increase of emotional investment inherent in aesthetic learning, such engagement can assist in the development of skills, though such an approach is under-utilized (Hohr, 2013). Within the field of education, the acquisition of facts and ability to memorize has had the main

focus and we tend to think of emotion simply as an aspect of motivation (Hohr, 2013). Such thinking falls short of appreciating the richness of the role emotion plays in learning. Emotion is not just what makes us learn, but deeply woven into our evolved selves, it inspires us to learn (Hohr, 2013). A sense of emotion arises from aesthetic learning experiences because within them there is passion, sensation, and anticipation of what is to come that cannot be separated from the doing or making (Biscotte, 2015).

Because an aesthetic learning experience arouses a willingness to be changed or transformed, it cannot be simply handed to another, instead the learner must seek it (Biscotte, 2015; Csikszentmihalyi & Robinson, 1990; Moroye & Uhrmacher, 2009; Uhrmacher, 2009; Wong, 2007). This suggests an epistemology in which knowledge, or meaning-making (Liston, 2001) is not a given but is generated through encounters (Rasmussen, 2014). Aesthetic learning allows students to access ways of knowing that are connected to the subjective dimensions of human experience (Ross, 1984). It has been said that knowledge begins when we are intrigued about something, but that intrigue, that epistemic hunger (Liston, 2001), begins as a result of a subject calling out to us, as a result of that subject's action on us (Palmer, 2007).

While we might look at aesthetic learning as separate from conceptual, cognitive learning for purposes of understanding how learning is structured, as learning functions in reality, the two aspects are intertwined (Girod et al., 2010; Girod & Wong, 2002; Moroye & Uhrmacher, 2009). The conceptual and the affective are interwoven; they “color” each other and function together (Girod et al., 2010; Girod & Wong, 2002; Moroye & Uhrmacher, 2009).

In this chapter I have developed the idea of learning as an aesthetic endeavor. When we look beyond learning as the acquisition of memorized facts, or as problem solving, or the ability to reason deductively, we can see that while these are important within the learning process, they

are partial. Not wrong, just incomplete. By tapping into an ecofeminist epistemology that views knowing as a paradoxical wholeness within the oppositions of each human being's unique abilities, experience, intellect, emotions, and spirit, we make-meaning, bringing our wholeness to bear on new thoughts and experiences. Rather than deductively picking the cloth of learning apart to its individual threads and stopping there with a tattered, pitiful, bit of nothing, as educators, we must become adept at wholeness: the wonder of big ideas, the passion we feel for the subject, and the Joy that results from embrace of paradoxes. Aesthetic learning can be understood as learning that involves the whole individual, arising from a subjective, sensory engagement, in interaction with prior experience and knowledge to leave the learner transformed.

The dialogical nature of the interaction of subjective experience and objective knowledge working to create the wholeness of aesthetic learning is exemplified within our human physiology in the way the wired and hormonal aspects of our brains interact dialogically as they function (Chatterjee, 2014a). These similarities highlight a physiological potential for approaching aesthetic learning, which I investigate further in Chapter 5 (Austring & Sørensen, 2012; Chatterjee, 2014a).

In the next chapter I lay out an ecofeminist framework to provide the basis for critiquing the 'logic of domination' (Warren, 2000) that animates our current approach to education in which the mind is dominant over the body. An ecofeminist framework assists me with encouraging an ecological epistemology in which knowing is not simply a function of conceptual understanding, but is integrated into the whole person, body, mind, and spirit, and which honors the individual's unique cultural location.

CHAPTER 3

WE CAN'T SEE UNTIL WE'RE READY:

AN ECOFEMINIST THEORETICAL FRAMEWORK

It was a warm spring day; perfect for taking my fourth grade elementary art students outdoors, to our school's butterfly garden to paint *en plein air,* just like the impressionist painters whom we had recently studied. Our work required students to utilize easels, and as I handed them out I said, "Let me know if you need help carrying your easel, since they are heavy." The only student to ask for help was a boy and in the moment before I replied to him, my teaching life of more than thirty years flashed before my eyes. I pictured myself as I was before my doctoral journey, saying something like, "Wh a-a-t? Let me see your muscles!" Or worse, "Wh-a-a-t? Show me your man-card!" I realized that the idea 'a man must be strong,' was animating the impulse to correct my student. A huge feeling of sadness descended on me as I thought of all the children I must have tried to normalize over the years. What should 'new-me' say, I wondered? Even as that question entered my mind, I spoke, "Excellent job asking for help, let's carry this together."

At another time, as I helped students out of their cars at morning carpool, I caught myself complimenting the girls for their pretty hair bows or something do to with their appearance. Oh no! How many times per day did my students hear the message 'girls must be pretty?' Once again, I was forced to confront my own complicity in the normalizing of my students. I had been subtly conveying the messages 'girls must be pretty' and 'boys must be strong' for all these years. It was a stunning revelation.

As someone who has first hand knowledge of being overlooked or underestimated because of my gender, it would seem to make sense that I should naturally look critically at

normalizing for traditional gender roles, and yet, I did not. To open my eyes, required the reading and writing I have done toward my doctorate. This suggests to me that, because they are subtle and frequently non-verbally communicated, cultural norms are very powerful; they are difficult to become aware of and even when such awareness is our desire, difficult to weed out. Ideals like male strength and female beauty are woven in to our unconscious from an early age, and thus, as my example indicates, women cannot be exonerated from the creation of patriarchy (Li, 2007). Though I identify as a woman, I have been colonized within my own culture and cultural tradition (Li, 2007).

I know that I am not finished 'chewing on' the experiences I related above. They will continue to reveal lessons about mindset and learning, and about my own journey, but for the purposes of my theoretical framework, they demonstrates the idea that when confronted with a new way of seeing the world, a way that differs from how we have been socialized, we cannot 'see' until we are ready. The picture that ecofeminism paints enables me to interrogate my own 'girls-must-be pretty and boys-must-be-strong' mindset, and therefore, my hope is that such a lens will prove helpful to my others. I have chosen to utilize an ecofeminist framework in this dissertation in order to illuminate how interconnection and mutuality can bring clarity to the manner in which hierarchy and dominance impact learning.

For most Americans, ideas of student and teacher accountability, standardized testing, merit pay for teachers, vouchers, and charter schools seem sensible in their embrace of the market model of reform (Ravitch, 2016). In this chapter I demonstrate that a "logos logic" metaphor of hierarchy rather than "lemma logic" web of connection (Jun, 2014) underlies our collective Western consciousness. According to Jun (2014) these two ways of knowing gain their names from the Greek "logos" which provided the link between rational discourse and the

world's rational structure, and “lemma” derived from the Chinese characters which mean to take hold of, or grasp intuitively. Thus, Lemma logic honors an epistemology of the “dynamic paradoxical unity of opposites” (Jun, 2014, p. 321).

What I suggest is a paradigm shift in the framework that structures our approach to education and our view of what constitutes learning (Chircop, 2008). I theorize that how we behave toward other humans and the earth is informed by the same logic that informs our thoughts about learning (Chircop, 2008). An ecofeminist theoretical framework makes these connections visible. Relevant beyond a nature-gender connection, for purposes of framing my dissertation, an ecofeminist theoretical framework provides a means of analyzing oppressive conceptual frameworks that embrace hierarchy and domination, which lack an appreciation for meaningful difference (Chircop, 2008).

Early Ecofeminism

From the 1870s through the beginning of the twentieth century, the industrial revolution in the United States had the result of dividing gender relations in a way that an agricultural economy had not. Baca-Zinn, Eitzen, and Wells (1993) termed this the "doctrine of separate spheres" indicating that women who once needed to produce bread, butter, soap, or clothing could now purchase those items, though the ability to purchase commodities was limited by the income of that household (Mann, 2011). The doctrine of separate spheres freed those women who were well off to participate in environmental activism, yet, to be socially acceptable these activities were defended as extensions of their traditional roles (Mann, 2011). Environmental activism that was undertaken by these well-to-do women was therefore called "municipal housekeeping" (Mann, 2011). Thousands of women participated in the "housekeeping" issues of ensuring clean water, air, and food for their families (Mann, 2011; Merchant, 2016).

During this era, as long as women related environmental interests to those of their cities or their children or homes, such activities were deemed proper by society (Mann, 2011). Early Ecofeminists included Chicago's Mary McDowell, who studied waste disposal in Europe in order to transform Chicago's unhealthy system (Washington, 2005), and Jane Addams and the Hull House women's club who used scientific data to enable reforms that improved the incidence of typhoid and other "filth diseases" (Merchant, 2016).

Ellen Swallow Richards (1843-1911), the founder of the municipal housekeeping movement, is most often credited as the "mother" of ecofeminism (Gottlieb, 2005; Hayden 1985; Merchant 2016; Yudkin 1982). She championed clean water quality, food inspection, and workplace ventilation (Mann, 2011). Her field eventually morphed into home economics obscuring her connection to the environment (Mann, 2011).

Black Women's clubs also engaged in municipal housekeeping activities, though in the early 20th century these women lacked the access to social services that were utilized by the white women's clubs (Lerner, 1979). Yet even with limited resources, black women undertook home and neighborhood clean-up activities and worked to ensure clean air and water (Lerner, 1979; Mann, 2011). According to Fannie Barrier Williams (1855-1944) “The club movement among colored women reaches into the sub-social conditions of the entire race. . . .[while] among white women the club is the forward movement of the already uplifted” (1900, p. 383).

Writing in the mid to late 20th century, novelist Zora Neale Hurston noted the prevailing stereotypes which negatively depicted African Americans as insensitive to nature had changed little from the early 20th century, “it [would] remain impossible for the majority to conceive of a Negro experiencing a deep and abiding love and not just the passion of sex. That a great mass of

Negroes can be stirred by the pageants of spring and fall; the extravaganza of summer, and the majesty of winter . . . is ruled out" (1998, p. 171).

Beautifully characterizing the deep connection between black women's experience, aesthetics, and nature, and standing in contrast to the racist thinking of the day are the words of the first published black poet in the United States, Phyllis Wheatley (c. 1752-1784), who praised the sunset in her poem "An Hymn to Evening" (1773): "Through all the heav'ns what beauteous dyes are spread! / But the west glories in the deepest red: / So may our breasts with ev'ry virtue glow, / The living temples of our God below!"

As Merchant (2016) describes, "[t]he rationale for women's involvement lay in the effect of waterways on every American home: Pure water meant health; impure meant disease and death" (p. 116). While most of these women did not challenge traditional gender roles and therefore were not by definition "feminist," they did use networks of other women and women's clubs to solidify political support for these early environmental movements (Mann, 2011). In the mid-twentieth century, French feminist Françoise D'Eaubonne coined the term 'ecofeminism' (Glazebrook, 2002). In her work, *Le Féminisme Ou La Mort*, she established the connection between the exploitation of women's reproductive capacity and the exploitation of natural resources for material production (D'Eaubonne, 1974).

When ecofeminists insist that feminism and environmentalism are inherently connected, their claim is not so much that feminist worries are environmentally grounded, though sometimes they may be, but rather that "environmental issues warrant feminist analysis" (Glazebrook, 2002, p.13). If we accept that, "nobody starts with a sum zero, and ... everyone's circumstances are rooted in past events" (Chircop, 2008, p. 144), we can see that history is told from the perspective of the one telling it. Remembering this, we must embrace a history, or *herstory*, of

pluralities in which perspectives of gender, race, class, ethnicity, and religion are interwoven (Chircop, 2008). "Ecofeminism, as a philosophical and political movement, aims to reveal oppressive ideologies, practices and structures within patriarchal social systems that support these interconnected exploitations, and seeks their elimination; as such, it is diagnostic and future oriented" (Chircop, 2008, pp. 138-139). Western environmentally destructive practices have always taken place in the context of patriarchy; the connection among women, people of color, children, the poor, and nature, is their experiences of oppression within these patriarchal structures (Chircop, 2008; Glazebrook, 2004).

An Overview of Ecofeminism Since the Early Days

Ecology is the study of natural communities, how they function to sustain a healthy web of life, and how this web can become disturbed and disrupted (Odum & Barrett, 2005; Reuther, 1997). Feminism can be studied in terms of culture and consciousness, “charting the symbolic, psychological, and cultural connection between the definition of women as inferior mentally, morally and physically, and male monopolization of knowledge and power” (Reuther, 1997, p. 73). To understand, criticize, and ultimately overcome the hierarchy of male over female, it can be helpful to do the same with the humans over nature hierarchy since principles of patriarchy still animate both (Reuther, 1993; Spretnak, 2011). The Oxford dictionary defines ‘patriarchy’ as, “a system of society or government in which men hold the power and women are largely excluded from it” (“Patriarchy”, 2017).

Power, which is exercised as control of individuals, operates in three terrains: consciousness- what people do inside their heads; relationships- what goes on as people interact socially; and in their bodies and behaviors- what people do with their physical presence as they live (Fiske, 1993). Power is normalizing, in that it seeks to make society members conform; as I

illustrated in the stories at the beginning of this chapter, patriarchal power is also invisible, pervasive, difficult to locate, and therefore, hard to resist (Covaleskie, 1993).

As symbolic forms, both femaleness and nature are ambivalent, that is, they both encompass opposites (Reuther, 1993). The cultural symbol of woman can comprise devalued portions of personhood and the roles that support those (Reuther, 1993). Alternately, 'woman' also represents a source of life (Reuther, 1993). In the same manner, nature can be understood as beneath humans, therefore within the realm of what must be controlled and fought against, while simultaneously, a location of blessed abundance (Reuther, 1993).

Ecofeminists note a symbolic and structural link between how a society treats women and how that society treats nature (Reuther, 1993). They seek to analyze the male monopolization of knowledge and power underlying the domination of women and the environment within patriarchal cultures, and by exposing the interconnection between these two types of domination, thus reveal a more complete picture (Kings, 2017). The dualistic conceptions of nature/culture or man/woman seek the preservation of both humans as ecologically superior and men as culturally superior (Mallory, 2010; Spretnak, 1990). Such conceptions are historically rooted as both ancient Hebrew and Greek cultures promoted this thinking (Reuther, 1993; Spretnak, 1990).

Because ecofeminism uncovers how issues of oppression and domination are interconnected, it becomes a helpful tool for interrogating the idea of a hierarchy in which the mind is dominant over the body and for weaving in metaphors of emergent growth, holism, and connectedness throughout my dissertation (Glazebrook, 2002; Warren, 2000). Additionally, because ecofeminism is by definition, multidisciplinary, it suggests solutions that are interconnected and multifaceted rather than isolated and one-dimensional (Glazebrook, 2002). At its best, ecofeminism is a focus term for philosophies that "integrate human society and nature

and aim for an entirely new intellectual/perceptual/sensate/experience of self and world" (Lahar, 1991, p. 43); thus ecofeminism provides an excellent framework to illuminate a holistic view of learning. An ecofeminist analysis allows for looking at educational issues in a way that is rich and multifaceted; therefore this approach can offer solutions that reflect interconnected solutions rather than those that result from linear, cause and effect, thinking (Chircop, 2008).

According to Warren (2000), ecofeminist theory connects the environment, oppressive social structures, and women's experience. The current educational paradigm belongs in that triad since its failure to meet the learning needs of students springs from the same institutional structures of power and privilege that fail women and the environment (Chircop, 2008; Warren, 2000; Ravitch, 2016).

Ecofeminism is a philosophy that is action oriented in that it seeks not only to describe and theorize around issues of exploitation and oppression but also to reconstruct a more just, viable social order which, at its best promotes an intellectual, perceptual, and sensate understanding (Chircop, 2008; Lahar, 1991). For the ecofeminist, recognition of an interrelatedness and interconnection that incorporates difference and distinctness is key (Chircop, 2008; Glazebrook, 2004; Plumwood, 1996; Warren, 1996).

There are connections between the ways a society views women and nature and that society's approach to education including the domination of what constitutes "good" knowledge, as well as how that knowledge should be imparted (Chircop, 2008). "The power of ecofeminism can be seen in its analysis of oppressive conceptual frameworks as they relate to the treatment of women and nature, and the acknowledgement of meaningful difference that does not sanction domination" (Chircop, 2008, p. 136). Ecofeminist philosophy advances the idea that "all forms

of unjustified domination in the west are based on the same western, patriarchal logic of domination" (Chircop, 2008, p. 138).

King (1989) frames ecofeminism as the practice of hope that believes the future can be created by intentional human beings who will take responsibility for it. When we recognize our interconnection, the result is compassion and a heightened ability to feel for, and identify with, other beings (King, 1989). Ecofeminism seeks to confront the fallacies of biologically determined gender roles and value-laden polarizations to find connection (Lahar, 1991). When we understand ourselves as situated within a site of relations that extends beyond our skin, beyond our humanity and beyond our time, within a symbiotic field of exchange, we can come to understand ourselves as part of an extensive field of "relations-in-process" that can never be claimed as completely our own (Polk, 2003). Additionally, contrary to our notion of the self as masterful and autonomous, the symbiotic self is characterized by cooperation and negotiation (Polk, 2003).

Ecofeminism is useful beyond its ability to analyze treatment of women and nature, since shining a light on patriarchal domination illuminates marginalization because of race, class, sexual identity, and religion and thereby, learning environments (Chircop, 2008). This dissertation benefits from highlighting these overlapping foci to illuminate the role patriarchy has played in establishing ideas of learning.

Sites of social change can frequently indicate sites of struggle over gender relations (hooks, 1989), so when we link dominations by understanding, for example, that raced and gendered concepts of nature "naturalize social inequalities and ecological crises" (Sturgeon, 1997, p. 19), we can see how, along with concepts of nature, attitudes toward education and approaches to learning are raced and gendered as well. According to Kristin and Hipfl (2012):

> The classroom is a racialised and gendered location of cultural production and identity formation, where we learn to understand the world around us, to assess who can belong and who never truly will, who rules and who does not. At a more personal level, by attending school we can become somebody, an educated, respected person. Or rather learn to see ourselves as a failure, not up to standards. Schools hurt those who do not fit in easily or those who are perceived to embody otherness. Teachers have the formidable task to be aware of the promises and dangers of the schooling project to which they are often deeply committed. Unfortunately, teachers often shun this task, being part of the privileged white middle classes themselves (p. 62).

Because it makes visible interrelated systems of oppression, ecofeminism helps us to recognize those systems of domination so that they can be dismantled (Selam, 2006). An ecofeminist theoretical framework provides for: an epistemology that recognizes knowing as embodied and thereby connected to an individual's environment and culture; an ethic that is care-sensitive and rooted in the aesthetic; an analysis of oppressive conceptual frameworks; and insights into mitigating those aspects of current approaches to education which teach children who are not white or middle class that they are 'other' (Harvester & Blenkinsop, 2010; Kristín & Hipfl, 2012).

By definition, as a framework and philosophy that is an expression of shared identity, ecofeminism is situated outside of easily definable categories and outside of the "you are not this parameter" (Salem, 2006, p.76). It challenges the logic of domination by first seeking to make that logic visible and once visible, to provide a direction to overcome it (Harvester &

Blenkinsop, 2010). By framing an ecofeminist vision of learning as aesthetic, embodied, and connected, I seek to illuminate an overlooked vista.

"Too often ignored in education...is the fact that culture and environment, or humans and nature, are inextricably connected and that our educational policies, structures, theories, traditions, and academic journals continue to operate as if this were not the case" (Gruenewald, 2003, p. 206). Recognizing our interdependency is a necessary component of a commitment to biological as well as cultural diversity and a desire to end oppression of any kind (Harvester & Blenkinsop, 2010).

> ...we think of intellectual knowledge as separate from sensual knowledge, and the spirit as belonging to a different realm entirely...our experience of the world is fragmented. Using the scientific method scientists attempt to be above the sensual experience. But instead of being above experience, they are perceiving partially. They see the pieces clearly, with no feeling for the whole. (Griffin, 1990, p.87)

When discourses from multiple disciplines come together, their power to communicate meaning and thereby affect change is enhanced (Sedgwick, 1990). Ecofeminism offers a means of linking "social and environmental justice in an educational context" (Harvester & Blenkinsop, 2010, p. 121). This ability to connect multiple disciplines makes ecofeminism useful for my purpose; to illuminate learning as not simply an aspect of cognitive functioning but connected to culture, environment, the body, and aesthetic experience.

Ecofeminism and Intersectionality

Within ecofeminism, essentialism debates dominated the 1980s and 1990s (Kings, 2017). “Attempts to romanticize the relationship between women and nature by first universalizing the experience of ‘one kind of woman’ and then appealing to some essential ‘essence’ or necessary

connection, leads into a trap whereby one becomes blinded to the multitude of ways in which the concept of ‘womanhood’ is implicated in the continued constraints and exploitations experienced by women and the natural environment” (Kings, 2017, p. 77). One important means of framing the essentialist debate is found in intersectionality.

The term intersectionality is attributed to Kimberle Crenshaw (1989), who sought a metaphor and conceptual framework to capture what a single axis framework could not, that is the lived experience of black women. The metaphor of the traffic intersection, representing the multiple, complex oppressions encountered by black women, has stood the test of time (Crenshaw, 1989: Kings, 2017). Intersectionality can also allow for disparate approaches to contribute to ecofeminism, encouraging the cross-examination of questions from different theoretical viewpoints, utilizing a variety of methodological approaches (Kings, 2017). The "intersectional project" has provided ecofeminism with the opportunity to challenge ideas of essentialism and exclusion (Kings, 2017). While it was first used to describe the experiences of black women, it has since expanded as an analytic tool to discuss differences among all women (Mallory, 2010; Kings, 2017).

Despite its history of highlighting the interconnected nature of social categories such as gender, race, and class and their impact on an individual's relationship to the natural environment as well as that individual’s culturally derived anthropocentric modes of thought, it is not correct to characterize early ecofeminist work as intersectional (Mallory, 2010). A conflation of intersectionality with the imprecise use of intersectional concepts to which early ecofeminists ascribed, “risks over-simplifying the important and often original theoretical and practical contributions, which intersectionality has made to academia” (Kings, 2017, p. 72).

Intersectionality is a complex, multilayered conceptual device and for that reason it can be difficult to discuss in non-metaphorical terms (McCall, 2005; Kings, 2017). For Kings, the metaphor of a spider web maintains the complex structure of intersectionality and the potential sensitivity of cultural categories (Kings, 2017). By revealing how gender, race, class, sexuality, age and other aspects of an individual's life interact in combination, rather than highlighting one aspect alone, intersectional analysis helps to illuminate the complex relationships between humans and the natural world, (Kings, 2017). Gendered impacts of approaches to education influence what becomes accepted as learning; these include the way we address the educational process, what constitutes curriculum, and how subject matter is taught. An intersectional ecological feminist approach can highlight how the same gendered thinking that affects climate impacts education.

Ecofeminism and intersectionality are both theories in progress, rather than static methodologies; as such, they take into account the "mutually shaping nature of social categories, the multi-leveled structures of power and their influence on identity and discrimination" (Kings, 2017, p. 83) and they enable us to interrogate our assumptions as we undertake research. Ecofeminist analysis, which does not utilize intersectionality as way of examining a variety of oppressions, can miss the understanding that discrimination is a factor of a variety of social identities and thereby miss the opportunity to give voice to the marginalized (McCall, 2005; Kings, 2017).

Matsuda (1991) utilizes the technique of 'asking the other question,' to further investigate intersecting oppressions. For example, when confronted with something racist, she might ask, 'Where is the patriarchy in this?' When confronted with something that appears sexist, she might

ask, ‘Where is the racism in this?’ (Matsuda, 1991, p. 1189). This technique allows for exposure of hidden oppressions and prejudices, disadvantages and privileges (Matsuda, 1991).

McCall (2005) identifies the main three approaches or ‘complexities’ of intersectionality as anticategorical, intracategorical, or intercategorical (p. 1773). Anticategorical intersectionality attempts to deconstruct the categories themselves, and in doing so, McCall (2005) posits it as the most complex and thus most successful form of intersectionality. An intercategorical approach, which inaugurated intersectionality, requires that researchers temporarily adopt pre-existing categories so that they may document the inequalities along the many axes of power (McCall, 2005). This approach falls between the two other, one of which rejects categories and the other, that uses them strategically. An intracategorical approach focuses on particular social groups at “neglected points of intersection” (McCall, 2005, p. 1774), and is typically used in case studies. I find it useful to acknowledge the existence of social categories, while simultaneously acknowledging the oppressiveness of such categories, so an intercategorical intersectional approach provides another helpful layer in my framework.

