Connecting Stories, Environment, and Culture:
An Ecological Journey from China to Canada and Back Again

by

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Supervisory Committee

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Second Reader

Abstract

Environmental education is crucial to the present and the future of the planet. This study incorporated ecological and cultural thinking into the context of curriculum planning. In this study, I explored theories in environmental education, ecological and systems thinking, and ecojustice education across many research studies. My project shows how culture influences, ways of environmental learning and teaching, and provides Chinese and western Canadian examples. Through personal stories and the use of autoethnography, I examined my embedded cultural perceptions of and my relationship with the natural environment. In doing so, I discovered how ecologically destructive thinking and behaviours are culturally embedded and the importance for educators to be responsive in how to address these cultural patterns in their teaching practices. Inspired by the insights that emerged for me through connecting my stories to the environment and culture, I provide examples to provoke teachers who teach young children to learn about living as a responsibility of being part of the world at large – that is, natural and cultural ecologies.

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Acknowledgements

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Chapter One

Introduction: Starting my journey

During my graduate studies at the University of Victoria in Victoria, BC, Canada, I immediately noticed differences between North American and Chinese scholars' perspectives on environmental education practices. My experiences in Canada enabled me to see critical challenges from diverse cultural perspectives. Given my unique perspective as a Chinese student conducting research in Canada, the focus of this project was to explore the two cultures from an ecological perspective that inquired into how culture influences my thinking about my relationship with the natural environment, and further, how cultural perceptions impact the global ecological crisis we face today.

I structured my project in the following manner: First, I share eight stories of personal experiences from both China and Canada. Then, using the approach of auto-ethnography, I examine the stories for deeper meanings as well as openings for my further inquiry based on the theoretical frameworks of environmental, ecological and eco-justice perspectives. Following this, I revisit key aspects of my life stories in China and Canada and identified critical ecological issues in the literature review. For example, my constant reflection on the experiences challenged me to rethink my identity as a city dweller who was far removed from the environmental crisis we see today, and as a result, led me to understand the deeper, embedded and layered cultural assumptions that were, to my surprise, ecologically harmful. As a result of this project, I have come to see how the ecological crisis cannot be fully understood without rethinking my relationship with both the environment and culture. I also used these insights to create new curricular possibilities for early years' education in China.

Past and present Chinese perspectives on environmental education.

The Daoism philosophy of *tian ren he yi,* which means humans live in harmony with nature, has a profound influence on traditional Chinese culture about nature. In Daoism, interconnectedness and interrelationships of humans and the environment are the roots of traditional Chinese philosophy, art and education. For example, in Laozi's *Dao De Jing (also translated as Tao Te Ching)*, he explained "道法自然" (dao fa zi ran) which means Daoism follows the way things naturally are (my own translation) (Laozi, Chapter 25). Laozi believes in protecting and respecting the original ways of beings of everything, which avoids humans' interferences or damage to the existing forms of the environment and the creatures that populate within. Zhuangzi further develops a Daoist philosophy of the environment which argues for respecting creatures' various ways of living and elaborates on the equality of things. For example, Zhuangzi states as quoted in Huang, "the nature of an ox is not to grow in order to be killed by a cook … and that of trees is not to be cut by carpenters" (Huang, 2010, p. 1054). Not assuming superiority or authority over other species radically changes humans' relationship with the natural environment and their worldview.

Modern Chinese society, in contrast, privileges scientific innovation and technological advancement over all forms of education. In China today, environmental education (EE) encompasses these same Chinese social and cultural values. Ji (2011) pointed out that Chinese educational sector categorizes EE into the field of science and technology education. Chinese society holds science in higher regard to other school subjects, while technology is the most powerful industry for economic progress. Today, schools address EE by treating environmental issues as problems to be solved or avoided (Sauvé, 2002). An appreciation for the natural

environment and the need for society to respect and preserve it is absent from EE in China (Xia, 2012).

Chinese teachers and students believe that achieving higher grades in exams will ensure a better future for both individuals and society as a whole. The Chinese entrance exam for universities, named "Gaokao," focuses on fundamental subjects (e.g. math, science, Chinese, and English), which require that schools put the greatest effort into these areas for academic achievement. Consequently, there are no resources (including time or space) for Chinese teachers to address environmental issues in classrooms because schools view environmental education as less important than those fundamental subjects. The dominant Chinese cultural value that emphasizes getting the best results in exams has limited the possibility of teaching environmental education widely in all Chinese schools. I explore these deeply rooted cultural beliefs further in Chapter Two, including how these ideas frame and shape our relationship with nature and the environment.

Connecting culture with environmental education in British Columbia, Canada.

In British Columbia, Canada, the new curriculum in B. C. encourages environmental responsibility and activism. Related to this but in another context, for example, during the 9th World Environmental Education Congress which took place in Vancouver in September 2017, environmental academics and activists discussed the need to weave connections between cultural perception and the human-environment relationship worldwide. Building on the Canadian lens of environmental education, scholars around the world sought an environmentally sustainable future in education. It is here that I suggest that China needs to join the global movement.

When Orr (2004) asked us what education is for, he reminded everyone that we should not answer this question in a way that falls into an economic trap, promoting Western cultural beliefs

such as individualism and isolation from nature and the environment (Orr, 2004). Instead, we need to realize that the way we learn to think of ourselves as autonomous individuals and separate entities from schools leads to the deep-rooted reason for our environmentally destructive ways of thinking and living. In other words, only after realizing the problematic cultural perception of our relationship with nature and the environment can we stop depriving the next generations of a future.

Autoethnography

In this project, I used autoethnography as my research methodology. Ellis and colleagues (2011) defined autoethnography as "an approach to research and writing that seeks to describe and systematically analyze (graphy) personal experience (auto) in order to understand cultural experience (ethno)" (Ellis, Adams, & Bochner, 2011, p. 273). Social science researchers believe that personal accounts (autobiography) and cultural meanings (ethnography) are two important components of the study of one's lived experience. Similarly, John Van Maanen (1995) acknowledged diverse perspectives and worldviews in different regions when using this qualitative method to research lived experience. These life experiences and related cultural understandings served as both the impetus and the data for my inquiry. Photographs provided a visual context in which to ground each of my stories. Analysis of the (social and) cultural aspects of my life experiences revealed deeper meanings in stories, a difference that distinguishes autoethnography from simply telling one's stories as factual accounts. Allen (2006), publisher of Left Coast Press said in an interview that, "what makes your story more valid is that you are a researcher. You have a set of theoretical and methodological tools and a research literature to use" (Ellis, Adams & Bochner, 2011, p. 276). Therefore, using autoethnography required me to examine my experiences in a deep way that brought into question, unrecognized cultural patterns

and biases that have shaped my assumptions about and relationship with the environment. I discuss this in more detail in Chapter Two.

Through the process of continual reflection that focused on my cultural understandings of my relationship with nature and the environment, I discovered hidden ideas most relevant within environmental education, ecological thinking, and eco-justice perspectives. The recursive activity of making sense of my life experiences from environmental and ecological perspectives added deeper layers of context, meaning, and significance to what I first assumed were simply my personal stories. By engaging in autoethnography, my intention was to see the environmental and ecological issues from my Chinese cultural lens, rather than simply explaining rigid and abstract concepts. At the same time, I wanted to invite the reader into my stories and reflective narratives, which are evocative memories of times spent in nature.

In writing and analyzing eight different yet connected stories about my interactions with Chinese culture, Canadian culture and the environment, I understood in a new way the interconnectedness between my lived experience and my perceptions of culture and the environment. Further, through reflecting on my "lived curricular… a somewhat different language … narratively told" (Aoki, Pinar & Irwin, 2005, p. 273), I saw my cultural perceptions of the ecological crisis as continuously changing and developing. For me, Bateson's (1972) idea of "the difference which makes a difference" (p. 316), which sheds light on the exchanging process of information, was key to my inquiry into issues in environmental education and the changing of my worldview. In this process of learning and relearning, I continuously reinterpreted the implications and resituating of my point of view, looking back at the tensions between my original assumptions and the ecological crisis. Specifically, shifts in my relationship

with animals and nature from childhood to adulthood provoked important differences that made a difference to my ecological worldview.

My stories

April 15, 2018

Recently I found a poem book named "Dog Songs" by Mary Oliver. In this poem, Mary wrote about how her dog Luke adored every blossom equally with an innocent and pure heart, which recalled my childhood feelings towards nature.

Just as Mary showed that Luke loved everything in nature, when I was in nature I felt as if I was the flowers, I was the dog, and I was the bees. Most importantly, I was happy.

Luke
By Mary Oliver

I had a dog
who loved flowers.
Briskly she went
through the fields,

yet paused
for the honeysuckle
or the rose,
her dark head

and her wet nose
touching
the face
of every one

with its petals
of silk,
with its fragrance
rising

...

into the air
where the bees,
their bodies
heavy with pollen,

hovered—
and easily
she adored
every blossom,

not in the serious,
careful way
that we choose
this blossom or that blossom—

the way we praise or don't praise—
the way we love
or don't love—
but the way

we long to be—
that happy
in the heaven of earth—
that wild, that loving.

Who I was.

Figure 1: Photograph of Dama and I, taken in Laoheishan, China, in November 2001.

When I was young, I spent every school vacation with my uncle and aunt at their farm by myself while my parents had to work. Laoheishan is a rather small rural town, which has a population of about nine thousand people and it is a three-hour drive away from the nearest city. My uncle is a professional beekeeper and he raised horses. My mom took a photo of Dama and me when I was seven years old. Dama was my favorite horse and she was a stunning brownish-red red horse who lived what I thought to be a very happy and long life. In my memory, Dama and I were lying on the grass and I leaned my body on her belly. I could hear the sound of her breath, the rustling in the leaves of the white birch trees, the buzzing sound of the bees.

I used to be a wild kid, riding the horses, hanging around with my friends along the rivers, and climbing the cliffs. I had no fear when I was in nature. I had love and wonder for nature. I believed I was part of nature and I felt a deep connection to and comfort with nature. Just as Mary showed that Luke loved everything in nature, when I was in nature I felt as if I was the flowers, I was the dog, and I was the bees. Most importantly, I was happy. The happiness I felt in nature as a child transitioned when I went to live in Harbin for university.

Harbin.

Figure 2: Photograph of Madier ice cream and Central Street, Harbin, China, December 2012.

Harbin, the capital city of Heilongjiang Province, located in the northern part of China, is where I started university in 2011. It is called "the ice city" because it is famous for The Harbin International Ice and Snow Sculpture Festival, where people can visit the world's largest ice and snow sculptures. In the summer, fragrance from lilac trees permeates the city. Another interesting feature of Harbin is the Central Street, a stone pedestrian street, built by the Russians a century ago, which lined with Renaissance and Baroque architectures.

It was in the fall of 2011 when I decided to start my university life in Harbin. I attended Heilongjiang University majoring in English Language and Literature. I chose Harbin because of my childhood memory of the hot summer days spent with my mom taking the train to Harbin for my piano level 8th exam. After the exam, we went to the Central Street in the evening, where the huge rocks on the road felt like a foot massage and the taste of famous Madier ice cream was unforgettable.

However, returning to the city of Harbin eight years later as a university student, Harbin was not what I remembered as a young girl, The Central Street has become the home for numerous gift shops. Harbin has developed into an industrialized city with many factories. The smog I experienced later and the way people polluted the beautiful city left me feeling disappointed. Luckily, the Madier ice cream was the same.

Ugly.

Figure 3: High school students wearing smog protection in China, October 2013.

This picture, taken by China Daily USA on October 22nd, 2013, is of a group of high school students wearing masks because of the smog in Harbin. At that time, I was an undergraduate student at Heilongjiang University in the city of Harbin. As a school requirement, all the students in our university must live on campus with designated dormitory apartment buildings according to their genders (girls only live with girls, boys only live with boys) and majors. I shared room 108 with three other girls from my class. Jian (now my husband) and I went to the same university, and he majored in Mathematics. Jian was my boyfriend and his dormitory was only five minutes' walk from mine, so we hung out a lot.

