

Teaching and Learning in Respectful Reciprocity: An Autoethnographical Account
of an Educator's Apprenticeship to Nature

by

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A Thesis Submitted to the Faculty of Social and Applied Sciences
in Partial Fulfilment of the Requirements for the Degree of

MASTER OF ARTS
in
ENVIRONMENTAL EDUCATION AND COMMUNICATION

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JUNE, 2021

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Abstract

As an environmental educator, I am interested in helping students learn from the natural world. In this phenomenological autoethnography, I outline some major lessons I learned from local nature while site-sitting, listening, reflecting and journaling by the Bow River in Calgary, Alberta. In apprenticing myself to the beings around me and paying attention to what they could tell me, I learned to let their teachings flow through me to tell a story about what can emerge when one fully pays attention. Inspired by traditional knowledge and worldviews, I developed an ethic of respect and reciprocity with the land around me and its inhabitants. Four fundamental themes emerged: paying attention, community, patterns and cycles, and belonging. I concluded that the natural world is a wonderful model of resilient communities and reciprocity, and that there are many ways for educators to allow Nature to be a respected co-teacher. This autoethnographic work was transformative, bringing forth a more reflexive worldview and allowing me to see the world as alive, animate, and full of teachers. Ultimately, I hope that these lessons can serve as an invitation for others to begin seeing the world with new eyes too.

Keywords: Environmental education, informal education, autoethnography, phenomenology, site-sitting, place-bonding, nature as teacher, belonging, adaptive cycles, ecological community, animism

Acknowledgments

My first acknowledgment is to the land: This work took place in Moh'kinsstis, on Treaty 7 land, the traditional territories of the Blackfoot Confederacy (Siksika, Kainai and Piikani Nations), the Tsuut'ina and Îyârhe Nakoda Nations, and the Métis Nation (Region 3).

This thesis would not have come into being without the unwavering support and encouragement of my supervisor, Dr. Hilary Leighton, who convinced me that sitting in the forest and writing down its stories was, in fact, a valid academic pursuit. Her wisdom in pushing me further than I thought I could go made my work the best it could be.

I am also immensely grateful to Dr. Bob Jickling, my committee member, whose work has so greatly inspired me throughout my degree, and will no doubt continue to do so as I move forward.

My dear friend and classmate Walter Cheatham, without your astute feedback, brilliant thoughts, and wise insights into my own words, this thesis would be much impoverished. Thank you for keeping me accountable and encouraging me to be brazenly authentic.

I also give thanks to my family and close friends: My partner Calvin, for your unconditional love and support no matter how dramatic I'm being; Maman, for always being my cheerleader; and all the friends who took the time to engage with my work and help me find confidence.

Finally, I would like to thank the other-than-human beings who have been my teachers and my community throughout this process: Bow River, Spider, Raven, Deer, and all the other denizens of the riparian forest in this land I call home.

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Introduction

There is a crisis afoot, and humanity is feeling its weight. This can be hard to believe: while species disappear at a truly alarming rate, while tremendous storms ravage coastlines and relentless fires consume forests, most of the industrialized world continues its day-to-day routine, as if unaware of the crisis at hand. How can this be? Robert Pyle (1993) coined the term ‘extinction of experience’ for our loss of direct and daily meaningful connection with the other-than-human natural world. He argues that this lack of other-than-human connection carries a range of negative emotional, health, and behavioural consequences that are fueling our current ecological crisis. This is undoubtedly true, yet it cannot be the whole story, for a culture where such extinction of experience is possible could not have come about without some prior shift in thought. How, then, did we get here—to a place where a child can grow up without knowing the name of a robin or the call of a chickadee, and an adult can feign deafness as the world cries out for help?

Many scholars believe that we are facing not just an environmental crisis, but a *crisis of perception*—a mistaken belief in a self that is separate from the rest of the world (Bai & Scutt, 2009; Berry, 1999; Capra, 1990; Macy, 2007; Naess, 1986/2007; Orr, 1994). For at least two hundred years, we humans have largely thought of ourselves “as not only distinct from nature, but as effectively independent of the web of life” (Moore, 2017, p. 596). Trapped in a mechanistic worldview full of false dualisms, including that of human-and-nature, we have justified abuse toward the planet on the grounds that its well-being is somehow disconnected from ours (Abram, 2017; Dale, 2002; Macy, 2007). Jickling et al. (2018) note that this is not a human problem, but a cultural one: “many of the most affluent and ‘developed’ nations have lost the knowledge of and, subverted the social structures for, living well with place” (p. 3). Eco-

philosopher Macy (2007) implores that the way back from this path of loss is a radical paradigm shift; from mechanistic to holistic, from earth as resource to earth as self—indeed, such a “greening of the self” (p.128) has already begun. More and more people in the industrialized world are beginning to see what so many nature-based peoples have understood for millennia: there is no meaningful distinction between our bodies and that of the Earth; “our sentient bodies are entirely continuous with the vast body of the land” (Abram, 2017, pp. 68-69).

This gradual awakening is promising and, if properly nurtured and encouraged, could lead us toward a model for long-term sustainability. What is habitually taught as ‘sustainability education’ is often focused on treating the symptoms of our predicament rather than addressing the root causes, which merely slows down environmental degradation at best and does little to change underlying values and behaviours (Ehrenfeld, 2004). As an environmental educator, I often deliver programs that contain the same tired laundry-list of actions: turn off the lights, turn the tap off while brushing your teeth, bike or walk to school, do not litter, and remember to recycle. Implicit in these familiar lists are at least two troubling messages: first, that humans in general are bad or ‘unnatural’. Second, that we can (must?) keep living the way we do, but we should live...less. Keep driving everywhere but do it less. Keep relying on fossil fuel-generated electricity but use it less. Keep consuming but do it less. It is a message of shame, no matter how we try to frame it as one of hope, and we do not give children enough credit if we believe they do not see through this deception. Through this thesis, I wish to explore a different, more positive model: what if we used the teachings of Nature herself to understand how to live in a way that allows life (including our own) to thrive? How can we go from tiptoeing hesitantly around the rest of Earth’s living communities, to actively and confidently participating in, and contributing

to, those communities in a life-sustaining way? I do not have the answers; however, I suspect that Nature does, and so I look to Nature as a mentor, my great teacher.

Many Indigenous cultures around the world have persisted for thousands of years without decimating the biodiversity around them (Abram, 2017; Atleo, 2011; Snyder, 1990). To me, this suggests that their worldview is probably a more useful one to use as a guide—for the good of our own species as well as all others—than a newer, more mechanistic Western industrial worldview, which after a mere few centuries is already contributing to mass ecological collapse (Snyder, 1990). Recognizing that ‘Indigenous worldview’ is a very generalized concept, as each local Indigenous culture naturally has its own nuanced worldviews and ways of knowing, there are nonetheless some commonalities among many groups (Abram, 2017; Atleo, 2011; Kapyrka & Dockstator, 2012; McKeon, 2012). Focusing on education, some of these commonalities include: a place-based approach, an emphasis on care-taking and responsibility, the concept of interconnection and interdependency, and the use of narrative storytelling to communicate teachings. These teachings, furthermore, are usually rooted in nature, community, and the land, in a holistic manner that does not separate these spheres (Atleo, 2011; McKeon, 2012).

My primary goal for this research has been to take inspiration from ancient, nature-based cultures and learn from the land in a way that felt both respectful and honouring. Not having any traditions of place-based stories and teachings in my own culture (at least none that have been passed to me), I endeavored to conduct my research in a way that honoured traditional cultures while remaining authentic to myself and finding my own way of communing with this land. My objective was simply to sit with the land I call home and pay attention, remaining open and curious about whichever natural teachers paid a visit. I wrote down Nature’s stories (filtered through my own lens) in a journal, and in so doing, interwove my own story, worldview and way

of being with those of the world around me. My hope is to share these stories with students, other educators, and anyone who is curious about what the world can teach us.

Research Questions and Objectives

In this thesis, I sought to answer two main questions:

1. What kinds of lessons can I learn directly from (other-than-human) Nature if I make space for these teachings?

2. How could these lessons and experiences become an invitation to others—both students and fellow educators—in my role as an environmental educator?

My hope was that this research could help me to find a way to shift my teaching about human-nature relationships by examining my own relationship with local lands and allow wild teachings to come forth. I often tell my students that Nature is our best teacher, a sentiment that comes from intuition and childhood memories rather than any careful research into the matter. Of course, many others *have* done this research, and they are featured significantly in this work.

While I engaged in a series of site-sitting sessions out on the land in nearby nature, at different times of day, in all weather, I reflected, wrote, observed, and listened deeply. Through this practice, I hoped to befriend and showcase a beautifully animated world, which knows itself partly through my human eyes, and to reveal the beings within it as honourably as possible.

Notes on Format and Language

This thesis is written as a series of lessons from a few of my wild teachers, namely: Raven, River, Spider and Deer. These were not my only teachers, mind you; I learned from many others, some of whom are mentioned in this text, and some whose stories I had to omit for the sake of length. The main themes that arose from these lessons are: Community, Patterns and Cycles, Paying Attention, and Belonging, respectively. I conclude with the Lessons of the Wild,

which connects the other four together and encompasses the broader understandings I have gained from my time spent apprenticing to Nature. Because of the unusual format of this thesis, I have deviated slightly from standard APA and made some stylistic choices to better serve the reader.

Firstly, this work contains end marks:



Each lesson is divided into three sections: the first and last are from my perspective as a learner in the forest. They are stories woven from my journal entries as I listened and attended to the environment around me in a phenomenological manner of being-in-the-forest. In the middle section, I switch from learner to teacher and analyze these stories from an environmental educator's perspective, trying to make sense of Nature's lessons and musing on how to apply them with my own students. Because of the stark contrast in tone and style between these different parts, I made use of the above end marks to demarcate them. I hope this makes the transitions clearer and easier for the reader to follow.

Since my stories come from journal entries, I quote verbatim from my own journal several times, which necessitated its own format.

I use indented italics—thus—for all passages that come directly from my journal, to present my voice and thoughts at the time of my research.

I have also foregone a traditional literature review in favour of weaving the literature into and throughout the main body of my work. I wish for this thesis to be accessible and easily read, and to be aesthetically pleasing as it reflects the beauty and interconnectedness of the land that inspired it. I believe organically weaving in the literature helps achieve this.

Regarding language, I, like many others who have undertaken this kind of animistic work, have had to wrestle with the constraints of the language in which I am writing. The English language is colonial, noun-based, rooted in *things*, and does not differentiate between the living and the non-living (designating a butterfly and a brick alike as “it”), except in regard to humans: “In English, you are either a human or a thing” (Kimmerer, 2013, p. 56). Furthermore, even humans are harshly categorized into a “he” or a “she”, leaving no room for fluidity or ambiguity. The dualism embedded in our language can also extend to our relationship with the world around us: ‘nature’ is commonly used to mean ‘everything except humans and the things humans have built’, which reinforces the harmful notion that we are not really a part of our own world (Alexander, 2013). Many scholars have pointed out how much of a barrier these features of the English language can be to nurturing ecological mindsets (see Harvey, 2005/2017; Kimmerer, 2017), but as I am writing this thesis in English, I have little choice but to adapt yet make conscious my choices.

In my writing, I wanted to avoid using “it” as much as possible to describe the wild beings who were, after all, my teachers. I could hardly be the student of an “it”. This left me with the distasteful options of either arbitrarily assigning gender via “he” or “she”, or to use the slightly confusing “they” even when talking about a singular being. I could also have borrowed Robin Wall Kimmerer’s “ki” and “kin”, which she coined with the counsel of an Elder of her people, the Potawatomi Citizen Nation, to replace “it” and “they” when speaking of living beings (Kimmerer, 2017). The term “ki” was derived from the first syllables of the Potawatomi word “*Aakibmaadiziiwin*”, meaning “a being of the earth” (Kimmerer, 2017), and “kin”, Kimmerer marvels, is a fortuitously appropriate English word for the plural.

Ultimately, I decided that accessibility and readability for people who have not been exposed to this kind of thinking were also crucially important to me. While a phrase like “ki was perched in the tree” might not phase most students of deep ecology, it would inevitably alienate many other readers. With that in mind, I decided to stay with the easier-to-understand “he” and “she”, using both in roughly equal proportion and mostly arbitrarily. Let it be understood that I am not trying to assign gender to a river or to guess the sex of a cormorant; I am simply trying to welcome them as subjects worthy of respect. I unwaveringly refer to both plants and animals as “beings” for the same reason.

