Planting Seeds of Green:

Promoting Environmental Citizenship Through Sensorial Media Education

by

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of the requirements for the degree of Master of Arts: Communication

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Abstract

This study probes how young people negotiate information received through both the common curriculum and mass media, and how the central characteristics of the media they use can influence their reasoning. The research shows that formalized education needs to take into account not only the growing importance of environmental education [EE], but also the powerful role media can play in developing environmental consciousness. Students need tools to critically evaluate the environmental discourses they encounter, and to understand and distinguish the difference between their interactions with mediated nature and the environment itself. A greater awareness about the effects of different types of sensorial communication and, correspondingly, the different sensorial biases of environmental media can help students obtain a deeper understanding of why mediated EE can be a useful device for developing interest in environmental issues, but cannot, in the end, be a viable substitute for personal interactions with the natural world.

Acknowledgements

Like many projects, this one is inspired by personal experience: my own relationship with nature. I think it is safe to say that no one has ever characterized me as an “outdoorsy” person. The truth is, my environmental inclination is derived from a steady diet of environmental media, including *Captain Planet and the Planeteers*, *The Smoggies*, *Ferngully*, Tolkien’s *The Hobbit* and *Lord of the Rings*, and any number of Disney movies, to name only a few. These shows, movies and books were a major influence on me, on how I understand nature, and on how I think about the environment today. In a sense, I am my own ideal research subject: someone whose attachment to the natural world is largely founded on mediated messages.

This project could never have been *started* without inspiration from this broad corpus of environmental media, the countless books and articles read throughout my academic career (John Berger’s *Ways of Seeing* deserves special mention), and the teachers and professors who helped me develop these ideas. It also couldn’t have been *completed* without the help and support of a number of very special people.

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Planting Seeds of Green has been a great journey of self-discovery and learning. I hope it will provide others with the same.

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*“Yet it is not our part to master all the tides of the world,
but to do what is in us for the succour of those years wherein we are set,
uprooting the evil in the fields that we know,
so that those who live after may have clean earth to till.”¹*

¹ (Tolkien 1965, p. 155)

Introduction

There are those among us who care very deeply about the natural world, who embrace every blade of grass, every darting insect, every tree, every animal. These people do everything they can to reduce their impact on the planet.

There are also those who are barely conscious of the world around them, who may not be aware or who choose simply not to notice the consequences of their actions. These people, predictably, do nothing to reduce their environmental footprint.

Finally, there are those who are well educated in the science of ecology, who have learned from a young age that the planet is fragile and who know that the actions they take have repercussions on its ability to sustain us. Surprisingly, these people—the majority of people—*mean* to do so much, yet *actually* do very little.

Since the late 19th century, the concerted efforts of local, national and international activists have helped institute important environmental policy changes to curb environmental harm. These achievements, noteworthy as they are, have arguably failed to keep the human-environment relationship in balance. Many problematic activities continue unchecked, and no persistent change in the behavior of citizens can, so far, be guaranteed. The knowledge is there, as well as the inclination, but no action results. What is missing?

We cannot ignore the role of education in generating environmental concern and encouraging responsible environmental behavior. Formalized environmental education [EE] has emerged only within the last forty years and, despite much theorizing and

debate, its application remains sporadic and its conceptualization, confused. The root of traditional environmental education is sensorial. As human beings, we learn about nature through experience, absorbing it with all our five senses—sight, sound, taste, touch and smell—like a sponge. This learning is an immersive, multi-sensory experience that allows us to connect with and learn about the world. Unfortunately, truly engaging experiences with nature are dwindling. We are increasingly occupied with work, school, television, video games, and other activities that keep us indoors and our encounters with the outdoors often allow for only superficial, controlled contact with carefully manicured surroundings. In place of our original forms of experiential learning, the media and the education system have taken over, and must now be considered the predominant purveyors of environmental knowledge.

In our mass media saturated world, “mediated nature” has become a simulation of the real thing. Mediated messages about the environment can be remarkably educational, and more engaging than traditional learning methods, but they do not compare to the complete sensorial experience created in nature. Moreover, our media culture is heavily visual, leaving four out of the five senses relatively untapped. What are the implications of this visual bias for how we learn about and value the natural world? What potential in the other four senses is waiting to be unlocked? We must not forget, also, that media show us only part of the picture. Mediated experiences of nature are *designed* experiences—produced in order to tell a story. (And there are always two—or more—sides to every story.) Thus, any mediated interaction needs to be examined with a

critical eye. Without this critical awareness, mediated nature is by no means a harmless substitute for personal environmental experiences.