That morning, the temperature outside was minus 30 degrees Celsius. The fierce wind in winter would blow straight through the thickest winter jacket. I woke up and got dressed for my English Writing class in the morning. Picking up my phone, the first thing to do was to check the air quality, and I saw that the weather was cloudy and the air quality was "dangerous to breathe, PM 2.5 particulate matter level is 770, which means it is extremely higher than safe level". Luckily, I was fully equipped with gloves, a knit hat, my favorite blue scarf, and of course a breathing mask for the horrible smog. I didn't even need to think about wearing a breathing mask. As smog was a continuous problem during winter, wearing a mask became a habit. Walking to the classroom, smoky haze surrounded the whole campus and people quickly vanished in this horrible odorous mist.

As heating in Harbin is produced by burning coal, the air is so polluted that it is harmful to health during winter. It happens each year when the city starts to provide heating (the heating usually starts from the middle of October) - the smog will spread like a wild virus, quickly blanketing Harbin.

I realized that Harbin was no longer the city that I remembered as a child. Spurred on by the disappointment I felt in Harbin, I moved to Canada to begin a Master's degree in the area of environmental studies.

Beautiful.

Figure 4: Photograph of me in a canola field near Botha, AB, Canada, June 29, 2016.

On a sunny day at the end of June 2016, Jian and I woke very early in the morning because we were finally going to meet our new puppy. The puppies had just opened their eyes, so the breeder invited us to visit a month before we would bring our puppy home. After living in Canada for almost two years, Jian and I both loved the life here so we decided to extend our stay, which allowed us to expand our family to include a puppy. We had dreamed of raising a puppy together since we first met in Harbin in 2011. After some research, we decided on a golden retriever, as they are friendly and intelligent family dogs. Just like our destiny, we found a breeder online who happened to have a new litter. Driving northeast from Calgary to a town named Botha to visit the puppies, we were amazed by the beautiful bright yellow fields of flowers that stretched along both sides of the road and as far as we could see. It was the first time we had seen anything so vast and beautiful.

A few months later, I learned in a documentary that the beautiful yellow flowers that we had admired were of canola plants. I also learned that the oil produced from the canola plants is one of the world's main supply of cooking oil which is also most often grown from genetically modified (GM) seeds. I realized then that what I thought was beautiful was actually in reality, an ugly and serious ecological loss of biodiversity and soil contamination. I wanted to know why there was only one plant along the vast fields, so I started to dig further into the environmental aspects of the GM seeds. It was then that I started to question how my perspective of the world was determined by the assumptions I made about it. This trip to visit our puppy challenged my original taken for granted understanding of what was beautiful. What I did not yet know was how our decision to raise a dog would open up new possibilities for relating to the natural environment.

Yoho.

Figure 5: Photographs of the Yoho National Park sign and of Jian, our dog Yoho, and me near Red Deer, AB, July 19, 2016.

On a road trip during the summer of 2016 from Victoria to Calgary Jian and I passed a sign that read, "Yoho National Park". Before this, the word, "Yoho" was what I always shouted - "Yoohoo!" – when I felt really happy and excited. After the road trip, we learned that Yoho was actually a name that came from the Cree language on the website of Parks Canada Agency, meaning awe and wonder for nature, sometimes mixed with fear or surprise of the spectacular scenery. This coincided with us getting our new dog from Botha, AB that same summer.

After a two-hour drive from Calgary to Botha, we turned north onto Range Road 18-0 and followed it down a gravel road to a blue house. Two adult golden retrievers (they were Yoho's mother and father) came to greet us and we were a little frightened by them, even though they appeared to be friendly. A man introduced himself to us and led us to a barn. Jian opened the door and immediately I smelled the fresh, sweet hay. Next, we walked along the stalls to the end of the barn, when I caught sight of a whole picture of "golden nuggets". Ten puppies were all running around their play area, so joyful and carefree.

Without noticing what was happening, I found myself holding a puppy (I was so nervous and did not know how to hold a puppy properly). We decided to name the puppy "Yoho" after Yoho National Park. Her coat was the lightest in color among all the ten puppies and her personality was the quietest. This was a good match for us as Jian and I were typical indoor people living in the cities in China, so we both wanted the puppy to be a quiet indoor dog.

It was amazing to finally bring Yoho home. As we made our way back home with her, we stopped at a small park and took our first family photo together. Looking at the photo of us, I could not imagine our lives without Yoho.

Yoho runs free.

Figure 6: Photograph of Yoho, at the river in Fish Creek Provincial Park, Calgary, AB, Canada on September 25, 2016.

By September 2016, Yoho was almost four months old. Having completed all of her vaccinations, it was safe for her to finally explore the outdoors. We dressed Yoho in a pink harness and set out on our first road trip with her to an open outdoor natural environment. We decided to do this because we believed Yoho should have the chance to explore nature even though we still felt unsafe ourselves.

We chose Fish Creek Provincial Park as our destination because there are short hiking trails and a creek. It was a typical autumn day in Calgary, the breeze flowing by our cheeks and crispy leaves dancing on the ground. It was about a forty-minute drive from our apartment to the park. We parked our car in the lot and Jian carried Yoho out of the car, which was Jian's way of showing care for Yoho (he has always been a rather overprotective person).

Yoho's round eyes were wide open with the same look she shows when she sees her favorite treats. As her paws touched the ground, she looked at us and then rushed towards a path we had not noticed. Yoho led us into the woods. If we had not been following Yoho, we would have never done this as we could not see anyone around and we were afraid to explore alone. However, we forgot about our fears of the unknown as we followed an excited Yoho, continuing to follow her all the way to a rushing river. We were surprised to see Yoho so comfortable in what was a totally strange and open area. It was as if she just knew how to explore the natural world. Her behavior was in stark contrast to the fear she often displayed in a city. Jumping up and cheering with her tail wagging, she picked up a stick in her mouth and looked at us, communicating that she wanted us to throw the stick for her to catch.

Walking up to the running creek, Yoho was not so sure what to do, as this was the first time she encountered a creek. To spur her on, Jian threw some rocks into the water, which splashed into the puddles. Yoho was very curious about the puddles and gradually put her front paws into the fast-moving water. At first, she stopped with her front leg shaking, turned her head and looked at us as if to communicate that she was not sure whether to step into the water. We encouraged her and her next step was much easier this time; she was able to move around in the stream. It was Yoho's happiness and enthusiasm in the natural environment that made me begin to question my fear of the outdoors.

Another first.

Figure 7: Photograph of Yoho, with a stick at Bragg Creek Provincial Park, AB, Canada on April 14, 2017.

After Yoho's first winter in Calgary, she finally got the chance to play in the rivers again as the weather started to warm up in April 2017. The sun was high, and it was warm the day we decided to take Yoho to a river again. We buckled up in our car and let Yoho sit in the back. It was about one-hour drive to Bragg Creek Provincial Park from our apartment in Calgary, but it felt longer as we all could not wait to get to our destination. Singing to the music, I looked back at Yoho and smiled. Yoho's tongue was hanging out and flapping up and down while she was breathing with her mouth open; her tail was wagging, which meant that she was excited. After we parked our car in the lot, we decided to go hiking, following one of the trails suggested on the information board. The hiking trail allows hiking with off-leash dogs, so we let Yoho be our team leader as always because during the last year we had explored a couple places together and our trust in Yoho developed stronger each time. As soon as Yoho was off-leash, she ran forward like a racing horse and her tail was wagging in circular motions like a helicopter, communicating that she was cheerful and overly excited. We followed Yoho and we were not afraid to go into the wild natural environment anymore.

After walking in the forest for half an hour, we saw an open area with a river surrounded by rocks. Yoho was already comfortable moving around in the river, but she never tried to sink her whole body into the water (because Yoho's sensitive area is her upper back). Jian decided to encourage Yoho to swim for the first time, so he took off his shoes and socks, rolled up his trousers, and started walking across the creek. The water was the same height as his knees, which was shallow for a man. However, the water seemed very deep for a golden retriever.

I was worried about Yoho since it was not possible for her to walk across the river. She did not know what to do, so she whined and looked back at me standing near the creek. I believe my worried state influenced Yoho's feelings and made her more tentative. Yoho watched Jian crossing the river and seemed anxious as she was pacing with her tail tight and low; she looked at me as if she was asking for my approval to go for Jian. At this point, Jian was already standing at the other bank of the creek. Then he started shouting: "Come! Come here, Yoho! You can do it!" Right after that, Yoho did another first as she swam for the first time. In that moment, I realized the need for myself and Yoho to explore more new and natural surroundings.

Fenced-in and Fenced-out.

Figure 8: Yoho and me at the Alex Decoteau dog park in downtown Edmonton on January 13, 2018.

However, my anticipation for new adventures with Yoho became less possible as we moved again. We moved to Edmonton during the Christmas of 2017 because Jian found a new job in downtown Edmonton. We decided to rent a place near his company so that our daily routine - from groceries to work - were within walking distance. That winter was very cold in Edmonton with an average temperature of minus 25 degrees Celsius, which made it so hard for Yoho and I to explore outdoors together as we did before. In a We-chat (a Chinese messaging app) group for Edmonton dog owners, two girls asked me to join their meet-up at a downtown fenced park. One of the dogs was a husky named Taro and the other dog was a Samoyed named Momo. We entered the fenced area and closed the gate behind us, finding only a very small play area crowded with many dogs. Snow covered the play area, yet it did not take long for me to notice that underneath the snow was actually plastic artificial grass!

As Yoho entered the enclosed area, all of the dogs in the park went to greet her and one of them was barking. I saw people standing around the fences, some of them making phone calls, some texting on their phones, with only two talking to each other. I threw a tennis ball for Yoho to fetch. It only took about ten seconds for Yoho to run from the entrance to the very end of the park. Yoho, an athletic dog and a fast runner, was fetching the ball and coming back for me every few seconds. She focused on the game of fetch but not the other dogs. Taro and Momo also wandered around seemingly without purpose, tails loose and heads down, looking bored. After all of our adventures in big natural areas, my interpretation of Yoho's behaviour in the small park was that it was very unnatural to return inside the fences. While fenced-in Jian and I also felt the natural environment as fenced-out.

Inspiration to Change

During my childhood, I felt connected to the natural world, especially animals. I was not afraid to spend time alone walking along the rivers or wandering in the woods. I was lucky to grow up with different animals around my uncle's house: honeybees, horses, dogs, and wild boars. Feeding the horses was the first thing I did after getting up in the morning. I considered our horses and wild boars to be my friends; the only difference is that my friends wore furry coats. Looking back, I realized that my life on our farm formed me as a child with an innocent heart and a generous mind towards all the creatures that I encountered. At that time, the river was crystal clear - I could see so many fish - and the air was sweet with the fragrance of lilies. Folks around the neighborhood would wash the vegetables that they pulled from their gardens. In the afternoon, groups of children played and swam in the river. We used glass jars to catch the fish and splash water on each other, laughing all the while.

As an adult, I realized now how different things are. Reflecting on my life, I could see changes as I grew up. I spent most of my time in my apartment or shopping in the malls of big cities. The most popular TV shows and the fancy fashion trends kept me so busy that I did not want to spend time outdoors. Gradually, I disconnected from the natural environment; so much so that both my heart and my mind became numb to the people who littered in the streets, and I took no notice of the severely polluted air created by manufacturing factories. Because I did not have any chance to learn about environmental issues in my schooling, I did not question unjust acts, for example, how the people who live in the remote areas of China, also known as "cancer villages" are marginalized and suffer the most from air and water pollution. These people belong to the least powerful social groups. In all honesty, I did not see anything unjust or out of balance about the environment. However, as soon as I began my graduate studies in Canada and visited

the Pacific Ocean in British Columbia and found my way to the clear blue lakes in Alberta, it was as if I pushed the rewind button of my memories. With all my childhood experiences in nature flooding back, I realized how long it had been since I had spent any length of time in the natural environment. Fast forward many months later, I found myself on a journey that at first glance, involved raising a dog with my husband. However, it was during this time that I realized I had a fear of being in big parks and open natural spaces. Looking back, I wondered how I had become so afraid of nature and if this was somehow connected to my cultural ways of knowing and being?