My next language struggle was that of describing the various spaces in which my research took place. Words like “nature” and “the environment” are fraught with assumptions. As stated earlier, the first and largest of these is that they exclude humans and human spaces (Alexander, 2013). These terms are exclusive rather than inclusive, and unwittingly reinforce an “us vs. them” mentality. While being fully aware of this, I nonetheless use “nature” in this thesis as meaning “other-than-human nature”, because the latter would be cumbersome and impede easy understanding. I use “the land” to encompass both human and wild spaces that form part of the places we live; in my case, the area in and around Calgary, Alberta. “The land” is the foothills rolling into the prairies; the confluence of the Bow and Elbow rivers; including the urban environment thereon and all the wild spaces therein.

Finally, a note on capitalization. I took inspiration from Kimmerer (2013) and have elected to capitalize plant and animal names when I am referring to them as persons and to leave them lowercase when referring to them conceptually or as categories. The same holds for “river” and “nature”.

Biographical Notes

In the interest of situating this autoethnography for the reader, I have included some brief contextual notes about myself and my background.

Though my research took place in Alberta, where I have lived for over fifteen years, it took me a long time to fall in love with a rolling prairie under a never-ending sky. I grew up in a small village of roughly 2000 people in eastern Quebec, perched on the edge of *Lac Témiscouata*, a deep, meandering lake long enough to host four separate communities along its banks. I was raised there by an Albertan (anglophone) mother and an Acadian (francophone) father. By virtue of being the youngest child of both by over a decade, and of living in a small, safe town, I was not hovered over and was largely a free-range child. I grew up playing in wild, cosmopolitan forests of maple, poplar, birch, aspen, fir, spruce and cedar, all framing the blue-black lake that was the center of my world. I learned to swim before I could walk, and summer vacation was spent cavorting with friends in and around the lake from dawn to dusk.

When I first moved to Calgary, Alberta—not by choice—at the age of 14, I hated everything about the prairies. The bald, empty landscapes and the big open sky that left me feeling vulnerable and exposed were associated with the trauma of leaving my entire life behind in Quebec, and so I chose to hate them. “Hate” is a strong word and not one I use lightly, but with all the mustered drama of a teenager ripped out of her social life and into a new and unforgiving world, I really did hate this land.

Amidst the turmoil of adjusting to English-language schooling and noisy urban life, I found small havens where I felt safe and calm. The first of those was the Calgary Zoo. There were animals there who, like me, were not in their native land but were making do. It is fitting that my first job as an educator, many years later, would be there. My second haven was our park

system. I pointedly ignored the grassland parks, instead favouring parks that encompassed the poplar forests along the Bow and Elbow rivers. The water moved more swiftly than I was used to, and I could not swim in it, but at least there were trees. One of these, called Carburn Park, became my go-to place when I needed to escape the urban chaos. Fast-forward many more years, and my current job as a municipal environmental educator has allowed me to teach at Carburn (among other parks) and to share my passion for that space with others. The strong sense of place that I have built around Carburn Park made it an obvious choice for a research locale.

My relocation from rural, French-speaking Quebec to urban, English-speaking Alberta at an emotionally delicate age was a defining landmark in my life, and I believe that having to redefine my sense of place and learn to feel at home in a new and different landscape instilled in me a drive to figure out how to belong. Because of my rural, nature-filled upbringing and my childhood love of animals (and probably because I had a hard time fitting in socially), I gravitated toward learning the local plants and wildlife as a way to find a sense of belonging. I slowly learned about the fascinating complexity of grassland ecosystems, and in learning about them I began to understand them, and then to love them. In retrospect, this process of rebuilding a sense of place through learning about my environment helped foster my deeper ecological identity, and probably set me on the path to my career in environmental education. For me, knowledge and understanding were crucial in building empathy and place-attachment, and as an educator I teach with the hope that the same will hold true for others as I strive toward a life-sustaining world.

A final note of importance for this work concerns my education. My childhood love of nature was nurtured and directed into a love of natural science. Like many people in the Western industrialized world, I was taught that science was the only reliable way to gain knowledge and

seek truth, and I believed it wholeheartedly for many years. It is perhaps telling that, although I always claimed science to be my favourite subject, my top grades were always in the language arts, both French and English. I graduated university with a Bachelor of Science in Zoology, while my first-year English professor begged me to consider a minor in English—a notion I brushed off as silly and impractical. Yet here I am now, writing a qualitative master's thesis replete with stories instead of statistics.

It was not until I took a Philosophy of Science elective in the fourth year of my undergraduate studies that I got the chance to examine the scientific institution from an outside perspective, and began to see that science was not the all-knowing, unimpeachable practice that I had believed it to be. And it is *this* master's degree—this journey I began just three years ago—that really taught me how equally valuable other ways of knowing can be, and how destructive a purely scientific worldview can be when empathy and emotion are shut out of the process.

Ultimately, I am happy with the path that I followed. Understanding the mechanics of the world from a scientific perspective taught me a profound reverence for the elegant processes that underlie the wonderfully complex phenomenon of life, and I am grateful for my ability to see the world through that lens. Science taught me one valuable way to seek knowledge, and now I am complementing it with another. And I believe that seeing the world through multiple lenses can only strengthen one's understanding of it. Nonetheless, this is a phenomenological autoethnography written by a woman who is still, in some ways, more comfortable hiding behind the dispassionate anonymity of scientific writing, and who is doing her best to grow braver.

Research Methods

Methodologies

Phenomenology

To create a thesis based on subjective experience and to invite teachings from other-than-human beings, I believe phenomenology is an appropriate scholarly tradition to follow. Phenomenology begins with lived experience—the immersive, sensory, immediate experience of being-in-the-world (van Manen, 1997/2016). It seeks not to objectively explain a phenomenon but simply asks, *what is it like?* “From a phenomenological point of view,” says van Manen (1997/2016), “to do research is always to question the way we experience the world, to want to *know* the world in which we live as human beings” (p. 5) (italics mine). Phenomenology attempts to describe an experience from the inside, as it were—to get at the *essence* of an experience and communicate this essence to the reader through thick, descriptive (but not unnecessarily flowery) prose.

The phenomenological tradition was founded by mathematician Edmund Husserl, who was skeptical of applying the scientific method to human problems in psychology (Lavery, 2003). He noted that living subjects “are not simply reacting automatically to external stimuli, but rather are responding to their own perception of what these stimuli mean” (p. 22), and therefore studying people like one might study a machine would not yield valid results. Husserl believed that, to perceive the essence of an experience, one needed to “bracket out the outer world as well as individual biases” (p. 22). Even though phenomenology had the potential to move researchers away from objectivism and Cartesian dualism, Husserl’s version may have unintentionally reinforced these notions through this idea of bracketing, which attempted to hold the data separate from the researcher (Leighton, 2014).

A later version of phenomenology, and that which best applies to my work, is hermeneutic or interpretive phenomenology, following the tradition of philosopher Martin Heidegger. Heidegger understood consciousness as not only being part of a person, but part of the *world* (Lavery, 2003), departing from the unwittingly dualistic worldview endorsed by Husserl. In hermeneutics, “the researcher brings her pre-understandings and ... the transaction between the situation and the person *is* the crucible where data is made” (Leighton, 2014, p. 45). Rather than examining biases in order to bracket them and set them aside, the biases and presuppositions of the hermeneutic researcher “are embedded and essential to interpretive process” (Lavery, 2003, p. 28). It is still essential to reflect deeply on one’s biases to know how they might affect one’s interpretation of an experience and to remain self-aware. My scientific training and objectivist leanings, for example, were biases that I was aware of and that I actively grappled with during the whole process.

Of course, language is the medium through which interpretation usually takes place and can be understood and shared. “Hermeneutic phenomenological research is fundamentally a writing activity. Research and writing are aspects of one process” (van Manen, 1997/2016, p. 7). In more traditional, positivistic research, there is a clear demarcation between the research and the writing-up of the report. Hermeneutic research, in contrast, is textual in nature; writing is *part of the method*, “closely fused into the research activity and reflection itself” (van Manen, 1997/2016, p. 125), because writing allows for a uniquely reflexive interpretation of an experience. The act of writing is interpretive to begin with, and the ability to see one’s thoughts on the page then leads to further reflexivity and re-interpretation. Hermeneutic phenomenology is an iterative process, and it is exceedingly demanding of the researcher. “The writer produces

text, and he or she produces more than text. The writer produces himself or herself” (van Manen, 1997/2016, p. 126).

I used journaling as a primary data-collection method, and these journal entries are the main source of my text. By letting those experiences percolate through me, get shaped by my senses and be woven in with my personality and prior experience before emerging on the page, I was participating in the hermeneutic phenomenological tradition—a tradition based on the principle that “every encounter involves an interpretation influenced by an individual’s background or historicity” (Laverty, 2003, p. 24). The essence of my encounters with wild Others are what I attempt to bring forth through this method.

Autoethnography

Within a phenomenological framework, I used autoethnography to explore my own intimate relationship with the natural world as it pertains to a culture I belong to: that of environmental educators who strive to foster such a relationship for their students.

Autoethnography seeks to use personal stories to better understand cultural experiences (Ellis, Adams & Bochner, 2011). The author does not simply relate his or her experiences as a member of a specific culture or group, but rigorously interprets these experiences to make sense of wider cultural phenomena (Ellis, Adams & Bochner, 2011). This dynamic process zooms in and out; observations about social and cultural phenomena are collected and driven inward to uncover aspects of the self, which in turn can feed the big-picture analysis until the distinctions between internal and external are blurred (Ellis & Bochner, 2000). This back and forth dance of inward and outward lends itself beautifully to the subject of my study. The natural world is also comprised of nested systems that can be looked at close up or from a wider perspective, and in looking outward to learn from Nature, I was inevitably looking inward to learn from my deeper

self as well. “Reflexive ethnographers ideally use all their senses, their bodies, movement, feeling, and their whole being—they use the ‘self’ to learn about the other” (Ellis, Adams & Bochner, 2011).

Arising out of poststructuralism, autoethnography frees the researcher from the burden of omnipotence, allowing us “to know ‘something’ without claiming to know everything” (Richardson & St. Pierre, 2005, p. 961). Richardson & St. Pierre (2005) assert that allowing researchers their own voices is liberating, releasing us from “the censorious hold of ‘science writing’ on our consciousness as well as the arrogance it fosters in our psyche” (p. 962). Autoethnography also produces a more accessible read, generally speaking, than does traditional academic literature (Richardson & St. Pierre, 2005).

As an educator, autoethnography also appealed to me for its applicability in teaching. I strongly believe in the importance of connecting one’s lived experience to one’s learning, because “when students do not see the connection between subject and self, the inducement to learn is very low” (Palmer, 1990, p. 14). When I teach, I like to tell stories and, even better, facilitate experiences that will leave students with their own stories to tell about the subject. Explaining facts for students to memorize is sometimes necessary to cultivate a background understanding that allows students to make connections to their lived experience, but I do not feel that disembodied facts can ever replace the lived experience of being in close connection with the world. In order to teach what is real and embodied, I feel that I must first experience it myself, then tell my story as an invitation for others to begin to tell theirs.

Research Design

To collect journal entries that serve as my primary data source, I sat in a specific place in the riparian forest of Carburn Park in Calgary, Alberta, twice a week from early March 2020 to

mid-June 2020. The transition from winter to spring was an ideal time to notice patterns and profound changes in the landscape. According to Stritch (2012), site-sitting promotes scientific inquiry by fostering attentiveness; provides opportunities for personal growth through both introspection and connection to nature; provides space for reflection and solitary time; and is a conduit to place-based learning. These benefits were all compelling reasons to choose site-sitting as my main method of data-gathering. With the goals to learn from Nature and examine my relationship with the world, I could hardly pick a more suitable method.

I had been exposed to site-sitting in class during my first two summers at Royal Roads University, and for a time I found it uncomfortable—embarrassing, even. My scientifically trained mind took a while to acclimate to the idea of examining what *I* thought, what *I* felt, as if those things were important. My writings, at first, were merely descriptions of the beings around me and what they were doing. I interpreted their behaviours in the way I was taught: never assuming, never anthropomorphizing, and keeping myself out of it. It took a lot of time and practice to begin weaving myself into my writing in an elegant way, and I know I still have some distance to go in that regard. This work is a part of my journey toward relearning how to relate to the world in a way that includes and celebrates my relationship with it.