Formalized education remains the most important tool at our disposal in attempting to reconnect with nature. Tight budgets, time constraints, and low priority have, in the past, made environmental education difficult to successfully integrate into the classroom. Recently, however, as environmental concern has grown, so too has the pressure on governments and education officials to make time for learning in and about nature. Environmental subject matter has secured a place in many curricula, but, by and large, has been relegated to the *natural sciences*: geography, physics, biology, and chemistry. Remarkably, formalized environmental education rarely deals with mediated nature. There are scarcely any examples, in both the theoretical and practical literature, of EE engaging with mediated representations of the environment, including literature, the arts, other entertainment, and news (except see Bishop et al 2000). Moreover, with few exceptions, students are taught about nature primarily through textbooks, lectures and a copious amount of note taking. In comparison, immersive experiences in nature have been few and far between. Practical, experiential environmental learning is increasing, though it has continued to be chiefly science-based. Instead of the sensorial richness of nature *in situ*, students are taught about nature in ways that only scratch the surface, and almost totally ignore the other “teachers” in their lives.

Education of all kinds relies on the communication of facts, ideas, values and skills from one person to another. It follows, then, that for improvements in education to be made, it is communication that must be made *better*. There is something amiss in

environmental education, something that has impeded its progress. This flaw is bound with issues of communication and media. It stems from the fact that it is not merely *what* we're taught about the natural world, but also *how* we're taught that matters.

Young people often cite examples of mediated nature among their preferred environmental experiences. They are excited and enthusiastic about learning about the media in the classroom. Merging environmental education with mediated nature makes sense because it makes EE more accessible and relevant to students' everyday experience. Harnessing the sensorial aspects of media technologies makes communication-oriented EE more akin to learning in nature itself: more engaging, enduring and affective. By incorporating the ideas of critical media education into EE, students can become aware of, and reflexively assess, how the environment is conceptualized and portrayed in the media, as well as how their own ideas about nature are shaped by both the content and characteristics of mediated nature. A greater comprehension of mediated environmental messages can, in turn, empower students to become more active and conscientious environmental citizens.

For these reasons, I've blended together three distinct but closely kindred areas of research: environmental education, theories of communication and media, and media literacy. By connecting environmental education and media literacy through sensorial communication, I argue that we are not only better equipped to replicate the sensorial experiences found in nature, we are also developing the critical awareness needed to become active environmental citizens. Despite a wealth of literature on environmental education, communication and citizenship, this combination has yet to be explored.

I will consider theoretical questions pertaining to how environmental citizenship is formed and developed; the sensorial nature of different communication technologies; the possible impacts that different communicative forms have on the development of environmental consciousness; and the role of media and the senses in environmental education. Some of the questions that guide this research are listed here:

- Where does environmental education occur?
- Who are the major players?
- What kind of environmental experiences are most common?
- What kinds of sensorial information are associated with environmental experiences (in school/in media/in situ)?
- How do we negotiate environmental information learned in a school setting/in media/in situ?
- What sensorial biases are present in environmental communication? How do these biases manifest on environmental consciousness?
- What are the dominant perceptions of mediated nature?

To these ends, I critically examine the status of the environment in the Ontario elementary curriculum, and the modes of communication used to impart environmental knowledge in the classroom. Using participant observation and focus group interviews, this study probes how students negotiate the information they receive through both school and the mass media, and how the central characteristics of the media used influence their reasoning. My intention is to flesh out the link between environmental education and media literacy, demonstrating how the two reinforce and complement each other as devices for improving active, informed citizenship.

Defining Terms

For most of human history, the environment has been experienced first hand. *First hand*, meaning through direct physical interaction of our bodies (as sensorial receivers) in our environment (*in situ*), and *environment*, meaning not simply that which surrounds, but—more specifically—that part of our surroundings that consists of organic material, things that grow, and the natural forces associated with them. Whether or not we include human beings as part of the environment presents a definitional challenge. On the one hand, the “natural” environment has, for much of recent history, been set apart from humans and the “man-made” environment. The idea that nature excludes humanity is the more common, traditional definition. On the other hand, humans are basically animals and, much like the other forms of life on this planet, we depend on the Earth’s natural cycles and systems for survival. Furthermore, as will be explored further herein, the notion that humans are unique and exist apart from the rest of the world is a distinction that has been created over several thousand years of human philosophy. Therefore, for the purposes of this argument, the terms *nature* and *environment* will refer primarily to what Abram (1996) termed the “more than human world”. That is, the part of the world that has been here since before modern humans arrived and will likely be here after we are gone. The term “more than human world” acknowledges our presence within the natural system—our function and our impact—without allowing it to be solely defined by our presence.