The guiding questions for my project are: (1) What is the ecological crisis? (2) What does culture have to do with the ecological crisis? (3) How do our cultural perceptions influence our relationship with nature and the environment? In this inquiry, I examined the cultural lenses through which I view the world and the taken for granted assumptions that influence my relationship with nature and the environment. I connected the impact of my cultural ways of knowing and being on my life experiences, related these with the literature in ecological and systemic thinking, and re-viewed China's environmental education with these new perspectives.

Theoretical Framework

This project draws from three discourses, namely, environmental perspectives (Orr, 2007; Shiva, 2008; Suzuki, 2004), ecology and systems thinking (Bateson, 1972; Capra, 1996), and ecojustice education (Bowers, 2001; Martusewicz, 2005). Together, these discourses combine to provide a coherent framework in which to situate my stories, expose the tensions inherent in them, and help me to examine specific issues related to education in a deeper and more critical way.

Environmental perspectives on the environmental crisis.

Shiva (2008, 2010), Suzuki (2004, 2014), Orr (2007, 2011) and many more environmental scholars and activists continue to shed light on the increasing degradation of natural systems around the world. These include: increased land temperature and rising sea level caused by global use of fossil fuels and nuclear power (Nordell, 2003); air pollution and acid rain created by coal-burning factories (Chan & Yao, 2008); contamination of heavy metals and loss of nutrients in the soil from excessive use of chemical pesticides and fertilizers by industrial agricultural corporations (e.g., Monsanto) (Chang, Li, Jiao, Xiao, & Chen, 2015; Shiva, 2009); and severe water shortages that result from the extraction of groundwater by soft drink and food companies (e.g., Coca-Cola and Nestle) (Gleick, 2010; Lambooy, 2011). Many of these events are irreversible, if not immediately life-threatening. For example, not only does smog lead to decreased quality of life but it also contributes to medical conditions such as lung cancer in humans and other animals (Matus et al., 2012). With the advent of genetic engineering of crops, such as genetically modified (GM) canola, GM corn, and Bacillus thuringiensis (Bt) cotton, there has been a loss of biodiversity in plants around the world (Shiva, 2010). Deforestation is related to this loss in biodiversity and it has far-reaching consequences. In 2017, over 400 people were killed by severe flooding and mudslides in Sierra Leone, Africa as a result of the deforestation and slope undercutting by the diamond and mining industry (BBC News, 2017).

Environmentalists assert that we cannot ignore how our actions affect the earth and that the urgency of the situation must be of concern for everyone; that is, the consequences that impact the ability of the earth to support life directly affect all humans living on it. Further, environmental educator Orr (2011), argued that the purpose of education is to prepare learners with knowledge that takes into consideration the lives of humans and non-humans in ways that

reduce the emission of greenhouse gases, protect biodiversity, conserve soils, use efficient energy forms, and repair damage done to the earth. Similarly, Canadian scientist and environmental activist Suzuki (2004; 2014) asserted that people need to recognize the fragility of nature as well as how they can care for the environment. This, he urged, must be the focus of older generations in order for the younger generations to have a chance at making the world a better place. Like Orr, Suzuki argued that environmental education is not a choice but an imperative. Moreover, Suzuki stated that since "children are inherently curious about the world" (2004, p. 3), this reason alone should compel parents and teachers to "take children exploring outside so they can experience the magic of the natural world themselves" (Suzuki, 2004, p. 3).

Systemic perspectives on the environmental crisis as an ecological crisis.

Naess, a Norwegian philosopher who coined the term "deep ecology", proposed a new perception of our relationship with nature and the environment. To cultivate a closer, more connected and ecological self with the environment, the "ecological Self", as Naess, Drengson & Devall (2008) described, is how we identify ourselves in relation to other beings, ecosystems, and the earth. Naess and colleagues further explained the ecological Self as involving the sense of belonging to a place. Examples included "this place is part of myself" or "my relation to this place is part of myself" (Naess et al., 2008, p. 87). Naess argued that it is the connections between people - and the features of the places where they live - that shape who they are. Therefore, people may lose their identity due to destructive changes to these places, thus embedding a powerful sense that "if this place is destroyed, something in me is destroyed" (Naess et al., 2008, p. 88).

Similarly, ecological and systems-thinking focus on patterns of relationships among members of the earth's household with the environment (Capra & Luisi, 2014). Ecological and

systems thinkers Bateson (1972) and Capra (1996) argued for the need to recognize the relationships within systems rather than simply the component parts that make up a given system; in this way, they saw all living systems as interconnected and necessary parts of larger systems and contexts. To fully conceive how systems are dynamic and essential parts of other systems, it is not possible to view them as separate or independent from the larger systems in which they exist (Capra, 1996). Rather, life imagined as a web in Chief Seattle's speech in 1854 (Furtwangler & Seattle, 1997) makes it possible to acknowledge that a society's ways of living, the natural environment, and the whole ecosystem are constantly exchanging energy, matter, and information. Based on this systemic ecological view, Bateson (2002) and Capra (2009) put forth the view that the environmental crisis is not simply a matter concerning the natural environment, but in contrast, the environmental crisis is an ecological crisis that affects and is affected by all the living systems on earth.

To illustrate the influences from human activities to ecosystems and vice versa, it is crucial to acknowledge the complexity that lies in different living systems. However, we often take for granted the impact of human activities on other living and non-living systems, considering them to be one-way linear relationships. For example, people who work in industrial agriculture companies consider single crop farming to be the solution to world hunger (Struik & Kuyper, 2017). Simply put, they believe growing certain high-yield crops such as wheat, rice, corn, and soybeans is the key to provide enough food for the growing population, justifying chemical pesticide and fertilizer application. However, the impact of single-crop farming is complex and often overlooked. For instance, due to monoculture, certain crops provide abundant nutrients which some insects prefer to feed on, promoting insect outbreaks (Altieri, Nicholls, Henao, & Lana, 2015). Heinberg (2012) made the point clear that "you can't just do one thing. The world

is filled with relationships, and anything we do is going to impact parts of the system that we may never have even thought of" (Heinberg, 2012, para. 2). Ironically, the idea that single-crop farming was the solution that would solve the problem of how to feed the growing population has become the source of many problems such as toxic pollution to soils and water (Abdullah Al Mahmud, Rahman, & Hossain, 2018; Maharjan et al., 2016). And as the pollutants linger in the food web, they affect earthworms, birds, fish, humans, and all other living things (Carson, 2002).

Looking from a systemic perspective, it becomes obvious that human activity is negatively impacting ecosystems in numerous ways. For example, in the early 1990s the overfishing of Newfoundland cod resulted in the collapse of a cod fishery. Connected to this was the loss of tens of thousands of jobs, which cost of at least two billion dollars in income support and retraining (Haedrich & Hamilton, 2000). The discharge of toxic chemicals and heavy metals, fertilizer runoff, and plastic marine debris contributed to nutrient loss and interrupted the reproductive abilities of animals such as fish, birds, sea turtles, and marine mammals (Campani et al., 2013; Green, Boots, Blockley, Rocha, & Thompson, R., 2015). Worldwatch Institute and pioneer environmentalist Brown (2009) made this point clear, explaining that, "each of these discharges that build up in the oceanic food chain threaten not only predatory marine mammals, such as seals, dolphins, and whales, but also the large predatory fish, such as tuna and swordfish, as well as the humans who eat them" (Brown, 2009, p. 474). Reflecting on this, overfishing and marine pollution are only two examples of the connection between animal well-being and human food resources and health conditions. At the very least, even if we remain focused on only our human lives, the simple fact is that we need the earth's natural systems to live. This should be reason enough, as Brown (2009) argued, for us to protect biological diversity and restore the earth rather than treating it in a harmful way.

Eco-justice education and cultural perceptions.

The first time I encountered the concept of "eco-justice education" was in my master's course on Critical Discourses in Curriculum Studies. It was the work of Bowers' that caught my attention. Bowers, who coined the term "eco-justice education," believed that reforms in education must focus on ecological values that promoted culturally diverse and responsive schools and communities. He criticized Western cultural practices that promoted consumerism and industrial expansion. For decades, Bowers examined the cultural roots of the ecological crisis and the need for a revitalization of the ecological and cultural commons (Bowers, 1993; 2006; 2012). In these ways, Bowers' scholarship in the field of eco-justice educational reform is critical to my inquiry. Most importantly, Bowers' identification of the disconnect between our cultural ways of thinking and the effects of this thinking on the earth exposes the ecological crisis to be just as much about a cultural crisis of perception. Here, Bowers asserted that the disconnection between humans and their environment lies in human-centered cultural ways of thinking and being. For example, Bowers argued that the dominant industrial and consumer dependent form of culture created a taken for granted mindset in which people think of "consumer dependency and environmental degradation as a necessary trade-off for achieving personal conveniences and material success" (Bowers, 2002, p. 30).

Other eco-justice educators such as Johnson and Martusewicz (2016) examined how cultural contexts contribute to individual identities and project an epistemology that articulated humans as superior to other animals and the natural world as resources for human consumption. These scholars see the Western middle-class worldview as rooted in problematic cultural patterns of thinking in which technological advancement and radical exploitation of natural resources are considered normal and right. In this regard, eco-justice educators defined the ecologically

destructive cultural perception as a human-centered worldview that put humans at the highest status among all other living things. Following this thinking pattern of human dominance over other living and non-living systems, the destruction of the natural environment and other animals becomes justified and taken for granted. For this reason, eco-justice educators see it as necessary to recognize and challenge problematic assumptions to slow down the devastation of the environment and cultures.

Eco-justice educators call for educational reforms that create opportunities for students to appreciate, "an embodied connection to the earth and to respond with a relationship of care and mutuality" (Johnson & Martusewicz, 2016, p. 57). Examples of these include learning how to grow food and care for animals and learning about cultures that practice healthy and sustainable ways of living. In brief, eco-justice education not only focuses on the deep cultural roots giving rise to the ecological crisis, but it also brings into the conversation social and cultural ways of living that contribute to an ecologically just and sustainable future.

Significance

The integration of the three discourses in my theoretical framework enables a more holistic and complex view of the ecological crisis. Here, environmental education is providing a critical lens through which to view the urgency of environmental concerns. Ecological and systems-thinkers emphasize the interconnectedness and interrelationship across systems and their contexts. An eco-justice perspective brings attention to the deep-seated cultural assumptions that underpin and directly impact how we relate to and affect other living systems. Given the complexity of the environmental crisis, which is at large an ecological crisis of cultural perception, the three discourses in this project are necessary in order to examine and understand

issues concerning cultural assumptions about the relationship between humans and the environment in deep and connected ways.

Project Overview

As I explored Curriculum Studies in Canada, my worldview towards nature and the environment changed. This change was further influenced by my experience of raising a dog with my husband. In my stories, I described how my outdoor experiences provoked me to consider which cultural assumptions have changed since my education in China. Starting from this, I illustrated three important discourses, namely environmental perspective, ecological and systems-thinking, and eco-justice education, all of which form the basis of the key points of my arguments in the following chapter. In Chapter Two, I examine the literature that elaborates on my theoretical framework, bringing new understanding of my stories, and my reflections together to exemplify a deeper understanding of the ecological crisis. In Chapter Three of my project, I include suggestions for practical teaching ideas to create stories for young students in China. In this way, I wish to provide some useful provocations for Chinese early childhood teachers as I believe how they teach young children to see the world is crucial to change what I now view as problematic cultural ways of thinking and living. With these activities I hope to open new possibilities for teachers to question and reconsider assumptions— specifically, our relationship with the environment and local communities, with younger generations.