Each site-sitting session lasted between 45 and 90 minutes. Initially, I spent the first several minutes sitting, observing, and listening deeply in order to situate myself in the space. A few sessions in, I began to develop small acts of greeting and gratitude for the environment around me. Rituals of gratitude for the land and the beings within it are common in many nature-based cultures (Atleo, 2011; Kimmerer, 2013), but rather than try to emulate a ritual from a culture that is not my own, I wanted to let those grateful feelings emerge in whatever way felt personal and right for me. About a month in, this took shape as the following simple ritual:

After setting up my sit-mat, I would take note of the first being that seemed to greet me. This was usually the first being that I heard, saw or felt upon sitting down. I would always softly return the greeting and thank them for welcoming me into their home, in a deliberate effort to speak *to* the world rather than just journal *about* it (D. Abram, personal communication, August 5, 2020). Every journal entry after April 16 began by acknowledging this greeting. A few examples:

Today I was greeted by the laughter of flickers above my head...

Today I was greeted by a burst of clover erupting out of the ground in merry clumps, running through the grass as if aware of its tardiness...

Today a Franklin's Gull greeted me and invited me to walk over to the river's edge...

After I felt adequately situated and had acknowledged and thanked those who dwelled in that place, I began to write.

The journal-writing process itself was an integral part of creating my data. Richardson (2001) describes how writing can be a powerful tool for reflexivity, allowing the writer to piece together thoughts and experiences, reflecting on them and placing them in context to discover meaning that was not evident before the writing. She sees narrative inquiry as an antidote to the modernist ideal of the objective, decontextualized, omniscient voice in academia—an ideal which is patently unrealistic. “Try as writers do to suppress their humanity,” she writes, “thankfully it keeps erupting in their choice of metaphors, topics, and discourses” (Richardson, 2001, p. 34). In using writing as a primary method of both data collection and data-*creation*, I wish for this thesis to be widely readable, relatable, and human.

During my bouts of journaling, I took the role of student and endeavored to open myself to the teachings of the land in whatever way they arrived. I tried to focus on patterns and

relationships rather than on individual parts of the landscape—seeking verbs rather than nouns. In focusing on relationships and actions rather than objects and organisms, I hoped my writing would take the form of stories, rather than the scientific-style notes that my journaling at Royal Roads often became. This was not always the case at first; often I would write aimlessly for many minutes on end before anything of value emerged; I did not know what I was going to write about until I wrote it. The real “ah-ha!” moments emerged when I allowed myself to draw connections to my personal story as an environmental educator. I let the two flow in and out of each other, weaving myself and my story into the stories of the land around me, thereby reinforcing the fact that I was part of the world I was studying.

The next step was choosing what to bring from my journal into this final work. The lessons I share here mostly take the form of anecdotes produced from my journal and through emotional recall (Ellis, Adams & Bochner, 2011), which are then interpreted to give them weight and meaning. According to van Manen (1997/2016), “anecdotal narratives (stories) are important for pedagogy in that they function as experiential case material on which pedagogic reflection is possible” (pp. 120-121). Thus, anecdotes are “not merely a literary embellishment” (p. 120), but an essential component of the conclusions being reached. I tried to be purposeful in my use of language to depict a clear and resonant picture of those experiences. In van Manen’s (1997/2016) words, “the phenomenological method consists of the ability, or rather the art of being sensitive—sensitive to the subtle undertones of language, to the way language speaks when it allows the things themselves to speak” (p. 111).

Oberg (2003) wrote of a moment when she noticed a congruency between some of her master’s students’ topics and methods, such that “the topic becomes the method through which the topic is pursued” (Oberg, 2003, p. 126). This idea guided me in my own method. My topic

involved being receptive to knowledge from the land through deep listening and paying attention without preconception. I employed a similar mindset to the data I collected in the form of journal entries when choosing which stories to tell and where to weave them in: I let the data percolate and told the stories that “wanted” to be told. The writing, like the research process, was iterative and transformative. I could not have predicted what this work would turn out to be until I wrote it, just as I could not have predicted what I would learn from the land until I learned it. In apprenticing myself to the beings around me and paying attention to what they could tell me, I learned to let their teachings flow through me to create a thesis about what can emerge when one pays attention. I learned to learn from Nature in order to write about learning from Nature. The research method and the topic were congruent.

Validity

This type of research inevitably brings up questions of validity. How can I trust knowledge that comes primarily from my own experience? How can such knowledge be seen as legitimate?

The first answer to these questions involves redefining the meaning of ‘truth’. Curriculum theorist and arts-based educator Elliot Eisner (1991) points out that restricting valid knowledge to that which is *literally* true “leaves us with a very restricted view of knowledge” (p. 108), and that understanding can be gained through metaphorical truth such as that contained in literature. He asserts that even fiction can be ‘true’, in that it “helps us to perceive, experience, and understand what we have previously neglected” (p. 108). Metaphorical truth, in other words, is valid in its own right. In fact, Kimmerer (2017) mentions that restricting oneself to objective facts, as scientists are trained to do, can actually *obscure* truth, since the emotional and relational aspects of the world are a powerful part of how we experience it.

Of course, metaphorical truth cannot, by itself, present a complete picture of any phenomenon, any more than objective truth can. It can only present a partial, situated aspect of it. Richardson & St. Pierre (2005) suggest that the term “crystallization”, as an alternative to the traditional academic practice of triangulation (using multiple methods to corroborate data), can strengthen the validity of a qualitative study. Crystallization invites phenomena to be seen from multiple perspectives, through multiple lenses, and often with multiple voices. “Unlike triangulation,” explains Ellingson (2009), “crystallization is informed by postmodernism, meaning that it presupposes that no truth exists ‘out there’ to discover or get close to, but only multiple and partial truths that researchers (and others) co-construct” (p. 22). Thus, rather than trying to alight on a single, objective truth through multiple methods, crystallization illuminates the phenomenon from multiple different angles of subjectivity, which together form a nuanced, if still incomplete picture of the topic at hand (Ellingson, 2009). I went into this research knowing that my voice would form only a partial and subjective view of the learning that comes from Nature, and I hoped my voice could be one of many—one voice in a chorus that pointed to a more complex, nuanced view of nature-as-teacher and the possibilities therein.

Renowned educator Parker Palmer (1990) explains how autobiography can enhance learning:

The authentically educated person is one who can both embrace and transcend the particularity of his or her story because it has been triangulated many times from the stand points of other stories, other disciplines—a process that enriches the disciplines as well. When autobiography and an academic discipline are brought into “mutual irradiation” the result is a self illuminated in the shadows where ignorance hides and a discipline warmed and made fit for human habitation. (p. 13-14)

Palmer's explanation speaks of triangulation from many standpoints—which I understand to be more like the concept of crystallization. The result is a story tempered by humility and enriched by multiple lenses, creating a mosaic of partial, situated truths that coalesce into a bright, multifaceted crystal of knowledge.

This work falls under the umbrella of “CAP [creative analytical processes] ethnographies” (Richardson & St. Pierre, 2005, p. 962). As the name implies, these are practices that do not separate the creative from the analytical, the process from the outcome, nor the author from the study. In the wake of postmodernism and poststructuralism, where truth is not absolute and writing can create meaning as well as reflect it, CAP ethnographies offer a level of humility and transparency that is absent from traditional social science and frees the author from the obligation to play the part of an omniscient narrator. Acknowledging that all knowledge is partial, and that the author's perspective cannot be removed from the research, invites knowledge to come from different angles, hence the concept of crystallization (Richardson & St. Pierre, 2005).

This also applies to how research is communicated: Richardson (2000) notes that there is an increasing desire to write “ethnography which is both scientific—in the sense of being true to a world known through the empirical senses—and literary—in the sense of expressing what one has learned through evocative writing techniques and form” (p. 253). Such work has the potential to devolve into egocentric opinions, and must be held to standards of validity and rigor if it is to be taken seriously as a source of knowledge. Richardson (2000) offers five criteria for evaluating CAP ethnographies that I used as touchstones in my own work: “substantive contribution, aesthetic merit, reflexivity, impact, and expression of a reality” (p. 253).

Substantive contribution asks whether the writer has offered a grounded and unique perspective that adds to our collective knowledge about social life. Aesthetic merit is self-explanatory; the piece should be interesting and accessible, inviting engagement and interpretation. Reflexivity is largely about self-awareness: did the writer hold herself accountable and aware of her subjectivity? Impact, again, is self-evident: is the reader impacted in some meaningful way by engaging with the work, and will the work potentially have impact for others? Finally, expression of reality is a little trickier to delineate. As stated above, “reality” does not have to mean “factual reality”. Even in metaphor, CAP ethnographies should paint a credible and detailed picture of the lived experience (Richardson, 2000). Just as CAP ethnographies are subjective works, these five criteria are subjective, and different readers may disagree on whether the qualities listed here have been attained. Overall, though no one could construct an objective scale for measuring such qualities, I suspect that most people know them when they experience them. This is the nature of hermeneutics. According to Leighton (2014),

We can easily betray hermeneutics when we attempt to believe that our definitions are “true” ... it is in recognition of what *rings* “true” that we may begin to see (and feel) something of ourselves, but also of the world, something both old and new in the moment. (p. 41)

By holding myself accountable to these criteria to the best of my ability, by identifying my pre-existing biases, and by writing as authentically as possible, I hope I was able to produce research that rings valid as a source of (partial, situated) truth.

Nature's Lessons

Lesson of Spider: Paying Attention

It was mid-April and still chilly, but I could feel the shift in the sun's rays. This was no wan winter sun but warm spring rays venturing to melt away the remnants of snow. The gulls had recently returned in multitudes, cackling delightedly as they circled over the Bow. The crows, too, had come back, pushing most of the ravens out of the city and westward to the mountains for the summer. The wetlands and lagoons around the river were opening up, and I looked forward to hearing the chirping of boreal chorus frogs. Of course, that could not happen yet; there were still no insects for them to eat.

Wrapped in a blanket in my usual place, I paused my writing to optimistically inspect a nearby Saskatoon shrub for buds. There were none to be found, but my investigation was rewarded with a spider weaving an elaborate web between two branches. "What are you doing, Spider?" I thought, shaking my head at the busy little arachnid. "Can't you see there are no insects for you to catch? It's too cold!"

I thought Spider's endeavour was hopeless, and I felt a pang of pity when I thought of her sitting hopefully on her completed web, belly empty with no prey in sight. But that same day, near dusk, I saw my first butterfly of the year: a small orange skipper. It forced me to reconsider my hasty judgment of the web-weaver. Perhaps she knew better than me, after all.

A few days later, I heard the frogs. The Îyârhe Nakoda word for 'April' is 'tabehran tawi' or, loosely, 'frog moon', in reference to the last quarter moon when the frogs begin to sing (J.

Fowler, personal communication, April 22, 2019)¹. This was the first time that I, too, was able to fully associate April with the chorus of the frogs, rather than vaguely noticing them at some point without really knowing when they started. This is not trivial: if we collectively notice and celebrate the song of the frogs, then we will collectively notice and mourn its loss. As it is, our wild kin are in danger of disappearing without us even noticing, nor remembering that they were there at all (Jensen, 2010). How could we forget to listen for the Boreal Chorus Frogs if the month of their singing debut was named after them? But I digress—last April, I noticed the frogs. And thus I knew the insects were here. Spider had told me so.

After watching that first spider spin her web, I noticed an explosion of them—probably because I was now looking for them. Spider webs everywhere, on every tree, in every nook. They were ready. Then, the swallows came back. Tree swallows, to be precise: acrobatic aerial insectivores flitting between trees and skimming the river in droves. It was still cold, and there was still residual snow on the ground, but the swallows knew what they were about, for suddenly there were tiny flying and crawling creatures everywhere I looked:

Some gnats here, a moth there, an anthill writhing with frenzied activity... enough insects to feed a chorus of frogs and an army of swallows. The spider did indeed know something I did not. What is intelligence, anyway? A spider had more wisdom than I did, last week.

I could imagine that first Spider snickering at me: “Silly human, telling me I wouldn’t catch any dinner. As if *you* know the first thing about the procession of Spring.”



¹ Knowledge received from Elder Lloyd “Buddy” Wesley of the Îyârhe Nakoda Nation, with encouragement to share.

What else can I learn, if I stop and listen to the wisdom of the wild? As an educator, I am used to being in a position of knowing. I am the person who is looked to for answers. I know that I do not have them all, of course, and I know that the natural world is a vast trove of lessons just waiting for students attentive enough to learn them. I started this project because, as an environmental educator, I want my students to learn from their environment just as much as I want them to learn from my teaching. But in receiving the lesson of Spider, I remembered how difficult it often is, even for me, to put my preconceptions aside and let Nature do the teaching. How can I encourage my students to accept Nature as a teacher when I can't always do the same?