Ecowomanism

An ecowomanist perspective "centers the religious, theological, and spiritual perspectives of black women and women of color as they confront multilayered oppressions such as racism, classism, sexism, and environmental injustice" (Harris, 2016, p. 27). It names black women and women of color as an intimate part of divine existence (Harris, 2016). Ecowomanism considers a race-class-gender analysis in combination with a environmental justice paradigm; it examines religious ideas that promote interconnectedness, resist hierarchical value dualism, and embrace the understanding of nature as sacred (Shantu Riley, 2003). Taking into consideration earth ethics from women in communities of color, ecowomanism understands human, natural, and

spiritual realms are connected and one cannot honor the self by dishonoring community (Kings, 2017; Shantu Riley, 2003).

While ecofeminism expresses the thinking that the degeneration of the earth's systems springs from the same source as the subordinating and bullying of women, ecowomanism expresses this burden on women of color (Kings, 2017; Shantu Riley, 2003). Within ecowomanism there is a focus on changing patriarchal structures and adapting more feminist views of community and relationality by adding a womanist approach to environmental justice that includes an analysis of race-class-gender (Kings, 2017). Additionally, an ecowomanist analysis reveals how religious and moral values can be a part of an ethic that honors the earth and voices that speak for the earth (Kings, 2017).

Ecowomanist theorists reframe the Christian idea of domination of the earth and women by men, moving beyond the notion of dominion and control toward a notion of stewardship and interconnection (Baker-Fletcher, 1998). This view includes loving the earth as we love our own bodies since as embodied beings we are connected to the earth (Baker-Fletcher, 1998; Shantu Riley, 2003; Kings, 2017). In this way, an ecowomanist approach can critique the interlocked oppressions of patriarchy, classism, racism, and homophobia and suggest the equal status that plants, animals, and humans share (Kings, 2017).

An ecowomanist analysis highlights intersectional lines of oppression suffered by women of color, and the earth, to reveal how racism, classism, and sexism shape the moral realities and theological and ethical perspectives of African American women and women of color and how pollution, overuse of resources, and general exploitation intersect with the ways women of color have been exploited (Baker-Fletcher, 1998; Shantu Riley, 2003; Kings, 2017). An ecofeminist lens can offer Western, white, affluent, Christian, feminists an opportunity to be

more fully aware of how they profit from systems of colonialism and neocolonialism (Reuther, 1997). Western, white, affluent, Christian, feminists can repudiate these same systems by utilizing the benefits privilege provides to empower those women who have been exploited by these systems (Reuther, 1997).

Criticisms of Ecofeminism

As I indicated earlier in this chapter, the primary criticism of ecofeminism is that it is grounded in an essentialist conception of women as nurturing caretakers who are natural or closer to nature because they give birth, thus reinforcing harmful gender stereotypes (Glazebrook, 2004). Additionally, through metaphors, women are identified with nature (e.g. chickens, cows, hare-brained) and nature is identified as female (e.g. barren and needing to be penetrated); in this way women are naturalized and nature is feminized and therefore, both women and nature must be dominated (Chircop, 2008; Merchant, 1989; Warren, 1996). Essentialism equates women with nature rather than understanding all women are not the same, and no one set of values can be assumed to benefit all women equally (Li, 2007). According to Li (2007), essentialism can take three forms. The first attributes women's psychological experiences to fixed traits in their physiology, the second takes patterns visible in a single time and place to be universal, and a third unifies groups of descriptors into a single set of attributes labeled "man" or "woman" (Li, 2007). While some ecofeminists state the capacity of women to give life is a powerful thing in alignment with reverence for the mother-child bond of caring (Swanson, 2015; Noddings, 2002), others argue “such associations were created by patriarchal and patricentric cultures to debase women” (Biehl, 1991, p. 13). I support Glazebrook’s suggestion of combining Warren's (2000) view of strategic commonalities with Heidegger's (1977) notion of essences to form "the conceptual insight that women’s experience is

underwritten by a politics of location in culture and history" (Glazebrook, 2002, p. 21). Our view of gender in the U.S. seems to be hopelessly binary in its embrace of logos logic - I am a woman, which means not a man – rather than lemma logic– I identify as a woman, which means I am one part of the whole of humanity (Jun, 2014). Given the binary metaphor that frames our collective experience of gender, the challenge becomes framing women's experience as an aspect of cultural location and history as much as biology.

For my purpose, I reject an essentialist view. For me this means I do not identify women with nature, nor do I think that women's experience is monolithic, or that there is a finite set of issues belonging to women (Li, 2007). As my easel story at the beginning of the chapter illustrates, given my position in history and culture – a white female raised in the southern U.S. in the twentieth century - I must continually check myself, to ensure my life and actions reflect this viewpoint. An ecowomanist thread which adds an analysis of race, class, and gender (Kings, 2017) enables me to embrace the broadest possible understanding of all women's experience as springing from location in culture and history (Glazebrook, 2002); and, an intercategorical intersectional thread which acknowledges the existence of social categories while simultaneously acknowledging their oppressiveness (McCall, 2005), is also helpful. While I incorporate these multiple threads, I elect to use the term ecofeminism to identify the context for my dissertation because of ecofeminism's ability to expose the logic of domination as an oppressive conceptual framework, offering insight into mitigating current unsuccessful approaches to education which spring from such a framework (Harvester & Blenkinsop, 2010).

Oppressive Conceptual Frameworks

At its core, an oppressive conceptual framework features some type of domination that legitimates the subordination of one aspect of the world over another (Chircop, 2008; Warren, 1996). Oppressive conceptual frameworks:

> …value hierarchical thinking, encourage oppositional value dualisms, see power over relationships as necessary and positive, create and maintain the practice of privilege for those at the top of the hierarchy, and sanction a logic of domination that justifies subordination of those lower down in the hierarchy. (Harvester & Blenkinsop, 2010, p. 124)

For example, when "'mind', 'reason', and 'male' are portrayed as opposite of [and superior to] 'body', 'emotion' and 'female'", they comprise an oppressive conceptual framework (Chircop, 2008). An important feature of such frameworks is their ability to establish exclusiveness and opposition rather than interconnection as the prevailing value norm (Chircop, 2008; Collins, 2000; Warren, 1996).

An ecofeminist framework provides a lens for highlighting those oppressive hierarchical structures and for identifying solutions (Chircop, 2008; Warren, 2000). According to Warren (2000), ecofeminism is a "theory-in-process" (p. 66) that she compares to a quilt in which the bounding edges provide that "nothing that is knowingly, intentionally, or consciously naturist, sexist, racist, or classist—which reinforces and maintains 'isms of domination'—belongs …" (p. 67).

The Domination of Nature

In Western culture, the conception of the world as alive, organic and female was first found in Greek thought and persisted through the Renaissance (Merchant, 1989). According to

Merchant (1989), beginning with the invention of the clock, a paradigm shift occurred and while some portions of the organic philosophies of nature were transformed and retained, many were criticized and rejected, allowing for the adoption of a passive, non-living and mechanistic view of the cosmos (Merchant, 1989). This “process of mechanizing the world picture removed controls over environmental exploitation that were an inherent part of the organic world view that nature was alive, sensitive, and responsive to human action” (Merchant, 1989, p. 111). In the mechanistic view, as those who bore children and were associated with nurture and childrearing, women were seen as closer to nature and thus their social role was lower than that of men (Merchant, 1989). Christianity further established this thinking since in the Christian vision, God authorized men to have dominion over both the earth and women (Merchant, 1989). The machine metaphor also established a nature/culture dualism in which culture was set “above and apart from all that was symbolized by nature” (Merchant, 1989, p. 143).

Peering through a different lens, Vandana Shiva (1993) utilizes monoculture, which is the growth of a single crop or organism, as a metaphor for a reductionist, linear, ultimately destructive, worldview. She proposes leaving behind uniformity, and homogenization and instead making “diversity the logic of production” (Shiva, 1993, p. 147), resulting in resilient and sustainable agriculture and resilient and sustainable communities.

As I previously stated, Western efforts to master nature were propelled by the scientific revolution in the sixteenth and seventeenth centuries, and enforced the power of scientific narratives to fashion the earth and its resources into objects for human use (Merchant, 1989; Selam, 2006). "This tension, between technological development and the organic images of nature, only heightened through time” (Selam, 2006, p. 76). In his writings in the late sixteenth and early seventeenth centuries, Francis Bacon used a courtroom metaphor to advocate the idea

that nature should be interrogated (Merchant, 2006). As Merchant (2006) relates, Bacon probably meant this as a benign means of securing knowledge but it reveals “a legitimation for the domination of nature" (p. 518). Within both Greek philosophy and Christian doctrine we find the idea of the dominion over the earth, but it wasn't until the scientific revolution that this domination metaphor spread beyond the religious sphere to permeate the social and the political (Merchant, 1989; Selam, 2006). “The domination metaphor actually spread to its own loss of origin to become the only (read "natural") way to see nature, the outside, and ourselves" (Selam, 2006, p.78). As the view of nature morphed from nurturing and benevolent to chaotic and dangerous, Mother Earth had to be tamed (Selam, 2006). At the same time, industrial capitalism marked a shift in the role of women to that of a more narrowly defined "reproductive machine" (Merchant, 1989; Selam, 2006). In general, the body became something that one could fix and thus was a "machine" (Merchant, 1989; Selam, 2006). This worked against a vision of wholeness, by fragmenting the world and the body into knowable bits and pieces (Merchant, 1989).

The Logic of Domination

The logic of domination insists that those at the top of the hierarchy, white males of western European descent, must logically manage, regulate, and exploit all those beneath them on the hierarchy including women, non-European races, children, the elderly, and nature (Harvester & Blenkinsop, 2010). The logic of domination can also be characterized as “superiority justifies subordination” (Warren, 2000, p. 47).

For Burns (2008), Warren’s (2000) thinking on the logic of domination stands in opposition to ideas of hierarchy. As she explains:

> This logic, which turns "diversity (or difference) into domination and …[justifies] that domination" (Warren, 2000, p. 49), is behind problems such as racism, sexism, and naturism, defines as "the unjustified domination of non-human nature" (Warren, 2000, p. 1). Thus unlike some feminists who claim that the oppression of women stems from hierarchical thinking, Warren holds that the logic of domination is the underlying problem of the Western conceptual framework, … rejection of the logic of domination is what links feminism (which focuses on the domination of women by men) and ecological concerns (which focus on the domination of nature), as Warren posits that it is this same logic that is used to justify both kinds of domination. Overcoming the logic of domination is a key aspect of her ecofeminist ethic. (Burns, 2008, p. 103)

For me, the logic of domination emerges from the idea of superiority, which IS hierarchical thinking. Unlike Burns (2008), I do not think of the logic of domination as opposed to hierarchical thinking, instead, each helps reveal the other.

Ecofeminism has two principal goals: to expose the logic of domination (Warren, 1987; 2000) and to seek alternatives to destructive ways of relating to other humans and to the natural world (Harvester & Blenkinsop, 2010). By challenging root metaphors and the epistemological understandings and relations to power they engender, an ecofeminist framework can disrupt the logic of domination (Barrett, 2005; Gough & Whitehouse, 2003; Harvester & Blenkinsop, 2010; Kheel, 1993; Warren, 2000). Additionally, by exposing this logic, which places the mind over the body and the cognitive over the aesthetic, and by encouraging alternative ways of understanding all of these as connected, ecofeminism provides a useful theoretical framework for my exploration.

Framing An Ecofeminist Theology

Christianity, which grew out of ancient Hebrew and Greek cultures, has been cited as a prime source of cultural symbolic patterns that seek to render women and nature as inferior (Reuther, 1997). The patriarchal God of the Hebrew Bible, defined as outside and over against the material world as its creator and lord, when fused with Greek philosophical dualisms of spirit and matter, are seen as the prime identity myth of the Western ruling-class male who made this God in the image of his own aspiration to be both separate from and ruling over the material world, as land and animals or non-human resources and as subjugated groups of humans (Reuther, 1997). As a Christian and an ecofeminist, rather than declaring the two mutually exclusive, Eaton (2001) seeks connections. To that end, she points to a need to clarify both the oppressive and liberating aspects of the Christian faith including the destructiveness that results from religious traditions (Eaton, 2001). Also necessary, is an awareness of the negative legacy of the Christian faith including predatory practices toward nature and issues related to domination (Eaton, 2001). Developing a critical appraisal of the past is imperative in order to acknowledge the socially and politically situated roots of Christian thought (Eaton, 2001). For Reuther (1993), analysis of the liberating and oppressive aspects of Christianity involves adopting a feminist Christology. Such a lens reveals Jesus as representative of a humanity liberated from social hierarchy, calling us to complete the incomplete vision of human liberation (Reuther, 1993). A feminist Christology reveals sexism as a sin; it separates us from God and from God's vision for humanity (Eaton, 2001). Images of vine and branches, metaphors that Jesus used, evoke a conception of generative growth (Reuther, 1993). In this vision, the maleness of Jesus, like the femaleness of the outcasts who respond to him, is socially and symbolically important, though ultimately insignificant (Reuther, 1993). Instead, maleness and femaleness are used to highlight

and unmask the "idolatrous system of patriarchal privilege...[that has] no connection with favor with God" (Reuther, 1993, p. 137). In an ecological-feminist theology, man is not placed over woman, humanity is not placed over the nonhuman, and God (non-material spirit) is not placed in hierarchy over nonspiritual matter; in this view "spirit and matter are not dichotomized but are the inside and the outside of the same thing" (Reuther, 1993, p. 85). This theology provides a foil for the cycle of guilt and self-denial resulting in ethical conduct that forms the basis for morality in theologies that hold sin at the center (Spretnak, 2011).

The criticism of religious and social hierarchy, characteristic of Jesus in the synoptic gospels, parallels feminist criticism; this is not a way of saying, "Jesus was a feminist" (Reuther, 1993, p. 135). Instead, since he called into question the hierarchical systems of his day, Jesus is compatible with feminism (Reuther, 1993). The Gospels do not promote a dualism of masculine and feminine in the traditional Western sense, instead they speak to social realities of which gender is but one (Eaton, 2001). "The reversal of social order doesn't just turn hierarchy upside down, it aims at a new reality in which hierarchy and dominance are overcome as principles of social relations" (Reuther, 1993, p. 136). Similar to the prophets, Jesus did not validate the existing social order, instead he proclaimed the marginalized and outcast were able to hear and understand his message while the religious and social elite were not (Eaton, 2001). Jesus sought to reject and to change the ways that societies define and endow privilege and deprivation by engendering a vision of human existence as one of mutuality and service (Reuther, 1993). Within the messianic vision, as “the oppressed of the oppressed,” women are seen in a singular way as "the last who will be first in the kingdom of God (Reuther, 1993, p. 137); as such they are not seen as the ‘feminine.’

An ecofeminist theology assumes a dynamic unity between creation and redemption (Eaton, 2001; Tucker, 2003). This redemption is not a finished, final result, but rather an on-going, unbreakable dialectic uncovered in the search for the good self within a good society (Reuther, 1993). For patriarchal cultures, the bodily, natural world is both inferior and evil. For these cultures the spiritual, male world offers escape from the bodily world and as an inferior world, the natural bodily world must be dominated (Eaton, 2001; Tucker, 2003). The idea of domination fails in the face of understanding our interdependence with the ecological community (Reuther, 1993). "The notion of dominating the universe from a position of autonomy is an illusion of alienated consciousness" (Reuther, 1993, p. 89). When we accept our interdependence with the natural world, we can then use our intelligence to create harmonies and balances (Spretnak, 2011). Linear, dichotomized thinking is exaggerated by dominant social roles, and re-creating our relation with nature can mitigate this ultimately destructive bias (Spretnak, 2011).

According to Reuther (1993), there are levels of subjugation instigated by the vision of humanity as fallen; these are 1) control over the womb so no woman may control access to her body; 2) exploit labor so women become property to be bought and sold; 3) rape of the earth and its peoples so women and the poor provide the laboring bodies through which the earth is violated; and 4) promoting the ‘Big Lie’ so the previous levels of subjugation are not questioned and enlightened man must put himself in charge thereby restoring order to the disorderly cosmos. As Reuther (1997) describes, the Big Lie is an underlying philosophical view that humans are disconnected from one another and from the earth; that our flesh, blood, and instincts for survival, are our enemies and therefore we must spend our lives “suppressing our hungers and thirsts and shunning our fellow beings” (p. 264- 265).

Along with sacramental cosmology, covenantal ethics also critiques the individualism, chauvinism, and escapism within biblical thought (Reuther, 1997); thus, together they provide helpful components of an ecofeminist Christology. “Covenantal ethics gives us a vision of an integrated community of humans, animals and land that seeks to live by a spirituality and code of continual rest, renewal and restoration of just, sustainable relations between human and other humans, humans and the land, in one covenant under a care-taking God" (Reuther, 1997, p. 81-82). Such an ethic may be understood as rejecting the patriarchal aspects of the covenant while embracing those aspects that envision reclaiming community by continually seeking to right relationships that may be distorted by domination or exploitation; by allowing the land to lie fallow and thus be renewed; by allowing humans and animals to have rest; by emancipating the servant; and by forgiving debts and restoring land to the landless, enables covenantal ethics to build generative, sustainable communities (Reuther, 1997).

For many Western Christians, God is revealed in biblical texts and nowhere else (Eaton, 2001). Within an ecofeminist spirituality there is a sense of the mystery of the divine in nature and a commitment to a holistic understanding of each other and the natural world, so that a violation of any other is a violation of self (Eaton, 2001; Spretnak, 2011). “A deep and nourishing sensitivity toward life engenders reverence, and this is a profound resource for religious awareness and activism” (Eaton, 2001, p. 87). In this sacramental cosmology, the cosmos is seen as alive; the embodiment of the Holy Spirit, where God is not a 'detached male ego' but a source of renewal in which we "live and move and have our being" (Reuther, 1997, p. 82).

Ecofeminist writers approach this theological framework through a variety of disciplines such as philosophy, sociology, science, anthropology, economics, etc. and through a variety of

religious traditions (Christian, Jewish, Goddess, Wiccan, Buddhist, Indigenous and womanist) (Eaton, 2001). Ecofeminist theology is interpreted and appropriated in different ways depending upon individual social and cultural situations (Berry, 2009; Eaton, 2001). Western Christian feminists should study the ability to mine indigenous beliefs for threads to weave together with Christian ideology that Christian feminists in non-Western countries employ, in order to enhance life for women at the bottom of society in particular (Berry, 2009; Eaton, 2001). Such a 'weaving together' of types of wisdom can become a powerful tool for letting go of the overweening individualism so pervasive in American culture (Spretnak, 2011).

The Western world-view considers the individual as discrete and distinct (Pulliam & Van Patten, 2013). Individualists value self-reliance and the individual apart from the group and they promote the accomplishment of one's goals and desires (Brown, 2003). Viewpoints can range from the "existential individualists," who are committed to freedom for individuals as freely choosing agents, to the "instrumental individualists" who are committed to freedom for individuals as competitors for resources (Brown, 2003).

As a society moves toward instrumental individualism and fails to account for the good of the entire community, that society can become toxic (Reuther, 1997). Weaving those wisdoms that are not mainstream into Western wisdom is key and additional help for this process may be found in Asian spiritualities of Taoism, Buddhism, Hinduism, and Confucianism, particularly in the visions of the harmonizing of dialectical forces within society and the cosmos (Tucker, 2003).

Christianity tends to place itself at the pinnacle of a hierarchy of world religions (Eaton, 2001). Instead, Eaton (2001) advocates for a pluralist-correlational model in which Christianity

see itself as but "one thread within a tapestry of revelations" (p. 87). This view centers the idea of theology or the study of the nature of God, rather than centering Christianity (Eaton, 2001). The Trinitarian order assumes a linear scheme of salvation history (Reuther, 1993). If we can reject such a view of theology and instead see religious symbols as circular rather than linear representations of history, it becomes easy to begin where we are, rather than thinking in terms of beginnings and endings (Reuther, 1993). In the Christian view, the fact that Adam and Eve were once equal does not cause believers to reevaluate the subjugation of women; instead, it highlights woman's sinfulness and need for subjugation (Reuther, 1993).

In this way, feminist theology finds a starting point in cognitive dissonance (Reuther, 1993). Cognitive dissonance is a type of psychological distress that occurs when an individual simultaneously holds two or more contradictory beliefs (Reuther, 1993). For Reuther (1993) an individual can learn to recognize and utilize her own cognitive dissonance as an instrument for analysis of social context and experience. She suggests beginning with what we identify as good and evil. How do we characterize human nature? Ultimately, questions arise about the origins of the cosmos and about God (Reuther, 1993).

The acknowledgement of the congruence between the Gospel and liberation from sexism, leads to an experience of isolation from existing churches for many individuals (Berry, 2009). For Reuther, (1993), the Hebrew word, *Shekinah*, or the dwelling of the divine presence of God with us, provides a vision of "new relations; simpler, more harmonious, more just, more beautiful patterns of life" (Reuther, 1993, p. 259); thus freeing woman/body/nature from its role as the representative symbol of carnality, sin, and death, and instead, establishing it as symbolic of these beautiful, harmonious patterns. “An ecological ethic must always be an ethic of eco-justice that recognizes the interconnection of social domination and domination of nature”

(Reuther, 1993, p. 91). Our human intelligence privileges us with the responsibility to become caretakers of the ecological community upon which our existence depends, rather than simply to dominate it (Berry, 2009).

Framing An Ecofeminist Epistemology

We can trace the double crisis of eco-justice (climate change and corporate globalization) to the Western dualistic habit of knowing (Jun, 2014). Logos logic, which derives from ancient Greece, is related to reason and speech, and is rooted in the thinking that what something *is* maybe be understood by identifying what it is *not* (Jun, 2014). Lemma logic derives from Buddhism and in this logic, what something is encompasses what it is not (Jun, 2014). Lemma logic is symbolized by the lotus blossom and is related to intuition and silence rather than speech (Jun, 2014). The Western dualistic habit of knowing has shaped human knowledge, values, beliefs about gender roles, and our approach to learning as well as our attitudes towards the earth's biotic community (Jun, 2014). Gender is not a minor element in an oppressive framework since it often manifests itself alongside other oppressions (Salem, 2006).

Ecofeminism examines this epistemological context and by exposing these oppressive conceptual frameworks, including that of mind over body, it provides a lens for understanding and mitigating educational inequalities (Warren, 2000). We come to know the natural environment by experiencing and forming a relationship with it through our bodies and not simply through observation or reflection (Chircop, 2008; Warren, 2000). A masculine social construction of gender identity stems from a split between productive labor and reproductive labor, which reflects the separation between humans and nature (Chircop, 2008; Salleh, 2003). Warren (2000) promotes seeking an alternative to the rationality of objectivity and instead embraces new ways of thinking that respect rather than assault; and the understanding that much

of what we are socialized to see as oppositional – man/woman or nature/culture – are really part of a whole.

The traditional understanding of knowledge transfer is as follows: "Hierarchized, competitive, and built on an epistemological metaphor that understands knowledge to be held in particular places or by particular individuals, transferred successfully in whole or in part, and returnable and examinable for its specificity and completeness" (Harvester & Blenkinsop, 2010, p. 128). Applying Lemma logic means embracing my dependence as simultaneous to my independence. Thus, knowing becomes "a conversion to relationality in which the dialectics of human existence are converted from opposites into mutual interdependence" (Jun, 2014, p. 319). An ecofeminist epistemology rejects the rationality of objectivity and embraces knowing as simultaneously cognitive, emotional, spiritual, and embodied (Jun, 2014).

A Framework for Learning

Today, from the way we study subjects in school to the way we rationalize our ethical choices, reductionist thinking, outlined by Rene Descartes (1596-1650) in 1637, still animates much of the Western worldview (Inwood, 1993). First presented as a means of obtaining knowledge, reductionism consists of dividing the object to investigate into parts and proceeding from the simplest to the most complex in order to understand it. Ideas of hierarchy and dualism (good/evil, male/female, man/nature) proceed from reductionism (Collins, 2000). In such thinking difference is understood as oppositional and “one element is objectified as the Other” (Collins, 2000, p. 70).

Even in areas such as environmental education, educators can inadvertently further what they seek to change when they do not explore the root metaphors and cultural assumptions that underlie their practice (Harvester & Blenkinsop, 2010). For example when educators focus on

technical approaches such as the management of ecosystems and their resources, they fail to move beyond the goals of school achievement and economic well-being to interrogate the disciplining power of dominant discourses as shaped by root metaphors (Furman & Gruenewald, 2004; Harvester & Blenkinsop, 2010). Failure to explore root metaphors makes it difficult for teachers to enable students to achieve education's broader goals of becoming life-long learners who find passion (Garrison, 1997), joy (Liston, 2001), and beauty in what they learn.