Chapter Two: Literature Review

Introduction

In this chapter, my review of the literature facilitates a deeper understanding of the following two arguments: First, that the environmental crisis is an ecological crisis, and second, that the ecological crisis is a cultural crisis of perception. To understand why the environmental crisis does not simply involve the problems of the environment but also entails ecologically destructive cultural patterns of thinking, I further analyze my stories from Chapter One in the three sections that follow. I structured the literature review as follows: first, I identified three main themes that enabled me to continue my inquiry and review relevant literature. The three themes are: place and identity – farm and city; culture and environment; and, a changing worldview. Then, for each theme, I chose significant quotes from my stories to connect my experiences to the literature. Each quote provided an opening for me to revisit the story, drawing me back into a reflective process in which I realized that some of my cultural assumptions were problematic and ecologically destructive.

Place and Identity – Farm and City

> "Growing up on a farm, I used to be a wild kid, riding our horse and hanging around … along the rivers and climbing the cliffs" (Who I Was).

On the farm.

My childhood on the farm had a profound effect on my understanding of the environment, shaping my identity as one that was intricately connected with nature and animals. I believe that the farm as place is a part of me today, even as an adult, because I lived my life harmoniously around animals and the mountains. In the same manner that David Orr (2007) posited place as teacher, growing up in a small town that offered great outdoor experience and adventures taught me a sense of belonging to the rivers where I swam and to the cliffs that I climbed with my

friends. Over the years, this place taught me to care and take responsibility for the local environment and the well-being of different living systems, for example planting trees and picking up litter along the river. Similarly, researchers conveyed that helping young children learn about being responsible stewards of their environment can increase the probability that they will be more conscious about their surrounding environment in their daily lives (Blanchard & Buchanan, 2011; Davis, 1998).

Urban spaces.

Nowadays in China, children spend significant amounts of their time in after-school tutoring. Examples include: writing skills development classes, piano lessons, mathematics tutoring, English competition classes, etc. This is different from how I spent my time as a child twenty years ago. Not surprisingly, it is also during the past two decades that environmentally destructive human activities have threatened ecosystems worldwide (Dodds, 2008). Children in China do not have the stamina or resources to play in a natural environment which limits their opportunity to learn about how their worldviews and behaviors would influence the environment. Young children nowadays spend little time outdoors and free play time is fairly restrained. Examples of the difficulties that Chinese kindergarten teachers face include safety concerns, lack of resources, limited choices of activities, the large size of a class (Hu, Li, De Marco, & Chen, 2015). I also wonder how parents' environmental views and values affect their child's life. Based on what I observe today in China, "climbing the cliffs" as I did during childhood does not appear to be a popular activity among youngsters. However, David Orr (2011) reminded us that we need to realize that "the weakening sense of place … in our culture is at the heart of what is called ecological crisis" (Orr, 2011, p. 220). In other words, if children do not have the opportunity to learn how to take care of the land, how could we expect them to address global environmental

problems? From here, I investigated the approach of place-based education and its implications to promote a sense of belonging, which could inspire stewardship for the local natural environment.

Place-based education.

Place-based education is a term first coined in the early 1990s by The Orion Society (1992). Originally, a Massachusetts-based nonprofit organization promoted this approach, which was later developed by environmental educator David Sobel (2004) to provide students with practical engagement with their local communities and environment (Meek, 2011). David Sobel (2004) posited that through real-world learning experiences, place-based approaches enhance students' appreciation of the natural environment and establish a sense of commitment to serving local communities through active stewardship. Place-based education, in this way, is designed to awaken students' sense of place and cultivate their responsibilities for the local natural environment. Its purpose is not only to develop students' feelings of belonging and responsibility but also to help teachers connect classrooms, families, and communities to protect the local environment.

Many researchers consider eco-justice education to be compatible with place-based education as both approaches address local ecological injustices (Lowenstein, Martusewicz, & Voelker, 2010; Power & Green, 2014; Wason-Ellam, 2010). For example, Lowenstein et al. (2010) combined eco-justice education with place-based education. They suggest that, in collaboration with place-based education, eco-justice educators ask students to identify the deep cultural roots of the issues in their immediate environment, such as the schoolyard, the neighborhood, or a local park. In doing so, there is an opportunity for teachers and students to examine and respond to both social injustice and the ecological degradation in their local

communities. Place-based education emphasizes students' cultivation of responsibility towards a democratic and sustainable community. In other words, through regularly visiting local places and looking into the embedded cultural aspects of environmental concerns, students have more opportunities with everyday contexts to start caring for their environment and community, which help them to cultivate a long-term relationship with a place. This echoes with David Sobel (1996), who posited that "what's important is that children have an opportunity to bond with the natural world, to learn to love it, before being asked to heal its wounds" (Sobel, 1996, p. 10).

A place-based approach may also reinforce young children's cultural understandings of local places through embodied learning experiences. For example, Wason-Ellam (2010) studied third graders from an urban school in Saskatoon, Saskatchewan. The children participated in various activities including painting, field walks, and group discussions. As each student became familiar with the river valley in diverse ways, they later contributed each of their culturally diverse perspectives during their discussions. Over the school year, the students used their imagination and sense of wonder to open dialogues and inquire into environmental topics at the nearby river valley. As the children became conscious of the issues, through thoughtful observations and conversations, what they previously referred to as "the river" became "our river," which signified a growing sense of and connection to place (Wason-Ellam, 2010, p. 286).

The importance of considering place as an essential element of school practices and curriculum lies in its inclusiveness of everyday contexts and hands-on learning experiences (Sobel, 2004). Scholars believe that place-based approaches help overcome the possible disconnection between school teaching and children's lives in a way that incorporates typical features of the local environment into the curriculum (Brkich, 2014; Smith, 2002). For instance, earth science teachers in Florida, USA enacted place-based approach with urban fifth graders,

where the students had the chance to take photos to find earth science in their daily lives such as a weathered rock and as a result, the students had the opportunity to learn about earth science directly from their local environments (Brkich, 2014). Other examples include a group of pre-service teachers reimagined new ways of teaching and learning and brought new possibilities for the young students to learn about local places that beyond the classroom walls (Power & Green, 2014).

Culture and Environment

> "[S]moky haze surrounded the whole campus and people quickly vanished in this horrible odorous mist." (Ugly).

> "we were amazed by the beautiful bright yellow fields of flowers that stretched along both sides of the road and as far as we could see." (Beautiful).

As I reflected on the ugly smog further, I started to think about other environmental challenges that people in China face, in particular, 'cancer villages' (the county-level clusters of high cancer incidence due to pollution) (Lora-Wainwright & Chen, 2016). At first, I thought the smog and 'cancer villages' in my country to be completely separate problems, yet now I am see they are two symptoms related to the disease of the environment. The ugly smog I experienced made it hard to see clearly and uneasy to breathe. In a similar and metaphorical way, the smog also prevented me from really understanding the deteriorating environmental health in China and of the planet as a whole (Shapiro, 2012). Like the smog, 'cancer villages' are another indicator of the same problem. The general public in China, including the villagers, might not fully understand what is causing the villagers' illness yet they are still living in areas where factories pollute the water, air, and soil with chemicals used in the manufacturing process. The disease of

the environment, which is due to industrialization and the resulting pollution, has manifested both the smog and cancer in humans.

What is "ugly"?

Without a doubt, air pollution is one of the greatest environmental challenges in China today. When people have no option but to live with severe smog, serious health concerns that include lung diseases like tuberculosis and cancer (Shapiro, 2012), heart failure, and asthma exacerbation (Lancet, 2014) are inevitable consequences. Even though the smog that I experienced in Harbin was serious enough, it still did not draw enough attention from the government to address this issue immediately. Not until one month later did Beijing experience a week-long episode of smog. This time the "horrible odorous mist" influenced the capital city of China, which also signified the beginning of public attention and government redress of air quality in China (Shi, Wang, Chen, & Huisingh, 2016).

Looking back at the public's reaction in Harbin (a fairly remote city) and Beijing (the capital city), I wondered why there was a lack of concern regarding pollution and the related health risks. Upon researching Chinese citizens' perceptions of the country's environmental pollution, including smog, water pollution and related health concerns, I discovered that there are two extreme groups: one group who are aware of the health risks and empathetic to the suffering of marginalized people, and another group who are unwilling to care for the well-being of the environment and lack empathy for those influenced by the pollution. The two groups are: the victims ('cancer villagers') who suffer the most from the pollution of air, water and soil, and the middle class citizens, who live the most affluent lives yet perceive little of the risks of environmental pollution (Chen et al., 2017; Lora-Wainwright & Chen, 2016). As middle-class citizens who have a better educational background and higher income levels, their daily lives in

many ways both conceal and are concealed from ecological crises. To a significant extent, they have adopted a "taken-for-granted" attitude that follows a pattern in which environmental problems are "out of sight and thus, largely out of mind" (Bowers, 2001, p. 16).

The phenomenon of 'cancer villages' reveals the social inequity and environmental crisis in China due to rapid industrialization, which is harming the health of rural and poor people most (Zhao, Zhang, & Fan, 2014). In China, the rural and mountainous areas, where the 'cancer villages' are located, are the places that are the least economically developed and the most polluted (Gao, 2013; Lora-Wainwright & Chen, 2016; Liu, 2010; Zhao et al., 2014). The phenomenon of 'cancer villages' has existed since the end of the 1970s (Zhao et al., 2014). However, it was not until 2013 that 'cancer villages' first captured the public's attention when the Chinese government publicly acknowledged the existence of villages where high rates of cancer typically correlated with severe air, water, and soil pollution from harmful chemicals and heavy metals directly released into their communities (Ministry of Environment, 2013, p. 9). This official recognition from the Chinese government served as a starting point for villagers to raise concerns about environmental pollution (Lora-Wainwright & Chen, 2016).

In 'cancer villages,' the harmful pollutants released into the river from factories caused smelly water, loss of prawns and fish, and skin irritation on contact with water, which severely influenced villagers. However, as Lora-Wainwright and Chen (2016) reported, "cancer villages remain largely a sociopolitical issue rather than an established medical fact" (p. 411), which means there may still exist various regulations regarding the redress of the pollution and some industries refuse to admit their negative impacts on villagers' health condition. In conclusion, the phenomenon of 'cancer villages' cannot be understood if separated from the social context, which in this case is the fact that township and county governments who are faced with financial

pressures and "may opt for limited pollution monitoring and repression of local protests" (p. 404). Most importantly, these areas still need further attention to address the environmental concerns and support villagers' rights for a healthy living environment.

What is "beautiful"?

The never-ending canola fields once beautiful revealed the ugly aspects of industrialized farming. My curiosity to find out more about the bright yellow flowers led me to discover that genetic engineering is the reason behind the massive production of canola seeds. However, what shocked me more was to learn the ecologically destructive consequences brought by genetically modified (GM) canola. Industrialized production of GM canola not only related with oversimplified varieties of crops (Barfoot & Brookes, 2014) but also could lead to irreversible damage to the balance of the ecosystem (Bailleul, Ollier, & Lecomte, 2016). For example, herbicide-tolerant genes might transfer from canola plants to weeds, causing herbicide-resistant weeds (Bawa & Anilakumar, 2013). After I discovered the damaging environmental effects related to GM canola, I also learned about the need for sustainable alternatives such as farms based on principles of permaculture that are organic, bio-diverse, and use alternative methods such as water harvesting and composting. I started to realize that, environmentally, things are not always what they appear to be.