When I dismissed that spider's knowledge of the seasonal cycles, I made the mistake of assuming that because she does not think like I do, her knowledge must be inferior to mine. If I were to verify this by challenging her to a game of chess, I would undoubtedly confirm my superiority. Yet, as I learned from experience, her knowledge of insect emergence in springtime handily exceeds mine. The fact that her knowledge comes from instinct honed over millions of years and not from linear rational thought does not make her knowledge less valid, nor less useful.

Others are realizing this, too: a study by ornithologist Christopher Heckscher (2018) showed that the breeding behaviour of the veery, a thrush that migrates through the Gulf of Mexico during peak hurricane season, is a better predictor of the severity of the hurricane season to come than our most sophisticated meteorological technology. Heckscher followed the publication of his paper with a Tweet that boldly predicted a worse-than-average Atlantic hurricane season, while meteorologists were predicting a milder-than-average one. Sure enough, the ornithologist using bird nesting behaviour predicted the season's severity much more

accurately than did meteorologists using sophisticated computer models (McGlashen, 2019). The natural world has so much to teach us, if only we could learn to listen.

Unfortunately, there are many cultural barriers to the acceptance of Nature as teacher in the Western industrialized world. These include, but are not limited to: the assumption that human intelligence is superior to all others and thus that humans are the supreme species (Crist, 2019; Chapman & Huffman, 2018; Warkentin, 2010); the decline in our ability to truly pay attention, both to the world and to ourselves (Plotkin, 2008; Sewall, 1999; Warkentin, 2010); the pervasive paradigm of mechanistic dualism that encourages us to break wholes into parts, and drives wedges between human and nature, self and other (Bai & Scutt, 2009; Capra, 1990; Dale, 2002); the celebration of objective, rational knowledge and the denigration of the subjective and emotional (Harvey, 2005/2017; Jickling, 2009; Palmer, 1990); and, of course, the rapid extinction of wild species and spaces that renders direct experience with nature a rarity for many people (Orr, 1994; Pyle, 1993; Snyder, 1990). Studies such as Heckscher's are a promising sign that some of these barriers may be eroding, yet they are highly interconnected and share many causes in common, making it difficult to create change from a single leverage point. To change the system, I suspect that we have to change it at its most fundamental level: that of the people, as a whole, across every part of society. And education seems to me the best way to achieve that goal.

If we need a different way of being in the world, and if we need to educate toward that goal, then we must be careful about *how* we educate. The dichotomy between student and teacher, after all, is just another dualistic paradigm. Of course the roles of teacher and student are real, but the line between the two can be blurry. Teachers can (and should) learn from their students, and students can and do learn more deeply from experience than from the words of a

teacher, no matter how eloquent (Burch et al., 2019; Thomashow, 1996). If, as an educator, I am teaching from a place of authority and control, then I am perpetuating the status quo no matter how noble my intentions. Instead, like many wiser educators before me, I dream of an educational model that welcomes the individual experiences of the learners and makes room for the spontaneous, the wild, and the unexpected (Illich, 1971; Jickling et al., 2018). I aspire to act, not as an authority, but as a *guide* to the deep learning that occurs through a connection with place and the cultivation of ecological identity. In short, I want to invite the kind of transformational learning that fundamentally shifts one's relationship with the world and can only be achieved, I think, by learning directly from the living world itself. And so I sit with the land and listen, hoping that she will guide me just as I hope to guide others.

My guiding principle, reinforced by Spider's lesson, is deep attentiveness. To actively acknowledge other-than-human beings as teachers, as equals, some scholars have proposed that we first put a stop to the kind of passive, detached attentiveness to which so many nature-watchers are prone (Warkentin, 2010; Sewall, 1999). The oft-used term 'pay attention' is telling of our attitudes toward the act of attending: It implies that attention costs us something, that it takes something from us (Sewall, 1999). Yet Sewall suggests that being truly attentive means quite the opposite: to attend, one must be *receptive*, opening oneself to experience the world without judgment nor preconception, or at least with full awareness of any preconceptions one might have. And if we do it well, we may *become* that which we are receiving, merging with the world and losing all notion of ego, of separation. The objectifying, dualistic way of attending is replaced with a deeply intimate, intersubjective relationship; a recognition of interconnectedness, of ecological identity (Fleming & Macy, 1995; Thomashow, 1996).

Warkentin (2010) advocates for the kind of attentiveness that “involves one’s whole bodily comportment and a recognition that embodiment is always in relation to social others, both animal and human” (p. 102). To this I would add plants, earth, water and sky as well. This verges into the realm of animism, a relational way of knowing that treats our other-than-human kin as people worthy of attending to, not as objects (Abram, 1996/2017; Bird-David, 1999; Harvey, 2005/2017; Kimmerer, 2013). The average person, in my experience, hears of animism and laughs, picturing people talking to trees and thinking that the trees understand their words. Bird-David (1999) corrects this misconception thus:

‘Talking’ is shorthand for a two-way responsive relatedness with a tree—rather than ‘speaking’ one-way to it, as if it could listen and understand. ‘Talking with’ stands for attentiveness to variances and invariances in behavior... It is expecting response and responding, growing into mutual responsiveness and, furthermore, possibly into mutual responsibility. (p. 77)

Did I expect Spider to understand me when I questioned her behaviour? Of course not. Yet the questioning put me in relation with her all the same, as I tuned into her behaviour and opened to what she might show me.

Paying attention, then, is a deeply intimate, relational and responsive exercise. It necessitates relinquishing the subject-object dualism that so many of us have internalized, and yielding to an intersubjective worldview in which humanity is not the pinnacle of existence. It necessitates “a willingness to forgo our addiction to omnipotence in the presence of other life” (Leighton, 2020, p. 199); to speak *with* the world instead of *about* it (D. Abram, personal communication, August 5, 2020); to replace ‘I-It’ relationships with ‘I-Thou’ relationships, in which one being is not complete except in relation with others (Buber, 1923/1996).

Paying attention in this way is crucial because learning to see teachers in nature requires that we stop thinking of our own knowledge and intelligence as inherently superior. This directive to give oneself over, to be fully in communion with the world, to look beneath the surface and see into the depths of other beings while bearing one's soul in return, is repeated again and again in deep ecology literature (e.g. Abram, 1996/2017; Drengson & Inoue, 1995; Fleming & Macy, 1995; Kimmerer, 2013; Naess, 1986/2007; Snyder, 1990; Warkentin, 2010). The entry point into welcoming Nature as teacher, then, may be to acknowledge Nature as animate, as a *thou* worth attending to and not an *it*, just as I addressed the web-weaving Spider directly that morning, asking her why she was weaving so early and attending to her answer. What I "paid" in time, I more than made up for in knowledge, wonder, and newfound respect for my tiny, eight-legged teacher.

How, then, can educators foster such attentiveness in students? In a world replete with technology and an over-abundance of information, it has been shown that our collective attention span is growing ever shorter (Lorenz-Spreen et al., 2019). Eco-philosopher David Abram (1996/2017) argues that experiencing the land through our senses may be one way to ground ourselves in the real world and re-learn how to pay attention. He observes that our sensuous bodies are the primary means by which we learn about the world around us and points out the ways in which modernism has discredited those senses in favor of a more abstract intellect. Abram believes that a true ecological ethos will not arise via intellectual learning, "but through a renewed attentiveness to this perceptual dimension that underlies all our logics, through a rejuvenation of our carnal, sensorial empathy with the living land that sustains us" (p. 69). By reawakening our senses and attuning to the land as a participant in our lives and not just a

backdrop, humanity may be able to find, once again, a sense of belonging and a more meaningful relationship with the Earth.

In the spirit of banishing false dualisms, it is important to note that this is not an “either/or”, but a “both/and” situation. Embracing an animistic, empathetic, emotional worldview does not mean abandoning all other ways of knowing. Environmental educator Bob Jickling (2009) puts it neatly:

To be clear, I am emphatically not advocating abandonment of science or philosophical reasoning. And I am not suggesting that emotional understanding is infallible or sufficient. ... Yet, I do maintain that experiential-emotional understanding adds flesh and life to the bones so often polished smooth and white by analytical thought. (p. 168)

I have a science degree myself, and learning the intricate workings of the natural world through a scientific lens helped me cultivate a deep love and respect for it. I am writing a thesis championing an animistic, emotional worldview not because I wish it to replace the scientific, but because the scientific has been dominant in Western industrial culture for so long that we have collectively forgotten that there are any other important ways of knowing. Science excels at many things, but not at everything. Certainly not at persuasion, or at fostering interconnection, else we would not still be in the same ecological predicament today as we were when scientists first began to raise the alarm several decades ago. I believe we need to adopt different ways of knowing if we are to survive, and that one of those ways is to regain trust in sensory and emotional learning alongside the intellectual.

Once, during a school program about wetlands, I was telling some third-grade students about various waterfowl that frequent the wetland on which we were situated. I abruptly stopped talking and pointed mutely when I saw, perched high up on two adjacent posts, an adult and

juvenile bald eagle majestically surveilling the water. “What do you think they’re looking for?” I whispered to my excited urban prairie children, most of whom had never seen an eagle before this day.

“Mice?” Suggested one boy.

“Hmm, maybe.” I nudged further: “Where are they looking?”

“The water!” gasped a girl who had been silent all day before this. “Do they eat fish?”

Before I could respond, the juvenile took flight and dove enthusiastically at the water, talons outstretched, eliciting whoops of excitement from the class. The young eagle’s attempt was unsuccessful, but no less impressive for it. The bird confirmed the girl’s hypothesis much more decisively than I could have, leaving an awestruck gaggle of eight-year-olds who will probably always remember the diet of the bald eagle.

Nature is not always so obliging, but a rare and precious moment such as this one is worth all the lectures in the world. Thanks to the young eagle’s impeccable timing, the students were able to use their sense of sight and the emotional weight of their excitement to answer the question, rather than having an abstract answer come from my lips. Such is the way of Nature: she teaches through action (Elder Pablo Russell, Kainai Nation, personal communication, June 23, 2019). When outside with students, it is important to know when we are witnessing something of more value than our own words (Burch et al., 2019; Jickling et al., 2018). And by modelling to students that the land and everything (in fact *everyone*) within it is to be respected as a teacher, educators can strive to impart some of this reverence to their students. Learning from Nature requires an opening of the senses that simply listening to a teacher does not, and I believe that the act of witnessing a teaching moment from the wild can help students remember how to use those senses in balance with their intellect.

The notion that land can be a teacher is not a new one; quite the opposite. Nature-based peoples have been learning from the land for millenia, and many educators take inspiration from these ancient traditions when designing curriculum. Styres (2011) and her colleague designed a child and youth studies course based on the idea of Land as First Teacher, “a contemporary engagement with Indigenous philosophies derived from a land-centered culture and based on *very old pedagogies*” (p. 717). She uses reflexive inquiry—the use of one’s own experiences to reflect on one’s teaching—to develop effective practice for both herself and her students. This is achieved through a variety of reflexive methods including journaling, reflection and the sharing of stories and experiences (Styres, 2011). This type of reflexive practice causes all teaching to ultimately stem from the self, but Styres takes this further: she argues that if we conceive of ourselves as being continuous with the body of the land, and if we allow the land to inform our practice, then this type of reflexive inquiry relates all learning back to the land, through ourselves (2011). Harvey (2005/2017) agrees, stating that “everything begins and ends with land. More precisely, particular lands place everything, everyone and every happening in relation to and communion with one another” (p. 65). Our senses, then, are the means by which our bodies can connect to the larger body of the land, allowing information to flow through us and into the vast network of relationships that surround us, making us one in reciprocity with the living world.

The means of encouraging students to see Nature as a teacher are many and varied. They require an ongoing commitment from both teacher and learner, and openness of mind and spirit, and, ideally, the support of community (Jickling et al., 2018). It sounds daunting, yet relinquishing total control over a lesson can be freeing, too. Spider taught me a more enlivened lesson about local seasonal change than any textbook I have ever read; and, given the choice

between the textbook and Spider, I suspect that many students would choose to learn from the latter if they just knew it was possible.



The art of paying attention is more than just a learning tool. During my time by the river, listening and watching and feeling and journaling for this research, I noticed the unfolding of Spring in a way that I never have before. Not from the standpoint of a detached observer, but as a participant. Had I simply been observing, I might have already forgotten much of what I learned. At the time of writing, it has been a full year since my first journal entry. Yet I feel that the lessons run deep because I paid attention with my senses and not just with my intellect. I can say with certainty that I will always remember how it felt to feel invited into the confidence of whispering trees, or to merge my consciousness with the flowing river. I cannot forget the sticky-sappy smell of poplar buds in early May, nor the feel of new grass tickling my ankles in greeting as I set out my sit-mat in early June.