An ecofeminist pedagogy requires a change in the traditional educational relationship where teacher and student (the human) come together with the natural world (the more-than-human) to engage in a way that is more robust and genuine than is currently the norm (Harvester & Blenkinsop, 2010). These genuine relationships can take place in environments that take into account the hidden curriculum that architectural structures bestow and include the outdoors and natural environments (Orr, 2004; Louv, 2008). In this way there is not only a shift in the relationship between teacher and student, but also an intentionality and thoughtfulness for the "place" of education, allowing for the natural world to play a prominent role as co-teacher (Orr, 2004; Louv, 2008). So, even within environmental education, which ought to be the starting place of learning, "the dominations of women, other human Others, and nonhuman nature are interconnected, are wrong, and ought to be eliminated" (Warren, 2000, p. 155), this vision has not been fully achieved given that environmental education is situated in an anthropocentric paradigm that focuses heavily on "school achievement and economic well-being, and employing the narratives of the Western Enlightenment tradition" (Harvester and Blenkinsop, 2010, p. 121). According to Plumwood (1996), "both men and women must challenge the dualised conception of human identity and develop an alternative culture which

fully recognizes human identity as continuous with, not alien from, nature" (p. 36). In this way emergent, holistic growth forms the foundation of an ecofeminist perspective.

Root metaphors give life to our deepest cultural assumptions (Lakoff & Johnson, 1980; Liston, 2001). Prior to the scientific revolution the prevailing metaphor was the organism, which presupposed simultaneous interdependence and independence (Selam, 2006). Within this conceptual framework "nature was a caring, loving, and ordered "mother," but also wild, uncontrollable, and the creator of chaos" (Merchant, 1989, p. 2). As part of a "linear mentality of forward progress" (Merchant, 1989, xxi), a market-based economy that valued production over reproduction shifted the prevailing conceptual framework to create a vision of nature and women as something exploitable.

A care-sensitive ethic minimizes reductionist bias by giving legitimacy to voices on the margins (Chircop, 2008; Warren, 2008). An ecofeminist ethic of care is a framework that moves beyond the dualistic male-female paradigm (Swanson, 2015). For Cuomo (1998), "a central position grounding ecofeminism is the belief that values, notions of reality, and social practices are related, and that forms of oppression and domination, however historically and culturally distinct, are interlocked and enmeshed" (p. 1).

Noddings' (2002) ethic of care ties in with an integrative ecofeminist perspective by laying aside gender and focusing attention on the space between people; the relationship, which is the wellspring of an ethic of caring. Values of care are underrepresented and thus have a place in an ecofeminist ethic since "relationships are not something extrinsic to who we are; they play an essential role in shaping what it is to be human" (Warren, 1996, p. 33). An ethic of care in the educational setting suggests a shift in pedagogy to one that cherishes the intertwining of

seemingly paradoxical viewpoints; inviting reciprocity, nurturing, and cooperation (Spretnak, 1990).

According to Garrison (1997), ethical and aesthetic appreciation have much in common since expansive caring necessitates skills that we usually characterize as aesthetic: constructive criticism and discriminating judgment.

> One of the earliest discoveries of morals was the similarity of judgment of good and bad in conduct with the recognition of beauty and ugliness.... The sense of justice, moreover, has a strong ally in the sense of symmetry and proportion ... a harmonious blending of affections into a beautiful whole, was essentially an artistic idea ... The Greek emphasis upon Kalokagathos (the good life), the Aristotelian identification of virtue with the proportionate (golden) mean, are indications of an acute estimate of grace, rhythm, and harmony as dominant traits of good conduct. (Garrison, 1997, p. 271)

When we perceive the needs of others we rely on a sympathetic capacity that is in itself, a creative response to the needs, interests, and values of others (Garrison, 1997).

For John Dewey, life grows out of transitions that include equilibrium, disequilibrium (including loss), and back to equilibrium again (Garrison, 1997). Within those transitions "science and art, scientific law, and aesthetic form emerge out of the rhythms of nature and art in identical reality" (Garrison, 1997, p. 63). An individual's commitment to growth as an ideal for living means accepting vulnerability and risk since as one grows some aspects of their previous understanding are necessarily pruned away. The emergent (growth) model of the mind and self is reciprocal; that is, in order to receive one must give and vice versa (Garrison, 1997). "Bestowing value, generating love or creating goodness enhances others while affirming and expanding

ourselves" (Garrison, 1997, p. 40). Thus ecofeminism enables me to utilize a lens of caring, connection, growth, and holism in my theorizing.

Ecofeminism and Embodied Learning

A feminist ethic is necessarily pluralistic rather than unitary or reductionist (Warren, 1996; Swanson, 2015). The mind is not the master of all lived experience because the body and the natural world contribute to our human lives (Levy, 2012). Though conceptions of "body" and "nature" are socially constructed as oppositional, an embodied knowing grants knowledge to our bodies and to nature (Chircop, 2008; Twine, 2001). Culture weaves in as well, and we see gender, race, and class as social structures that inform lived, embodied experience (Glazebrook, 2002). Ethically and epistemologically, the proposition that our bodies and the natural world are continually communicating provides a lens for seeing and experiencing the world (Levy, 2012).

In order to challenge the conception of the mind having mastery over the body and to illustrate the idea that our minds and bodies are continually conversing, Levy (2012) uses the example of how her own body felt when her mother was in the emergency room. She could not, through effort, make her heart stop pounding or her limbs stop feeling twitchy or on edge. Her body had "agency" which was different than the human type of agency that refers to an autonomous subject (Levy, 2012). This embodied agency "is not predicated on the humanist model of the free individual" (Alaimo, 2008, p. 248), but instead is performative or "intra-active." This vision of intra-activity refers to Barad's (2003) vision of a constant state of relating. Levy (2012) offers the example of the ill body that is constantly interacting with environmental factors like food, sleep, and stress. Our bodies and their environment are conversing; they are shaping and influencing each other despite any attempt to suppress this relationship, and our lived experience confirms this (Levy, 2012).

Levy (2012) uses the body's surprisingly unpredictable agency to invoke feelings of pleasure or panic as a means of transgressing the boundaries of mind/body. “Nature... is part of our own being, ...we are continually breathing in and exchanging the particles of the environment with the cells of our own bodies...[thus] harming the environment is an assault upon our own humanity" (Levy, 2012, p. 18). Our experiences are shaped cognitively, socially, culturally and by the material world (Levy, 2012). In the next chapter I explore the idea of embodiment in greater depth.

Final Thoughts

In this chapter I have presented an ecofeminist theoretical framework for enabling an epistemology that: recognizes knowing as embodied and thereby connected to an individual’s environment and culture; includes an ethic that is care-sensitive and rooted in the aesthetic; provides an analysis of oppressive conceptual frameworks; offers insights into mitigating those current approaches to education which embrace a market model of reform and remain unsuccessful in their ability to improve student learning (Harvester & Blenkinsop, 2010; Ravitch, 2016); and offers insights into mitigating approaches to learning that teach non-white, non-middle class students they are other (including the consideration of race, class, and gender) (Kings, 2016).

An ecofeminist lens assists me in making the unconscious conscious (Warren, 2000), to facilitate the union of the mind and body. This dissertation, which frames an ecofeminist vision of learning as aesthetic, embodied, and connected, benefits from highlighting these overlapping foci to illuminate the role patriarchy, through the logic of domination has played in establishing ideas of learning. Such a vision offers suggestions for changing the underlying metaphors, which shape our collective consciousness (Harvester & Blenkinsop, 2010). I propose a metaphor that

evokes the significance of webs of connection over lines of hierarchy. Ecofeminism invites the understanding of lived experience, at once individual and collective. It rejects the hierarchical logic of domination in which whatever is conceived as superior must logically dominate whatever is conceived as subordinate (Warren, 2000). A web of connection does not allow for hierarchy. Drawing on Charles Darwin's (1859/1964) image of the tangled bank, I envision the ecofeminist tangled bank which incorporates the interconnection and complexity of Darwin's biotic tangled bank but includes human-to-human relationships, as well as each human's relationship with his/her/their own body-mind.

In the next chapter I continue to explore the body-mind's ability to know, including how embodied experiences of learning offer an important and often overlooked key to learning.

CHAPTER 4

THE BODY-MIND: AN ECOFEMINIST PERSPECTIVE

To further my ecofeminist vision of aesthetic, embodied learning, I begin this chapter, which investigates how, for the individual, the body is the center of experience, with a description of 'way-finding' by Mary Evelyn Tucker (2008). In a chapter entitled "Learning to See the Stars: The Earth Charter as a Compass for the New Century" Tucker (2008) tells of a presentation by a young Hawaiian sail master, Nainoa Thompson, to a group of academics attending a history conference in Hawaii. As Thompson related, since the time he was young, it had been his desire to recreate the South Pacific voyages that took place from approximately 700 AD to 1400 AD; he wished to construct and sail original canoes, bringing only traditional foods for the voyage (Tucker, 2008). At the time – it was the 1970s - this was not an easy task since knowledge of the ancient ways of canoe building and navigation were thought to have been lost, especially among those who were adept at using modern tools of navigation (Low, 2007). After a great deal of searching Thompson found Mao Pilaug on the Milanesian island of Satawal, who helped him and other members of a sailing society build traditional canoes; he also shared his knowledge of how to sail them (Low, 2007; Tucker, 2008). Under the direction of Mao, slowly Thompson and the others began to read the flotsam and plankton on the surface of the sea and they began to notice the pattern of the bird's flight and the currents in the ocean; they "felt the voyage being born within [them]" (Tucker, 2008, p. 41). When the sailors eventually set sail without compasses or other modern technology, they literally and figuratively sailed the paths of their ancestors (Low, 2007; Tucker, 2008). As Thompson related, on cloud filled nights, when no stars were visible, Mao would lie in the hull of the canoe,

> [F]rom both knowledge taught by his elders and instincts absorbed as a child he could discern the movement of the currents. He would navigate direction based on these ancient indigenous ways of knowing that had been learned and transmitted across the centuries. … [Thompson and his colleagues] were deeply moved in witnessing this. (Tucker, 2008, p. 42)

This indigenous way of navigating challenges models of learning that separate the cognitive and experiential, suggesting that for such learning, the individual combines cognitive with visual, auditory, and kinesthetic information into an integrated whole (Feinberg & Genz, 2012). This holistic approach to spatial orientation or 'way-finding' demonstrates the manner in which certain ways of learning and forms of knowing are not easily expressed in words, as with the kinesthetic knowledge of a canoe's motion (Feinberg & Genz, 2012).

In this chapter I explore what the body has to do with learning; employing an ecofeminist lens to reveal how cognitive, visual, auditory, and kinesthetic learning exist as intertwined- in dialogue one with the other- each shaped by the other.

According to Twine (1993) and Young (2002), ecofeminism encourages respect for the cultural and natural elements that codetermine our corporeal subjectivity. Given that the lived-body acts and experiences within in a specific social, cultural, and geographic context, it can be considered a body-in-situation – a unified idea (Young, 2002). The ecofeminist body-in-situation physically manifests consequences of the human domination of nature while allowing for a politics of locatedness and accountability (Fields, 2000). Going further, ecofeminism provides an additional lens for critiquing socially and culturally invented ideas about the body, particularly the ways in which bodies become marked and devalued; and then pointing toward various unexpected and creative solutions (Twine, 2000). Such a respect for the-body-in-situation

illuminates those approaches to learning that teach non-white, non-middle-class students they are 'other' (Harvester & Blenkinsop, 2010; Young, 2002).

Beyond its usefulness as a metaphor for kinesthetic navigation, way-finding is an apt metaphor for the process of embodied learning through experience. As our first teacher, experience leads us to understanding before we are able to understand abstract or intellectual concepts (Stolz, 2015). According to Lakoff and Johnson (1999), prior experience undergirds later experience and understanding, because it lays the groundwork, both metaphorically and actually, for understanding subsequent experiences. "...[W]e can only think the world because we have already experienced it; it is through experience that we have the idea of being, and it is through experience that the words 'rational' and 'real' receive a meaning simultaneously" (Merleau-Ponty, 1964/2012, p. 17). The idea that experience is the precursor to understanding holds true, even when the experience involves imaginatively constructing castles in the air (Dewey, 1938/1997). As William James (1890/1950) remarked:

> The body is the storm-center, the origin of coordinates, the constant place of stress in [our] experience-train. Everything circles round it, and is felt from its point of view...The world experienced, comes at all times with our body as its center, center of vision, center of action, center of interest. (p. 86)

Experience takes the form of a never-ending dialogue between self and world; therefore the world is what I live through before I can understand or 'think' the world (Merleau-Ponty, 1964/2012; Stolz, 2015). Our experience becomes meaningful and transformative when we relate it to other actual or possible experience, pointing beyond it to connect and transform past, present, and future experience (Dewey, 1934/2005).

As I discussed in previous chapters, the idea that knowledge is fixed and eternal began with Plato and is exemplified by his belief in a hierarchy of fixed and eternal Forms or metaphysical truths (Garrison, 1997). In such a view, knowledge already exists, apart from the knower (Garrison, 1997). Western thinking, which began with Plato, sees a divide between mind and body; in such thinking the two are separated - as with cognition and emotion, knowledge and imagination, and thought and feeling (Johnson, 2007). Additionally, in Western thinking, ends of a dichotomy are seen not only as separate, but also contradictory and oppositional (Collins, 2000; Johnson, 2007).

In contrast to such a polarized view of mind and body, French phenomenological philosopher, Maurice Merleau-Ponty (1908-1961), whose foremost interest was the constitution of meaning in human experience, thought it was impossible to understand cognition without reference to the lived body (van Manen, 1997). Since the body is not simply a passive vehicle for the mind but engages with the world in concert with the mind, the body plays a crucial part of the cognitive process (van Manen, 1997). Phenomenology is the philosophical study of the structures of experience and consciousness, embracing the notion of the knowing body (Groth, 2016; Merleau-Ponty, 1964/2012). A phenomenological perspective stands in contrast to the Western, Cartesian, dualistic and hierarchical view of the mind and body; asserting an individual's understanding of the world is the product of his or her situated body, and emphasizing perception’s foundational role for an individual who seeks to understand and engage with the world (Merleau-Ponty, 1964/2012; van Manen, 1997). Phenomenology asks what is a particular experience like? What is the quality of the experience and what does it mean? This process may involve description and it may also include interpretation of a lifeworld (van Manen, 1997). Because humans are beings-in-the-world, whose bodies function in the world, our thinking self

cannot be separated from our sensing self; instead, our experiences and ways of knowing spring from unified minds and bodies (Merleau-Ponty, 1964/2012; Stolz, 2015).

Learning that is transformative arises from subjective, sensory engagement in interaction with prior experience and knowledge (Wong & Pugh, 2001). For the educational establishment to embrace such a vision requires a paradigm shift in the framework that currently structures our approach to education and our view of what constitutes learning (Chircop, 2008). I propose a framework that embraces an ecofeminist epistemology, which recognizes knowing as embodied and thereby connected to an individual's environment and culture (Harvester & Blenkinsop, 2010); and that exposes how the embodied knowledge of women, children, the poor, and people of color, reveal shared experiences of oppression and oppressive socioeconomic structures (Chircop, 2006). When we understand ourselves as situated within a site of relations that extends beyond our skin, beyond our humanity and beyond our time, within a symbiotic space of exchange, we can come to understand that we are part of an extensive field of "relations-in-process" that can never be claimed as completely our own (Polk, 2001).

The Knowing Body

To comprehend how the body is crucial to cognition requires an understanding of consciousness and the foundational role of experience. Consciousness, or the awareness of myself or of something external to myself, requires the joint operation of brain, body, and world. Indeed, consciousness is "an achievement of the whole animal in its environmental context" (NoeÌ, 2009, p. 10); consciousness is dependent on what is happening in my brain and also on my history, my environment, and my experience with the wider world. My ability to think and reason likewise relies on my experiences and cannot be wholly separated from my body and its processes (Shusterman, 2006). Reasoning, therefore, is not something that human beings

logically come to, rather reasoning is the result of embodied experience and the prototypes, framings, and metaphors which result from that experience, therefore, human beings are not in conscious control of, or even necessarily aware of their reasoning (Lakoff & Johnson, 1999).

> We think and feel with our bodies, especially with the body parts that constitute the brain and nervous system. Our bodies are likewise affected by mental life, as when certain thoughts bring a blush to the cheek and change our heart rate and breathing rhythms. The body-mind connection is so pervasively intimate that it seems misleading to speak of body and mind as two different, independent entities. (Shusterman, 2006, p.2)

For Liston (2001), to separate the body from the mind or the spirit from the physical body is like separating taste from an apple. The term *body-mind*, first used by John Dewey (1928/1996), is an appropriate term to express and experience these interconnections because it preserves the ability to distinguish between the mental and the physical aspects of lived experience as well as between lived experience and performance (Shusterman, 2006). Utilizing the term 'body-mind' therefore encourages us to be more mindful of our bodies and the manner in which they live and move within an environment that they simultaneously contribute to (Dewey, 1938/1997; Liston, 2001; Shusterman, 2006). According to philosopher and psychologist William James (1842-1910):

> Mental facts cannot be properly studied apart from the physical environment of which they take cognizance. The great fault of the older rational psychology was to set up the soul as an absolute spiritual being with certain faculties of its own by which the several activities of remembering, imagining, reasoning, and willing, etc. were explained, almost without reference to the peculiarities of the world with

> which these activities deal. But the richer insight of modern days perceives that our inner faculties are *adapted* in advance to the features of the world in which we dwell, adapted, I mean, so as to secure our safety and prosperity in its midst. (James, 1890/1950, p.3)

Meaning emerges as we engage in experiences, make sense of them, and in so doing, transform and transcend them to create something new and to become something new as a result (Dewey, 1938/1997; Johnson, 2007). Johnson (2007) proposes what he calls, the “embodied theory of meaning" (p. 10), which involves the cognitive skills of conceptualizing and reasoning utilizing sensorimotor experience and emotions in a naturalistic way that aligns with Dewey's (1938/1997) ideas of continuity and James’ (1890/1950) ideas of adaptation. This theory springs from psychology, linguistics, and physiology and proposes that the body is a physical entity that is animated by organic processes (Johnson, 2007; Varela, Thompson, & Rosch, 2016). These animating organic processes include sensations and movement, which are overt, as well as processes, like metabolism, of which the individual is not aware; additionally, the body is socially constructed in that it responds consciously and nonconsciously to its social environment (Johnson, 2007; Varela, Thompson, & Rosch, 2016), as demonstrated by the story of my own participation in the normalizing of my student, which I shared at the beginning of chapter 3. In what is for the most part, nonconscious, social norms are inscribed in the body in ways that are both generative and oppressive (Shusterman, 2006). Ethical behavior is formed somatically through ritual and music, and by inspiring love and the desire to emulate; conversely, oppressive norms can be somatically inscribed, as bodily habits, which we accept as normal (Shusterman, 2006). This is exemplified in the expectations of women in many societies to speak softly, or

lower their eyes; such norms are difficult to identify and root out, when they are so deeply absorbed, they become inscribed on the body (Shusterman, 2006).

Looking past ethics to epistemology, the body further demonstrates our human ambiguity; being the source and the limit of our perception (Shusterman, 2006). Human ambiguity is also manifested in the body ethically, as demonstrated by our freedom to choose and act (Shusterman, 2006). Willed actions such as raising our hand or moving our legs exemplify our freedom to choose (Shusterman, 2006). Conversely, our lack of ability to move as we wish, our human needs, and even death, epitomize our lack of freedom (Shusterman, 2006). Bodies express the ambiguity of human experience in another way as well. While they unite us, our bodies also divide us into genders and ethnicities, by our physical structure, and how we function with them (Shusterman, 2006). An ecofeminist epistemology recognizes knowing as connected to an individual's environment and culture through the body (Harvester & Blenkinsop, 2010).

Conceiving of learning as a process that springs naturally from experience illuminates how reasoning, experience, and emotion are aspects of embodied meaning. The idea that thinking and the body are intertwined aligns with this dissertation's ecofeminist framework. Such a framework is helpful to me since shining a light on patriarchal domination illuminates marginalization of all kinds, and therefore, it can illuminate the Western proclivity for placing the mind and body in opposition (Chircop, 2008). By challenging root metaphors and the epistemological understandings and relations to power they engender, an ecofeminist framework can disrupt the logic of domination, which is understood as "superiority justifies subordination" (Warren, 2000, p. 47). The idea of the knowing body challenges the notion of the body as simply a vessel for holding the brain, in which is located the essence of an individual (van Manen,

1997). The theory of embodied knowing (Johnson, 2007) critiques the logic of domination that places mind and body in an oppositional, hierarchical relationship to each other. Additionally, the same gendered thinking that affects climate impacts education (Kings, 2017). An ecofeminist lens helps to focus on connections between mind and body as aspects of the whole person as well as how that individual interacts within their culture and environment.

Embodied Learning

Real human experience is subjective and multifaceted and as such, it has consequences for learning (Stolz, 2015). Critical reflection and attention to the embodied sensation of learning result in a 'feel' for the kind of knowing that anticipates future requirements, preparing an individual to think on his or her feet (Ord & Nuttall, 2016). Through experiences with other things or objects, the individual comes to know and understand herself and her abilities and limitations, as well as to understand the other (Dewey, 1958; Johnson, 2007; Merleau-Ponty, 1964/2012). Ord and Nuttall (2016) theorize that knowledge is located within practice in a dynamic manner, rather than as something that is applied to practice or found in the Cartesian separation between mind and body. As Nainoa Thompson's experience of "way-finding" exemplifies, our human organism's process of forming meaning is multilayered and can take multiple web-like pathways on its journey. Conscious and nonconscious (outside cognitive awareness) physical interactions within our world, are aspects of meaning formation that are powerful (Johnson, 2007; Sheets-Johnstone, 1999). According to dancer/choreographer turned philosopher, Maxine Sheet-Johnstone (1999), as infants we begin making sense of the world by first making sense of our bodies:

> We make sense of them in and through movement, and in and through animation. Moreover, we do so without words. This primordial sense-making is the standard upon which our sense-making of the world unfolds. (p. 148)

Human thought and meaning have a bodily basis which begins with this primordial sense-making (Johnson, 2007; Lakoff & Johnson, 1999; Sheets-Johnstone, 1999).

Learning about self and world through movement occurs in a particular environment; this learning happens at a visceral level that does not separate subject and object and the experience of both (Johnson, 2007). Through the movement of the body the individual gains knowledge of the world and insights into her nature; much of this type of learning through experience occurs beneath the level of consciousness (Johnson, 2007).

> In the beginning, we are simply infused with movement -- not merely with a *propensity* to move, but with the real thing. This primal animatedness, this original kinetic spontaneity that infuses our being and defines our aliveness, is our point of departure for living in the world and making sense of it.... *We literally discover ourselves in movement*. We grow kinetically into our bodies. In particular, we grow into those distinctive ways of moving that come with our being the bodies we are. In our spontaneity of movement, we discover arms that extend, spines that bend, knees that flex, mouths that shut, and so on. We make sense of ourselves in the course of moving. (Sheets-Johnstone, 1999, p. 136)

When we think of movement as primary to meaning, this refers to both our phenomenological, felt experience and our nonconscious bodily interactions (Johnson, 2007).

To 'meaningfully grasp' a thing, as when we come to understanding it deeply, we do so because we have experienced it (Stolz, 2015). Such experience is subjective and objective since

it involves a synthesis of emotional, practical, aesthetic, cognitive, and theoretical information that is simultaneously embodied and intellectual (Stolz, 2015). If we simply seek the ends without considering means, and without considering the messages our body is sending us, the result is frustration (Shusterman, 2006); this ‘feel’ for learning and the somatic information our body communicates is marginalized if not ignored in schools (Palmer, 2006).

When educating children, complex concepts are more easily taught when they are connected with "biologically primary knowledge" (Araya, 2016, p. 169), which can also be called intuitive and embodied knowledge. As Nainoa Thompson discovered, certain ways of learning and forms of knowing have a kinesthetic basis. By connecting new information with a student's innate, embodied knowledge, utilizing perceptual, motor and cognitive systems, teachers can enable students to gain understanding at a deep resonant level (Araya, 2016).

Feelings also carry information, which in most school settings, students are not taught to ‘read’ (Palmer, 2006). Palmer (2006) offers an example, with the perception that within academia, emotions are seen as the enemy of objectivity and therefore, must be suppressed. As a result, many educated people compartmentalize their feelings; regarding them as dangerous to professional life (Palmer, 2006). To overcome this prejudice, and as part of an ecofeminist vision of learning, students must be taught to mine their emotions for information, to access “affective knowledge that eludes our instruments and intellect” (Palmer, 2006, p. 209).