China and Canada are the top two producing countries of genetically modified (GM) canola. It never occurred to me that GM canola seeds were ecologically destructive when I was in China due to the lack of environmental education. It was only when I moved to Canada that I found local farmers confronted injustice in their choices of farming when the GM canola seeds became more popular among Canadian farmlands. Corporations brought genetic engineering into farming, focusing more on economic profits. This not only overlooks the possible negative

impacts on the local environment but also deprives farmers' practices of their conventional knowledge. Deborah Koons' (2004) documentary, *The Future of Food*, further revealed the injustice and the battle between a Canadian local farmer, named Percy Schmeiser, and the global company Monsanto over GM canola seeds. GM canola seeds contaminated farmland that once grew organic food. However, Monsanto sued Percy Schmeiser and another 9000 farmers worldwide, claiming these farmers used patent genes without permission. A money-driven mindset is controlling corporations and local farmers pay the price, with corporations neglecting the fact that the farmers never wanted to grow the GM seeds. The "beautiful" canola field in Alberta implied an issue of injustice brought on by big corporations to local farmers.

How do such culturally embedded perceptions of the environment influence people's ways of thinking and ways of living, especially the younger generations? When I thought about why I perceived the canola fields to be so beautiful only based on what I could see, I wondered if there was a connection between how I grew up to see the world and what other assumptions I had that were hiding the connections between human activities and the environment. I was lucky that my childhood fostered a closeness to nature, the environment, and animals; however, this is certainly not the case for most children in China today. What is the current curriculum of early childhood education in China and in BC, Canada? And what role does each play in shaping how educators instruct children to see the world as well as their relationships with the environment?

The impact of culture on curriculum.

Culture poses a strong influence on education as Bowers said, "cultural knowledge that becomes part of the natural attitude of the teacher and students may represent the most formative and powerful aspects of the educational process" (Bowers, 1993, p. 121). In the context of Chinese culture's influences on curriculum, Pinar argued that Chinese schooling sometimes

excessively relies on textbooks, which entails economic interests that further emphasizes on examinations (Pinar, 2014).

For example, The National Guidelines for Early Learning in China, published in August 2001, emphasized five main aspects of early childhood development: health, language, society, science, and art. There are three main characteristics from the curriculum: 1) a focus on children's intellectual development, for example, "develop interests in reading and writing" (p. 4), "feel the quantitative relationship and realize the importance of mathematics through lives and games" (p. 7), and "promote interests in quantity, quality, shape, time and space and solve problems using simple mathematical approaches" (p. 8); 2) the view of group activities as a waste of time, for example, "teachers need to ensure young children actively participate in group activities directly instructed by teachers" and regarding to "the free play time", the guideline says "try to avoid unnecessary group activities" (p. 12) which can indicate a lack of free exploration of the environment.

The principles in the above guidelines indicate a disconnection between community and young children' daily life experiences, rather the children have to obey certain disciplines that might restrict their free movement to explore the environment. However, these values contradict with environmental education, ecological thinking and ecojustice education because they are rather enclosed and neglect the interconnection between young children's mind, body and the bigger world besides the classrooms.

The Early Childhood Education (ECE) curriculum in British Columbia, Canada, on the other hand, appears more comprehensive and more holistic in its vision for early learning than the one in China. For example, the framework encompasses a wide range of areas of early learning: well-being and belonging, exploration and creativity, languages and literacies, social

responsibility, and diversity. Natural environments are regarded as particularly important to promote early learning, enabling the perfect setting for holistic learning: "Exposure to natural environments strengthens children's relationship to nature, building the physical, social, emotional, and intellectual connections that are a necessary motivation for environmental stewardship" (British Columbia Early Learning Framework, 2008, p. 11). In this regard, the B.C. framework welcomes young children to understand their relationship with nature and the environment.

In general, the gap between China's and Canada's ECE curricula lies in the opportunities that each curriculum provides in developing children's awareness for and perception of the environment, as well as their relationship with nature, animals, and other living systems. BC curriculum aims to develop a sense of wonder for nature in children through hands-on activities using natural materials like branches, flowers, and shells, with exploration in local natural environments like mountains, the ocean, forests, and rivers. In comparison with the ECE curriculum in BC, Canada, China's ECE curriculum is rather enclosed and restricted to school settings. We need to understand this difference with the cultural context that Chinese teachers and parents demand children's academic achievements (Li & Chen, 2017). Thus, there may be no time and resources for Chinese young children to explore and learn through play, as provided in the BC curriculum. However, the lack of human-nature interactions in early learning not only limits opportunities that can contribute to children's well-being, but also discourages occasions for younger generations' to develop care and empathy for natural environments and wildlife (Soga & Gaston, 2016).

A changing worldview

"While fenced-in Jian and I also felt the natural environment as fenced-out." (Fenced-in and Fenced-out).

As a result of comparing the BC ECE curriculum and China, several further questions emerged for me: What forces limit ways of thinking about the relationship between the environment and the urban world? The limiting of young children's outdoor exploration in Chinese context led me to inquire further into other cultural forces that enclosed and conditioned my ways of thinking and living, which separated me from nature and the environment. In what ways might children connect with the environment? My worldview and relationship with the environment continues to change with Yoho through awe and wonder for nature. Based on my experiences, I examined the research literature that highlighted educational experiences with the environment to search for new possibilities to (re)connect young children with nature.

Fear and dislike.

Unlike my childhood where I spent all my time exploring outdoors, I was scared to go outside and spend time in nature as an adult. I worried about confronting wild animals, losing my way in the forests, or falling with no one around to help me. It was as if I could have put myself in danger when I went exploring in big and open natural environments. Bateson (1972) described this as a double bind, where people face two contradictory options, with no way of getting out of this situation. For me, the more I worried about the possible dangers, the more I feared and disliked nature. However, if I did not question my fear for nature, my urban lifestyle— promoted by modern society—my feelings of fear around exploring outdoors would continue. I now sensed the cultural 'fences' of modern urban lifestyle and how they fenced me in, separating me from my once strong love and connection with the natural environment to now fencing it out and in doing so, instilling a sense of fear for and disconnect of the natural environment. What were these cultural fences that stopped me from freely exploring nature in China and later in Canada?

What made me think that city life was safe and peaceful whereas exploring the outdoors was dangerous and stressful?

Several authors argued that humans were once closer to nature both emotionally and physically than people who now live in industrialized countries are today (Vining, Merrick, & Price, 2008). It is true for the case in China as China experienced rapid urbanization over the past three decades, which neglected and sacrificed the ecological aspects of natural environments (Zhou, Xu, & Lin, 2017). Examples include the rapid speed of urban development and the imbalance between city planning and reserves of the ecosystems, such as the contamination of the drinking water (Wang & Yu, 2014) and loss of natural habitats (He, Liu, Tian, & Ma, 2014). For city dwellers, rapid urbanization and loss of natural habitats mean limited access to natural environments, however, the urbanized lifestyle makes people forget about the well-being of other natural living systems. Instead, people who live in big cities value personal agendas. This is what Naess described as the shallow ecological self (Naess, 1973).

Similarly, Bowers (2005, 2006) argued that for many of us in modern Western cultures, with their cultural commons and norms consumed by the processes of commodification, it is difficult to identify our close relationship with the environment as still existing. Yet we have come to believe that technological and scientific advancements will solve environmental problems (Bowers, 2013). Thus, as Bateson (1972) argued, it is the very modern global economic practices, such as consumerism and commodification, that are destroying the earth, cutting us off from acknowledging our interdependence and protecting the living relationships within larger systems (Martusewicz, Edmundson, Lupinacci, 2015). The sad truth, is that the future of our planet desperately depends on this understanding of our connection to the world around us and to each other (Bodor, 2016).

Awe and wonder.

Going to the big parks was never the first thing to come to my mind when I had some leisure time; instead, I would rather go to a big shopping complex and hang out with my friends. For me, open natural parks were scary because I assumed that walking in the woods might be dangerous, real or imagined. Later, my new experiences of raising an energetic dog named Yoho with Jian totally changed my way of living. Yoho was constantly pushing us out of our comfort zone, following her along hidden paths while hiking. Gradually, with Yoho's help, I was not afraid to spend time hiking in the woods anymore.

As mentioned earlier, the word, *Yoho* comes from the Cree language, as an expression of "awe and wonder for nature" (Parks Canada, 2018). Yoho was an expression for those exceptional and great natural places that could provoke a mind-slowing astonishment. Sandford (2010) describes the meaning he developed for Yoho and his keen sense of place living simply in the small town of Field, B.C., Canada. In his book *Ecology & Wonder in the Canadian Rocky Mountain Parks World Heritage Site*, Sandford (2010) described how living in the mountains shaped the lives and worldviews of the people in Field in the 1970s. Local people had little need for material things such as luxury cars or fashionable clothes. Rather, they relied on life skills – cutting firewood, cleaning a chimney, using practical vehicles - and they put more clothes on when the weather got cold rather than turning up the indoor heating. In Field, people have good knowledge about the seasons and a close relationship with the mountains because they must understand patterns of relationship in order to live there. From the mountain life in Field, Sandford (2010) concluded that "if there is wonder in Yoho, it is in part because people put it there" (p. 236). This may indicate that awe and wonder for nature comes from people and further develops a sense of place in people through "years of subtle learning that comes only from

cumulative observation" (p. 236). It is here that people develop a kind of mindfulness and willingness to think in terms of relationships, which shows a good example for what Naess referred to as "deep ecology" and Bateson called an ecology of mind (Bateson, 1972).

Today there are schools that are trying to cultivate close relationships with nature and animals through outdoor programs, which incorporate the concept of respect and astonishment for nature. The benefits of such immersive educational programs is that they provide opportunities for children to develop connections and positive feelings toward nature (Kossack and Bogner, 2012; Lieflander, Frohlich, Bogner, & Schultz, 2013; Mullenbach, Andrejewski, & Mowen, 2018). For example, students have opportunities to observe and learn about local flora and fauna (Kossack and Bogner, 2012); to play games such as walking barefooted in a shallow creek; to assess water quality through identifying aquatic animals and plants along the banks of the river (Lieflander et al., 2013); to play outdoors regardless of the weather conditions including rainy and cold days and to learn about natural cycles and animal adaptations (Mullenbach et al., 2018). These educational outdoor programs invite students to play outside and learn about local natural environments in numerous ways.

Fenced-in and fenced-out.

After my experience of revisiting the natural environment in Calgary, I was surprised at how unnatural it felt to spend time in the small fenced park again in downtown Edmonton. The park was as an area enclosed by fences. It kept people and their dogs contained, separated from the rest of the surroundings. From my observation of the people who live downtown, my interpretation of their busy lifestyle is that these indicated a possible disconnect between people and the environment. I realized that while the city is becoming even more urbanized, people's ways of living and thinking is increasingly becoming limited to a self-centered, fast-paced, and

efficiency-driven way of being. Very quickly, I came to see, in an analogous way, how the fenced-off area of the dog park physically separated people and dogs from the possible interactions with the environment.

Bowers explained the term "enclosure" in his EcoJustice Dictionary (2005) to describe the process of privatization of lands and cultural heritage, which limits people's access, use, and democratic decisions about what community members can freely share. Examples of the enclosure in metropolitan cities include cases where people buy tickets to visit natural parks and zoos, and to spend money on getting to know about artworks, crafts in museums. In this way, privatization contributes to commodification of cultural practices, beliefs that once function to enable people to live more mutually supportive. However, Bowers argued that as Western cultures put a price tag on non-material forms of wealth which was once freely shared within communities, it fences-out those who may not have the chance to carry out intergenerational knowledge learn about the local culture because of the misconceptions that the industrial system of consumerism project on everyday contexts (Bowers, 2006). Similarly, the physical 'fences', the enclosure of culture is a form of invisible human-built 'fences'/ 'enclosures' which stop people from knowing who they are, where they come from. What is fence-in and what is fenced-out provide important meanings about culturally shared ideas and identities; that is, ways of understanding our human relationships with each other and the natural environment.

Summary

Based on the three themes that connect my stories together, combined with relevant literature, I realized now that cultural beliefs and understandings are constantly shaping who I am and how I live, my judgments of beautiful and ugly, and my feelings towards the natural environment. I have found that the rapid urbanization in China significantly limits people's

access to natural environments. Given the vast natural landscape in Canada, I found it disappointing that I still see the same disconnection between people's daily lives and awareness of the surrounding environment in downtown Edmonton as I did in China. After reviewing the literature, I discovered that the physical enclosure (fences) and the invisible enclosure (privatization) are the root cause of people's self-centered worldview. This loss of shared identity can separate people from each other and the natural environment.