How can I explain this? I do not remember that the new grass grew tall in June because I wrote it down and memorized it. I remember because my memory of tickling grass brings with it a feeling of annoyance at the whining mosquitoes. It is also linked to the sensation of warm and summery rays of sun on my skin, the (to my mind) unpleasant smell of flowering Saskatoon shrubs, and the sweet sound of yellow warbler song. It was definitely *after* the warblers' return, but it was not yet fully summer because the feel of the warm sun and the whine of mosquitoes were new enough to be surprising and thus lodged in my memory. And all of those memories and sensations crystallize to mean "late May-early June". And that is just one small example of the kind of sensory memory that emerges from paying close attention to one Spring. Imagine if I attended as closely to the pattern of the world year after year, how deeply I could come to know

the warp and weft of it. Being woven *into* the tapestry of life rather than merely staring at it means that when a thread is unravelling, one does not merely notice a blemish on the tapestry that can be frowned at and ignored. Instead, one's own essence begins to empathetically unravel with it. It is not enough just to want to live in harmony with nature in an abstract sense; to cultivate a relationship with the natural world requires a felt awareness of the ecological nuances of local place (Snyder, 1990). No one can know all the patterns of the world, but everyone can learn to feel the patterns of their local environment. Some truths are only true in their home place.

This matters because the pattern of the world is indeed changing. Climate change, the great side effect of industrial capitalism, is rapidly throwing the processes of the world into chaos. To overcome the deeply ingrained norm—the collective trance—of politely ignoring it, we will need to feel like more than just external observers. We need to feel that it affects us. We need to feel the pain of the Earth in our souls, as our own pain, in large enough numbers to overcome the barriers to change with life-saving desperation. To my mind, a cultivation of ecological identity on a massive scale will be required for Western industrialized culture to realize that by brutalizing the Earth for the financial gain of a rich minority, we are inflicting deep harm on humanity at large (Macy & Brown, 2014; Macy, 2007; Naess, 1986/2007; Thomashow, 1996).

I dream of a world where we remember that April is the month of frog song, and where a communal outcry might ensue should that song fail to be heard. I dream of a world where the lesson of Spider on a cold Spring morning is respected as much as that of any schoolteacher. And despite the pain of the world, despite feeling fear so overwhelming that at times it threatens to choke me, I nurture a small bead of hope in my heart that those dreams might yet come to pass.

Every expression of undisguised wonder on a child's face upon witnessing a lesson from the wild helps that bead glow a little bit brighter.



Lesson of Raven: Community

It was only my second time journaling in the park when I became acutely aware of myriad voices around me. As an avid birder, I already recognized birdsong as voices, of course, but prior to that day I had mostly used those voices as a means of identification while taking idle pleasure in their musicality. That day, the birds were not being particularly vocal. The northern flickers and downy woodpeckers around me had more pressing matters to attend to: finding food and excavating nests. As I heard the tap-tap-tapping all around, I closed my eyes and allowed the sounds to percolate through me. I could tell the difference between Downy and Flicker by the sound and speed of the bird's beak on the poplar trees. Beak-on-Poplar. No, too vague. Downy-on-Poplar and Flicker-on-Poplar. There. Two voices. As I came to this conclusion, the wind picked up, bringing two more voices to my attention: Wind-Through-Poplar and Wind-Through-Dry-Grass. Excited, I picked up my journal and started scribbling.

Grass and trees give voice to the wind. Or is it the other way around? The woodpeckers, the playful breeze, and even the squirrel clambering through the branches all announce themselves to my senses through the sounds they bring forth from the trees. So...the trees speak through that which interacts with them? Yes, but the trees are not the only ones speaking. In each "tap-tap-tap" there are two voices speaking simultaneously: "Flicker", says Poplar and "Poplar", says Flicker. Each being speaks of the other (to the other?) through a distinct voice born of their interaction.

I lay there for a long time with my eyes shut, trying to pick out as many voices as I could. Flicker-on-Poplar sounds different from Downy-on-Poplar, and perhaps if I lay there for months or years on end I could eventually hear Downy-on-Aspen, Downy-on-Young Poplar, Downy-on-Old-Poplar, and many more distinctions, but the forest has not yet taught me enough for that. Wind-through-Poplar might sound different from Wind-through-Aspen if they had their leaves, even to my novice ears, but not now. For now, all the trees speak in similar creaks, groans and rattles as the wind plays with their bare branches. The creaking of those branches sounds the same as the creaking of a well-loved wooden rocking chair: even after death, the wood maintains its voice. A raven speaks in a harsh croak of his own making before taking off and leaving the branches jouncing noisily about his sudden departure. They really do talk about each other! What, then, is the forest saying about me? What could it be saying *to* me? And, even more importantly, what could I say in return?

Lying in the forest, I thought long and hard about Raven's croak. Ravens have their own voice, as do humans. We do not need trees, wind, or woodpeckers to allow us to speak, right? Even as I thought it, there was something off about the notion. Sure, we can produce sound deliberately with our own bodies, but does that really mean our voices are independent?

As I mulled this question over, two more raspy croaks echoed in the distance: a call and response. *Ah*. At this point, my science education supplied me with the answer to my unease: ravens evolved to croak, just as humans evolved to speak, *only because there are others to listen*.



Evolution does not happen in isolation. A yellow warbler sings his heart out chiefly to signal the boundaries of his territory to other males of his kind and to attract a mate (Morse,

1966), and if he happens to enjoy the singing, well, who can blame him? In fact, he probably does enjoy it; evolution has largely ensured that behaviours that help us survive also feel good, else we might stop doing them. But the enjoyment is incidental; the purpose is survival and reproduction through communication with other warblers. The yellow warbler's elaborate song would not be useful, and thus would never have survived natural selection, if warblers had no ears, or if they lived so far apart as to rarely be within earshot of each other.

Warbler voices, then, are no different from Wind-Through-Poplar, only they are co-created with others of their kind (even this is too simple; one could argue that warblers' warning calls were co-created with falcons and hawks, for instance). And the connections go deeper still: one can expand this notion to fit the land itself into the relationship. Abram (2020) remarks that humanity has had a very difficult time explaining the phenomenon of migration, relying on technological metaphors such as "internal maps and internal compasses" (p. 14) to explain migrating animals' uncanny navigational abilities. He argues that the difficulties in explaining phenomena such as migration likely stem in part from our Western dualistic worldview—our assumption that living organisms are distinct from the Earth they inhabit, and that we can understand a plant or animal in isolation from its environment (Abram, 2020). Snyder (1990) has similarly criticized the notion that we are independent, "that we exist as rootless intelligences without layers of localized contexts (p. 60). Yet, as Abram (2020) points out, "whatever specialized sensitivities and internal organs are brought to bear, those very organs have co-evolved with...large-scale repetitive or rhythmic happenings proper to that part of the biosphere" (p. 16). Having evolved and survived with these phenomena, plants and animals cannot be anything but extremely attuned to them, and large-scale behaviours such as migration impact the

land in return by carrying nutrients from one part of the world to another, for example. The land shapes plants and animals, which shape the land in turn.

That soil, rock, wind and water are not ‘alive’ in the scientific sense of the word does not negate their intimate involvement with living beings, humans included. Countless nature-based peoples around the world can predict weather patterns with stunning accuracy, triangulating such indicators as the blossoming and fruiting of trees, the migration and behaviours of animals and insects, cloud configuration, wind direction, livestock behaviour, and ocean conditions (Galacgac & Balisacan, 2009; Zuma-Netshiukhwi, Stigter & Walker, 2013). Some scholars have suggested that traditional knowledge should be incorporated into scientific forecasting methods to improve the accuracy of forecasts, especially for farmers whose livelihoods rely on the weather (Irumva, Twagirayezu & Nizeyimana, 2021; Zuma-Netshiukhwi, Stigter & Walker, 2013). To those of us who are culturally disassociated with the land on which we live, this ability to understand the language of the world seems quite miraculous!

I believe one of the essential components of these types of intimate relationships with the world is community. Being in community means being aware of, and participating in, the network of relationships around us. Newbrough (1995) remarks that the ability of the United States “to provide the integrating forces for quality social life is impaired due to an overcommitment to the philosophy of individualism” (p. 10). This is true for much of the Western industrialized world, not just the U.S. Nature shows us that the same principle—that community provides the integration necessary for life—applies to all life beyond humanity. Life, whether we realize it or not, is made up of relationships (Abram, 1996/2017; Buber, 1923/1996; Haskell, 2020). From the microbial biome in our digestive systems to the friends and family who support us socially and emotionally, being a healthy human being necessitates

interconnectedness and reliance on others, but these social networks often go unnoticed in the day-to-day. In both Nuu-chah-nulth culture and Blackfoot culture, it is considered very impolite not to ask for help when one needs it and to refuse help when it is offered; it is a sign of unfriendliness (Atleo, 2011) and dismisses an opportunity for building relationships (Elder Pablo Russell, Kainai Nation, personal communication, June 23, 2019). I suspect most cultures who strongly value community have similar norms. In Western industrialized cultures, in contrast, it is mainly regarded as noble to struggle to achieve something by oneself, and the “self-made man” is one of our most enduring and popular myths (Catano, 2004). If this worldview is leading to an impoverished sense of community, as Newbrough (1995) claims, and if this impoverished sense of community is leading to social and environmental degradation, then it would behoove educators and communicators everywhere to help make explicit the relationships that we all share, human and otherwise. Site-sitting can be one way to go about this. As Haskell (2020) explains:

Contemplative observations of a particular place bring [its network of relationships] into awareness. Over extended periods of time, we come to understand and participate in the network through multiple modes: intellect, emotions, senses, microbiology, memory, and conversation with others. The deeper and longer our engagement, the more our body, mind, and emotions awaken to the strands of living network in which we live. (p. 129)

The interconnected network of voices that I only became aware of through site-sitting is just the tip of a monumental iceberg, I am sure, and I will endeavor to deepen my awareness of the communities around me throughout my life. My educator heart would thrill to help awaken similar awareness in students.

The nature of my work up to now—having a different class every day, often only for a few hours—limits the extent to which I can incorporate site-sitting as a practice. However, I have run many programs that involve site-sitting for short amounts of time, and even more that involve journaling in some capacity. I variably ask participants to journal about a place, about what they learned that day, about an animal or plant, or sometimes about a biofact such as a skull or pelt. But looking through a community-oriented lens, I find myself wondering: What if I asked students to journal *with* these subjects, instead of *about* them? What if I asked them to write a letter to Cattail, a postcard to Blackbird, or a poem to Coyote Pelt? How might that invite subject-to-subject engagement?

The idea of speaking to the world is not a new one. In philosopher Martin Buber's famous essay *Ich und Du*, translated into the English *I and Thou*, he discussed the need to shift our way of being in the world from an "I-It" perspective to an "I-Thou" perspective (1923/1996). Instead of seeing other beings (human or other) as objects to experience or use, Buber wrote that we must engage in participatory relationship with them, for the human exists only in relation to all other beings. "All actual life is encounter" (p.62), said Buber; anything less leaves us feeling empty and unfulfilled. Again, this is the idea of community. Buber's legacy is still rippling down to more modern advocates such as Abram, who has called it "rude" to speak about the world all the time without ever speaking to it (D. Abram, personal communication, August 5, 2020). This is to say nothing of the countless traditional cultures who have held ceremonies and rituals for communing with the land since time immemorial, knowing full well that a respectful and reciprocal relationship with all others is necessary for a community to thrive (Atleo, 2011; Kimmerer, 2013; McKeon, 2012; Snyder, 1990).



As for the Ravens who sparked this line of thought, their voices have shaped each other not just through evolutionary time but through their own lifetimes as well. Research has shown that the voices of mated raven pairs grow to resemble one another so that their call is instantly recognizable to their mate over long distances (Luef, Ter Maat & Pika, 2017). The call and response I heard contained the pair's own terms of endearment—how wonderful! Any being with its “own” voice, whether human, warbler or raven, only has that voice because there are others to receive and reciprocate it. Biology students are taught that evolution only acts on individuals, not on communities (Dawkins, 1976/2006). This is not false, but it is also not the end of the story. Natural selection may only act on individuals, but it often rewards prosocial behaviours, and just by looking around one can see that it results in robust relationships that form and strengthen complex communities. These communities interact with one another, compounding into the dynamic, adaptive, resilient systems that make up the living world.