For Oakeshott (1967):

> Learning is the comprehensive activity in which we come to know ourselves and the world around us. It is a paradoxical activity because it is doing and submitting at the same time. And its achievement can range from merely being aware, to what may be called understanding and being able to explain (p. 156)

Stoltz (2015) argues that psychological discourses, which are disconnected from the role the body plays in learning that is "grasped meaningfully," provides only a partial vision of the learning process. For Dewey (1938/1991), "The idea that any knowledge in particular can be instituted apart from its being the consummation of inquiry, and that knowledge in general can be defined apart from this connection is, moreover, one of the sources of confusion in logical theory" (p. 16). Dewey's (1938/1991) claim is that thinking of learning as disconnected from our action in the world is illusory. People learn in multiple ways and such learning can take a variety of forms and occur in a variety of settings. The problem with peering through a narrowly psychological lens at learning is that such a view focuses on mental and behavioral processes to the exclusion of other factors (Stolz, 2015).

Theories of learning that spring from psychology describe aspects of learning that are "empirically discernible" (Stolz, 2015, p. 476). These theories can most often be characterized as behaviorist in that they confine themselves to aspects of behavior that are observable and quantifiable (Stolz, 2015). One of the most enduring legacies of behaviorism in the field of education are behavioral objectives within curriculum planning (Stolz, 2015). As a teacher of many years I have found, in matters of classroom management as well as for organizing informational instruction, objectives do have usefulness in the everyday life of the school. But for the most part, those who promote behaviorism make no distinction between behaviors that arise from personal agency, in other words, what an individual does consciously and deliberately, and those that arise because an individual is behaviorally conditioned to do so (Stolz, 2015). Additionally, behaviorism fails to provide a means of advancing those processes by which students come to understand or make sense of something in a meaningful way (Carr, 2003; Stolz, 2015).

Embodied learning theory draws on philosophy, psychology, and cognitive science to investigate the role of the body in learning (Stolz, 2015). This paradigm does not seek to separate the body from the mind but rather understands a body requires a mind to function (Stolz, 2015). An ecofeminist lens reveal a disembodied/embodied divide within school settings, which privileges theory over practice and assumes the body plays no role in cognition (O'Loughlin, 2006). We understand something because we have experienced it; our being (our body and mind together) is present and involved in this experience and therefore, we understand (Stolz, 2015). The meaning of a thing is tied up in how it connects to what has gone before and what it offers to present or future experiences (Dewey, 1938/1997; Johnson, 2007).

According to Piaget (1950), children develop sequentially through stages from concrete at the youngest age to more abstract as they age. In such thinking, perception and experience are reduced to their cognitive aspects, making no allowance for the integral role embodiment plays in our perceptions of ourselves, others, and of the world around us (Stolz, 2015). “Merleau-Ponty (1964) recognized that psychology distorts how we come to learn because it remains faithful to realism and to causal thinking and only provides atomistic accounts of learning" (Stoltz, 2015, p. 476). When we acknowledge our human engagement with the world is cognitive and also emotional, practical, aesthetic, imaginative and so forth, it illuminates fallacy of dividing the object from the subject; since within the interaction of object and subject - in this case the human and the world, is where meaning is made (Merleau-Ponty, 1964/2012; Stolz, 2015). The experience of learning is much more rich and embodied than simply thinking about a subject with our minds (Merleau-Ponty, 1964/2012; Stolz, 2015). An acceptance of meaning-making as experientially derived, obliges us to critically interrogate the contribution of cultural world to those modes of thought we uncritically absorb, particularly around ideas of race, class, and

gender, as well as those which are anthropocentric (Mallory, 2010; Kings, 2017). An ecofeminist vision of learning as embodied experience invites us to question the cultural curriculum.

Embodied Expression

I have taught art to elementary students for more than 30 years. In that capacity, I frequently observe my students creating works of art which express ideas that they cannot share with words. According to my observations, this lack of ability for putting words to what is in their minds can be either developmental, in that they do not yet possess the words, or it can be emotional; they cannot possess the words because some sort of trauma prevents it. In both cases, the students may draw or paint what they want to communicate. The arts can illuminate how humans express ideas that are beyond words; demonstrating that the body-mind (Dewey, 1928/1996) holds on to memories, thoughts, and understandings, both beautiful and traumatic, which are not easily spoken (Chatterjee, 2014; Chaplin, 2005; Vander Kolk, 2015).

According to Langer (1957/1976), art expresses human feeling in the broadest sense. "In a work of art we have the direct presentation of a feeling, not a sign that points to it" (p. 134). I would add along with Dewey (1934/2005), that a work of art sets up a dialogue in which the percipient, who is the synthesis of his or her life experience, is in 'conversation' with what the artist seeks to express. This artistic dialogue most frequently does not involve words, though through reflection it may be put words. Such a dialogue involves one person's life experience in conversation with another's in a sensory language.

As humans, we project our own bodily feelings like fear, hope, or desire, onto objects; such emotional reactions involve more than simple biological functioning though they may have started as such (Chaplin, 2005). By drawing together "a complex web of culturally mediated

embodied encounter with the world" (Chaplin, 2005, p. 13), aesthetic reactions are both ignited by metaphoric meaning and feed more complex metaphoric meaning.

Art's unique ability is to communicate directly, expressively, and affectively the experiences that give shape and form to the world (Chaplin, 2005). This non-discursive communication can resonate with the affective experience of others, thus expanding the lived (bodily understood) experience of another (Chaplin, 2005). By emphasizing similarities between art and phenomenology, Chaplin (2005) argues, Merleau-Ponty failed to differentiate "pre-reflective, bodily sense-experience" (p. 14), and artistic vision, which can be consciously and reflectively shaped. As he states, this failure to differentiate may also suggest that everything that is not philosophical or scientific is, by default aesthetic, perpetuating the art/science and thinking/emotion dichotomy (Chaplin, 2005).

When we make and/or respond to art, we rely on habitually embodied actions and reactions (Chaplin, 2005). Yet as both artist and responder move past the habitual, motor-memory, behavioral response to a symbolic transformation, the resulting nondiscursive dialogue articulates the artist's experience of the world in a way that lends itself to metaphoric interpretation (Chaplin, 2005).

My conscious self utilizes my body's habits and so does my unconscious self. Therefore, I am those things I decide to do as well as those things I do without deciding at all; my body is the constant in both cases (Shusterman, 2006). By attending to the signals my body sends, I can expand my ability to understand my own being (Shusterman, 2006).

> As human thought would not make sense without the embodiment that places the sensing, thinking subject in the world and thereby gives her thought perspective and direction, so wisdom and virtue would be empty without the diverse, full-

> bodied experience on which they draw and through which they manifest themselves in exemplary embodied speech, deeds, and radiating presence. (Shusterman, 2006, p. 17)

The idea that the body is necessary for perception, action, and thought is taken for granted by those of us in the humanities. The arts can help to forge a connection between what is consciously and what is unconsciously known. Because of its ability to stimulate bodily responses, art in all its form, can disrupt usual sensory patterns, thereby contributing to an individual's capacity to bodily see and perceive, breaking through the 'I've already gotten this figured out, no need to look further' mind set (Tait, 2018).

Practice theories offer an alternative to our current, binary view of knowing versus practice, because they provide a powerful lens for looking at knowledge, meaning, and discourse, "with knowledge understood as existing in a dynamic relationship between social, psychological, material, and embodied realities" (Ord & Nuttall, 2016, p. 357). The divide between theory and practice encourages an epistemological distinction between ways of knowing as a mental process and doing as a physical process (Clandinin & Connelly, 1988a; Ord & Nuttall, 2016). This dichotomy between ways of knowing, establishes two erroneous ideas, first that knowledge is an object, and second that knowledge is easy to transfer to another which implies a separation between 'knowing' as formal, procedural, or abstract and 'doing' as practical, perceptual, or informal (Ord & Nuttall, 2016).

Finnish artist and researcher Camilla Groth (2016) wanted to understand how embodied cognition is enacted within artistic practice; to shine a light on the relationship between the embodied mind and artistic practice. In her work with blind potters, she found that "sensory experiences are key to sense-making" (Groth, p. 16, 2016). What we can see, touch, and learn by

experiencing can shape our mind and emotions and thereby, seeing and touching play an important role in learning (Groth, 2016). Additionally, she determined that emotions she characterized as "low spirits and stress" proved to be helpful in "heightening alertness, ... [providing] extra sensitivity and attunement to the material" ... thereby "aiding concentration and focus on the problem at hand" (p. 13). Although research literature on design cognition does include reflective conversations with material or reflecting-in-action and reflecting-on-action (Groth, 2016; Schön , 1983), the literature does not explicitly include the body as a contributor to knowledge.

An ecofeminist vision of learning includes tacit knowledge which, as described by Polyani (1966) is unwritten, unspoken, and hidden; tacit knowledge is held by practically every human being, based on his or her emotions, experiences, insights, intuition, observations and internalized information. Any skill or practical knowledge involves tacit knowledge, which for the most part is inexplicable, or at least very difficult to explain (Groth, 2016). For Groth (2016), design thinking, or methods of design practice used to create solutions for design problems, can help to clarify understanding of embodied cognition by illuminating how the material based act of *making* can be an integral aspect of embodied thinking, encompassing subjective bodily experiences.

The Invisible Body

The common sense notion of the body sees only the biological object called "my body." But, within the environment, an integral aspect of the flow of interaction that defines our reality, the body is also ecological; the body is phenomenological, as we live and experience it; the body is social through our intersubjective relations; and the body is culturally composed of practices, rituals, and institutions (Johnson, 2007).

> The body's own tendency toward self-concealment allows for the possibility of its neglect or deprecation. Our organic basis can be easily forgotten due to the reticence of the visceral processes. Intentionality can be attributed to a disembodied mind, given the self-effacement of the ecstatic body. As these disappearances particularly characterize normal and healthy functioning, forgetting about or "freeing oneself" from the body takes on a positive valuation. (Leder, 1990, p. 69)

Looking at the example of fear, we know that the amygdala play a major role in the processing of fear in an individual (Johnson, 2007). The amygdala controls the release of hormones that increase heartbeat and respiration as well as other defense responses (Ledoux, 2000). We do not have a felt awareness of our amygdala doing this, we have a felt awareness of a feeling - in this case of fear; thus illustrating that our 'recessive body' functions behind the scenes allowing us to focus on the objects of our emotions rather than on our body's processes (Johnson, 2007). Michael Polyani (1966) calls this the "from-to" nature of human perception which is directed *to* what is perceived, *from* the body doing the perceiving. As he states:

> Our body is the only assembly of things known almost exclusively by relying on our awareness of them for attending to something else ...Every time we make sense of the world, we rely on our tacit knowledge of impacts made by the world on our body and the complex responses of our body to these impacts. (Polyani, 1966, p. 5)

Shaun Gallagher (2006), uses the contrasting ideas of body image, involving "perceptions, attitudes, and beliefs pertaining to one's own body" …versus body schema which is "a system of sensory-motor capacities that function without awareness or the necessity of perceptual monitoring" (p.24), to differentiate between those aspects of our body of which we are aware,

and those which function without our awareness. In other words, "We are aware of what we see, but not of our seeing. The bodily processes hide in order to make possible our fluid, automatic experience of the world" (Johnson, 2007, p. 5).

In much of an individual's experience, the body is transparent, that is to say, while my body is the source of my perceptions, I move through life unaware of my body's contribution to my perceptions (Shusterman, 2006). "Rather than a mere mechanical corpse" (Shusterman, 2006, p. 3), the sentient body, enables us to feel and thus to perceive. Revealing a fundamental human ambiguity; that is we are both object and subject - I *have* a body and I *am* a body (Shusterman, 2006).

The Body-Mind

Our perceptual ability forms the basis of our ability to think abstractly and intellectually (Stolz, 2015). Since our experience of the world comes to us through the 'lens' of our eyes, ears, arms and legs, the categories and concepts we form are inseparable from our experience (Lakoff & Johnson, 1999). In this way, our biological makeup creates the context for the categories that we form (Lakoff & Johnson, 1999). In other words, we come to truth through our bodies. As we have experiences, we form concepts; thus concept formation is the stuff of experience (Lakoff & Johnson, 1999). Additionally, each concept is actually a neural structure, which allows the individual to "mentally characterize ... categories and reason about them" (Lakoff & Johnson, 1999, p. 19). These categories are typically conceptualized in terms of prototypes (also neural structures) that allow for reasoning (Lakoff & Johnson, 1999).

Conceptualization, or, the ability to conceive and form concepts, arises from our interactions with the world (Johnson, 2007; Tucker, 2007). Within the brain, conceptualizing "recruits structures of sensorimotor processing..." that operate "within a motivational framework

that evolved to help us function successfully within our complex environments" (Johnson, 2007, p.101). In simplistic terms, the human brain developed through evolution by adding to the primitive layers we share with other animals (Johnson, 2007). So, our primitive inner core contains the limbic structures, which are responsible for monitoring our physiology, for emotions, and for motivation, and the outer, cortical layer is responsible for reasoning, action planning, perception, and movement (Johnson, 2007; Tucker, 2007). Interestingly, the structures in the core region are very interconnected and those in the cortical layer are less so; consequently, in the cortical shell there is more functional differentiation, where isolated parts are responsible for different functions (Johnson, 2007; Tucker, 2007). Expressed in another way, within the brain connections stay at their own level (with the exception of adjacent connections), but for the most part connections within one level are made with other areas within same level (Tucker, 2007). Additionally, the limbic core possesses the greatest density of connections and there is a decrease in connections out toward primary sensory and motor modules...

> In fact, the primary sensory and motor cortices can be accurately described as modules because each is an isolated island, connected with the diencephalic thalamus but with no other cortical areas except the adjacent unimodal association cortex of that sensory modality or motor area. The exception is that the primary motor cortex does have a point-to-point connection with the primary sensory cortex. (Tucker, 2007, p. 78)

Whether an idea fits our preconceptions or challenges them, that conception is given importance only by integrating with what is already there, whether it integrates by enlarging or changing what preexists. What James (1911/1979) interpreted as a feeling of logical inference comes into play as we "feel" a situation; a feeling of logical inference discredits the view of logic as

superior. In this view, which I claim for my ecofeminist vision, logic is an embodied, aesthetic sense, which "has a satisfying emotional quality because it possesses internal integration and fulfillment reached through ordered and organized movement" (Dewey, 1928/1996, p. 38).

In Western thinking, human reason is seen as the capacity that differentiates us from other species; reason is seen as autonomous from bodily capacities like perception and movement (Lakoff & Johnson, 1999). Rather than being autonomous from such abilities, neuroscience supports instead, an evolutionary view in which reason grows out of bodily capacities (Lakoff & Johnson, 1999). This idea is demonstrated by the simple amoeba which approaches what is beneficial to itself and avoids what is not by utilizing its sensing system and ability to move and manipulate objects (Chatterjee, 2014a; Lakoff & Johnson, 1999). Here we see, at its most basic, how bodily capacities contribute to reason.

As an example, when we see a cup, we do not just have a visual experience, we also become aware of what we might do with the cup, perhaps pick it up or drink from it; as the process of seeing the cup unfolds, scientists observe the activation of canonical neurons which are part of the sensorimotor system (Jeannerod, 1994). Mirror neuron phenomena indicate that watching another do something, or even to imagine doing it ourselves - as with imagining picking up a cup, activates some of the same sensorimotor areas as if we were actually performing the activity. Mirror neuron research proposes that understanding is a form of simulation (Johnson, 2007; Kosslyn 1994).

There is evidence to suggest that sensorimotor areas of the brain play a role in the processing of abstract concepts (Johnson, 2007). What this could mean is that when we "grasp" an idea, the neurological structure of grasping the cup is made available, or activated (Johnson,

2007). We do not know if the brain actually does recruit motor schemas for abstract reasoning, but this theory does suggest a "certain evolutionary economy" (Johnson, 2007, p. 173) that the brain would utilize sensorimotor circuits for abstract cognitive functioning.

> The brain evolved to regulate the motivational control of actions, carried out by the motor system, guided by sensory evaluation of ongoing environmental events. There are no "faculties" -- of memory, conscious perception, or music appreciation -- that float in the mental ether, separate from the bodily functions...When we study the brain to look for networks controlling cognition, we find that all of the networks that have been implicated in cognition are linked in one way or the other to sensory systems, to motor systems, or to motivational systems. *There are no brain parts for disembodied cognition* - emphasis added. (Tucker, 2007, p. 58)

Our meaning is human meaning, which means it is grounded in our bodies. What if, like moths, we had wings and could follow scent trails, what would our view of the world, or truth be then? It would be based on our bodily experience of the world. This illustration directs us to some things we know about the human mind: the human mind coevolves with the human body; human meaning is embodied, since even at the beginning of our lives we sense and feel our way to an understanding of the vast complex of meanings; understanding and reasoning are embodied based on our sensorimotor capacity; we are metaphorical creatures, forming our understanding of one thing based on how we understand another thing, beginning with our simplest, earliest understandings (Johnson, 2007).

The theory of embodied cognition proposes that cognition involves a deep connection between perception and action (Stolz, 2015). Springing from philosophy, psychology, and

neuroscience, the key assumption of embodied cognition is that “the body functions as a constituent of the mind rather than a passive perceiver and actor serving the mind" (Leitan & Chaffey, 2014). The theory that cognition is embodied presumes that the body has influence over aspects of cognition, such as decision-making (Richter & Kennedy, 2017). Neuroscientist Antonio Damasio (1994) offers an example with the story of a man who lost the ability to make decisions when a tumor destroyed the portion of his brain connecting the frontal lobes. Rather than become more rational, after losing the connection between reason and emotion, the patient became paralyzed when required to make decisions (Damasio, 1994; Richter & Kennedy, 2017). This example supports the idea that emotions provide an essential piece of human decision-making. It also supports my ecofeminist vision of embodied cognition, which rejects the dichotomies like reason/emotion, perception/action, physical/mental, and mind/body, instead finding that all are intertwined aspects of the cognitive process (Leitan & Chaffey, 2014). An ecofeminist vision of embodied cognition aligns with Dewey's naturalism and Merleau-Ponty's phenomenology because they share the view that the body experiences the world directly, rather than as a passive vehicle for the mind; and cognition emerges from the individual's position in the world (Leitan & Chaffey, 2014). In many ways, we are at the mercy of our life experiences, and there is no pure reason, it springs from our bodily experience of the world (Lakoff & Johnson, 1999).

Those whose bodily experiences teach them they are ‘other,’ including women, children, the poor, the non-white, and those who are LGBTQ, are at the mercy of those messages that diminish rather than extend their understanding of themselves as productive and significant. If we make the first step, which is to honor bodily experience, we must immediately ask the other question - whose experience (Matsuda, 1991) An ecofeminist lens can enable the ability to first

perceive and then honor all types of bodily knowledge as we begin a shift towards valuing the richness inherent in diversity, including diversity in ways of knowing. An exemplar for an epistemology that honors all bodily experience can be found in indigenous ways of knowing. As my story of Nainoa Thompson at the beginning of this chapter illustrates, indigenous ways of knowing combine the cognitive and experiential into an integrated whole (Feinberg & Genz, 2012).

For William James, when we learn, we begin with experience and pluck from it those aspects that are salient for us (Johnson, 2007).

> The great difference between percepts and concepts is that percepts are continuous and concepts are discrete. Not discrete in their being, for conception as an act is part of the flux of feeling, but discrete from each other in their several meanings. Each concept means just what it singly means, and nothing else… The perceptual flux as such, on the contrary, means nothing, and is but what it immediately is. No matter how small a tract of it be taken, it is always a much-at-once, and contains innumerable aspects and characters which conception can pick out, isolate, and thereafter always intend. (James, 1911/1979, p. 32)

Such a view helps us to avoid the dualistic trap of seeing perception and conception or percepts and concepts in opposition. Instead, like James (1911/1979), we can see them as aspects of perceiving/conceiving, a single, rich process. According to Tucker (2007), both James and Dewey were correct when they argued that an individual's all-encompassing grasp of a situation is what engenders the ability to form concepts, within which the individual may distinguish the distinct qualities of a particular perception (Johnson, 2007). Finding a home in an ecofeminist vision of learning, the theory of embodied cognition locates the body in sense-making; finding

that human cognition is dependent on interaction with the environment, therefore action, perception, and emotion are important threads in knowledge formation (Groth, 2016). As Groth (2016) discovered in her research with blind artists, bodily experience shapes our mind; the cognitive and emotional are intertwined, both contributing to our conception of ourselves.

The Metaphoric Conceptual System

Lakoff and Johnson (1999) draw on the thinking of Maurice Merleau-Ponty and John Dewey around the idea of experience, for their thoughts on embodiment. For Merleau-Ponty (1964/2012) "flesh" expresses our primordial embodied experience and how our physical body lives in the world. As recent neuroscience seems to uphold, Dewey (1934/2005) postulated that bodily experience is the basis for everything we know. Human beings acquire primary metaphors, not through effort or by being directly taught, but unconsciously, through ordinary existence in our earliest years (Johnson, 2007; Varela, Thompson, & Rosch, 2016). We have no influence on this acquisition as our neural connections are formed during the "period of conflation" (Lakoff & Johnson, 1999,p. 47). In this period our infant brains do not distinguish between sensorimotor and subjective (nonsensorimotor) experiences and judgment (Johnson, 2007). Hence, in the period of conflation, affection becomes joined with a feeling of warmth or being held (Johnson, 2007). Additionally, as we learn a concept, for example, the color red, our brains compensate for changes in reflected light as when a red balloon moves around in various lighting conditions, thus having different reflectance, yet we still perceive it as red, revealing that our perception of color arises from the interaction of these aspects (Varela, Thompson, & Rosch, 2016). We can therefore say color concepts are *interactional*, in that they arise from the interactions of our embodied brains and the reflective properties of objects (Lakoff & Johnson, 1999; Varela, Thompson, & Rosch, 2016).

The three aspects of mind that Lakoff and Johnson (1999) investigate are the cognitive unconscious, the embodiment of mind, and metaphorical thought. All of these are exemplified in our system of primary and complex metaphors (Lakoff & Johnson, 1999). To discern and demonstrate the importance of metaphor for framing our understanding of various ideas, Lakoff and Johnson (1999) offer the example of the conception of love. It would be difficult to understand love if we take away the metaphor of physical force which includes attraction, electricity, and magnetism (Lakoff & Johnson, 1999). Without these we are left with a skeletal understanding of love, which is bereft of richness (Lakoff & Johnson, 1999).

Humans conceptualize our most important abstract concepts (love, causation, morality) through metaphors (Lakoff & Johnson, 1999). Each complex metaphor is built from primary metaphors that are formed through bodily experience in the world. When sensorimotor experience and subjective experience are regularly simultaneously activated or coactivated over and over, permanent neural connections are forged (Lakoff & Johnson, 1999). In this way we can see that *love* and *warmth* may activate the same neural pathways, thus their meaning is joined in the body (embodied) (Lakoff & Johnson, 1999).

Conceptual metaphors can be useful, crucial, or misleading to our thinking, and therefore we must study them carefully (Lakoff & Johnson, 1999). As in my story of the boy and the easel at the beginning of chapter 3, when I was acting under the normative conception that men must be strong, I was perpetuating a misleading metaphor. Understanding the aptness of a metaphorical concept requires an embodied realism that depends on a body-based understanding of basic-level experience within our world (Lakoff & Johnson, 1999; Tucker, 2007). Metaphors, in turn, "supply the logic, the imagery, and the qualitative feel of sensorimotor experience to abstract concepts" (Lakoff & Johnson, 1999, p. 128). These formations are unconsciously

acquired and therefore we are not free to choose them (Lakoff & Johnson, 1999). Metaphors project patterns of inference from the primary, sensorimotor source onto a cognitive target domain (Lakoff & Johnson, 1999; Tucker, 2007).

Complex metaphors are comprised of submetaphors or primary metaphors, which are grounded in early experience as I described above with the primary metaphor *love is warmth* (Lakoff & Johnson, 1999). So while there may be complex metaphors such *a purposeful life is a journey* that are not directly grounded, they are built with primary metaphors - in this case *purposes are destinations* and *actions are motions* - which are grounded, so in effect, the complex metaphors are grounded (Lakoff & Johnson, 1999).