I examined the factors that influenced my worldview, and this enabled me to connect environmental education's cultural impact with the knowledge I gained from my own schooling. I see now that there are endless and significant possibilities for schools to integrate ecological learning into local contexts through place-based approaches, in both rural and urban settings. Most important is for teachers to identify their taken for granted assumptions before and as they teach and to be open-minded to the students' diverse cultural understandings. I believe that it is possible for future generations to explore their surroundings and develop an 'ecology of mind' (Bateson, 1972) through the collective effort of teachers, families, and local communities.

In the next chapter, I connect these key ideas to teaching practices. Specifically, I investigate the roles and responsibilities of teachers and parents in carrying out ecological learning experiences with the younger generations to foster ecological intelligence (Bowers, 2010).

Chapter Three: Creating (New) Stories

This chapter connects research literature with practical teaching ideas for providing opportunities to foster children's ecological intelligence through meaningful experiences indoors and outdoors. This chapter focuses on enabling teachers, students and their parents to generate stories that not only challenge taken for granted ways of thinking about culture(s) and the natural environment but also enable them to gain new insights through meaningful experiences.

The Role of Teachers

Teachers need to challenge existing, deeply held, assumptions that modern society reinforces if children are to explore alternative ways of thinking (Bowers, 2001). This issue grounded in ecojustice pedagogy asks teachers to take time to reflect on their own perspectives and attitudes towards ecological concepts before communicating their ideas with the students (Almeida & Vasconcelos, 2013). Teachers can introduce sustainable and non-commoditized skills from diverse cultural groups in local communities that help students to understand cultural practices that have a smaller ecological impact on the earth, and thus to understand the relationship within the community and the natural environment (Bowers, 2002). For example, teachers and students might learn how to grow, prepare, and preserve food with the help of parents from diverse cultural backgrounds. Additionally, ecojustice education asks teachers to help students examine ecological concerns in the local communities and help address the problems with more sustainable knowledge, practices, and beliefs that are crucial for the well-being of all members (Lowenstein, Martusewicz & Voelker, 2010).

With deeper understandings of the importance of various approaches to ecological learning, teachers who want to adopt these methods might need to make changes to the traditional way they teach and the taken for granted ways of knowing, actions and identities. By

developing an ecological identity, teachers see themselves, the environment, and all the living systems on earth in a more complex and connected way, which connects to Naess' (1973) "deep ecology" (p. 95). Naess' argument of a deep ecological worldview means for teachers that they should not judge or decide the value of other species solely based on human use and convenience. In the context of ecojustice education, teachers need to be more comfortable with uncertainty and complexity "for the purpose of gently scaffolding students toward their learning goals, and in turn, to help students feel successful as learners" (Lowenstein, Martusewicz & Voelker, 2010, p. 17). The teacher's role as a facilitator entails providing opportunities for students to lead the inquiry and ask questions naturally (Williams, Brule, Kelley & Skinner, 2018). Teachers facilitate students' learning by asking provocative questions to assist students' reflective thinking, providing meaningful experiences and deeper discussions that enable learners to "investigate, reflect, and rigorously discuss potential solutions to their own questions about a topic the class is studying" (Chiarotto, 2011, p. 7). For example, from an ecojustice perspective, teachers can bring the topic of the use of pesticides from lawns that run off to the nearby creek and then ask the students provocative questions such as "what in the way that we talk and think about the world, allows for us to take such practices for granted?" (Lowenstein, Martusewicz & Voelker, 2010, p. 112).

Teachers are aware of children's intentions in their play while allowing the students' questions and interests drive the learning process forward (Chiarotto, 2011; Leggett, 2017). Teachers encourage the children to get their hands dirty when building compost from leaves, straws, grass clippings, food waste in the school learning garden, encourage learners to wonder about change over time, food webs, life from death as the students start to plant seeds in the "compost-turned-soil" (Williams & Brown, 2010, p. 42). Teachers act as students' learning

allies, and at times, observing and listening from a distance while young learners are exploring and expressing their meaning-making outdoor with natural materials such as bark, leaves, seeds, and pine cones (Ashbrook, 2016; Caro, 2012).

A local community is a place where students live and study every day, which is familiar and accessible to all learners, and this is an ideal context for environmental learning. Teachers need to look for opportunities for students to engage with an environmental inquiry from the local community and many manage to do so even in seemingly unnatural places, thus teachers should avoid assuming that urban schools offer limited meaningful experiences. As Chiarotto (2011) notes, teaching should take care not to rely too much on "one-time events to locations that are not readily accessible for all learners due to socio-economic background, geographic location, culture, or ability, potentially signals the wrong message: that the environment is something far away, detached from and irrelevant to their everyday lives" (p. 39).

The Role of Parents

Besides teachers, parents significantly shape their children's environmental lifestyle and learning. To support young children's healthy relationship with the natural environment, parents and/or guardians can engage their children in active outdoor play. There are numerous activities that parents can use to bring their children outdoors, where they can teach the significance of environmental stewardship (Blanchard & Buchanan, 2011). Parents can help their children to realize that we are all part of the web of life in which all living and non-living things are interconnected (Capra, 1996). For example, children can learn about life cycles – as well as where their food comes from – through gardening in the backyard, or using window boxes to grow vegetables in apartments. This connects children with experiential learning such as touching soil and planting seeds; families share the joy of harvesting vegetables (Novak, 2012).

As ecojustice educators demand a diverse and sustainable community, families can develop ecological thinking by becoming aware of ethical responsibilities as community members – to respect neighbors equally and value diversity (Martusewicz, Edmundson & Lupinacci, 2015).

Benefits for Children

There are many approaches to providing environmental education in both urban spaces and wilderness settings, for example, in the heart of the city (Chiarotto, 2011), school gardens (Blair, 2009), on school grounds (White, Eberstein, & Scott, 2018), and in nature camps (Collado, Staats, & Corraliza, 2013; Warber, DeHudy, Bialko, Marselle, & Irvine, 2015). The benefits of environmental learning are well documented where children engaged in science learning (Williams et al., 2018) such as learn to how to compost and ways to warm the soil for plant growth and environmental education activities such as bird-feeding on school grounds (White et al., 2018). The common benefits of these environmental learning helped students understand the web of life (Fisher, Fisher-Maltese, & Ray, 2016; Williams et al., 2018) and increased awareness of the local wildlife (White et al., 2018).

Growing food in school gardens not only helps develop children's positive environmental attitudes and empathy for living things (Robinson & Zajicek, 2005) but it also helps foster their social development such as teamwork and self-esteem (Blair, 2009; Robinson & Zajicek, 2005). Gardens offer opportunities to improve children's health and increase children's knowledge of healthy choices of food (Ohly et al., 2016); to promote healthy eating habits (Morgan et al., 2010); to develop understandings and experiences with local plants and food cycle systems (Blair, 2009).

Additionally, immersive experience in the great outdoors where children explore together and attend educational activities fosters friendship, a sense of community, and willingness to

carry out environmentally-friendly behaviours (Collado et al., 2013; Warber et al., 2015). Participating in regular outdoor learning sessions in a natural environment helps build life skills and self-confidence, as well as the ability to assess physical risk based on personal capability (Fjørtoft, 2001; Harris, 2017). Free play in natural environments focuses on child-initiated learning (Harris, 2017) and learning through play (Warber et al., 2015); encourages children to explore freely and take control of their physical mobility (Fjørtoft, 2001). Overnight nature camps enable children to develop independence, life skills, and opportunities to be physically active (Humberstone & Stan, 2011).

Environmental learning can benefit children who live and study in cities in numerous ways. For those who have limited opportunities to encounter the natural environment, students can learn about the impact of urban development on ecosystems. Students observe local communities and identify the relationship between built environments and natural environments when they observe their surroundings (Chiarotto, 2011). Students make sense of the connections between their ways of thinking and living and the influences on the natural environments (Suzuki, 2004). Other examples include students' inquiry into numerous everyday ecojustice topics such as inhumane treatment of animals in industrial farming, the social and economic impacts on local farmers, the loss of nutrition of the food products in fast food (Sperling & Bencze, 2015).

Students can develop positive perceptions of connecting scientific thinking to real-world situations such as where the water from the tap or in the drain goes (Francis, Paige & Hardy, 2016), where the local garbage ends up and how facilities process the garbage (Royce, 2014). There are also many ways to provide opportunities for children to put their problem-solving and critical thinking skills in action to address environmental concerns where they live. As a result,

students further develop citizenship and interpersonal skills - including leadership and communication - which they can apply to other areas of learning and at different stages of life (Sperling & Bencze, 2015).

Creating Spaces for Meaningful Experiences

In this section, I suggest activities, questions to open up inquiries and reveal the environment as directly connected with cultural ways of thinking, acting and being. I created spaces for teachers, parents and young students to allow for intergenerational teaching and learning experiences (Martusewicz, Edmundson & Lupinacci, 2015). I suggest four different ecological story starters: “Get your hands dirty!”; “What’s in your community?”; “Where does it come from?” and “Where does it belong?” For all the four contexts, new and emergent experiences are possible; there are different possibilities to see things differently from what was once taken for granted, to explore the local community and discover opportunities to consider ecojustice issues and as well, to expect to be surprised. In doing so, it will become clear that putting theory into practice in culturally and ecologically responsive ways is not as difficult or complicated as first thought! The suggested activities and topics are open-ended and intended to be experienced by teachers, parents and young children. Each of them can be easily adapted to particular situations.

Get your hands dirty!

July 23, 2018
O.U.R. Ecovillage, Shawnigan Lake, BC, Canada

AT O.U.R. Ecovillage, I got my hands dirty when I was mixing soil, water, straw into the clay. Then I threw the clay onto a wall, which was a major process to build a wall. I felt great because I knew I helped to build that wall, which is a part of the house, and a part of people's life. This connection between me, soil and the people who live in ecovillage now is what I think of Capra's web of life – we are all connected!

What is your story with soil?

Activities:

Get our hands dirty! Spend time together with others in a school garden or a nearby community garden and feel the soil with your hands. Grow plants together, for example: strawberries, lettuce, spinach, or herbs. Find out where the food you eat comes from. Discover how a seed grows into the food that's put on your table. Take a walk around the garden and identify the different plants. Just like us, plants need constant care and water, what do you notice when you visit the garden over a period of time? How do you care for a plant? How do you care for the garden? What are two life cycles that are part of this place? How do you know? In what ways are they changing? In what ways is it connected to other life (cycles) in the garden?