This of course holds true for human communication as well. Our voices may seem independent, but they were shaped by interaction with others of our species and with the other-than-human beings around us, so that losing those other voices will inevitably impoverish our own, as Abram (1996/2017) describes:

For when we no longer hear the voices of warbler and wren, our own speaking can no longer be nourished by their cadences. As the splashing speech of the rivers is silenced by more and more dams, as we drive more and more of the land's wild voices into the oblivion of extinction, our own languages become increasingly impoverished and weightless, progressively emptied of their earthly resonance. (p. 86)

Thanks to the voices of Wind and Tree and Downy Woodpecker and Northern Flicker, I learned to view the community around me in a new light—as “a communion of subjects, not a collection of objects” (Berry, 2006, p. 96). And most of all, thanks to Raven, I learned to include those who speak, including humans, in this worldview. Every voice is co-created, every utterance heard and answered, even when you think no one is listening. And because I *am* listening, and it would be rude to eavesdrop, I remember to say hello.

“hello, ravens,” I say, under
their dark tree and, as if courtesy were of
great importance, they turn, they clack and spill their
delicious glottals, of no consequence but
friendly and without the least judgment, down and
over me. (Oliver, 2004, p. 22)



Lesson of River: Patterns and Cycles

The Bow River was a constant companion throughout my data-gathering process. Amidst the Spring rebirth—the wild changes of sunlight, wind, rain, migration, leafing, blooming, buzzing and birdsong—River appears constant. Sure, the water swells fast and brown with the Spring melt and calms back to a glacier-blue hue as the days grow hot, but for all its moods, it flows ever on. As I noted one sunny afternoon in May,

The cyclical nature of the world is evident in the departing and returning of birds, in the blossoming and withering of flowers, in the fawns following their mothers on spindly

legs; it is much less obvious in the constant flow of a river, always in the same direction, sometimes frozen but never reversing its course.

At least, it seems so up close. It takes some panning out to see that River is indeed part of a cycle—a cycle so vast it spans continents and oceans, land and sky.

Imagine a droplet of water from the Pacific Ocean, carried aloft by westerly winds and deposited as snow on the Rocky Mountains. Melting down the slopes under the spring sun's blaze, the droplet collects with her fellows in the Bow Lake and is pushed out toward the rolling foothills as part of the nascent Bow River (Armstrong, Evenden and Nelles, 2009). That little droplet tumbles and swirls her way East, bringing precious moisture across the parched prairies. Gaining momentum, merging with other rivers in a churning procession, the droplet suddenly finds herself hurled into Lake Winnipeg for a moment of respite. She relaxes into the slow rhythms of the vast lake for around four years (Watershed Systems Research Program, 2019), until the ceaseless inflow bumps her out through the Nelson River and into Hudson Bay. Perhaps the little water droplet takes some time to acclimate to her new identity as a salty bay while she makes her way into the North Atlantic (Straneo & Saucier, 2008). From the Atlantic Ocean, that droplet might be transported back to the Pacific by winds over Africa and Eurasia, perhaps sojourning in their freshwater systems along the way, or she might instead flow through a 'global conveyor belt' of ocean currents that can take a thousand years to complete (Dey and Döös, 2020; Patel, 2020).

What a journey this water has had! The water cycle is a circuit of global proportions, so it stands to reason that looking at one segment of river makes the circle appear linear, just as standing on the ground makes the Earth appear flat. I believe it is important to appreciate both perspectives, for both are correct depending on where one stands.

All of us can be as placed and grounded as a willow tree along the streams—and also as free and fluid as the water in the water cycle that passes through all forms and positions roughly every two million years. (Snyder, 1995, p. 241).

This paradox of rootedness and freedom is the kind of thinking that allows a person to love and take pride in the place they inhabit, while appreciating its connectedness to the greater whole. I believe it is also the kind of thinking that prevents a person from getting overly attached to the status quo. In sensing the greater patterns and cycles of the world, it becomes obvious that everything is a process, everything is in motion, and to expect anything to maintain one trajectory forever is not only futile, but undesirable. What would happen, after all, if that water droplet remained a cloud forever, never falling to the ground?

When I sat in Carburn Park and thought about the journey of River, I did not know the exact trajectory that its waters might take to circumnavigate the globe. I did not have to. The awe and respect for the magnitude of the water cycle was felt even though I did not (and still do not) know every detail about it. I did not write much in my journal at the time, because how could words capture the magic of closing my eyes and slipping my consciousness into River, following it, sensing its ancient immensity and wondering whose breath, perhaps captured in language—an utterance of hate or a poem of love from times long forgotten—might now be flowing in front of me as a molecule of H₂O? This kind of experience does not translate easily to words, at least not in the English language, save perhaps as poetry. Jickling articulates this clearly:

First, at its very core, the learning experience was felt—understood in a bodily and sensuous way. In the end it was also an emotional learning experience. It cannot be disproved or falsified. It just was. It was only later, upon reflection, that it included elements of abstraction. (Jickling, 2009, p. 167)



The cyclical, dynamic and interconnected nature of reality that I glimpsed in a droplet of water has been a foundational premise of most Indigenous worldviews, and is also widely acknowledged by ecologists and systems scientists, among others (Abram, 1996/2017; Atleo, 2011; Atleo, 2012; Capra, 2005; Kapyrka & Dockstator, 2012; McKeon, 2012). Yet, as River showed me, some cycles are too large, and some systems too complex, to understand up close. One must pan out, if only in imagination, to get a sense of the fuller picture. The complex, dynamic cycles found in nature are known as the ‘adaptive cycle’ in systems science (Holling, 2001). These cycles are found across multiple scales, nested within each other, and the enormous, slow cycles such as that of River form the backdrop against which smaller, faster cycles can unfold. They create resilience through feedback loops that regulate the more erratic processes happening within them. These faster processes, in turn, feed up into the larger system to create change over time. The trans-continental story of that little water droplet is the backdrop against which poplars grow, birds migrate, fish spawn, insects swarm, and humans gather and settle. The story of the world is written in a single drop of water, for anyone who cares to pay attention.

In renowned Canadian ecological scientist C.S. Holling’s model, each adaptive cycle, whether large or small, comprises four stages: exploitation, conservation, release, and reorganization. The transition from exploitation to conservation represents a “slow accumulation of resources”—a growth phase—while the shorter transition from release to reorganization—known as the ‘back loop’—“create[s] opportunities for innovation” (Holling, 2001, p. 394). A classic example is ecological succession: A temperate forest, for example, might experience a forest fire (release phase), clearing the way for pioneer species such as grasses and shrubs to

begin settling the space (reorganization phase). Over time, a succession of tree species populates the land (exploitation phase), culminating in a mature, stable forest (conservation phase). As the trees grow old, shedding leaves and dry twigs that accumulate on the ground, the conditions become ripe for another forest fire to start the process anew. Indeed, the longer a system is maintained, whether naturally or artificially, in its conservation phase, the easier it is to disrupt (Burkhard, Fath & Muller, 2011; Walker & Salt, 2006). Resisting change to maintain the status quo makes a system fragile and vulnerable to sudden, uncontrollable release. This is also encoded in traditional knowledge: the Nuu-chah-nulth people, for example, have a cultural concept called ‘fullness of time’. According to Atleo (2011), “A trajectory achieves its ‘fullness of time’, or point of maturation, when it fulfills a natural law of completeness” (p. 162). Furthermore, at this point of maturation, “a shift from one worldview to another may suddenly become possible” (Atleo, 2011, p. 162). This sounds very much like Holling’s back loop: a modern take on very old observations of the patterns that make up the world.

I frequently talk with students about ecological succession, and our local story involves not fire, but flooding. Being a tree in Alberta is fairly difficult due to a persistent lack of moisture, and the Balsam Poplar trees that dominate the riparian (riverside) forests rely on the river to survive and reproduce. A poplar seed will only germinate and grow in fresh sediment deposited by a flood (Bradley, Reintjes & Mahoney, 1991). In fact, an aerial view reveals bands of poplars on either side of the river, where all the poplars in each band are the same age, corresponding to the high-water level of the river over the years (Bradley, Reintjes & Mahoney, 1991). I tell students the story of the poplar cycle: how the parent trees time the release of their seeds just right so that they fall, pillowy-soft, into the fresh silt after a flood. How the small, fragile seedling gets her roots in before other plants (who lack her parents’ impeccable timing),

have a chance to take over. How the layer of new sediment covering the uneven ground allows beavers to go further into the forest than they normally could, chewing down old trees to give this new seedling space and light. How the small poplar grows and thrives, and in her maturity becomes host to a whole community of other beings: shrubs and grasses grow at her feet, insects tickle her bark, birds and squirrels raise their families in her branches and trunk. She will live for around a century—not so long, for a tree—and when it comes time to have children of her own, she counts on the spring flood to make their cradle.

But what happens when dams and dikes prevent the river from flooding? When we see flooding—a release phase if there ever was one—only as a bringer of misery and a destroyer of homes, our instinct is to stop it. Flooding, of course, is what rivers do. In an undeveloped area a river might swell out of its banks and calm back down again with little fanfare and without ruffling any feathers (other than those of the ground-nesting birds whose nests might be swept away). Thus, the concept of ‘floods’ is partially a social one. It could even be said that “floods are caused by houses” (Armstrong, Evenden & Nelles, 2009, p. 250), as it is mainly the destruction of our built environment that causes us humans to regard floods as disaster events. A house, unlike a poplar, does not reseed itself in floodwaters if it is built on a floodplain. Is that the fault of the flood, or the fault of the builder? The erosion of riverbanks due to development removes vegetation essential to bank stability; the filling-in of wetlands to build roads removes systems that are essential to both flood- and drought-control. Are these the fault of the river, or the fault of our arrogance?

Eco-theologian Thomas Berry (1999) recounts the words of a woman in Florida after Hurricane Andrew caused widespread devastation:

The hurricane, she insisted, was telling us something. It was telling us how to build our houses if we wished to dwell in this region. It was telling us to consider well the winds and the sea, to mark well the fact that if we live here we must obey the deeper laws of the place, laws that cannot be overridden by any type of human zoning. (p. 51)

We could live well with the world, if only we recognized that every part of it is telling us something. Calgary was built on a “level, gravelly expanse by the river, ideal for railroading and real estate speculation” (Armstrong, Evenden & Nelles, 2009, p. 244). This flat, fertile expanse was, in fact, a floodplain, and on it now sits a city of over a million people. Are we not, then, responsible for the disastrous results of River’s overflow? Have we not simply failed to heed what River was telling us? We build dams and walls to constrict the flow of River, preventing our native trees from reproducing and our wetlands from replenishing, in order to “fix” a problem that we created for ourselves. Can we not pan out and see the bigger picture? Can we not see this release phase for the force of renewal that it is meant to be?

At least, that is what I wish I could ask my students. Their parents, however, might not thank me for it, so instead I simply tell them the story of the poplar, and end with the open question: *What happens to this forest if the floods stop coming?*



On that sunny day in May while I was watching River and reflecting upon its journey, my thoughts were interrupted by a dark, skinny something sticking out of the water. I grabbed my binoculars and jammed them to my eyes, trying to find the thing retreating with the current...and I laughed out loud. It was not *something*, but rather *someone*: a Cormorant, head and neck sticking comically out of the water as he bobbed downstream. I watched with amusement as he receded from sight, and then I began to reorient my thoughts to the cycles of River. I had almost

succeeded when Cormorant (I can only assume it was the same one) appeared again, this time flying upstream. I gave a small wave of farewell in his direction, assuming he had business elsewhere. Once again, I readjusted myself, closing my eyes for a moment. When I opened them, to my utter astonishment, there was Cormorant's absurd-looking head again, bobbing back down with the flow. Now, perhaps taking advantage of the swift current is a smart way to hunt for fish. *Surely that is the explanation*, I thought, giggling. But as I watched that little head rush down the river a second time, I could not help but think he must be having fun.