"Once we have learned a conceptual system, it is neurally instantiated in our brains and we are not free to think just anything" (Lakoff & Johnson, 1999, p. 5). What a stunning thought! There is no complete autonomy; we are at the mercy of our life experiences, and there is no pure reason, it all springs from our bodily experience of the world (Lakoff & Johnson, 1999; Johnson, 2007). Reason is mostly unconscious; largely metaphorical and imaginative; is not dispassionate but emotionally engaged; is not disembodied, but arises from our embodiment; is evolutionary because it uses, rather than transcends the "perceptual and motor inference present in 'lower animals'" (Lakoff & Johnson, 1999, p. 4); reason is universal in the way it springs from embodied experience (Johnson, 2007).

In accordance with an ecofeminist vision of connection, we cannot think of reason and concepts as transcendent once we realize their dependence on our bodies for their conceptual structure (Lakoff & Johnson, 1999). "Our bodies, our brains, and our environments together generate a vastly meaningful milieu out of which all significance emerges for creatures with bodies like ours" (Johnson, 2007, p. 31). For Johnson (2007), this generated milieu is *immanent*

meaning. When we begin to see how abstract thinking and reasoning are grounded in immanent meaning, we realize that such "higher" thinking is not disembodied as Western thought insists, but instead leads to a richer understanding of thought (Johnson, 2007). For Johnson (2007) "immanent, preconceptual, and nonpropositional meaning is the basis for all forms of meaning" (p. 34).

In addition to revealing the bodily basis of reasoning and abstract thinking, an understanding of our metaphoric conceptual system also reveals our empathetic ability as the basis for our spiritual experience; through our aesthetic, (subjective sensory) experience, empathy is our connection to an embodied spirituality that helps us find pleasure in the bodily connection to earth, sky, plants, and animals (Lakoff & Johnson, 1999). Lakoff and Johnson (1999) define empathy as, "the focused imaginative experience of the other" (p. 566). From this definition we can see that empathy links moral values and spiritual experience (Lakoff & Johnson, 1999). Additionally, to simplify or find the essence of a thing, we appropriate our physical awareness as we conceive something non-physical like moral uprightness (Johnson, 2007; Sheets-Johnstone, 1999).

The construction of metaphors is related to our ability to abstract. Abstraction is an important tool for the furtherance of human inquiry, but because of the way it generalizes, abstraction is also responsible for much of the loss of meaning that is available to us in any given situation, thus it take us further from the situation's full meaning (Tucker, 2007).

Final Thoughts

Our bodies, the natural world, and our cultural environment are continually communicating, providing each individual with a unique experience and a distinctive understanding, arising from the interactions of our embodied brains within a cultural and natural

environment (Lakoff & Johnson, 1999; Levy, 2012; Varela, Thompson, & Rosch, 2016). Our earliest ways of learning are embodied (Sheets-Johnstone, 1999) and never leave us entirely, though, as we age, we lose awareness of our understanding as interactional (Lakoff & Johnson, 1999; Levy, 2012; Varela, Thompson, & Rosch, 2016).

An ecofeminist vision of learning as embodied invites the interrogation of the Western proclivity for viewing the head and the body as separate (Garrison, 1997). We see this separation in the ways some schools deprive students of experiences within which they can "think the world" (Merleau-Ponty, 1964/2012, p. 17).

As early childhood advocate, R. Clarke Fowler (2018) explains, at the current time in American schools, we see a reduction in teacher autonomy along with a disappearance in child-directed activities in low SES (socioeconomic status) schools. This seems to suggest that creativity, personal agency, and a sense of purpose are not deemed a necessary component of the education of an individual who will not participate in a creative economy (Fowler, 2018). An ecofeminist lens, suggests that patriarchy plays a role in this travesty. It reveals a social system characterized by up–down relationships of domination and subordination, in which the downs have difficulty getting their basic needs met (Glazebrook, 2002). In a patriarchal system, which can be understood as an unhealthy social system in which men hold the power and women are largely excluded from it, the downs can include women, other human others (in this case low SES students), and non-human animals and nature (Chircop, 2006; Glazebrook, 2002; Warren 2000). The educational paradigm I described above utilizes an up-down conceptual metaphor (an oppressive conceptual framework) that informs relationships within the educational system in a powerful way. The logic of domination is a significant feature of an oppressive framework because it legitimates subordination as logical since it assumes a relationship of hierarchy

(Chricop, 2006; Warren, 2000). In *Ecological feminist philosophies* (1996), Karen Warren offers this example of how the logic of domination works:

> Humans do, and plants and rocks do not, have the capacity to consciously and radically change the community in which they live.
>
> Whatever has the capacity to consciously and radically change the community in which it lives is morally superior to whatever lacks this capacity.
>
> Thus, humans are morally superior to plants and rocks.
>
> For any X and Y, if X is morally superior to Y, then X is morally justified in subordinating Y.
>
> Thus, humans are morally justified in subordinating plants and rocks. (p. 22)

When we do not institute a curriculum of rich experience for low SES students, we do not prepare them to participate fully and creatively in the world. The low SES students are the downs, destined to be low SES adults. The paradigm that Fowler (2018) describes utilizes the application of the logic of domination to the perceived divide between mind and body. The thinking might look something like this: The mind, where consciousness resides, is morally superior to the body, where physical urges reside, so the mind (as characterized by seat-work) must subordinate the body (as characterized by child-directed activities).

The root metaphor of hierarchy invigorates the logic of domination. I argue that webs of interconnected would be more useful for characterizing the way the mind and body interact in the learning process. As I related in chapter 2, according to Elliot Eisner (1998), knowledge is not completely cognitive but instead much is tacit and therefore, intuitive, experiential, personal, and secured in action (Eisner, 1998). Eisner (2002a) also promotes the idea that intrinsic

satisfactions matter and form the basis for our passionate desires or *eros* (Garrison, 1997), which is at the root of aesthetic learning experiences.

> At the theoretical level, the conceptual analysis and argumentative justification of the women–nature connection by the patriarchal logic of domination is ecofeminism's fundamental insight *underlying all forms of oppression* (emphasis added). This insight will contribute to a better understanding of the mechanisms underlying gendered educational inequities. (Chircop, 2006, p. 145)

Within an ecofeminist analysis, which reveals the oppressive hierarchies that characterize the relationship of humans to the earth and to each other, our view of learning as a hierarchical activity of the mind, is also illuminated (Kings, 2017). Additionally, it reveals the flaws in a conception of learning that marginalizes knowledge that results from gender, race, and class (Glazebrook, 2002).

In order to provide of vision of learning as meaning-making (Liston, 2001) or generated knowledge (Rasmussen, 2014), I suggest engaging and ecofeminist epistemology to provide a vision of learning as connected and embodied, in which body and mind work in concert to engage with the cultural and environmental world. An ecofeminist epistemology embraces knowing as simultaneously cognitive, emotional, spiritual, and embodied (Jun, 2014). Such a framework suggests what the students Fowler (2018) describes need is more time devoted to child-directed activities and greater teacher autonomy to ensure those activities are meaningfully engaged. As the example of Nainoa Thompson demonstrates, indigenous ways of knowing can offer examples to guide our reconnection with this holistic epistemology.

In the next chapter I further investigate the aspects of the body-mind to uncover more specifically how aesthetic learning is inscribed on the body.

CHAPTER 5

CRITIQUING MIND OVER BODY: AN ECOFEMINIST PERSPECTIVE

My fifth grade students had been learning about the ancient Egyptian civilization for several weeks. As part of their studies, they were each assigned a particular topic to research in depth. One student, Petra, had been assigned the Nile River as her specific research area, and therefore, she had heard and read repeatedly, "The Nile River floods every year, depositing rich soil, which enabled the Egyptians to grow crops." In art class, Petra had decided to make a paper maché rendition of her topic, which included a topographical view of the sandy landscape of Egypt, with a river running through it. As she painted the blue river, I asked if she would place brown paint along the sides of the blue? "Why would I do that?" she asked. "Because the Nile River floods and deposits rich soil. That's where the Egyptians could grow crops." This was perhaps the seventh or eighth time Petra had heard similar statements, but now her eyebrows went up, and the proverbial light bulb came on. I could almost see her thought process, "Oh… I get it! That's why everyone keeps saying that!" As much as I'd like to think that Petra's light bulb moment happened because I am a particularly gifted teacher and therefore my words are powerful, in this instance, that is not the case. Instead, because she was physically engaged with her own Nile River, these words Petra had heard so many times, "the Nile River floods every year," now had a place to live. For Petra, understanding required a subjective sensory (aesthetic) experience that involved her body and her mind.

As we observed her project together, Petra and I comprised a learning community (Liston, 2001). It was not the traditional, hierarchical model of teacher and student in which, rather than asking her plan I would have directed, "you need to put brown paint beside the blue." Instead, we centered the subject (Palmer, 2007), which in this case was the Nile River. The

experience was educative in that it connected to Petra's previous experiences helping them become available to be useful – to be continued (Dewey, 1938/1997). It was also *an* experience in that Petra's sensibilities and understandings were ordered or changed through her form's engagement with the matter of the experience (Dewey, 1934/2005). In other words in what we often refer to as a 'light-bulb' moment, Petra could draw a distinction between her old and new understanding of the Nile River as it impacted the development of the Egyptian civilization. Though she did not reflect her thoughts in words, I saw them in her face. It was not an experience of her mind alone; it engaged her body and mind, and she found it was pleasurable to make that connection.

This story exemplifies an ecofeminist vision of learning as aesthetic, embodied and connected, because it places these subjective sensory (aesthetic) experiences within a web of interaction with cognition. It embraces the body-mind connection without hierarchizing either; instead such a vision understands the body and mind work in dialogue. It presents a foundation for an epistemology that recognizes knowing as embodied and connected to the learner's lived experience (Hatrvester & Blenkinsop, 2010; Selam, 2006). Such a vision helps critique oppressive conceptual frameworks, such as mind over body, male over female, and human over nonhuman other, which spring from the patriarchal metaphor of a vertical, discrete line that currently invigorates the accepted view of what constitutes learning. An ecofeminist lens suggests instead, a more holistic metaphor of a web of connection or as Darwin describes in *On The Origin of Species* (1859/1964), a tangled bank:

> It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately

> constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us…. There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone circling on according to the fixed law of gravity, from so simple a beginning, endless forms most wonderful have been, and are being evolved. (p. 429)

An ecofeminist lens illuminates a view of learning that recognizes, like the tangled bank, all things are connected; it honors the capacity of aesthetic experiences, such as Petra's, to both theoretically and physically, inscribe themselves on the body-mind.

In order to theorize around the idea of learning as aesthetic experience that inscribes on the body-mind, in this chapter I investigate the manner in which our bodies keep score of life experiences. To that end Bessel van der Kolk's, *The Body Keeps the Score: Brain, Mind and Body in the Healing of Trauma* (2015) has proven to be a valuable resource. For my purpose, I wish to flip his thesis to illustrate my theory that aesthetic experiences inscribe on the body, but unlike trauma, in a way that resonates as beautiful rather than horrific. Such aesthetic, embodied knowing, becomes a powerful wellspring for *eros* (Garrison, 1997), or those passionate desires that give life meaning and purpose.

To frame my thinking, I will first explore the physiology of the brain as it relates to understanding the body-mind. I begin the chapter presenting an overview of the relatively new field of neuroaesthetics. Next, I investigate the effect of trauma on the body-mind and then finally, offer examples of how aesthetic learning, in the form of subjective sensory experience, is used to mitigate trauma's effects. Agency, or the subjective awareness of initiating, executing,

and controlling one's volitional actions in the world, is a pre-reflective form of awareness, which involves the sense of the self as in control rather than being controlled, and it applies to motor movements and thoughts (Tsakiris, Schutz-Bosbach, & Gallagher, 2007). Such self-agency is at play in the subjective awareness of initiating, executing, and controlling whether we approach or avoid something. Lack of ability to control a devastating situation and the resulting inability to weave that experience into a cohesive story create trauma (van der Kolk, 2015). Finding a sense of self-agency is essential for resolving symptoms of posttraumatic stress disorder (PTSD) (Bremner, 2016). I theorize that the experience of self-agency plays an important role in learning that is aesthetic, embodied and connected.

Neuroaesthetics

'Neuroaesthetics' is a term coined by vision neuroscientist Semir Zeki of University College London in the 1990s (Chatterjee, 2014b; Zeki, 1993). Neuroaesthetics is defined as "an emerging discipline dedicated to exploring the neural processes underlying our appreciation and production of beautiful objects and artwork, experiences that include perception, interpretation, emotion, and action" (Chatterjee, 2014a, p.1). This sounds very compatible with Dewey's (1934/2005) description of *an* experience. As he describes, *an* experience embodies certain qualities: it satisfies an impulsion; is receptive and perceptive; it causes the one engaged to reflect; and it achieves consummation. Though Chatterjee (2014a) is referring to aesthetic experience that stems from looking at beautiful art objects, I claim his words for my purpose which is to describe aesthetic experience in general; that is those experiences whether they involve looking at art or adding a row of numbers, which invite "perception, interpretation, emotion, and action" (Chatterjee, 2014a, p.1). Accordingly, aesthetic pleasure is rooted in basic appetites, but it also extends beyond them because it utilizes part of our neural system that

promotes liking without wanting (Berridge & Kringelbach, 2008; Chatterjee, 2014a). Liking and wanting are, of course, different things. Liking is the pleasure we get from objects and wanting is the desire we have for them (Chatterjee, 2014a). Liking is the core experience of pleasure and it works by engaging the nucleus accumbens and the reward system (Berridge & Kringelbach, 2008; Chatterjee 2014a). This system utilizes natural brain cannabinoids and mu-opioids that are similar to the chemicals found in cannabis and opium and the receptors for these drive our sense of liking (Berridge & Kringelbach, 2008; Chatterjee 2014a). Wanting, or the desire to get the things we like, is driven by dopamine rather than cannabinoid or opioids (Berridge & Kringelbach, 2008; Chatterjee 2014a, 2014b).

It makes sense that liking and wanting work together since we like what we want and we want what we like. However, these two things can and do become uncoupled from each other through rewards (Berridge & Kringelbach, 2008; Chatterjee, 2014a). Dopamine is involved in this type of learning because as we predict future rewards, dopamine neurons increase firing when the reward is better than we expect and they decrease firing when the reward is less than expected (Schultz, 2007). Our cortical systems (those that utilize the cerebral cortex) interact with the nucleus accumbens and the reward system enabling humans to avoid becoming enslaved to our wants, likes, desires, and pleasures (Berridge & Kringelbach, 2008; Chatterjee, 2014a). As any first year teacher knows, rewards change behavior. One implication of this "is that we constantly adjust our expectations as we confront reality, often without even being aware that we are learning" (Chatterjee, 2014a, p. 106). Our reward system powers our basic appetites for things like food and sex but it also helps us develop abstract notions like deciding whom we can trust (Chatterjee, 2014a). So, the same brain system that guides us in choosing what to eat is utilized as we evaluate something abstract like fairness or another person's reputation

(Chatterjee, 2014a). Our reward system allows us to experience pleasure, to evaluate that pleasure, to plan how to get more pleasure, and to modify and restrain our methods; in other words our reward system helps us learn (Berridge & Kringelbach, 2008; Chatterjee, 2014a).

As an artist, I find it helpful to visualize the brain in three parts: first to develop in an individual is the reptilian brain that is located in the brain stem and controls life-sustaining functions like breathing, sleeping, and peeing; next is the limbic region which is organized during the first six years of life and continues developing in a use-dependent manner (also called neuroplasticity) through life, it controls things like categorization, perception, and determining emotional relevance; finally, the prefrontal cortex (part of the neocortex), develops last and is responsible for planning, anticipation, sense of time, and empathetic understanding, and along with the limbic system is vulnerable when it senses threat (Carter, Aldridge, Page, & Parker, 2014; Carter & Frith, 2010).

Besides being the first portion of the brain to develop as an enfant develops, the reptilian brain is also evolutionarily the oldest portion (Carter et al., 2014; Carter & Frith, 2010). Because it contains brain structures that humans share with creatures like birds and lizards, this portion is given the name the reptilian brain (Al-Chalabi, Turner, & Delamont, 2008; Carter et al., 2014; Carter & Frith, 2010). The ability to operate instinctively, to move reflexively, and to sense environments are behaviors handled by the reptilian brain, which links the brain and body in emotional experiences causing, for example, our eyes to dilate when we are excited and our palms to sweat when we are nervous (Chatterjee, 2014a; Shimamura, 2012).

Above the reptilian brain is the limbic system, also known as the mammalian brain because all mammals have one (Carter et al., 2014; Carter & Frith, 2010). This portion of the brain advances after birth; the limbic system is important for dealing with the challenges of

living in complex social systems, monitoring danger, pleasure, fear, and what is necessary for survival (Carter et al., 2014). As Perry, Pollard, Blakley, Baker, and Vigilante (1995) first described, this portion of the brain is ‘neuroplastic’, meaning it forms through use, so as certain neurons are used they become the default, or the response most likely to occur. With this in mind, we can see how some individuals who are safe and loved become adept at exploration and play, and those who have experienced fright and rejection become adept at feeling alone and fearful (Perry et al., 1995). Van der Kolk (2015) refers to the limbic system and the reptilian brain together as the "emotional brain" (p. 57). The emotional brain is the heart of the central nervous system, which reacts to both danger and opportunity with a squirt of hormone that provides an individual with a visceral sensation that overrides any thinking the cognitive mind was concerned with (van der Kolk, 2015). The emotional brain's job is to assess incoming information quickly, by jumping to conclusions based on similarities rather than rationally sorting complex options, as is the job of the neocortex, or the rational brain (van der Kolk, 2015). Thus, the emotional brain's biochemistry is simpler than that of the younger, cognitive brain.

Continuing with our three part picture, the rational, cognitive portion of the brain takes up about 30 percent of the brain's mass; this portion is concerned with figuring out how the world works - including things and other people (LlinaÌs, 2002; Carter & Frith, 2010). The cerebral cortex is the outer-most portion of the brain, completely covering it except for a small portion of the cerebellum that sticks out in the back (Al-Chalabi et al., 2008). The neocortex, as previously stated, is the most recent portion of the cerebral cortex to evolve and it comprises 90% of it (Al-Chalabi, et al., 2008; Bear et al., 2007; Carter et al., 2014; Carter & Frith, 2010).

The neocortex is divided into four parts or lobes: the frontal lobe is, as its name indicates, in the front and it extends to the central sulcus (a groove or furrow in the brain is called a sulcus);

the parietal lobe extends from the central sulcus to the occipital lobe, which is in the posterior or back of the brain; and finally, the temporal lobe extends from the place where the occipital and parietal lobes meet, to the anterior under the frontal lobe (Al-Chalabi, et al, 2008; Miller & Miller, 2011). The neocortex enables most of the complex activities that we associate with being human; including the acquisition of language, complex social and tool-making skills, and high level-consciousness (Al-Chalabi, et al., 2008; Bear et al., 2007; Carter et al., 2014; Carter & Frith, 2010). The neocortex is something we share with other mammals, though thicker in humans, it begins to develop rapidly around 2 years old and around age 7 we begin to see evidence of frontal lobe capacities such as understanding abstract ideas and planning ahead (Carter et al., 2014; Carter & Frith, 2010).

An important aspect of brain physiology to understand is lateralization, which is the idea that the two halves of the brain's cerebral cortex, left and right, execute different functions (Chatterjee, 2014a; Shimamura, 2012). In general, the right side of the brain takes care of the left side of the body and vice versa (Al-Chalabi et al., 2008). The concept of the dominance of one side of the brain over the other is derived from the location of language functions (Chatterjee, 2014a). For example, almost all right-handed people are dominant for language function on the left side of their brain (Al-Chalabi, et al., 2008; Bear et al., 2007). Interestingly, when there is damage to the brain in the first two years of life, it can be possible for the brain to re-wire itself (Al-Chalabi et al., 2008). Understanding this plasticity in order that people older than two years, such as those who suffer a stroke, might be helped, is a goal that concerns many neuroscientists today (Al-Chalabi et al., 2008). The two hemispheres of the brain are connected by the corpus callosum (Bear et al., 2007).

The various portions of the brain communicate with each other through extensions of neurons called axons, we can think of this as the 'wired' brain (Al-Chalabi, et al., 2008; Bear et al., 2007). Besides the neural circuits of the wired brain, there is an additional hormonal aspect of the brain that uses diffuse-projection neurons called neuromodulation to modify the intensity of neurotransmissions (Al-Chalabi, et al., 2008; Bear et al., 2007). Neuromodulation does not change the nature of the connection between two neurons, but instead, it modified the intensity of the transmission, giving it 'color' (Al-Chalabi, et al., 2008; Bear et al., 2007). Phenomena such as attentiveness, pleasure, and anxiety require the coordinated efforts of the wired brain and the hormonal brain, thus the nervous system and the hormonal system are independent but actually control each other (Al-Chalabi, et al., 2008; Bear et al., 2007), or as I conceptualize them, they work in dialogue.

The phrase "pleasure center of the brain," first coined by Olds (1956), is for the most part, a good way to describe the neurological substrates of rewards for behavior, but the term "center" which indicates a single location has been replaced by the word "system," which stresses the involvement of multiple groups of neurons (Berridge, 2003; Wise, 1980). In our daily lives, information comes to us in a variety ways as we hear, see, touch, taste, and smell the world around us. Each sensory system begins with specialized receptor cells such as vibration sensitive neurons in the cochlea of the ear, pressure sensitive neurons of the skin, or light-receptive neurons in the retina of the eye (Al-Chalabi et al., 2008; Kandel, Schwartz, & Jessell, 2000). As an example, when we see something, visual processing commences in the brain. This processing begins in the retina of the eyes and that visual information is then sorted in different regions of the occipital and temporal lobes where complex objects like faces, bodies, or landscapes have their own special region (Chatterjee, 2014a; Shimamura, 2012). The

hippocampus plays an important role in our processing of complex objects as a critical storehouse of meaning, where we gather our knowledge of the world that is tagged in time (Chatterjee, 2014a; Shimamura, 2012).

As something beautiful captures our attention and we engage with it, we activate our parietal and frontal lobes (Chatterjee, 2014a; Shimamura, 2012). As human beings, we are wired to find pleasure in things that ensure our survival, so pleasure is deeply rooted in our evolutionary past as well as in our integration with the natural world (Chatterjee, 2014; Gopnik, 1998). As I reported previously, all organisms, even amoebae, are driven to either approach or avoid other organisms (Chatterjee, 2014a). As human beings, our ancestors who found pleasure in an object or activity with survival value and who therefore approached it were the ones of their era who lived to produce children (Chatterjee, 2014a; Gallup & Frederick, 2010). The pleasure aroused by certain faces, places and even mathematical formulas can now be studied with magnetic resonance imaging (MRI) and functional magnetic resonance imaging (*f*MRI) technologies (Chatterjee, 2014a; Gallup & Frederick, 2010), allowing for the development of the field of neuroaesthetics. Our reactions of pleasure cause us to continually seek out those objects and experiences that we find aesthetic (Chatterjee, 2014a; Gallup & Frederick, 2010).

According to Chatterjee (2014b), aesthetic pleasure, or the pleasure we find in beauty, extends beyond appetitive pleasure in at least three ways: first it taps into our neural system that is biased toward liking without wanting; second, aesthetic pleasure is nuanced and involves a mixture of emotions; and third, as Csikszentmihalyi and Robinson (1990) agree, aesthetic pleasure is influence by our cognitive system which is colored by experience. We have evolved to find things beautiful that extend our abilities to survive or procreate; finding aesthetic pleasure in those things is then passed down both biologically and culturally (Chatterjee, 2014a; Prum,

2017; Shimamura, 2012). Pleasure drives us to beauty and beauty produces different responses within us for different reasons; it engages our sensations, emotions and meaning flexibly (Chatterjee, 2014a; 2014b; Shimamura, 2012).

Trauma in the Body-Mind

An important task the brain performs is identifying danger. It does this with the help of the amygdala and the medial prefrontal cortex (MPFC), which is an aspect of the frontal lobes (Ratey, 2001; Carter & Frith, 2010). The amygdala, which is part of the limbic system is shaped by experience (neuroplastic) and it reacts much more quickly to signals of danger than the MPFC (van der Kolk, 2015). Van der Kolk (2015) has nicknamed the amygdala the ‘smoke detector,’ because of its speedy response time. Sensory information from eyes, ears, nose, and skin come in to the thalamus, which is also within the limbic system (Chatterjee, 2014a). The thalamus, or ‘the cook,’ then takes all the sensory input and stirs it into a soup which it then passes to both the amygdala and MPFC (van der Kolk, 2015). When the 'soup' communicates danger, the amygdala triggers the release of powerful stress hormones, including cortisol and adrenaline which prepare the individual to fight or run away by increasing blood pressure, heart rate, and breathing rate (Fisher, 2014; van der Kolk, 2015). Since it does its work more quickly than the frontal lobes do theirs, it can happen that in fact, there is no danger at all and then the enflamed system must be calmed (Fisher, 2014).