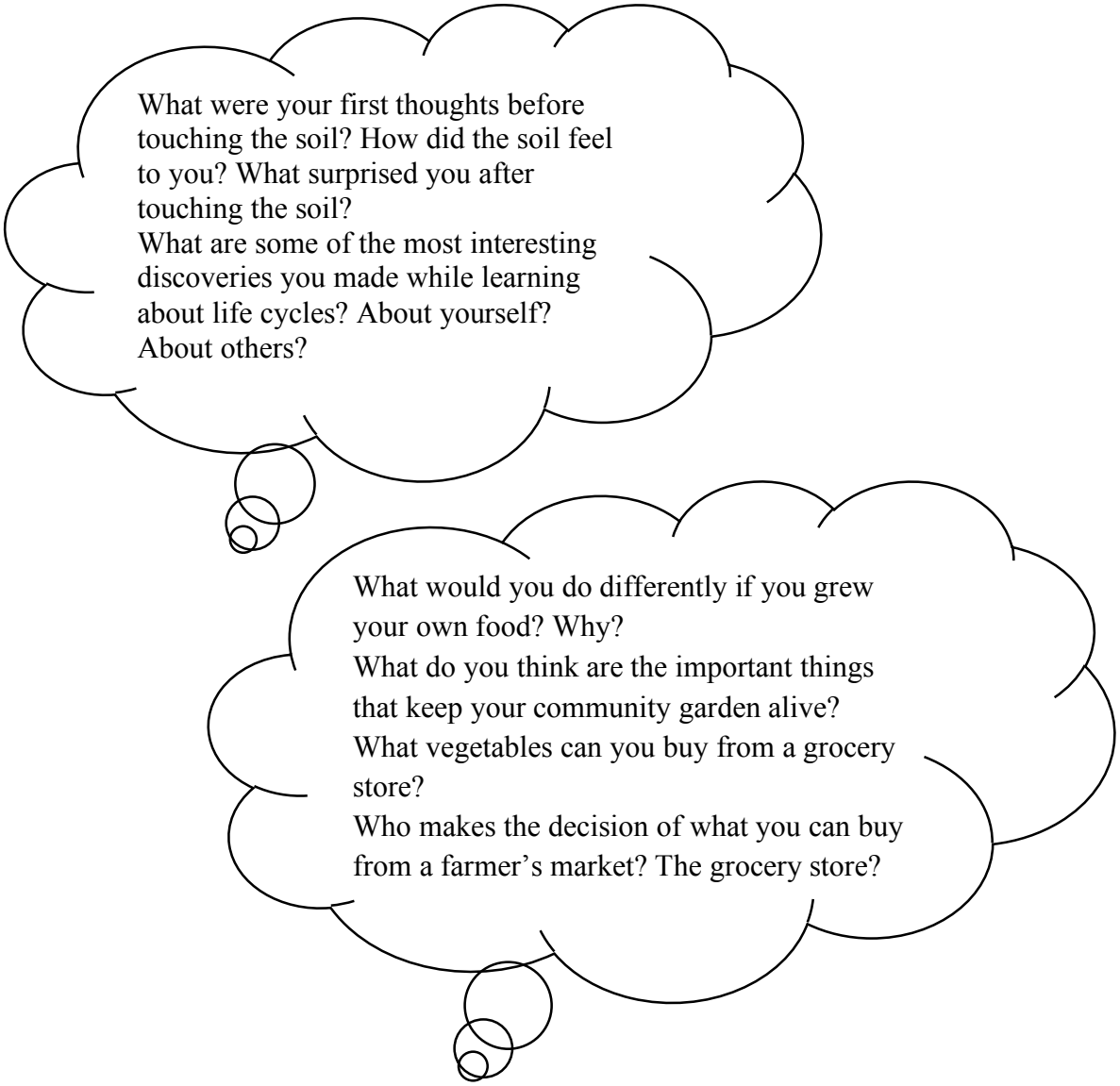

Figure 9: Activity: Get your hands dirty!

What's in your community?

"No dumping, drains to ocean"

California, USA

When I was on vacation in Los Angeles, California, USA, I saw two signs besides a drain, which said "no dumping, drains to ocean". I was quite impressed by the little things people do because they are trying to inform the importance to protect the sanitary of the ocean. I think this community shows care and ecological consciousness for telling everyone the water in drain eventually goes to the ocean.

What ecological efforts are going on in your community?

Activities:

Let's take a walk in our community! It doesn't need to be somewhere far, for instance: along the city streets, your residential neighborhood, a nearby park. Look at the surroundings carefully and see what interesting things are happening. See and find anything that is helpful to promote the well-being of the community, such as recycling bins on the streets or a water drinking fountain in a park.

Take a walk around a park and (re)connect with your special places if any. Share your unforgettable moments with each other and say why these places are special to you. Who shared the same places? In what ways are your stories different yet connected? Do you still visit your special places and if not what things in life hindered you from connecting yourself with the environment?

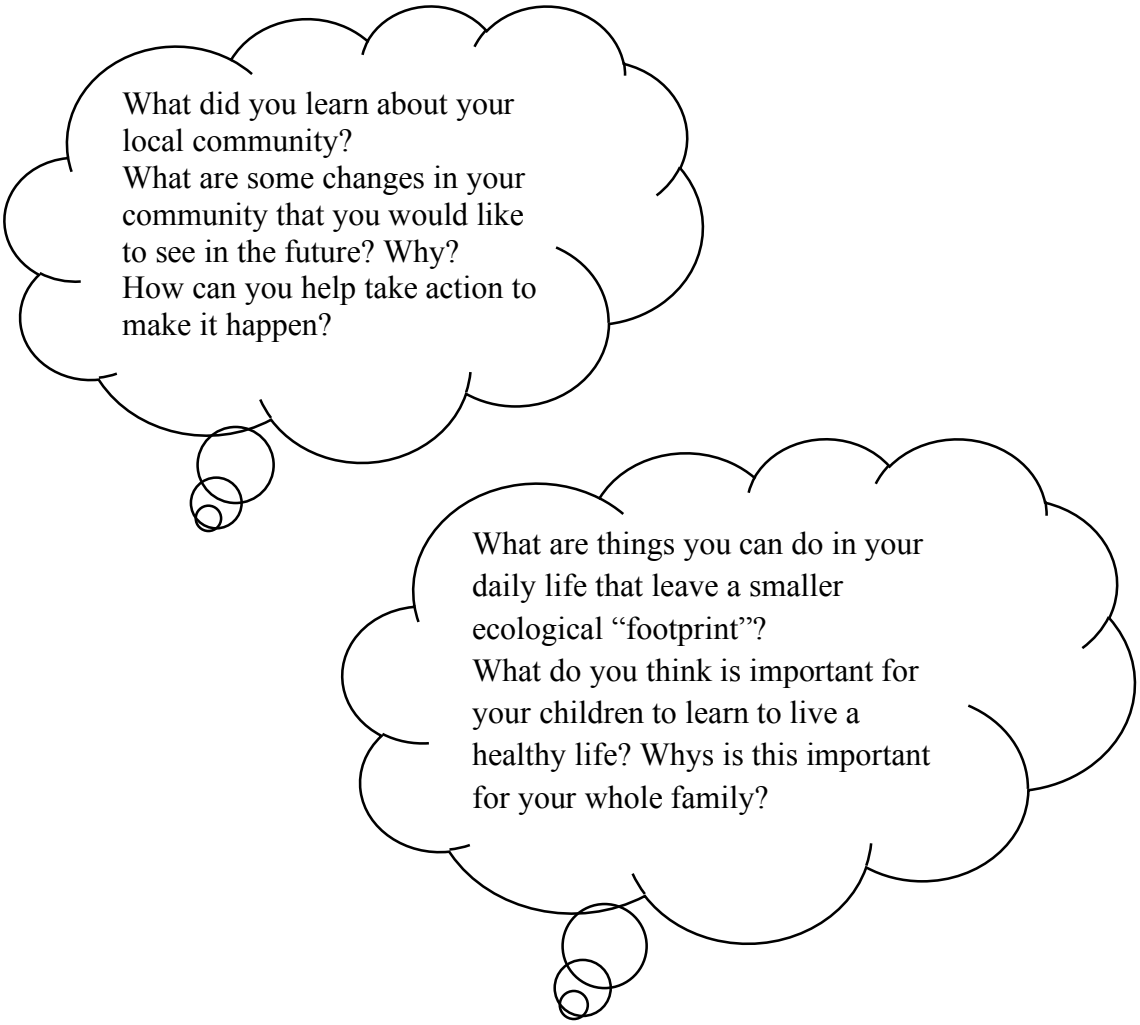

Figure 10: Activity: What's in your community?

Where did this come from?

A bottle of water

Edmonton, AB, Canada

Bottled water is not just drinking water in a plastic bottle. The truth is that plastic bottles alone produced by big companies pollute the environment in many negative ways. For example, small fish in the ocean might swallow the plastic debris and what will happen next? Eventually the poisonous debris might end up in our dining table and there is no way that we could tell.

I wonder where did this come from?

Activities:

Do you know how plastic bottles and the environment are connected? Let's take a look around and see how many bottles of water can you find. Share your ideas with each other while exploring questions such as: Who made this bottle and why would they make plastic bottles? What do you see in this bottle? Where does it come from? What connects it, the bottle and the environment together? Now watch the video clip : https://www.youtube.com/watch?v=OasbYWF4_S8 Now that you have watched the video, take a moment and really think about what you could do to help reduce the consumption of plastic bottles, starting from your school!

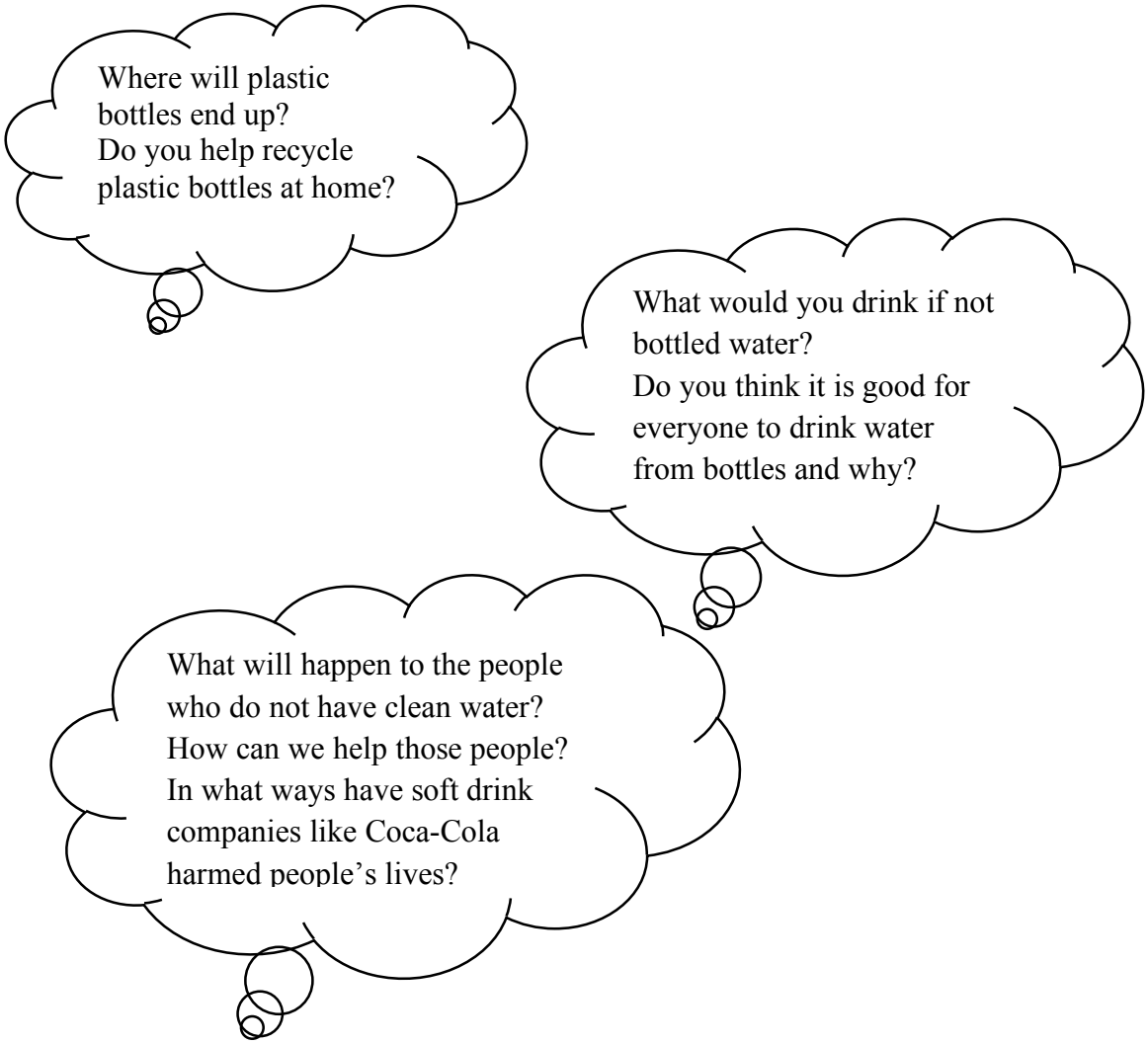

Figure 11: Activity: Where does it come from?