It was then that I gave up *trying* to think about River; three interruptions by the same bird were enough of a hint. Everything I needed to learn was right there—Cormorant was *right there*, telling me to stop thinking and just pay attention. For in watching Cormorant I saw, too, the circling of the gulls above the water, patterning the spiraling thermals upon which they rode. I followed the spirals back down to the river, where Cormorant sought the slippery fishes whose lives seem small compared to that of their predator, and who in turn seek the larvae of insects—smaller still—lives winking in and out as their numbers swell rapidly and then crash in a fashion that scientists unpoetically call 'R strategy' (Rafferty, 2014). Holling would perhaps call it rapid exploitation followed by barely-there conservation and unhesitating release. There is a sense of freedom in such boom-and-bust cycles, a lack of worry for the future, a zealous undertaking of the business of life with no fear of the unraveling to come because the release is not the end; it is a passage to the next beginning. The lifecycles, the predator-prey cycles, the flood cycles—all cycles experienced by the denizens of the riparian forest, including the forest itself, are cradled by the vastness of the Bow, which is itself nested in the immense global water cycle. River provides the slow, deep rhythm against which smaller melodies and countermelodies are to play, both regulating the other instruments and altering slightly to accommodate them. The globe-

travelling droplet of water and the comical little cormorant are both part of a great pattern—a symphony with no clear score where all musicians must listen to each other and improvise together against the pulsing background of Water, Sky, Climate, Earth.

Despite my musical metaphors, I am no musician but I *am* a dancer, and I felt a desire to move to the music of the world that day. River taught me to embrace my role in the great pattern of the world and to regard difficult times as the seeds of something waiting to be born. She taught me that my actions do have consequences, for collectively they work their way up into the greater cycles that regulate my life in turn. And when I danced under the poplar trees, I did so knowing that I matter.



Lesson of Deer: Belonging

The first time I went to journal at sunset, I immediately felt the difference. Gone were the staccato rhythms of woodpeckers and the chirping of chickadees. Instead, the world was ringing with the honking of geese converging on the river to roost. The darkening sky was alive with their flightpaths: some high, some low, different groups meeting and crisscrossing and readying for landing in an elaborate dance that was astounding to witness. Down below, under the trees, there was a hush that contrasted sharply with the cacophony up above. As I walked to my usual spot, the hairs stood up on the back of my neck. During the day, in that forest, I can feel as if I am part of the energy of the place. But that evening, I felt like an intruder. I had never felt so ‘watched’.

When I slowed down and paid attention, I saw why: the deer, the silent watchers of the woods, materialized out of the shadowy forest and melted back into it just as suddenly, appearing and disappearing every few steps I walked. They seemed like animal extensions of the trees:

wearing bark-brown coats, they are quite literally leaves made flesh. They move with liquid grace through the twilight, projecting an aura of confidence they lack during the day. When the sun is up and the parks are busy, they are mostly out of sight, so that glimpsing them feels like a treat, like witnessing something special. But in that twilight hour, *I* was the one being witnessed. I bore no illusions about whose forest this was, about who was the resident and who was the visitor. They were shaped by this place, both sustained and protected by the trees amongst which they live—those trees whose colours match their fur so perfectly, swallowing them up like a protective mother ushering her child away from a stranger.

Deer are crepuscular, a wonderful word that means they are most active at dawn and dusk. They are built for these times of low light: their eyes contain a much higher density of rods—cells that detect light and movement—than those of humans, but fewer types of cones, which detect colour and provide high-resolution vision (Fleegle, 2015). As a result, they can see fewer colours than humans, but can see more clearly than we can in low light and are especially great at detecting motion. Combined with eyes placed on the sides of their head, giving them a 310-degree field of vision, it is safe to say that a deer at dusk knows exactly what is going on around her (Fleegle, 2015). Meanwhile, the forest at dusk seemed, to my human eyes, to be a fairly uniform shade of blue-grey. Deer were difficult to spot. There was no birdsong or human chatter to indicate who was around; I had to use my vision, which was becoming ever less useful as the sun set. I was not in my element, and it was exceedingly obvious that Deer were in theirs. It made me uneasy. Do not misunderstand me—there was no real sense of danger or malice from Deer going about their business. Rather, it felt like being the new kid at school: everyone around me belonged—really *belonged*—and it made me acutely aware that I did not.

Even in the daylight, my senses are not used as they evolved to be used. Scholars such as Abram (1996/2017) and Plotkin (2013) have articulated the reciprocal nature of evolution, how our environment shapes us and is shaped by us in return:

Our bodies have formed themselves in delicate reciprocity with the manifold textures, sounds, and shapes of an animate earth—our eyes have evolved in subtle interaction with *other* eyes, as our ears are attuned by their very structure to the howling of wolves and the honking of geese. (Abram, 1996/2017, p. 22)

Perhaps it is this—the fact that Deer, in both body and mind, are still so integrated into the landscape that shaped them—that made me feel so unmoored. I suspect that witnessing beings so intimately intertwined with their environment made it clear how disconnected I have become from mine. What could it look (and feel?) like for humanity to fit as snugly into the land around us as Deer in the forest?



We *do* belong here, of course. It needs to be boldly stated because the current ecological crisis has pushed many people to believe that humans, by nature, are bound to destroy everything in their path (Abram, 1996/2017). Such a cynical worldview can not only foster despair and inaction, but seems to me a rather dismal way to view one's own species. I, for one, believe we are better than that. And here is proof: prior to the arrival of colonizing Europeans in North America, millions of Indigenous North Americans had been living in thriving, sophisticated societies on this land for at least ten thousand years without compromising its ability to sustain life (Abram, 1996/2017; Atleo, 2011). In Abram's (1996/2017) words,

That indigenous peoples can have gathered, hunted, fished, and settled these lands for such a tremendous span of time without severely degrading the continent's wild integrity

readily confounds the notion that humans are innately bound to ravage their earthly surroundings. (p. 94)

We *can* live well with place. It seems our Western industrialized culture has just forgotten how. In her 2013 book, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*, Robin Wall Kimmerer describes the heartbreaking moment when she asks a class of graduate students—all of whom feel a great love and reverence for the Earth—whether the Earth loves them back, and none of her students can bring themselves to answer. I myself have had a similar experience with a different, but related, topic: I often ask my students to come up with some positive impacts of humans on the Earth. I teach different students every day, yet I can count on one hand how many times someone has offered a serious answer. Even a Google search does not yield many results other than the reactive practices of recycling, creating wildlife preserves, and other such crisis mitigation or adaptation measures. It seems that many people (perhaps even most people) feel, at some level, that we do not belong on this Earth, that we can only destroy it. Is it any wonder that we lack the motivation to take care of it? How can we live and act in such a way as to feel that we are giving love to the Earth, and that the Earth loves us back? How can we forge a relationship with the world that will encourage us to take care of it as we would our loved ones? To figure out how to belong, I must first determine what belonging looks like, and for this I look to my teachers, Deer.

So, what makes Deer belong in the forest? They evolved there, as part of a community in which every ‘one’ contributes so that every ‘one’ can benefit. They provide food for carnivores, who in turn keep the deer population from becoming too great for the foliage to sustain. They help provide structure and diversity to the forest by consuming excess vegetation and making clearings where new plants can grow. Their waste disperses seeds with a helping of fertilizer,

cycling nutrients and growing a new generation of plants that will sustain Deer's own descendants. They keep fires from raging too frequently and uncontrollably by regulating the number of plants that accumulate and dry out (Ripple et al., 2015). It is easy to look at Deer browsing a tree and say, "Deer eat trees, so Deer are bad for forests". But that would be simplistic, linear thinking. That would be ignoring the larger system of which they are a participating and constituent part, necessary for its health and wholeness.

So, according to Deer, belonging in a place means taking while simultaneously giving back. It means knowing a place inside out and relying on it to meet your needs, while tending to its needs at the same time. It means being so well adapted to living there that you are not just an inhabitant, but an integral element of the place. It means being part of the processes within, so that your absence would leave that place impoverished or even in peril. And, not least, it means being part of the cycles of conservation and release, birth and death, growth and decay—having checks and balances to prevent you from taking too much.

Nature-based human societies have these checks and balances not (often) in the form of predation, but in the form of cultural norms. Kimmerer (2013) cites several examples of these as honourable cultural harvesting guidelines. When picking sweetgrass, one must not take more than half; during the salmon run, four days' worth of fish must be allowed to swim upriver before harvesting can begin. In fact, the salmon run, specifically, is accompanied by ceremonies and rituals that help regulate over-fishing not only in North American Indigenous cultures, but Japanese ones as well (Abram, 2020), which is not surprising if one views these rituals as natural selection at work. All over the world, such codes of conduct often arise in the form of ceremony. Far from being antiquated frivolities, ceremonies "[focus] attention so that attention becomes intention" (Kimmerer, 2013, p. 249). They are both joyous celebrations *and* extremely pragmatic

affirmations of community norms and expectations (Atleo, 2011; Kimmerer, 2013). Many environmental education texts support the use of ceremony in one form or another to connect children with nature (e.g. Macy & Brown, 2014; Young et al., 2010), and it is easy to see why. Ceremony can be a joyful, sacred, experiential way to uphold protocols that protect both the land and its people, while inviting participants to learn, through story and ritual, about the other-than-human beings who share their home. Whether it is through ceremony, story, songs, repeated experience, or a combination of methods, getting to know one's wild neighbors is surely a prerequisite to true belonging.

In much the same way as knowing one's neighbours makes a generic neighbourhood feel like a community, knowing one's other-than-human neighbours is a way to be in community with the larger region that we identify as "home". It helps shift an egocentric worldview to a more eco-centric or 'kincentric' one—a worldview that celebrates our wild relatives as family and acknowledges our reciprocal responsibilities toward one another (Kimmerer, 2013; Salmon, 2000). Once, when I was running an educational touch-table in a municipal park, I had a wonderful interaction with an elderly woman who was admiring a robin.

"What is that bird?" She asked me. She spoke slowly and deliberately; English was not her first language.

"It's called a robin," I answered.

"Ahhhh, robin!" She sighed. "*Robin*." She tested the word, feeling its shape, a relieved smile gracing her features. "Robin," she said one last time, now looking at the bird in question, associating his bright, musical being with his newfound name.

It struck me, in that moment, how it would feel to look at all the life around you and see only strangers. How alienating it would be, how lonely! Yet even many people who grew up here

live their entire lives in this state of isolation, completely ignorant of the very beings that make their home unique, that make the place what it is. Eco-depth psychologist, Bill Plotkin (2008) says that “to inhabit a particular place is to have the potential to do and observe the specific things that one can do and observe in that place” (p. 7). He believes that our sense of ecological identity is intimately tied to our deeper sense of personal identity and that learning to act from an eco-centric worldview can bring us closer to what he calls a ‘soul-centric’ worldview. To follow, he posits it is learning to embrace our deeper human natures and bring our unique gifts into the world, that allows us to achieve true maturation (Plotkin, 2008). Blackfoot Elder Pablo Russell of the Kainai tribe also believes that finding and bringing our true selves into the world is the way to maturity and belonging (personal communication, June 23, 2021), which indicates that this notion predates modern scholarship. Inner and outer nature: another false dualism, it seems.

Hearing robins singing in Spring, sneezing poplar fluff in June, sitting on a patio in January when a Chinook wind has warmed the land—these are intrinsic to what it means to live in Calgary, in *Moh'kinsstis*, at the confluence of the Bow and Elbow rivers. If a Calgarian cannot name the robins or the poplars or recognize the signs of an incoming Chinook, how can she comfortably call the area home? It would be like having a roommate but not knowing their name or habits. A livable situation, sure, but one that is not living up to its potential. Snyder (1990) laments that “there are tens of millions of people in North America who were physically born here but who are not actually living here intellectually, imaginatively, or morally” (p. 40), noting that knowing the plants and wildlife is viewed as so non-essential in this culture that “many contemporary Americans don't even know that they don't ‘know the plants’, which is indeed a measure of alienation” (p. 39). A transition to a responsible way of living is not just about learning to love “nature” as a theoretical entity; it is about learning to love and understand the

particularity of nature that is home. It is about learning the local patterns and the natural rules that govern how we must live in a particular place, so that we can be responsive to that place and enter a productive, life-sustaining relationship with it. This has been beautifully described as *sustainability through increased relatedness* (Yunkaporta, 2020).

This philosophy has a name: Bioregionalism. In summary, bioregionalism is about connecting to the living world through the local region that we inhabit, and using that local knowledge to build infrastructure, food systems and ways of life that are sustainable and fit into the land where they take place (Brunckhorst, 2002; Snyder, 1990; Wahl, 2016). This movement does not advocate for an obliteration of all our technology or a reversion to primarily rural living; we need a modern way of living well with the world, which means we must bring community and life back to our cities as much as anywhere (Snyder, 1990; Wahl, 2016). Of course, like other newish terminology around sustainable living, bioregionalism is only a new name, not a new concept:

While the term “bioregionalism” is a new way of representing and identifying with a place and its history and culture and living within the laws of nature, the concept is new only for people who come out of the Western industrial-technological heritage. The essence of bioregionalism has been a reality and common sense for native people living close to the land for thousands of years, and remains so for most human beings today. (Wahl, 2017)

This should be hopeful: for most of human history we have been responsive to our home places in this way, and we have role models in the many cultures that still are. It is only our heavily technological-industrial culture that has forgotten how to do this, and that culture, powerfully destructive as it may be, is still very young. We can change. Again, this does not mean turning

back to some idyllic past; it means learning from the past and moving forward with new eyes and new intentions.