Once the 'smoke alarm' has been triggered, there are two ways to calm it; one is through moderating messages from the MPFC and the other is through the reptilian brain by way of breathing, movement, and touch (Fisher, 2014). Trauma increases the risk of misinterpreting signals of danger and of an impaired ability to activate calming mechanisms (Ogden, Minton, & Pain, 2006). Our early explorations as toddlers begin shaping the limbic structures, devoted to

emotion and memory, but these structures can be modified significantly later in life for the better by those experiences we find aesthetic such as love and friendship, or for the worse by experiences that are traumatic, like abuse and neglect (Ratey, 2001; van der Kolk, 2015). Our emotions color what we notice and how we experience those things we attend to (Chatterjee, 2014a; Shimamura, 2012). As an ecofeminist vision supports, we must not place emotion and reason in opposition since emotions help the individual determine the significance of experiences and therefore, they are the foundation of reason (Morgan, Romanski, & Ledoux, 1993). When people are neurotic, extroverted, or laidback, these differences are written into differences in the frontal lobes and their connection with the limbic region, which is responsible for happiness and pleasure as well as our fear and disgust area (Chatterjee, 2014a; Shimamura, 2012). The basal ganglia, which are found outside and above the limbic system, contribute to our experience of pleasure and reward because they are washed in dopamine, opioid, and cannabinoid neurotransmitters that can be thought of as pleasure chemicals (Chatterjee, 2014a; Shimamura, 2012).

When the emotional and rational systems fall out of balance due to trauma, we feel it viscerally in the heart, lungs, and gut; the imbalance is manifested in physical discomfort as well as psychological misery (Morgan et al., 1993). The outcome of severe trauma can be that the individual is stuck in survival mode (van der Kolk, 2015). Such stress can affect what Pavlov (1927) named the reflex of purpose; which involves both movement and emotions - feeling and doing. When the left hemisphere shuts down either during the actual trauma or during reactivations of the original trauma, the individual frequently relates it feels as if they are losing their mind; in fact, they are experience what is referred to as the loss of executive functioning -

many feelings are present but no way to organize or name them is available to the individual (Ogden et al., 2006).

Fear triggers the amygdala to release serotonin, a neurotransmitter and stress hormone that drives up blood pressure, heart rate, and oxygen intake (Roozendaal, Mcewen, & Chattarji, 2009). Individuals with low levels of serotonin are hyperreactive to stress, while those will higher levels of serotonin have a reduction in their 'fear system', making them less likely to become aggressive or frozen in response to a threat or potential threat (Gray & McNaughton, 1996; Ogden, Minton, & Pain, 2006). Extreme trauma causes an immobilization of Brocca's area, which is one of the speech centers of the brain; in this way, trauma leaves the individual speechless, unable to put words to their experience and so we see mute assault victims, soldiers, and traumatized children (Roozendaal et al., 2009; van der Kolk, 2015).

In addition to immobilizing Brocca's area, trauma 'lights-up' Bordmann's area 19, which is a region in the visual cortex that normally activates when visual stimuli first enter the brain; even when trauma has long since passed, this area is reactivated (Roozendaal et al., 2009; van der Kolk, 2015). Van der Kolk (2015) also noted that sounds, smells and physical sensations register in reactivated trauma "apparently unmodified by the passage of time" (p. 44), these experiences are commonly referred to as ‘flashbacks’. As I explained previously when I describe the concept of lateralization, the left-brain is where vocabulary, facts, and statistics are processed, while the right brain stores sounds, touch, and smell (Chatterjee, 2014a; Shimamura, 2012). Ordinarily, the two sides work together fluidly, but when one side shuts down, the individual cannot organize experience logically, nor can it put feelings and perceptions into words (van der Kolk, 2015). The effects of trauma include memory and attention issues, and irritability and sleep problems, all stemming from elevated stress hormones (Roozendaal et al.,

2009; van der Kolk, 2015). Talk therapy has a limited usefulness in such cases since "no matter how much insight and understanding we develop, the rational brain is basically impotent to talk the emotional brain out of its own reality" (van der Kolk, 2015, p. 47). Drug therapy may dull the consequent feelings but it does nothing for the root cause; the trick for the one traumatized it seems, is to find a way to integrate the experience into the whole of their life (Roozendaal et al., 2009; van der Kolk, 2015).

One way to integrate traumatic experience is through the adaptive response. The adaptive response to threat is basic to human survival and this response is characterized by at least two critical aspects: first is the ability to take an active role - to become an agent of one's own rescue; the second is to imagine a creative alternative (van der Kolk, 2015). Van der Kolk (2015) offers the example of, Noam the five year-old son of a family friend, who attended PS 234, an elementary school only 1500 feet from the World Trade Center in Manhattan. On September 11, 2001, Noam, his older brother, and their dad all had to run for their lives as planes began striking the World Trade Center. They made it safely home and the next day Noam created a drawing of what he had witnessed. Noam's drawing included airplanes, flaming buildings, and figures leaping from the buildings. It also included a black circle at the base of one building. When Noam was questioned he related it was a trampoline, "So the next time people have to jump, they will be safe" (van der Kolk, 2015, p. 52). Thus Noam demonstrates the two aspect of the adaptive response mentioned above; he was able to be an agent of his own rescue by running away, and he was able to imagine a creative alternative in the form of a trampoline. In this example we see the impact of self-agency in the healing of trauma.

An individual who cannot make an adaptive response becomes stuck; he or she cannot integrate the experience into his or her life and thus are doomed to continually relive an

unchanging, immutable trauma -- every new event is thus contaminated by the past (Roozendaal et al., 2009; van der Kolk, 2014). When stress hormone levels remain elevated and cannot be restored to normal, an individual can experience ongoing fear, rage, and even physical disease (Roozendaal et al., 2009; van der Kolk, 2015). Since the early 1990s, with the development of brain imaging tools, neuroscience can show what happens inside the brains of those who are traumatized. Because of these tools we have come to understand the manner in which profound trauma is not simply an event that happened, but instead become imprinted on the mind, body, and brain; this imprint has consequences for how the individual experiences the world (Insel, 2010; van der Kolk, 2015).

> When the brain's alarm system is turned on, it automatically triggers preprogrammed physical escape plans in the oldest part of the brain. As in other animals, the nerves and chemicals that make up our basic brain structure have a direct connection with our body. When the old brain takes over, it partially shuts down the higher brain, our conscious mind, and propels the body to run, hide, fight, or, on occasion, freeze. By the time we are fully aware of our situation, our body may already be on the move. If the fight/flight/freeze response is successful and we escape the danger, we recover our internal equilibrium and gradually regain our senses. (van der Kolk, 2015, p. 54)

The ability to move, to take an active role to do something to save oneself, is an aspect of the adaptive response enabling the survivor of trauma to integrate that trauma (Lima, et al., 2010). If this ability is thwarted and the trauma cannot be integrated, the body keeps its reaction going and thus the survivor experiences the world with a different nervous system than the one they possessed before the trauma (Lima, et al., 2010).

Van der Kolk (2015) proposes 3 possibilities for helping individuals whose lives have been dramatically affected by trauma. These include drug therapy which involves treating trauma chemically, talk therapy which allows for greater understanding of the trauma experience and reaction, and finally a palliative solution which allows "the body to have experiences that deeply and viscerally contradict the helplessness, rage, or collapse that result from trauma" (van der Kolk, 2015, p. 3). In other words, when the individual was somehow thwarted from making an adaptive response at the time of the trauma, a palliative solution allows for it after the fact.

We have begun to understand how overwhelming experiences affect our innermost sensations and our relationship to our physical reality - the core of who we are. They are not just events that are part of the past; such experiences leave an imprint on mind, brain, and body. This imprint has ongoing consequences for how the human organism survives and thrives in the present. In the next section I present non-drug trauma treatments, which utilize “perception, interpretation, emotion, and action” as aesthetic experience (Chatterjee, 2014a), in order to engender an adaptive response in traumatized individuals. An ecofeminist vision of learning as aesthetic, embodied and connected, embraces the role of such experiences to heal because they connect all aspects of an individual’s being – the physical, social, and environmental – in meaningful, healthful ways.

Aesthetic Learning Experience as a Means of Integrating Trauma

Van der Kolk (2015) suggests that resonance (the opposite of dissonance) is key to the healing of trauma. In 1893, Pierre Janet, who explored trauma, described what he named "the pleasure of completed action," (1893/1925, p. 660) to characterize the relief that comes from therapies which help the individual restore a sense of agency, in particular he was interested in what today we term somatic therapies, because they utilize the body in a variety of ways, for

achieving the resonant pleasure of competed action. When faced with extreme stress, the body responds by producing stress hormones to facilitate fleeing, fighting, or freezing (Insel, 2010; van der Kolk, 2015). When these inclinations are thwarted, and the individual is helpless or immobilized, the hormones continue to be secreted and therefore the body persists in its hyper-aroused state (Insel, 2010; van der Kolk, 2014).

Unlike ordinary events, traumatic events are not something one remembers via a coherent story, something with a beginning, middle, and end (van der Kolk, 2014). Instead, traumatic events are relived through physical sensations, emotions, images, and even smells or sounds associated with the event (Insel, 2010; van der Kolk, 2015). As fMRIs indicate, the portion of the brain that provides a sense of time and perspective, as well as the portion that integrates images, sounds and sensations into a coherent story, are offline during a traumatic experience, allowing for the development of posttraumatic stress disorder (PTSD) (Mithoefer et al., 2013; van der Kolk, 2015). Trauma can be successfully processed only when the entire brain is kept online while the individual remembers what happened; the ability to quietly observe oneself, in order to put the pieces together, finding words where words were absent, is crucial (Insel, 2010; van der Kolk, 2015).

Thus, ‘words’ in the form of a cohesive trauma story help to lessen the isolation of trauma, but they can obscure the fact that trauma changes people - individuals are not the same before and after a traumatic event since the brain rewires itself as a result (Kelley, Macrae, Wyland, Caglar, Inati, & Heatherton, 2002). Ways of knowing are localized in very different, far removed parts of the brain; physical sensations of moment to moment self-awareness are found in the emotional brain (the limbic system and the reptilian brain together) while autobiographical ways of knowing, which track the self across time, and creates assemblages of experiences into

coherent stories, is found in the medial prefrontal cortex (Kelley et al., 2002). Usually the autobiographical and emotional work together, however in severe trauma, they can be split and tell different stories. This is called posttraumatic stress syndrome.

> [P]osttraumatic stress is the result of a fundamental reorganization of the central nervous system based on having experience an actual threat of annihilation, (or seeing someone else being annihilated), which reorganizes self experience (as helpless) and the interpretation of reality (the entire world is a dangerous place). (van der Kolk, 2015, p. 258)

The emotional brain can only be changed, and the two stories integrated through the autobiographical system in the medial prefrontal cortex (Kelley et al., 2002). Thus we see how trauma works to break connections. An ecofeminist vision of learning as aesthetic, embodied and connected offers a vision for a tangled web of connection in which all aspects of the individual work as n integrated whole. For this integration to occur, all aspects of the individual including the social or interhuman, the internal, which includes the cognitive, emotional and invisible body, all of which together I call the intrahuman, and the environmental must connect (Kelley et al., 2002; van der Kolk, 2015). The following are examples of healing as a result of such connection. They are manifested through what I label ‘aesthetic learning experiences’ because they utilize subjective sensory experiences, thus they help to fill in my ecofeminist vision of the tangled web of learning.

Reciprocity

The standard medical treatment for the effects of trauma is to find the right drug and not to deal with how the effects of the drug prevent the individual’s meaningful engagement in community (Porges, 2011; van der Kolk, 2015). Feeling safe with others is probably the single

most important aspect of mental health, enabling us to enjoy meaningful and satisfying lives (Porges, 2011; van der Kolk, 2015). "The critical issue is *reciprocity*; being truly heard and seen by the people around us, feeling that we are held in someone else's mind and heart" (van der Kolk, 2015, p. 81). In order to become calm, to quiet our enflamed system we need a visceral feeling of safety (Holt, 1997). Holt (1997) has named this ability, licking and grooming behavior after the behavior that animals use to quiet their enflamed systems. Danger turns off our ability to socially engage, resulting in the desire for “fight or flight," however there is a third option which is dissociation, or withdrawal and shutting down (Porges, 2016). This type of disengagement and collapse is controlled by the DVC (the dorsal vagal complex), which is an evolutionarily ancient part of the parasympathetic nervous system (Porges, 2016; van der Kolk, 2014).

> Knowing that we are seen and heard by the important people in our lives can make us feel calm and safe, and ... being ignored or dismissed can precipitate rage reactions or mental collapse. [This] ...helps us understand why focused attunement with another person can shift us out of disorganized and fearful states. (van der Kolk, 2015, p. 80)

Humans are amazingly attuned to the emotional shifts of others, revealing the brain as a cultural organ shaped by experience (Porges, 2016). Research confirms that positive relationships are a powerful protection against trauma; feeling safe at a visceral level helps us feel protected against threat, "much of the wiring of our brain circuits is devoted to being in tune with others" (Van der Kolk, 2015. p. 212). For this reason, when trauma occurs within relationships, it’s effects are usually more difficult to resolve than those of trauma that occurs in an accident (Insel, 2010).

A feeling of reciprocity becomes impaired when we are unable to connect with others. In the next sections, I offer examples of how this reciprocity can be restored through movement, rhythm, action, and mindfulness (Holt, 1997; Porges, 2011; van der Kolk, 2014).

Drama Therapy

Traumatized adolescents are noticeably out of sync with others and drama therapy as been shown to improve their ability to engage through mirroring exercises, which involve things like one person raising their arm, while the other raises theirs in response (James & Johnson, 1996).

> Trauma is about trying to forget, hiding how scared, enraged, or helpless you are. Theater is about finding ways of telling truth and conveying deep truth to your audience. This requires pushing through blockages to discover your own truth, exploring and examining your own internal experience so that it can emerge in your voice and body on stage. (James & Johnson, 1996, p. 320)

In this way participants in drama therapy are helped to connect and become attuned viscerally, rather than cognitively, to another's experience (James & Johnson, 1996).

In his work with a variety of patients at the Trauma Center in Brookline Massachusetts, van der Kolk (2015) noted those individuals who felt unwanted as children did not fully benefit from conventional psychotherapy, presumably because they could not activate old traces of feeling cared for. His question then became, how to help such people become viscerally acquainted with feelings that were lacking early in their lives? In answer to this, van der Kolk (2015) highlights the work of Albert Pesso and Diane Boyden-Pesso, whose therapeutic approach Pesso Boyden Systems Psychomotor (PBSP) he found both fascinating and effective. In short, this system provides opportunities for individuals who are traumatized to replay and

rescript their trauma with caring support and witnesses (https://pbsp.com/). Pesso creates tableaus or what he calls 'structures' in which group members are asked to play roles of significant people in the 'protagonist's' life, and different groups members play the roles of the ideal or wished-for parents or significant others (Pesso, 1985). The result of these 'structures,' as van der Kolk observes, was that the protagonists "clearly experienced profound physical and mental relief after these imaginary scenarios" (2014, p. 300), allowing them to reweave the past in a way that provided a visceral memory from which to draw in the future. This suggests how important visceral memories are for giving an individual a springboard from which to engage future experience (Pesso, 1997).

Movement and Rhythm

In a short book entitled *Keeping Together in Time* (1997), William McNeil investigates what he entitles the "muscular bonding," that emanates from military drill, dancing, and theater. Finding that in some instances, these have a powerful effect, such as when Prince Maurice of Orange (circa 1600) instituted close-order drill, thereby enabling the Dutch to drive out the Spanish, in the Dutch Revolt (1568-1648) (McNeil, 1997). Such examples shed light on the way that languages encompassed by the fine arts (drama, dance, music, visual art) can hold the key to a visceral communication, which is direct and powerful (Dewey, 1934/2005; McNeil, 1997).

In another example of the physical release that comes from communal rhythm and movement, van der Kolk (2015) describes an experience with a group of traumatized women in South Africa when he was following the work of the Truth and Reconciliation Commission in 1996:

> One day I attended a group for rape survivors in the courtyard of a clinic in a township outside Johannesburg. We could hear the sound of bullets being fired at

> a distance while smoke billowed over the walls of the compound and the smell of teargas hung in the air. Later we heard that forty people had been killed.
>
> Yet, while the surroundings were foreign and terrifying, I recognized this group all too well: The women sat slumped over - sad and frozen - like so many rape therapy groups I had seen in Boston. I felt a familiar sense of helplessness, and, surrounded by collapsed people, I felt myself mentally collapse as well. Then, one of the women started to hum, while gently swaying back and forth. Slowly a rhythm emerged; bit by bit other women joined in. soon the whole groups was singing, moving, and getting up to dance. It was an astounding transformation; people coming back to life, faces becoming attuned, and vitality returning to bodies. I made a vow to apply what I was seeing there and to study how rhythm, chanting, and movement can help to heal trauma. (p. 216)

For traumatized people physical sensations can become the enemy because such sensations can hijack them; therefore, learning to connect to physical sensation is an important aspect of healing from trauma (Kabat-Zinn, 1990/2013; van der Kolk, 2015).

Mindfulness

An ecofeminist vision of connection can refer to interhuman, as between individuals, or intrahuman, as within a single person's being – though of course these two connect. Mindfulness training, pioneered by Jon Kabat-Zinn (among others), who founded the Mindfulness-Based Stress Reduction (MBSR) program at the University of Massachusetts Medical Center in 1979, promotes mindfulness as the means to transform the scattered and reactive energies of the mind and focus them into a coherent source of energy for living, problem solving, and healing (Kabat-Zinn, 1990/2013). Mindfulness training includes focused attention on bodily sensations as a way

to observe the interplay between thoughts and physical reactions, since self-awareness is at the core of recovery, or said in another way, there is no mind without mindfulness (Kabat-Zinn, 1990/2013). Brain research confirms this thinking, demonstrating that the practice of mindfulness decreases the activity of the amygdala, the smoke detector, thereby decreasing reactivity to triggers (Banks, Eddy, Angstadt, Nathan, & Phan, 2007). We can directly train our arousal system by the way we breathe, chant, and move because the vagus nerve, which connects the brain with many internal organs, contains fibers that are afferent, meaning they attach directly into the brain (Porges, 2016). Since emotions and physical impressions become inscribed on the body during trauma, they are not experienced in the present as memories but as intrusive physical reactions, so learning to remain in a state of relative physical relaxation through breathing and other methods, while accessing horrifying memories, becomes an essential tool (Porges, 2016). Thus, movement, rhythm, action, and mindfulness, which are found in things like rhythmic drumming, martial arts, and yoga have all been shown to have a positive effect on post-traumatic stress (Lee, 2013; van der Kolk, 2014).

As an aspect of mindfulness, the practice of yoga helps with interoception, or the sense of the internal states of the body (Lee, 2013; van der Kolk, 2015). According to Van der Kolk (2015), once an individual begins to observe his or her own bodily sensations with curiosity rather than fear, everything shifts and he or she can begin to notice rather than ignore what is going on inside themselves, in order to nurture emotional regulation. Because of its focus on breathing, yoga helps to promote the awareness of the connection between the body and the emotions and how breathing can affect various sensations (Lee, 2013; van der Kolk, 2015).

Neurofeedback

Another way to form intrahuman connection is with neurofeedback. When we can stay calm, control our impulses and emotions, and thereby choose our actions, we feel more in control than when we are hijacked by our impulses (Hopper, Spinazzola, Simpson, & van der Kolk, 2004). The HRV is an indicator of the ability to modulate impulses (Hopper et al., 2004; van der Kolk, 2015). HRV stands for heart rate variability, a biological metric that measures the relative balance between the sympathetic and parasympathetic nervous systems. In individuals with PTSD the HRV is out of balance; in those who are healthy, their HRV reflects their wellbeing (van der Kolk, 2014).

The ANS - (autonomic nervous system) is made up of the SNS (sympathetic nervous system), so named by the Roman physician, Galen who noticed it functions with the emotions and acts as the body's accelerator, and the PNS (parasympathetic nervous system), which serves as the brakes (Carter et al., 2014; Hopper et al., 2004). The SNS is responsible for arousal by moving blood to the muscles, partly by triggering the adrenal glands to release adrenaline; the PNS triggers the release of acetylcholine, which calms arousal (Carter et al., 2014; van der Kolk, 2014). The SNS and PNS work together in a complementary fashion to manage the body's energy flow. When we breathe in and out, we are experiencing both systems. As we breath in, the SNS is activated, and a small burst of adrenaline speeds up the heart; as we exhale, the PNS is activated, which in turn slows down the heart (Carter et al., 2014; van der Kolk, 2014). Thus yoga and meditation practices utilize conscious attention to breathing. Interestingly, the interval between heartbeats is never exactly the same, though a balanced or healthy HRV is indicated by a greater interval (Carter et al., 2014; van der Kolk, 2014). Research has shown that teaching individuals to become aware of their HRV can be used to treat PTSD (Hopper et al., 2004).

As early as the late 1950s, University of Chicago psychology professor Joe Kamiya (1970) discovered that people could learn, through feedback, to tell when they were producing alpha waves, which are associated with relaxation. Barry Sterman at UCLA did subsequent research in which a woman who suffered with epilepsy, learned to control her seizures with neurofeedback (Sterman, Macdonald, and Stone, 1974). Significant funding for this type of research into the potential of the human mind, ended in the mid 1970s with newly discovered psychiatric drugs that manifested in psychiatry and brain science adopting a chemical model of mind and brain (van der Kolk, 2015).

Happily, today, a large body of research is happening around the idea of the "connectome," referring to the "exquisitely interconnected network of neurons (nerve cells) in the brain. Like the genome, the microbiome, and other exciting 'ome' fields, the effort to map the connectome and decipher the electrical signals that zap through it to generate thoughts, feelings, and behaviors has become possible through development of powerful new tools and technologies" (Collins, 2012, p. 1). According to Thomas Insel, director of the National Institute of Mental Health:

> Brain regions that function together to carry out normal (and abnormal) mental operation can be thought of as analogous to electrical circuits - the latest research shows that the malfunctioning of entire circuits may underlie many mental disorders. (2010, p. 48)

In spite of the chemical metaphor, which invigorates much of the mental health field, work is being done in the ways neurofeedback can be used to treat trauma.

Somatic Therapy

One method that allows for a unique means self-connection for putting the pieces together is called eye movement desensitization and reprocessing (EMDR) (Shapiro, 2001). Francine Shapiro, PhD, serendipitously discovered this therapy as she walked through a park looking left and right as she pondered painful memories. Afterward, she noted an experience of relief and thus began studying the phenomenon.

In the treatment that Shapiro ultimately developed and refined, a therapist directs the patient in an external stimulus, which is usually lateral eye movements but can include hand tapping and audio stimulation, while simultaneously attending to emotionally disturbing material in brief sequential doses (Shapiro & Forrest 2016). Shapiro (2001) hypothesizes that EMDR therapy facilitates the accessing of the traumatic memory network, allowing for the formation of new associations, which then allows the trauma story to become integrated, thus eliminating emotional distress. During a session, the patient is encouraged to observe mental images and bodily sensations that become apparent. Shapiro and Forrest (2016) theorizes that in the same way the brain processes events during the rapid eye movements of deep sleep, traumatic memories and other adverse life experiences are accessed and processed during EMDR treatment, in order to bring them to an adaptive resolution. With EMDR therapy, the traumatized individual can access memories without being overwhelmed by them (Shapiro, 2001).

Traumatic memories, unlike linear, story-type memories, persist as unmodified images, sensations, and emotions, which are not integrated, but rather split-off (Stickgold & Walker, 2007). As with EMDR, dreams replay, recombine, and thereby reintegrate old memories for months and even for years (Stickgold, Scott, Rittenhouse, & Hobson, 1999). Stickgold & Walker

(2007) speculate that the activation of distant associations could explain why dreams are so bizarre.

If the bilateral stimulation of EMDR can alter brain states in a manner similar to that seen during REM sleep then there is now good evidence to suggest that EMDR should be able to take advantage of sleep dependent processes, which may be blocked or ineffective in PTSD suffers, thus allowing effective memory processing and trauma resolution (Stickgold et al., 1999). In other words as with REM sleep, EMDR may open up the associative process, allowing memories to become integrated (van der Kolk, 2014).