And, where does this come from?

A wooden candle holder

Canmore, AB, Canada

Jian and I wandered along the streets in Canmore, and visited a local boutique. This rustic wood candle holder appealed to me because of its simple design and natural qualities. It was perfect for our dining table. This log reminds me of the rustling sound that the leaves of the birch trees on my uncle's farm. As I look at it some more, I also wonder where this came from.

And, where does this come from?

Activities:

Find an object in your classroom, school grounds, or home. For example, a pencil, a desk, a leaf, a stone, a cone, a piece of bark… Pick up anything that is already on the ground and please be mindful not to hurt any living plants or animals. Gather and sit in a circle and talk about the differences and the similarities of the objects you found. For example, a pencil and a leaf, they once both belonged to a tree, but they are different because to make a pencil people need technology to shape it in this form whereas a leaf is as it was on the tree that it came from.

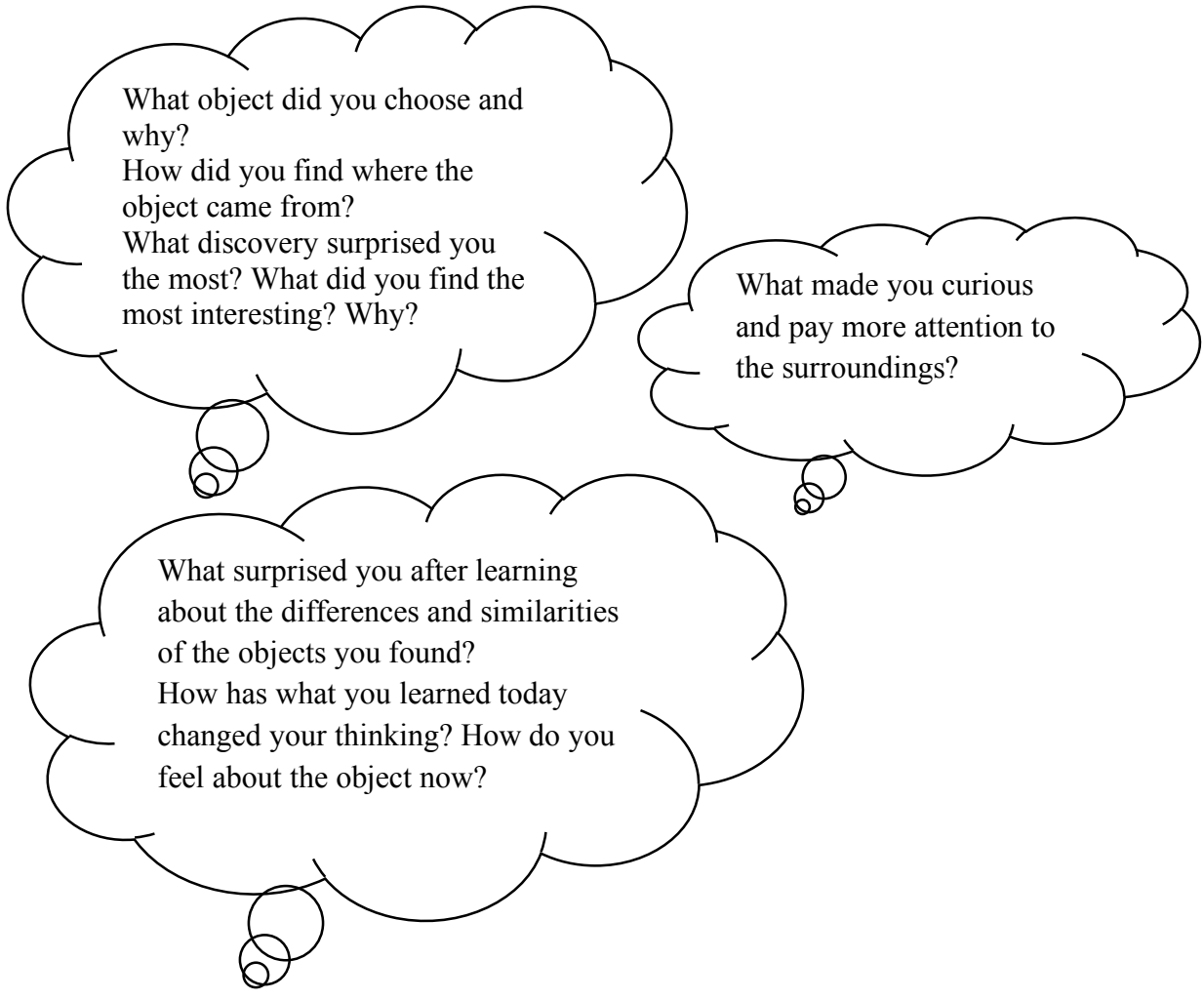

Figure 12: Activity: And, where does this come from?

Summary

In this chapter, I highlighted the importance of ecological learning for young children by providing practical teaching ideas that enable connections with the natural environment and cultural(s) in the world and everyday life. In doing so, I illustrated how teachers can apply concepts such as life cycles, the enclosure of natural and cultural systems, place-based pedagogy, and ecological thinking in ways that encourage the participation of not only young children but importantly, teachers and parents. Teachers, parents, and young children can learn how they are part of the world at large by finding out about the places where they live and make connections to natural and cultural ecologies. Together, all members in the school community can create (new) stories to develop ways of thinking and being in the world that enable more responsive forms of ecological intelligence and care.

Chapter Four: From China to Canada – An Expanding Journey

My project conducted a cross-cultural and ecological inquiry into the influences of cultural values on people's ways of thinking and living. I looked into how industrial culture from the Western world contributes to the ecological crisis we face today, and how these taken-for-granted patterns of thinking could diminish the prospects of younger generations. I investigated the cultural values embedded in China's educational system and found that the dominant view to focus on academic achievement in exams. I argued that privileging such a view leaves little opportunity to address urgent, global ecological concerns. I suggested that China should join current efforts toward educational reforms that seek ecological justice and a sustainable future. To this end, I sought ways of how a curriculum might enable a sense of awe and wonder for nature, similarly to what I experienced as a child and recently as an adult and teacher. My research involved generating practical activities for teachers to incorporate in their early childhood programs as a way to connect themselves, their students and parents with the natural environment and local community. In this final chapter, I conclude the project into two sections: looking back to what I learned during this inquiry, and looking forward to new possibilities for ecological learning with young children.

Looking Back

I started this project without knowing precisely where I was headed. All I knew was that I wanted to explore more deeply the broad topic of environmental education for young children. At the start of my journey, I discovered a vast variety of topics in the field of environmental education. Later on, I found myself inquiring into my worldview and relationship toward nature was connected and how it changed as I found myself experiencing two different cultures – China (during my childhood and early adulthood) and Canada (since 2015). In order to find out the

hidden cultural thinking patterns, I used an autoethnographic approach to my research because it enabled me to reflect on my life experiences, and thus I examined the underlying cultural assumptions. To my surprise, as I revisited my eight stories I found that my culture has largely shaped my identity and I was not aware that my ways of thinking and living could be harmful to the natural environment. I drew on from three theoretical frameworks to ground my exploration of my lived curriculum. The three discourses together guided my inquiry into ecological learning literature and continuously challenged my original assumptions. The four suggested story starters for teachers, parents and young children enable engagement with the local community and the natural environment. In significant ways, this project allowed me to connect aspects of Chinese culture with the environment and my own understandings in order to offer alternatives that complement China's current early childhood education curriculum, re-frame the environmental challenges China faces today to enable a shift in the Chinese public's perceptions of these important issues. As a result, my research aligned with the research literature in ecojustice education, particularly that of Bowers' and Martusewicz's idea of the crisis of cultural perceptions as the rooted cause of today's ecological crisis. Looking back, as I retold my stories and reflected on the different stages of my life, I started to appreciate the significant values in my life experiences in terms of my worldview, way of living and how I see myself in relation within a larger web of life. This new experience brought me different perspectives to perceive the world and allowed me to discover important ideas which previously I did not know were there.

Looking Forward

Looking forward, I now see the purpose and power of using autoethnography. The research approach enables me to look deeper into cultural ways of thinking and being. More importantly, the value of autoethnography lies in the unique opportunity for a researcher to not

only express emotions when telling stories but also to examine the meanings in life attentively. This project started with me telling my stories and through autoethnography my research expanded beyond descriptions of my life experiences and gave rise to meaningful connections between the implications of my lived curriculum and the embedded cultural ways of seeing myself in relation to the environment. In a profound way, this project changed what I thought a research project was— a traditional paper that focuses on objective information. I used a narrative structure to guide my work and examined theories and research literature in reflective and aesthetic ways. Doing so provided powerful experiences that required me to examine my Chinese cultural understandings in relation to critical ideas found in the literature. The value of autoethnographic research is that it not only allows the researcher to write in a unique and evocative way, but it also challenges the researcher to not hide behind other scholars' ideas.

My research opened new possibilities for me to explore ecological teaching and learning in China's curriculum. Some important ideas of the three discourses that I drew upon include: Environmentalists Shiva (2008), Suzuki (2004) and Orr (2007) urged everyone to recognize the fragility of nature and that environmental education is vital and urgent. Ecological and systems thinkers Bateson (1972) and Capra (1996) made it obvious that living systems are complex and dynamic filled with interrelationships, thus environmental crisis in China is the crisis for all beings on earth. Eco-justice educators Bowers (2002), Johnson and Martusewicz (2016) criticized Western culture that projects a human-centered worldview and overlooks the destructions of the natural environment in the name of human progress. By combining the three discourses, I came to understand my life experiences in China from a holistic and ecological perspective, which challenges how I used to perceive myself as separated from the natural environment and other beings. I also came to identify the connections among the smog in China,

the industries that pollute the environment and the impoverished people who suffer from the pollution. An ecojustice perspective sheds light on the situation that Western culture is hiding the connections between humans and the planet and projecting a consumerism mindset to people. It became more obvious now as I saw how shopping malls and trendy technological products could quickly draw Chinese citizen's attention.

For young children, ecological learning provides opportunities to look at the world in a holistic lens and to foster connections with the places they live in. I look forward to carrying out ecological learning activities in China's early childhood schools. As a staring point, my ecological learning suggestions in Chapter Three engage a variety of topics in daily contexts: growing food, observing life cycles, developing a healthy eating habits, investigating social inequities in local community, and protecting the well-being of the natural environment and local communities. Connecting young children to nature is a mind-body learning process, therefore, early childhood teachers adopt ideas that connect to ecological thinking into their teaching practices, in order to continuously challenge students' taken for granted assumptions of what they believe as good or bad. Besides young children, it is important for all educators and students of all age groups, in rural, urban and suburban settings to bring forth ecological ways of thinking and being. China's curriculum needs to focus on fostering ecological thinking and learning because it is especially vital for younger generations to have healthy relationships with the places they live, and most importantly, for the future well-being of the planet.

Completing My Journey

When looking from an ecojustice perspective in relation to the larger web of life, it is clear that in many ways it is contemporary culture such as consumerism and globalization, that continues to contribute to today's environmental crisis. My journey in this research enabled me

to see the urgent need to continuously pay attention to identify problematic cultural patterns of thinking that globalization and capitalization promote. This implication affects everyone, especially those who are teachers, researchers and parents; that is, “to recognize that life sustaining processes always involve relationships, including how ideas, values, events, behaviours, policy decisions and so forth are embedded in and influence interacting cultural and natural systems” (Bowers, 2010, p. 23). To bring issues of individually-centered industrial culture into classroom curricula can help younger generations to develop ecological ways of thinking that can locate sources of increasing environmental destruction and social inequity and generate possibilities for resolving these. Together, we and the younger generations can create awe and wonder for the planet while making the world a better one for all natural and cultural ecologies.

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