Related to bioregionalism is the notion of ecological identity. Where bioregionalism is concerned with responsiveness to one's home place, ecological identity is about relating to that place and understanding oneself as part of it (Macy, 2007; Naess, 1986/2007; Thomashow, 1996). Cultivating an 'ecological self' involves a shifting of the ego to encapsulate the wider world as part of one's identity (Macy, 2007; Naess, 1986/2007). This defies the notion that caring for the environment requires altruistic self-sacrifice, instead reframing pro-environmental behaviour as adaptive self-care (Macy, 2007; Naess, 1986/2007). Naess (1986/2007) makes this explicit when he points out that a culture of care "flows naturally if the self is widened and deepened so that protection of free nature is felt and conceived of as protection of our very selves" (p.29). Plotkin (2013) argues that ecological identity should be the default if we are to realize our full potential as humans, and our kinship with the rest of nature should be obvious even from an evolutionary perspective:

We evolved over millennia in response to the challenges and opportunities encountered within a wildly complex web of ecological relationships in a thoroughly animate world. The ways we think, feel, perceive, imagine, and act have arisen in attunement to the rhythms of the day and the turning of the seasons and in intimate relationship with myriad other life-forms and forces. (p. 7)

I would argue that a combination of bioregionalism and ecological identity together can result in something—an inward and outward awareness—that one might call 'belonging'.

As for a starting point—a way forward for educators and for the average person who feels a lack of belonging—many wise people have offered suggestions. I myself am finding it

through site-sitting and listening to the land. Storytelling is a method commonly used by educators, once again based on ancient cultural practices: place-making through storytelling is a tradition as old as humanity itself and spans Indigenous cultures around the globe (Abram, 1996/2017; Atleo, 2011, Chatwin, 1987; Yi, 2016). Stories connect people with their landscape, weaving them together to help people understand that neither can be whole if they are separate (Chatwin, 2987; Yi, 2016). Stories are the very fabric of our lives.

Thomashow (1996) engages educators in ecological identity work by having them share stories of special places from childhood, experiences of disturbed places, and contemplation of wild places. Discussing memories of favorite childhood places usually leads to bonding over the shared experience of having a beloved outdoor space, regardless of age or country of origin (Thomashow, 1996). For her part, Kimmerer (2013) suggests gardening as a way to enter into relationship with the Earth: getting our hands in the earth literally grounds us in a place, and receiving the gift of food in exchange for labour promotes gratitude and a sense of reciprocity. Kimmerer argues that a garden's bounty can even make us feel loved by the Earth, which can completely change the relationship. "Knowing that you love the earth changes you...But when you feel that the earth loves you in return, that feeling transforms the relationship from a one-way street into a sacred bond" (2013, p. 125).

Regardless of how one chooses to go about it, relationships are at the heart of belonging. Any action or method of learning that fosters a reciprocal relationship with the land can help us feel that we *are* Earth and that Earth is us—in other words, we belong.



May 28, 2020. 3:15pm. 20°C, sunny.

It's windy today and I hear a new voice in the forest: Wind-Through-Poplar-Leaves. It took a lot more wind to make branches creak than it takes to make leaves rustle: the trees can speak more easily in springtime. After creaking and groaning through the harshness of winter, the newly leaf-laden trees can welcome the warmer weather in excited whispers and rippling laughter, like reunited schoolmates sharing happy gossip after time apart. Their rumours and relieved sighs ripple through the forest, and their merriment is manifested in the chuckling and trilling of the newly arrived birds in their branches.

I feel wrapped up in it, giddy with the gossip, like I've been welcomed into the confidence of an exclusive club. The merriment around me invites me to dance and laugh and join the conversation, now that I'm attuned enough to hear it. But as the wind picks up, the gentle whisper becomes a hiss; the joyful ripple becomes agitated and the wildness of this interaction between leaves and wind is made clear! And with the strong shift of the wind I feel a shift in myself: no longer giddy but fierce, untamed and untamable, yearning for wild release into the world.

After writing this journal entry, I went home and wept. By May 28, I had been site-sitting for nearly three months, and that was the first time I felt such a strong sense of belonging. I felt, in my bones, that the trees were *including* me in their gossip, and much like the emotions of close friends are contagious, the moods of the trees became my own. The “new kid at school” who had watched Deer as an outsider months prior had finally been accepted into the fold. Whether it was the bond I'd formed with the forest through weeks of sitting and attention and gratitude, or whether it was simply something about my state of mind that day, what I felt shook

me and elated me and disturbed me all at once. I was one of those people who was so used to not belonging that I did not even know that I did not belong, until suddenly I did.

The presence of this tree signifies a rainfall and a temperature range and will indicate what your agriculture might be, how steep the pitch of your roof, what raincoats you'd need. You don't have to know such details to get by in the modern cities of Portland or Bellingham. But if you do know what is taught by plants and weather, you are in on the gossip, and can truly feel more at home. The sum of a field's forces becomes what we call very loosely the 'spirit of a place.' To know the spirit of a place is to realize that you are a part of a part and that the whole is made of parts, each of which is whole. You start with the part you are whole in. (Snyder, 1990, p. 38)

The feeling of being "in on the gossip" is one I am finally starting to understand. This does not mean I have nothing left to learn about the place: on the contrary! I certainly cannot name every being I see, nor do I know the moods and patterns of the place particularly well yet. But I like to think the land is somehow grateful that I am starting to learn its spirit, and how to be in relationship with all the other parts of this whole that I call home.



Conclusion: The Lessons of the Wild

My first journaling session for this research took place on a snowy day in early March. It was -10°C and I sat pink-cheeked and bundled in winter clothes, wondering if this was a ridiculous idea and whether I would learn anything worthwhile from the experience. I only wrote one page before my frozen fingers needed to return to my mittens, and that first, hesitant entry ended thus: *“The biggest lesson is that they’re there. They’re living their busy, noisy, social lives in concert with each other, whether we notice or not. They certainly notice us.”*

“Wow, Rachele, what a genius you are,” I thought sarcastically, reviewing my entry with a disdainfully cocked eyebrow. “That’s your big revelation? That the birds and trees and river are *there?!?*” I figured that entry would be a throwaway, and that greater wisdom would undoubtedly come to me as I spent more time with the place. Yet it seems now, in retrospect, that I had touched on something important after all. The knowledge that all other beings are *there* continued to fuel my learning throughout my research. Those intelligent beings know us, notice us, adjust their behaviours and schedules for us. Another of my very early journal entries notes that the difference between a bald eagle and a chickadee is that everyone in the forest knows when the former is around, though the eagle is surely not aware in return of every chickadee around him. Months after that entry was written, I found my thoughts echoed in Snyder’s (1990) evocative prose:

The world is watching: one cannot walk through a meadow or forest without a ripple of report spreading out from one’s passage. . . . Every creature knows when a hawk is cruising or a human strolling. The information passed through the system is intelligence.
(p. 19)

The world sees us, recognizes us, offers us gifts of food, shelter, materials and community. And we have power in return. We humans are noticed and reported about wherever we tread. We are deft hunters and skilled travelers, able to shift and shape the very land that made us and sustains us. And with such power comes a responsibility to learn how to use it in service of life, and not in opposition to it. Indigenous cultures use a wide array of stories to communicate this truth (Atleo, 2011; Kimmerer, 2013), and even in Western culture I have more often encountered this vitally important message in stories than in academia. Perhaps it is the moral nature of this lesson that excludes it from traditionally, morality-avoidant academic research, perhaps it is simply more easily conveyed through metaphor, or perhaps it is such an important message that stating it literally does not give it the weight it deserves. The directive to use power responsibly, in service of Earth and life, features heavily in great works of fantasy in particular:

From the hurricane and the great whale's sounding to the fall of a dry leaf and the gnat's flight, all they do is done within the balance of the whole. But we, insofar as we have power over the world and over one another, we must *learn* to do what the leaf and the whale and the wind do of their own nature. We must learn to keep the balance. (Le Guin, 1972/2001, p. 87)

And who better to teach us than those wild beings who live instinctively?

Perhaps this is why Nature is such a good teacher: she does not confront, does not judge, does not tell us what to think. Nature simply is. Research has shown that adversarial advocacy—an “I’m right and you’re wrong” attitude—no matter how well-intentioned, does very little to change opposing views and instead creates polarization and gridlock (Hogan, 2016). A more useful approach to creating change is to model the values that one stands for, and let others take

notice on their own. Nature models a way of life where diversity is strength, where flourishing communities are so much more than the sum of their parts, where cycles and feedback impose natural limits on growth, where each individual undeniably belongs yet is completely and unapologetically themselves. And this is breathtaking.

In this time of rapid industrial growth and capitalist ideals, we have been sacrificing the world to enrich ourselves, but the world that we sacrifice *is* ourselves, and so we are impoverished to our very souls. I *am* River, and Deer, and Spider, and Raven; the trees may be without speech but they create the oxygen that feeds mine. By harming the land, we harm our very selves, and what we mistake for gain is in fact a loss so profound and gradual that it is hardly noticed, save for a subtly mounting despair that manifests in the loss of community, rising rates of depression (Hidaka, 2012; Kidner, 2007), and the semblance of indifference; a loss of lust for life so insidious that it has become the norm almost without our noticing. Almost. For many of us *are* noticing. In what Macy terms ‘The Great Turning’ (Macy & Brown, 2014), many people across the industrialized world are awakening to our collective loss and striving to make ourselves and our land whole again through deep empathy and identification with others.

Spending time in local nature—whether in remote wilderness or in one’s own backyard—can be a reset button, of sorts; a new point of reference. Experiencing the conflicts, relationships, voices and moods of a wild community (even if that wild community is a gathering of pigeons on a balcony railing), is a way to remember that our human experience is only one part of a beautiful, complex community of life on Earth. It invites celebration and an outpouring of gratitude, undermining “an economy that thrives by creating unmet desires” (Kimmerer, 2013, p. 111).

The time I spent with Spider, Deer, Raven, River, and all the other denizens of the riparian forest in this place I call home, has been deeply transformative. I do not think that I love or appreciate the natural world any more than I did before; my rural childhood and natural science training cemented my love and respect for the world long ago. Rather, this experience changed how I *perceive* my relationship with the world. Three years ago, I would have agreed with the statement that humanity and nature are separate, and that humans are, by and large, a scourge on the land. I knew, on an intellectual level, that our fates and that of the natural world were interconnected, but I did not *feel* it in the core of my being. The experience of sitting with the land and its wild inhabitants, paying close attention, practicing gratitude, and unbinding myself from my “skin-encapsulated ego” (Watts, 1989/2017) to let the land speak through my human body combined a sensuous understanding of the world with my intellectual one. Through my human senses, emotions and willingness to receive wisdom, I found a sense of belonging, of kinship, with the beings who were my teachers. Raven, Spider, Deer and River are part of me, as I am part of them. Through our breath, our senses, our awarenesses, and our very bodies connected by the body of the Earth, we are intertwined.

This awareness changes everything. It resides alongside my scientific worldview to enhance and enrich my understanding of the world. It adds a sense of personal urgency to enact life-sustaining change, for no longer is being environmentally responsible an act of altruism; it is a necessary act of self-preservation. It also deeply influences the way I teach. “We see better with two lenses” (Richardson, 2000), and I believe we teach better with multiple lenses, too. I hope to bring my newfound awareness back to my students, weaving the lessons of this work into lesson plans I create. By looking *into* Nature rather than merely *at* it (Leighton, 2020), students can find a model of what a life-sustaining society looks like, and can apprentice

themselves to this way of being, just as I did. My hope is that they can witness true belonging, and this can help them learn how to cultivate their unique talents and find their authentic selves, just as every wild being does innately.

None of the nonhumans in the forest—or the world, more generally—are lost. Each one is precisely in its true place, and each one knows every place in the forest as a unique place. They are doing something you do not yet know how to do. You could apprentice yourself to them. (Plotkin, 2008, p. 7)

I certainly plan to continue apprenticing myself to the natural world through continued sitting practice, and letting this apprenticeship inform my worldview and my teaching. We are all of this Earth, after all, and there is nothing in this world so radically different from us that learning about it is not also, in some way, learning about ourselves.

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