Final Thoughts

Hearing and being heard, seeing and being seen by others, these are important to every human:

> As long as we feel safely held in the hearts and minds of the people who love, us, we will climb mountains and cross deserts, and stay up all night to finish projects. Children and adults will do anything for people they trust and whose opinion they value. (van der Kolk, 2015, p. 352)

Hearing and seeing another requires that we are able to hear and see ourselves. Or said another way, the interhuman connection requires an intrahuman connection. Understanding what our body communicates when we are upset, as well as when we are inspired and filled with joy, is empowering.

As the previous examples demonstrate, aesthetic learning experiences can erase, or mitigate, the traumatic ‘score’ left on the body. These aesthetic learning experiences may happen in community with others and engage the reciprocity found in drama, movement, or rhythm. They may involve the individual turning inward to find a kind of reciprocity with his or her own

physical reactions through mindfulness, neurofeedback, or somatic therapies. All of these therapies allow the one traumatized to access the pleasure of the adaptive response in order to restore a sense of self-agency. Such aesthetic learning experiences help individuals re-learn at the deepest, visceral level. In effect aesthetic learning experiences 'score' the traumatized individual in a positive, generative way. I theorize that, even in the absence of trauma, aesthetic experiences do this work within us; they mark us and form a framework that scaffolds our deepest and most passionate desires (Garrison, 1997). If, as van der Kolk (2015) states, "resilience is the product of agency" (p. 357), then by engendering a sense of agency, aesthetic learning experiences may become the oil that 'greases the wheels' for the kinds of learning that require hard work and a delay of reward. By engendering sensations that are aesthetic through reciprocity with the individual's own body, or with others, beauty becomes part of the body's score.

In this chapter I have shown how beauty lives in the body, becoming inscribed through the holistic interaction of the body-mind in dialogue with subjective sensory (aesthetic) experience. This theorizing is supported by an ecofeminist epistemology that embraces knowing as simultaneously cognitive, emotional, spiritual, and embodied (Jun, 2014). Such ways of knowing are exemplified in the experiences of women; honoring the bodily knowledge shaped by race, class, and gender (Kings, 2017) and springing from a cultural and historic situatedness (Glazebrook, 2002). Within this holistic vision the aesthetic quality of an experience is the bridge that connects doing and undergoing; the glue that holds an experience together (Hohr, 2002; Dewey, 1934/2005). Thus, knowing as relational and mutually interdependent becomes a defining metaphor (Jun, 2014).

As a Western civilization, our culture collectively embraces an oppressive root metaphor that prizes hierarchy and domination (Kings, 2017), which clouds our ability benefit from a

holistic understanding of the body as the “center of vision, center of action, center of interest” (James, 1890/1950, p. 86). An ecofeminist epistemology finds learning manifested through material bodies that are situated culturally and environmentally, and it recognizes knowing as simultaneously cognitive, emotional, and spiritual (Jun, 2014).

An individual's emotional engagement system is foundational to who they are (van der Kolk, 2015). When home and neighborhood are chaotic, it becomes even more important for schools to be places where students are known and seen and where they can learn self-leadership and an internal locus of control in order to find self-agency and to become resilient (van der Kolk, 2015). Instead it seems that schools are often sustained by an oppressive conceptual framework of knowledge as hierarchal and competitive and which understands it to be held in particular places or by particular individuals and therefore NOT held by others (Harvester & Blenkinsop, 2010). My vision reveals the ability of the aesthetic to allow for the integration of subjectivity and will, recognizing learning as shaped by an individual’s life experience, including culture, gender, race, class, sexuality, and environment.

In the next chapter I tie all the threads together presenting an ecofeminist vision of learning as aesthetic, embodied, and connected as I visualize what that might mean for the educational process.

CHAPTER 6

PUTTING THE PIECES TOGETHER: AN ECOFEMINIST VISION OF LEARNING AS AESTHETIC, EMBODIED AND CONNECTED

As he was about to climb yet another dune, his heart whispered, "Be aware of the place where you are brought to tears. That's where I am, and that's where your treasure is."

Paulo Coelho, *The Alchemist*, (1988, p. 90)

In his 2017 book, *The Evolution of Beauty: How Darwin's Forgotten Theory of Mate Choice Shapes the Animal World – and Us*, evolutionary ornithologist Richard Prum, traces his love for birds to a time when he was a young boy. His personal experience offers a resonant story of learning for my final chapter:

> It all started with glasses. I got my first pair of eyeglasses during fourth grade, and within six months I was a bird-watcher. Before glasses, I spent a lot of time memorizing facts out of the *Guinness Book of World Records* and asking my siblings to quiz me on them. I was especially interested in the records of extreme human "achievement," like the tallest and heaviest men, and the now suppressed category of "gastronomical" records, like the greatest number of whelks eaten in five minutes. But after glasses, the outer world came into focus. Soon, my amorphous nerdiness found something to organize around, something to run with – birds. (p. 1)

In a powerful illustration of my thesis, that at its deepest, learning is embodied, aesthetic, and connected with an individual's life experience and culture in what I term, an ecofeminist web, Prum shares the story of a day that served to cement the passion which became his life's work.

On a foggy morning in 1974, when he was twelve, Prum joined a group of birders, all of whom were adults, on a day trip to Machias Seal Island off the coast of Maine, the southernmost nesting colony of the Atlantic Puffin. He describes being dive-bombed by Arctic Terns, sitting in bird blinds for many hours, and then "some hours later, returning to the boat sunburned, covered in smelly tern shit, and ecstatically happy" (Prum, 2017, p. 339). Many events of that day are vivid to him, forty years later. "The convergence of book learning and life experience - of *savoir* and *connaissance* - created a profound joy. It was an early and formative avian epiphany" (Prum, 2017, p. 339). Liston's (2001) vision of Joy - exactly.

From those beginnings, Prum went on to become the William Robertson Coe Professor of Ornithology at Yale University and Head Curator of Vertebrate Zoology at the Yale Peabody Museum of Natural History. Though the impact of the kind of experiences Prum describes is not always so profound, I theorize that the embrace of an ecofeminist vision of learning as aesthetic, embodied, and connected can help ensure such learning is not left to chance, but intentionally encouraged as an integral piece of a complex process. As Prum (2017) relates, his work on the evolution of beauty, which had its genesis in an experience of aesthetic, embodied learning forty years prior, gives him tremendous intellectual and personal pleasure, “Never in my career have I been more excited and inspired to do science, I get goose bumps just thinking about the evolution of avian beauty” (p. 15).

Within this dissertation, I demonstrate that, particularly where learning is concerned, all things are connected in complex webs of communal networks (Griffin, 1989); that matter, energy, and human and non-human experience are all parts of a greater whole:

> This whole is not an abstract mentalism but has infinitely complicated characteristics somewhat analogous to the way communities of beings manage

> individual and collectivist realities. Ecofeminist writers suggest that humans have lost their integrated wholeness through a gradual shortfall of perceptual awareness initiated and sustained by modern institutions, economies, and educational systems. (Besthorn & McMillen, 2002, p. 225)

My conception for a solution to the 'shortfall of perceptual awareness' concerns reshaping how our educational system approaches learning. In this dissertation I frame an understanding of learning that supports and encourages a conception of integrated wholeness. As I argue, the way our Western society currently conceptualizes learning as a linear, cognitive process of the mind apart from experience of the lived body, apart from what the individual finds meaningful or aesthetic, and apart from *any* connection to the individual, lies at the root of why our educational system fails so many students. In this chapter, I weave the pieces of my vision together.

For ecofeminist philosopher, Huey-li Li (2007), an individual's gender ideology influences his or her world-view. I think she has it backwards, and instead, our worldview contributes to our gender ideology. The primary metaphors that undergird our ideology shape all our values (Lakoff & Johnson, 1999). Hence, those who have built their world-view upon the ideal of vertical, hierarchy naturally prefer the hierarchy of traditional gender ideology.

The Western view of nature stresses the divide between humans and nature, emphasizing those aspects of being human, like rationality, freedom, and transcendence from 'wildness', that define humanity negatively, or by what a human is not (Plumwood, 1996). Such a view, illustrates the idea of humanity as outside of nature and ontologically divided and discontinuous from nature (Plumwood, 1996). As ecofeminism reveals:

> Western thought has given us a strong human/nature dualism that is part of the set of interrelated dualisms of mind/body, human/nature, reason/emotion,

> masculine/feminine and has important interconnected features with these other dualism. (Plumwood, 1996, p. 162)

Within education, the conception of learning as a cognitive matter of the mind that leaves out embodied and subjective experience, illustrates a particular focus on mind/body and objective/subjective dualisms. In this way of thinking whatever is natural or animal (the body, sexuality, reproduction, emotionality, the senses, and agency) are separate and distinguished from those characteristics that are authentically human, that define us as human (Plumwood, 1996).

The problem with understanding something dualistically is “it typically polarizes difference and minimizes shared characteristics, it construes difference along lines of superiority/ inferiority, and views the inferior side as a means to the higher end of the superior side (the instrumental thesis)" (Plumwood, 1996, p. 168). So, challenging dualisms is not just a matter of elevating the inferior side, but of reconceptualizing the dualistically construed categories. I suggest to aid with this reconceptualization a new conceptual metaphor is needed. In the visual arts we often begin with basic shapes. To my thinking, a vertical line, discrete, hierarchical, and disconnected, seems to characterize the Western worldview. Ideals of individualism, personal rights, and separation find a home in this metaphor. I offer instead the metaphor of a web, characterized by the connections between the entities who still retain their individuality, yet are profoundly connected.

Humanity has developed symbol systems (metaphors) to explain and understand the world, but as those who experienced cultural disadvantage that was virtually universal, women were excluded from participating in this development no matter the culture (Lerner, 1986; Li, 2007). In China and other non-Western societies, nature is not traditionally associated with

women (Li, 2007; Tuan, 1968). Despite this, the use of gendered imagery plays a role in shaping the construction of institutions, just as it does in the West (Lerner, 1986; Li, 2007). Women are oppressed in eastern society and in fact "ancient Chinese misogyny coexisted with an organic world-view, which has proven capable of sanctioning the massive transformation of natural environments" (Li, 2007, p. 355). Li (2007) makes an interesting point; even within a society that embraces an organic worldview, hierarchical oppression thrives. Oppressions are interconnected and thus, there can be no liberation for women or solutions to the ecological crisis within a society for which domination, either at the micro or macro level, continues to be an animating metaphor (Li, 2007: Reuther, 1996). Rather than promote an organic world view and be done with it, ecofeminism promotes the validation of difference, challenges claims to universal truth, and seeks to facilitate social transformation and thereby suggests a different metaphor (Li, 2007; Weiler, 1989).

As an example of the power of metaphor, Western science has adopted a war-like vision of creation illustrated by ‘the big-bang’, alternately "ecofeminists visualize a complex and mystical birthing process, swelling and growing into life" (Besthorn & McMillen, 2002, p. 226). Since the earth is a living entity, not just random bits of cosmic dust, there is an organic unity between humanity and nature for which the war-like ‘big bang’ does not allow.

Given the power of metaphor, a new understanding of learning requires a new metaphor, one which suggests the complexity of the human and nature relationship, provides an image of interconnection, and evokes transformative possibilities for the way humans perceive their place within the natural environment and within the community of being (Besthorn & McMillen, 2002). According to social work theorists, Fred Besthorn and Diane McMillen (2002), the social sciences tend to perceive individuals as existing *on* the environment rather embedded within

complex environmental and social systems. A new vision is needed to ontologically bond humans and nature; a metaphor of entanglement encourages a vision of connection (Besthorn & McMillen, 2002). Building on my previous vision of a web of connection, and incorporating Besthorn and McMillen's (2002) vision of entanglement, I suggest what I entitle, the 'ecofeminist tangled bank,' to provide for biotic (which include human and non-human animals), inter-human, and intra-human interconnections.

I begin my metaphor with Darwin's resonant image in, *On The Origin of Species* (1859/1964) which I shared in the previous chapter, but it is helpful to see it again here:

> It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us… (p. 429)

My vision of the ecofeminist tangled bank includes Darwin's (1859/1964) biotic tangle, but adds to it the vision of human entanglement. The human threads consist of what I call the inter-human, or those threads that characterize human relations of all types, including cultural and familial, and the intra-human, which includes the individual's relationship with his/her/their own being - the body, mind, and spirit. These additional threads weave up and down, and in and out of the biotic, in a manner complex and profound, to characterize a lived experience at once individual, communal, and environmentally situated. It embraces self-contradictory unity (Liston, 2001) of inter-being (Hanh, 1997) that recognizes the self as at once individual and connected to community (Liston, 2001; Palmer, 2007). For learning, the ecofeminist tangled

bank frames an ecological epistemology that honors knowledge as structured by the conditions created within communities of learning.

This image does not invite a desire to untangle but instead, encourages an acceptance of the dialectical nature of these various points of view. The ecofeminist tangled bank allows for the synenergy that is inherent in the space between (Hohr, 2002; Winnicott, 1971). Additionally, this metaphor incorporates an alternative vision of the sources of human satisfaction, incorporating spaces for non-material sources of fulfillment:

> simple conversations, spiritual rituals, neighborhood/community gatherings, family outings, artistic pursuits, music, dance, literature, and experiencing nature. All are ways of life and being that can endure through countless generations. This is a kind of simple life vision adorned with nonmaterial sources of fulfillment. It includes the kinds of activities and associations that most people would admit are the main determinants of happiness. (Besthorn & Mc Millen, 2002, p. 228)

These ‘nonmaterial sources of fulfillment’ characterize subjective sensory (aesthetic) experience. For Prum (2017), subjective sensory experience is an existential key that has been long rejected among scientists. He frames the subjective experience of beauty as a crucial piece of the developmental puzzle, demonstrated in the subjective experience of female birds acting to shape the outward beauty of males of their species. For Prum (2017), beauty is “the result of a coevolutionary dance between desire and display" (p. 554).

> Darwin discovered that evolution is not merely about the survival of the fittest but also about charm and sensory delight in individual subjective experience. The implications of this idea are profound, requiring us to acknowledge that the dawn bird song chorus, the cooperative group displays of the Chiroxiphia manakins, the

> spectacular plumage of the male Great Argus Pheasant, and many other wondrous sights and sounds of the natural world are not merely delightful to us: they are products of a long history of subjective evaluations made by the animals themselves. (Prum, 2017, p. 325)

Within this vision, the evolution of sensory evaluation and choice is manifested in a type of self-agency in which individual judgments drive the evolutionary process (Prum, 2017). For Prum (2017) the most revolutionary aspect of Darwin's theory of mate choice is that it was straightforwardly aesthetic owing to the idea that "animals had evolved to be beautiful to themselves" (p. 25). When most people hear the word evolution, they think of adaptive evolution, or evolution by natural selection, which Darwin described in, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life* (1859/1964). In that work, Darwin (1859/1964) details the evolutionary mechanism of natural selection by which Galapagos finches evolved different beak shapes among generations since beak shape is highly heritable (Darwin, 1859/1964; Prum, 2017). Natural selection leads to adaptation:

> because subsequent generations will have evolved beak shapes that function better in their environment, contributing directly to improvements in individual survival and fecundity. (Prum, 2017, p. 9)

In contrast, to natural selection, is sexual selection, in which desire and the object of desire coevolve (Prum, 2017; Ryan & Cummings, 2013; West-Eberhard, 2014). We can think of this as aesthetic evolution in which display and mating preference shape each other - beauty and desire in dialogue (Prum, 2017; Ryan & Cummings, 2013; West-Eberhard, 2014). As an example, the iridescent plumage of the hummingbird has coevolved as a result of selection based on subjective

evaluation; the plumage and the desire for the plumage coevolved through mate choice (Prum, 2017; Ryan & Cummings, 2013; West-Eberhard, 2014).

Mainstream evolutionary biologists do not embrace Prum's ideas about aesthetic. Most think of sexual displays as a type of 'honest signaling' about the health and quality of a potential mate. In this way of thinking beauty is about utility; the handmaiden of natural selection (Prum, 2017; Weiner, 1995). Prum (2017) argues, "in pursuit of their subjective mate preferences, individuals can make mating choices that are maladaptive - resulting in a worse fit between the organism and its environment" (p. 11). When Charles Darwin proposed and championed the idea of the role of subjective experience in sexual selection, he was vehemently criticized.

By viewing nature's beauty exclusively through the ‘human gaze’, humans have a limited understanding of "the powerful aesthetic agency of nonhuman animals" (Prum, 2017, p. 334). Sexual ornaments of birds, such as the peacock’s tail, demonstrate the concept of coevolution. While "changes in mating preferences have transformed the tail, … changes in the tail have transformed mating preferences" (Prum, 2017, p. 334). How cultural ideas of the aesthetic coevolve with works in the fine arts is perhaps another example of coevolution at work.

In *The Descent of Man, and Selection in Relation to Sex* (1871), Darwin addressed the problems of human origins and beauty. I take my title from this quote:

> Courage, pugnacity, perseverance, strength and size of body, weapons of all kinds, musical organs, both vocal and instrumental, bright colors, stripes and marks, and ornamental appendages, have all been indirectly gained ... through the influence of love and jealousy, through the appreciation of the beautiful ... and through the exertion of a choice. (Darwin, 1871, p. 794-795)

As he discovered, within sexual selection, variations are determined by differential sexual success (Darwin, 1871; Prum, 2017). Thus sexual selection is responsible for ornaments and armament, those heritable features that contribute to success at obtaining mates (Prum, 2017; Weiner, 1995). Darwin (1871) hypothesized that 'the law of battle', or the struggle between individuals of one sex - often male - for sexual control would result in the evolution of large body size and weapons of aggression like horns (Darwin, 1871; Prum, 2017). The "taste for the beautiful has resulted in the evolution of those traits, including songs and colorful plumage", which are aesthetically pleasing because of the innate preferences of one sex (usually the female) (Prum, 2017, p. 22).

As my title suggests, acting on subjective judgment through the 'exertion of a choice' whether we are a female bird or a human being in a classroom, has significance. Self-agency, or the ability to exert a choice – to choose (also important in the healing of trauma) (vander Kolk, (2015) - manifests as a result of sensory evaluation; it is subjective. The scientific community's 'allergy' to the notion of subjective experience whether in evolutionary biology or in education, has contributed to a partial understanding of the role of subjective, embodied experience (Prum, 2017).

The Ecofeminist Tangled Bank

Incorporating a vision of interconnection and complexity in the human-to-nature and human-to-human relationships, as well as with each human's relationship with his/her/their own being, the ecofeminist tangled bank validates difference, challenges universals, and seeks interventions for oppression. My vision for a complication of Darwin's biotic metaphor incorporates a variety of interacting systems:

> each with its characteristic structure, … organization and spatial and temporal properties. The social environment comprises human beings organized in dyadic relations, social networks, bureaucratic institution, and other social systems including the neighborhood, community, and society itself. The physical environment comprises the natural world of animals, plants, and landforms, and the built world of structures and objects constructed by human beings. The social and physical environments are related to each other in complex ways. (Germain & Gitterman, 1980, p. 137)

To these relating plant, animal and human systems, I add the intra-human to provide for an even more complicated picture.

Humans and Nature

The human world and the natural world comprise the same interconnected world. Much of our debate around the question of how humans should interact with other biological communities revolves around the question of whether other species should be valued only for their usefulness to humans (Plumwood, 1996; Stephens, 2013). Within this instrumentalist view, objects or 'others' are only valued for their usefulness toward a predefined end (Midgley, 2000). Oppression, or unjust treatment or control of any sort toward another, occurs as a result of a value-based hierarchical ranking (Stephens, 2013). Ecofeminism sees oppression of women and nature as bound up together, springing from the value/power hierarchy that exploits the human and the non-human (Lahar, 1996; Stephens, 2013; Warren and Cheney, 1996). Since dualisms are connected, a critique of rationalism must connect with critiques of anthropocentrism and sexism (Plumwood, 1996; Stephens, 2013). The first task becomes to

see ourselves as ecologically embodied and situated beings who are akin to other animals rather than superior because of our rationality.

Within an ecofeminist paradigm, complex ecosystems and species are valued apart from their usefulness to humans, and research and educational agendas incorporate a generative model in which learning follows from the interaction of constituent parts or participants (Plumwood, 1996; Stephens, 2013). In ecosystem dynamics this generative ability springs from emergent properties, or those properties that become apparent as the system functions and which are not observable from examination of constituent parts alone (Odum & Barrett, 2005). Our Western conception of the rational self lies at the root of the proclivity for marginalizing the feminine, the emotional, the bodily, the animal, and the natural world (Plumwood, 1996). According to Thomas Aquinas (1225-1274): "The intellectual nature is alone required for its own sake in the universe, and all other for its sake" (1270/1976, p.56). This view of the ‘intellectual nature' as what characterizes and separates the human from the nonhuman, is responsible for the discontinuity or separation between humans and nature and also those within the human self, e.g. mind/body and reason/emotion (Plumwood, 1996).

Ecofeminism's "complex ontology of interconnection" (Besthorn & McMillen, 2002, p. 226) helps to heal this division by weaving together the individual's lived, sensual, experience with complexity of nature. Ecofeminism's complex ontology does not hierarchize either humanity or nature, but illuminates the interconnectedness of each to the other (Besthorn & McMillen, 2002).

According to Anne Stephens (2013) reductionist science bears the burden for our collective disconnection from our own bodies, our subjectivity, our natural surroundings as well as human and nonhuman others. She states, "We need to reconnect the experience of the body,

our subjectivity and our surrounding ecological nature with others..." (p. 3). I agree the need to reconnect is urgent, though I propose that in addition to looking at reductionist science, our reductionist approach to learning also needs examination.

The idea of differentiation helps us develop anti-reductionist alternatives to positivist scientific approaches (Lahar, 1996). Differentiation allows for revealing how the interlocked functions and activities of human and natural 'others' disclose differentiated accounts of the world; these differentiated accounts reveal a collective reality that values differences (Lahar, 1996; Stephens, 2013).

Inter-Human Interaction

Social justice figures largely in the ecofeminist tangled bank since it reveals that humans are interconnected with other humans and those forces that seek to oppress humans are the same forces which denigrate and oppress nature (Besthorn & McMillen, 2002). Just as they have affected our relation to nature, positivist scientific strategies have resulted in the acceptance of a fragmented, rather than communal, web-based, view of modern life (Besthorn & McMillen, 2002). I submit that our culture's conception of learning furthers this fragmented, linear, hierarchical metaphor, shaping and influencing our collective understanding of how the world works at the deepest level. For social work, Besthorn and McMillen (2002) propose what they call an 'expanded ecological model,' which emphasizes interaction that springs from caring, rather than "the dominance, competition, and exploitation inherent in our current competition-based social systems" (p. 229). This model acknowledges that social, political, and environmental issues are interrelated and that oppression of any kind undermines the wellness of the community that supports it. I claim the expanded ecological vision, with its emphasis on interaction that springs from caring, for the ecofeminist tangled bank.

Gender and diversity are linked in many ways. The construction of women as the 'second sex' is linked to the same inability to cope with difference, as is the development paradigm that leads to the displacement and extinction of diversity in the biological world. The patriarchal worldview sees man as the measure of all value, with no space for diversity, only for hierarchy. Woman, being different from man, is treated as unequal and inferior. Nature's diversity is seen as not intrinsically valuable in itself, its value is conferred only through economic exploitation for commercial gain (Shiva, 2014b). This criterion of commercial value thus reduces diversity to a problem a deficiency. Destruction of diversity and the creation of monocultures becomes an imperative for capitalist patriarchy (Shiva, 2014b, p. 164).

> In the indigenous setting, sacredness is a large part of conservation. Sacredness encompasses the intrinsic value of diversity; sacredness denotes a relationship of the part to the whole - a relationship that recognizes and preserves integrity. (Shiva, 2014b, p. 169)

Shiva (2014b), uses the conception of the seed to illustrate the point that seeds conserved for replanting by indigenous societies preserve in a real form, both the sacredness of plant and human heritage within the seed, incorporating an image of reproduction rather than production. High yield varieties (HYV) of seeds that are genetically engineered and owned by the seed companies, break the sacred cycle, discrediting the view of the seed as an integral part of the sacred whole (Shiva, 2014b).

For the one who produces, his or her products are abstractions that represent potential money; to the producer it makes no difference if those products are cookies or neutron bombs (Kurz, 1991; Mies, 2014b). But for the consumer, there is an interest in use-value and sensuous qualities of the product since each consumer wishes to have clothing, food, and habitation that

are aesthetic (Kurz, 1991; Mies, 2014b). In the subsistence perspective, rather than an opportunity for production of an abstract product as part of "capitalist patriarchy's model of unlimited growth of goods and money" (Mies, 2014b, p. 297), work (as in subsistence work) is life-producing, life-preserving, and a necessary precondition for survival, within it there is a sensuous, direct satisfaction of needs. "Ecological impacts are often experienced most directly and pertinently as effects on human bodies, and ecofeminism acknowledges that our embededness with the 'environment' is derived from our embodied position as human animals." (Cudworth, 2005, p. 3).

Rather than a reductionist, instrumentalist view of knowledge, a subsistence/ecofeminist perspective allows for a participatory, feminist, people-based, ecologically sound epistemology that includes indigenous/survival wisdom (Mies, 2014b). A subsistence/ecofeminist perspective incorporates the practical and theoretical recognition of the interconnectedness of life, resulting in a politics that practices experiential ethics reflected in a consistency of means and ends (Mies, 2014a). Such a perspective is based on the recognition that different dominance systems and problems are interconnected, and that they cannot be solved in isolation (Mies, 2014a). Instead, they require a synergistic problem solving approach (Mies, 2014a). Thus patriarchal relations, inequality, alienation, and poverty must be solved together with ecological problems; "the interconnectedness of all life on earth, and of problems and solutions is one of the main insights of ecofeminism" (Mies, 2014a, p. 320).

The inability of the West to embrace indigenous ways of knowing is fueled by a great colonial anxiety around exposing the exploitation and appropriation that coexist within the shadows of privileged Western ways of knowing (Stevens, Tait, & Varney, 2018). An ecofeminism that honors the voices of indigenous women exposes and names this colonial

anxiety (Kwaymullina, 2018). As with the impact of personal anxiety within one's own body, exposing and naming can steal power from fears that are hidden (van der Kolk, 2015)

Intra-Human Interaction

Human experience is an interconnection of the whole self, the mind and body, the subjective and the objective, and reason and emotion. The rationalist paradigm interprets the world in terms of dichotomies, which by definition are oppositional (Collins, 2000; Plumwood, 1996; Stephens, 2013). The rationalist worldview additionally construes one side of the oppositional dichotomy as having hierarchy. In other words one side is superior and other is inferior; as with the following pairs of dichotomies, the 'superior' is stated first: masculine/feminine, reason/emotion, private/public, mind/body, reason/emotion, human/nature, etc. Highlighting the importance of root metaphors, Griffin (1989) suggests, "We no longer feel ourselves to be a part of this earth. We regard our fellow creatures as enemies. And, very young, we even learn to disown a part of our own being. Western culture "still privileges the rational and empirical proof" (Tait, 2018, p. 178). Emotional affect and visceral dimensions of experience are minimized, making it possible to suppress and ignore bodily needs (Tait, 2018). “We come to believe that we do not know what we know ... dividedness is etched into our language" (Griffin, 1989, p. 7). I agree with Griffin (1989), a portion of our own being is disowned. Our conception of 'mind' so dominates that of 'body', that we have no means of interpreting what our body communicates. Even within our own being we are divided. The ecofeminist tangled bank includes a vision of the whole, tangled self rather than just a single thread.

Implications for Education and Learning

In a 2009 TED talk, Nigerian novelist Chimanada Ngozi Adichie describes what she entitles, *The Danger of a Single Story.* The child of a Nigerian professor and administrator, Adichie's life growing up can be called middle class. She recalls a time as a young girl taking clothing and food to the home of Fide the 'poor' houseboy her family employed. Adichie's eight-year-old sensibilities were shocked to find Fide's family had made and used beautiful baskets. "All I had heard about them was how poor they were, so that it had become impossible for me to see them as anything else but poor. Their poverty was my single story of them" (Adichie, 2009, 3:31). She goes on to describe reading only British and American children's books as a child, and forming the conclusion that books had to be about apple-eating people who were white, with blue eyes. After discovering African writers like Chinua Achebe and Camara Laye, "I realized that people like me, girls with skin the color of chocolate, whose kinky hair could not form ponytails, could also exist in literature" (Adichie, 2009, 2:15). Adichie came to the United States at the age of 19 in order to attend Harvard University. Her roommate at that time requested to hear her 'tribal music' and was disappointed when Adichie produced a Mariah Carey tape.

> What struck me was this: She had felt sorry for me even before she saw me. Her default position toward me, as an African, was a kind of patronizing, well-meaning pity. My roommate had a single story of Africa: a single story of catastrophe. In this single story, there was no possibility of Africans being similar to her in any way, no possibility of feelings more complex than pity, no possibility of a connection as human equals. (Adichie, 2009. 4:49)

Adichie goes on to relate, after she had been in the U.S. for some time, consuming American media and view points, she took a trip to Mexico. She was surprised to see people going to work and in the marketplace laughing and talking together, and then she realized,

> I had bought into the single story of Mexicans and I could not have been more ashamed of myself. So that is how to create a single story, show a people as one thing, as only one thing, over and over again, and that is what they become. (Adichie, 2009, 8:54 – 9:26)

When we accept a single story, we are accepting a stereotype. The problem is that stereotypes are not necessarily completely untrue- they are partial (Adichie, 2009). With that in mind, the danger of the single story is that it fails to communicate the richness and therefore the whole truth of a person, place, or thing. Even an activity like learning can suffer as a victim of a single story. I propose that what is accepted in our society as learning - the acquisition of memorized facts, problem solving, the ability to reason deductively - are all important within the learning process, yet each is partial, a single story. By including embodied learning, such as we find within indigenous knowledges as well as subjective sensory (aesthetic) experience within an ecofeminist tangled bank, we can begin to see a more complete picture.

The goal of traditional rationalist science and the traditional cognitive approach to learning is to emancipate humanity (mostly 'man') from nature and by way of the power of reason and rationality, to hold dominion over natural processes (Plumwood, 1996; Stephens, 2013). A positivist approach seeks to gain an objective understanding. When the human is uncoupled from the natural, many systems will begin to degrade or in other words, become unsustainable (Stephens, 2013). I would add, this view embraces a separation of mind and body within the individual, disallowing embodied forms of knowing (Garrison, 1997). The

consequences of the emancipation logic of a neutral scientific approach that is value-free, are seen in the destruction of the environment and in the consequences to the lives of women, children, and those who are 'other' (Midgley, 2000; Stephens, 2013). An approach that values learning over time (Eisner, 2002b), rather than learning as something completed as one absorbs knowable chunks of information, can assist with paradigmatic change helping human beings to understand themselves as one piece of a complex, tangled bank (Midgley, 2000; Stephens, 2013). "Situated knowledge requires that the object of knowledge be pictured as an actor and agent" (Haraway, 1988, p. 593) in which a logic of discovery acknowledges the agency of the world in knowledge. Embodied cognition locates the body in sense-making; finding that human cognition is dependent on interaction with the environment, therefore action, perception, and emotion are important threads in knowledge formation (Groth, 2016).

In education, when social phenomena such as race, class, gender, sexual preference, and/or abilities are considered in isolation from one another, we often fail to contextualize learning experiences meaningfully, as a result the educational process works towards the interests of the privileged (Stephens, 2013). An ecofeminist framework helps to reduce this (perhaps) unintended bias.

Ecosystem analysis offers an interesting lens for consideration of the biotic aspects of our world and this lens can suggest way of approaching the ecofeminist tangled bank. Besides the 'population-community' approach to ecology which views ecosystems as networks of interacting populations, and the 'process-functional' approach which is based on a "quantitative, mathematical, thermodynamic biophysical model" (Warren and Cheney, 1996, p. 247), a methodology called the 'observation set' approach, sometimes called, 'hierarchy theory,' provides an inclusive theoretical framework for a variety of ecosystem analyses. The idea of observation

sets is important for looking at learning as well. In this framework, the observation set is a particular way of viewing the natural world; it includes the phenomena of interest, the measurements used, and the techniques used to analyze the data (Warren & Cheney, 1996). When developing useful theory it becomes necessary to consider many observation sets (O'Neill, Deangelis, Waide, Allen, & Allen, 1986). The complexity of natural systems is overlooked or discounted when one focuses on a single observation set, as O'Neill et al. (1986) observe:

> A forest stand can be looked at from an organismic standpoint (e.g. as enduring, stable individual trees or populations of trees) *or* from an energy flow and nutrient cycling standpoint (e.g. as fluxes and flow or carbon and oxygen recycled through photosynthesis). Because the forest stand may accurately be viewed in either way, it is incorrect, in fact impossible, to designate *the* components of *the* ecosystem - the designation depends on the spatiotemporal scale and changes as that scale changes. (p. 83)

When we rely on only a single aspect of ecosystem dynamics (one observation set) to describe that system, the resulting theory is false or incomplete (Warren & Cheney, 1996). This sounds very much like Adichie's single story. In terms of observation sets we can see how one views the ecosystem will depend on the observation sets one employs; this is similar to ecofeminism emphasis on a description of 'ways of thinking', 'conceptual frameworks' or 'world views' (Warren & Cheney, 1996). Attention to observation sets is an acknowledgement of the importance of context in both ecology and ecofeminist theorizing. In education, we attempt through nationalization of standards and testing to erase the importance of context from the picture.

As an art teacher, I find myself compelled to offer an example from the art world that illustrates the importance of context. It *paints the picture* in a meaningful way and I think the ecofeminist framework is flexible enough for color theory to weave into the tangled bank.

In 1824, Michel Eugene Chevreul was appointed Director of the dying department at Gobelins Manufacture in Paris. Chevreul was a chemist, who had, in his previous work, determined that animal fats contain different acids, which he isolated and gave the names (stearic, oleic, margaric, etc) (Roque, 2010). This discovery led to important improvements in the candle-making field, among others. From the early 1800s, a chemist had directed Gobelins since this was the individual who oversaw the dyes used by the company for wool and silk tapestries; additionally, the dyes were sold to other companies that manufactured carpets, and fabrics for furniture coverings (Roque, 2010). As a renowned chemist, thanks to his earlier discovery, Chevreul was offered, and subsequently accepted, the Directorship, and soon discovered that beyond his tasks of maintaining the quality of the dyes, he became what today we call the customer service representative.

> The difficulties of my position were greatly increased by numerous perplexing questions proposed to me for solution by the directors of that establishment; I was therefore obliged to arrange my labours differently than if I had been free from every other occupation. (Chevreul, 1855, *xi*)

Many of the 'perplexing questions' (a.k.a. complaints), Chevreul received had to do with the "want of vigour in the blacks employed in making shades in blue and violet draperies" (Chevreul, 1855, *xii*). After much research, which included comparing Gobelins dyes with those of other celebrated manufacturers, Chevreul determined "the want of vigor complained of in the blacks was owing to the color next to them, and was due to the phenomena of contrast of

colours" (Chevreul, 1855, p. *xii*). Lest his reader misinterpret the law of 'simultaneous contrast of colours' to mean that the colors were indeed changed, Chevreul (1855) reiterates, this is a matter of perception:

> I beg the reader never to forget when it is asserted of the phenomena of simultaneous contrast, that *one colour placed beside another receives such a modification from it*, that this manner of speaking does not mean that the two colours, or rather the two material objects that present them to us, have a mutual action, either physical or chemical; it is really only applied *to the modification that takes place before us* when we perceive the simultaneous impression of these two colours. (p. *xiv*) (Emphasis in original)

In his research, Chevreul also notes that the value (darkness or lightness) and the intensity (pureness of hue) impact the phenomenon of simultaneous contrast of colors. What Chevreul called 'antagonistic' or complementary colors (those across from each other on the color wheel, e.g. orange/blue, red/green, violet/yellow) create the highest degree of contrast and thereby "mutually strengthen each other" (Chevreul, 1855, p. 240). Both Impressionist and Neo-Impressionist painters were aware of the law of simultaneous contrast and "applied it …in their works to give them more intensity" (Roque, 2010).

The dulling or intensifying of a visual perception happens as one color relates to another; and the energy of relating is strongest between antagonists or oppositions. The energy generated by the relation is what gave such visual impact to works of the Impressionist and Neo-Impressionist painters who were influenced by Chevreul's color theorizing, and I think the idea of energy generated by relation can help paint a picture for learning as well. I have spoken of this energy in various ways throughout my dissertation as: "a dynamic paradoxical unity of

opposites" (Jun, 2014); "wholeness within oppositions" (Palmer, 2007); "self-contradictory unity" (Liston, 2001); and "separateness in unity" (Buber, 1958). Each of these characterizes the generative and powerful energy that may be generated when separate entities relate to each other, whether that relating is visual, emotional, or physical.

As a society, our view of learning is based on a linear, singular idea; as I stated previously, we view learning as a discretely cognitive operation in which material "knowledge" is directly transmitted to students. As an artist, I claim the idea of simultaneous contrast for my ecofeminist vision of learning as aesthetic, embodied and connected because it paints a picture of learning in which context matters.

For Warren and Cheney (1996), there are three reasons why context is important to ecofeminist ethics: 1) what a thing is (person, community, population, species, animals, river), is partially a function of geographic and historic location- thus attention to place is important; 2) context helps illuminates conceptions of male and naturist bias around ideas of reason, rationality, and morality so they can be illuminated and weeded out; and 3) context conceives of ethics as growing out of defining relationships (Warren & Cheney, 1996).

> ...what ecology shows it not simply that the context makes a difference to the kind of action we engage in. It shows, rather, that what kinds of things we are, what sort of options for fulfillment and self-realization are open, are themselves very much context-dependent. (Brennan, 1988, p. 162)

So the ontology, or the image of being, that emerges from an investigation is relative to the observation set that produces it, or the ontology is relative to what it simultaneously contrasts with. According to Warren and Cheney (1996) "this does not make that ontology "'subjective' in a pernicious sense" (I must smile at pernicious subjectivity); but it does mean that accepting a

solution to a particular problem is not an acceptance of an absolute understanding. The idea of context, which observation sets provide, illuminates the understanding that differences and commonalities are both important in a functioning ecosystem (Warren & Cheney, 1996). The same can be said of the ecofeminist vision of the constructed self; contexts and relationships (including relationships with the natural world) are recognized as relevant (Warren & Cheney, 1996).

For Swimme (1990), our exclusively positivist scientific strategies are sustained within an educational process that utilizes only a sliver of our mind.

> It is a sliver chiseled to perfection for controlling, for distancing, for calculating and for dominating.... Our insistence on analysis, on computation, on categorization has blinded us to the reality of the whole. We have been seated at a table heavy with food, and instead of realizing that this is a feast we are meant to join, we occupy our minds with counting the silverware over and over as we starve to death. (p. 16)

What a tragic image, counting the silverware until we starve. Of course, missing the point - the feast, is easy when we cannot see the whole. Our vision of learning forms the framework for our attachment to the pieces, which precludes any sense of how the pieces fit together and how they are pieces of a whole. Rather than understanding the parts as a means to understanding the whole, Western reductionism, reduces to the parts....and that's enough. An ecofeminism vision honors the individual parts and the whole; at once, individual and connected, the simultaneous contrast of the individual within their unique natural, cultural, and embodied/emotional environment.

Ecofeminism not only calls attention to the double domination of women and nature, this view is well situated to highlight the ways in which capitalist globalization creates interrelated economic and social problems (Li, 2007). By building coalitions among activists as well as centering lived experience, ecofeminism unveils hidden assumptions in scientific fields which notoriously exclude the personal (Li, 2007), enabling an ecofeminist pedagogy that honors connection and lived experience. I propose that an education built around an ecofeminist vision of learning as aesthetic, embodied and connected would help learners conceive holistically as a natural result of their learning.

Modern public schools have the primary responsibility for educating citizens for "their civic engagement in the public domain" (Li, 2007, p. 358). The schools' embrace of rationality, individualism, and the pursuit of progress - ideals that revolve around men's experience in the public sphere rather than women's experiences of cooperation and mutuality in the private sphere- reveal how educational institutions have contributed to the human domination of nature and fostered a kind of bio-phobia (Li, 2007; Wilson, 2013). Sex and gender roles are entrenched in social institutions, including schools, which have power to shape the ways individuals interact with each other and the earth (Biehl, 1991; Gaard, 1994; Li, 2007). Herein lies the connection between modern schools, ecological problems, and gender ideology (Biehl, 1991; Gaard, 1994; Li, 2007).

Interventions

In *Ecofeminism and Systems Thinking* (2013), Anne Stephens delineates five principles to aid reflection around ways to affect social change: Center nature, select appropriate methodologies, be gender sensitive, value the voices from the margins, and bring about social change (p. 44). I would like to suggest three of these - center nature; value voices on the margins,

and be gender sensitive- can provide a framework for a holist view of learning as embodied, aesthetic and connected. *Be gender sensitive:* When we view learning as a process that takes place within a system, we can see that the gender with which an individual identifies is impacted by the cultural system within which they live. "When we overlook what is distinctively different about men's and women's experience, we can implicitly assume that the difference is unimportant" (Stephens, 2013, p. 44). *Value the voices on the margins:* this can mean socially including the voices of those whose perspective is frequently overlooked, and the inclusion of the 'voices' of intuition and emotion and one's bodily experience. Finally, *centering nature* requires that we view the environment as impactful to learning with a unique voice and agency that must be considered. So, voices on the margins, include those ‘voices’ within our own bodies, as well as external ‘voices’ within nature, and socially which includes the voices of other humans. Ecofeminism seeks to challenge the ontological divide between humans and nature, to encourage a "situated rootedness" that enables a "resonant identification with the organismic whole" (Stephens, 2013, p. 51). Centering nature as a component of an ecofeminist framework for learning helps encourage this resonance.

The principle of valuing voices from the margins extends the analysis to 'non-human' voices. According to Plumwood (1996) the dichotomy between man and nature can be transcended by revaluing emotion, subjectivity, particularity, and animality. A re-conception of the self in a discordant pluralism creates a dialectical model where issues are framed in a manner that allows perspectives and respective viewpoints (Stephens, 2013).

As our physiology suggests, and as Warren (1990) notes, "Relationships are not something extrinsic to who we are, they are not an add-on feature of human nature; they play an essential role in shaping what it is to be human" (p. 143). While relationships are intrinsic to who

we are, we are not indistinguishable within them. Instead, the relational self exists "embedded in a network of essential relationships with distinct others" (Plumwood, 1996, p. 172).

In curriculum studies we ask, “What knowledge is of the most worth?” (Pinar, 2006, p. 80); or in the words of William Schubert (2009b), “What is worthwhile? What is worth knowing, experiencing, needing, doing, being, becoming, overcoming, sharing, and contributing?” (p. 176). The ecofeminist tangled bank allows for all of these questions since by including threads for interhuman, intrahuman, and biotic connection, such a metaphor honors cultural, historic, and environmental situatedness.

When it comes to learning as practiced within the school setting, subjective experience or personal, emotional, intuitive, experience is not consistently honored as integral to the process. I theorize that subjective experience is essential to the transformative learning process, and offers a key to a more complete picture of what makes learning transformative. When the learner engages with the material of an experience and allows him or herself to be changed by the engagement they are transformed (Dewey, 1934/2005). Likewise, aesthetic learning is an aspect of transformative experience; such learning is a subjective sensory experience, which leaves the learner understanding some aspect of the world differently than they did before. These define *an* experience, as described by Dewey (1934/2005), thus transformative learning is not simply a matter of the mind, or of cognition, such learning utilizes the body. We *feel* it.

Four curriculum theorists helped me to make the case for an ecofeminist vision of learning as aesthetic, embodied and connected. John Dewey, Maxine Greene, Elliot Eisner, and Delores Liston offered insights, enabling me to paint a picture of the tangled bank that is learning.

According to John Dewey (1934/2005) experience is "a relation between doing and undergoing" (p. 48), as such experience becomes a way of living in the world. Experience utilizes sensory and cognitive engagement to become transformative. For Dewey (1934/2005) *an* experience embodies certain qualities: it satisfies an impulsion; is receptive and perceptive; it causes the one engaged to reflect; and it achieves consummation. In the same manner an educative experience does not occur in a vacuum but instead it has both continuity and interaction (Dewey, 1938/1997). When an experience is connected to all previous experiences it becomes available to be useful – to be continued – giving preparation for future life experiences, thus we can say the experience is continuous (Dewey, 1938/1997). Experience becomes interactive and purposeful when it utilizes observation, knowledge, and judgment without which there can be only impulse (Dewey, 1938/1997).

For Greene (1995) aesthetic learning experiences are embodied within the arts and therefore teaching students the language and skills of a particular discipline enables them to access the 'estranging languages' that constitute those experiences. For Greene (1995, 2001), sensory experience and objective forms illuminate each other. Through the imagination experience with the arts instills in us the ability to decenter ourselves, breaking through the crust of our own life experience (Greene, 1995).

Elliot Eisner (1998), an art teacher like myself, finds that knowledge is not completely cognitive, instead much is tacit, and therefore intuitive, experiential, personal, and secured in action. In Eisner's (2002b) vision, students must learn to 'read' important ideas that are rendered nondiscursively so that they may understand the ideas encoded within such renderings. In order to engage in this type of reading, students require experience and instruction, enabling them to realize that 'smartness' may exceed the limits of language arts and math (Eisner, 2002b). When a

curricular discipline utilizes aesthetic properties, it can generate aesthetic experiences, which in turn engender aesthetic learning for the student (Eisner, 2002b). In any artistic medium, how forms relate is critical (Eisner, 2002b) and within aesthetic learning this relation is key.

For Delores Liston (2001), an image of Joy "provides experiential understanding of the non-dualistic interrelatedness of each of us to each other of us" (p. 14). Transformative learning happens best within a community of learning where the individual maintains their unique individuality while simultaneously feeling connection with the group. Allowing for experiences of connectedness can transform education by allowing for a shift from a focus on skill and knowledge development to the exploration of ideas (Liston, 2001).

Reflecting back on the story, of Christopher and his experience with abstract expressionist painting, that inspired the direction of this dissertation journey, I at last have words to describe what I sensed was significant.

Developing a Curriculum of Aesthetic, Embodied, and Connected Learning

When Christopher stated, "I see now, this is about energy!" it made my heart happy. My own bodily reaction encouraged me to notice and remember the incident and as I stated previously, this dissertation is my attempt to 'inform my noticing.' So what have I determined about Christopher's experience and about this complex endeavor we call learning?

For the most part, those of us who teach think about learning in terms of utility. In the K-12 setting we say things like, "You'll never be able to do second grade if you don't learn this in first grade!" or "You'll have to know this for the SAT!" Such statements are not wrong, but what I've come to see is that they are partial (Adichie, 2009). Of course we learn for utility. For example, learning the times tables is useful. But, when learning transforms us it does not do so because of its usefulness, instead, as this dissertation theorizes, we are transformed by its beauty

and by the way our experience of it makes us feel- in other words, the subjective, sensory experience which the body feels and within which we make connections to past knowledge and past experiences as when we feel the "pleasure of completed action" (Janet, 1893/1925, p. 660). We are transformed by learning that compels us. We may be compelled by the subject calling out to us, or compelled by a teacher, whom we love or admire, introducing us to a subject which he/she/they love, or we may be compelled by pieces of the puzzle that seemed disparate, finally falling into place as when Christopher said, "I used to think this was just drips and splashes, but now I see…"

In previous chapters I have laid the groundwork for a new, more complete vision of learning that includes what we already know but complicates the picture with an aesthetic, embodied and connected vision. Educators have more power than we acknowledge. This is the educational power to move students by creating a classroom culture in which they are compelled to exert a choice.

As teachers we must always be aware of the importance of our interpersonal, intersubjective communication with students. Beyond the body of knowledge we wish to impart (which is also important), students viscerally absorb how we *feel* about our subject and how we feel about them. These are powerful indicators for whether or not the subject matter will prove to be aesthetic to our students. Of course relationships, whether with an individual or with an area of expertise, spring from multifaceted, deep places shaped by an individual's cognitive and affective selves working together. In teaching we seek to identify and mitigate the weaknesses of our students; this is not wrong, it's just partial (Adichie, 2009). When we can also help students identify and enjoy their strengths and where their passions lie, such knowledge continues well past their time in our classrooms.

Students arrive in our classrooms with their own interests and passions and, in spite of all the ways those in power seek to undermine the teacher's autonomy, when the door closes and it 'us and them,' we hold the power in those moments to share a bit of ourselves and what we care about in order to help our students hear their own heart whisper as they exert a choice to learn. When years pass and the information we imparted has grown fuzzy in our students' minds, this aesthetic, embodied treasure will endure.

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