In this thesis I argue that the traditionally first-hand experience we have of nature is being taken for granted, especially in the age of electronic media. Media of

communication, to use Joshua Meyrowitz's (1985, p. 331) definition, are *anything but* first hand: "all channels and means through which information is transmitted among people *except* direct, face-to-face modes of communicating". These include writing, photography and even clothing. *Electronic* media—like the telephone, television and radio—form a distinct category of communication media and, as Meyrowitz (1985, p. 332) writes, have special significance because "the nature of the electronic signal allows it to be rapidly transmitted through wire or air, and the form of the message often resembles "real" face-to-face communication." It is the latter quality of modern media that has led to the erosion of our first hand relationship with nature. Instead, we now rely on *mediated nature*, literally nature represented through media, for knowledge. This includes all published (books, magazines, articles, etc.), televised, filmed or otherwise broadcast material that showcases the world's many landscapes and creatures, describes natural settings, explains natural phenomena, tells stories about the lives of animals, insects or plants (both fact and fiction) or otherwise puts forward an environmental message. I also include in this definition the co-opting of nature and environmental themes for advertising purposes because, whether they intend to or not, these also represent nature, which, in turn, informs our relationship with nature.

The shift toward mediated nature—at the expense of in situ experiences—means that we no longer experience nature through the sensorium as a whole: the media favor certain senses (sight, sound) and neglect others (touch, taste, smell). The experience of nature, in other words, is not what it used to be. Consequently, *environmental consciousness*—our awareness, attachment and behavior toward the natural world—has also changed:

how we experience nature may be altered as a function of how it is experienced. Faced with growing environmental challenges, it has become more important than ever to foster *environmental citizenship*. In the wider literature, both “environmental” and “ecological citizenship” are used—almost interchangeably—to refer to the active participation of individuals toward sustainability, but Dobson (2003, p. 89-90) believes they should be viewed as separate but complementary phenomena. According to Dobson (2003), environmental citizenship “refers to attempts to extend the discourse and practices of rights-claiming into the environmental context” (p. 89), while ecological citizenship “obliges us to rethink the traditions of citizenship in ways that may, eventually, take us beyond those traditions” (p. 90). Both forms move toward the same goal (sustainable society), though in different ways. Since “environmental citizenship” is most often used within the educational literature, I have continued its use here, with some reservations. While the term environmental citizenship has more currency (it has, for example, been adopted within the Ontario Ministry of Education curriculum), I believe the sentiment reflected in Dobson’s definition of ecological citizenship deserves more exposure. According to Dobson, environmental citizenship operates only within the public sphere, and, as such, relies on “liberal” virtues of “reasonableness and a willingness to accept the force of the better argument and procedural legitimacy (...)” (2003, p. 89). It does not challenge existing notions of citizenship. Ecological citizenship, on the other hand, seeks to go beyond the public sphere to the individual, private level and re-examines the language of citizenship virtues (Dobson 2003, p. 90). It attempts to redefine citizenship in order to make sustainability an inherent concept. I would like to unite the two definitions

in order to provide a more inclusive and insightful notion of what it means to form truly environmentally conscious citizens.

Environmental literacy is also used to describe the ability to understand and act in a sustainable manner. Bishop et al (2000, p. 271) posit that true environmental literacy is really an aggregate of three separate forms: functional, cultural and critical. *Functional* environmental literacy is a basic knowledge of how the natural world works (science) and the current environmental issues (Bishop et al 2000, p. 271). *Cultural* environmental literacy involves developing an “awareness of what others see as significant”: feelings associated with national parks, for example (Bishop et al 2000, p. 271). Finally, *critical* environmental literacy entails the “capacity to engage in debate about environmental issues at an ideological and philosophical level, to “unpack” the text” (Bishop et al 2000, p. 271). Critical environmental literacy is the most directly associated with fostering positive action toward sustainability, but it is entirely dependent on the pre-existence of functional and cultural environmental literacy. Thus, environmental literacy requires a holistic approach to environmental education. Prioritizing one aspect over the others is detrimental to the whole.

Building the Argument

Good arguments are built on strong foundations. Chapter 1 examines three bodies of literature—environmental communication, environmental education and media education—in terms of how each branch of inquiry, through both its overlaps and omissions, works together with the other two to inform my research ideas. This section

includes an examination of the evolution of the concept of nature, the discourses associated with that concept, as well as an exploration of the affective underpinnings that characterize environmental communication today. I also examine the theories of environmental education, particularly in terms of its arguments on curriculum reform—the call for holistic, experiential education—and the precarious position of advocacy in this endeavor. Finally, the arguments for comprehensive media education, specifically a review of the notions of literacy and citizenship, are probed and emphasized in terms of how they combine with the themes and gaps from the other two sections to sow the seeds of a compelling and intricate theory.

In Chapter 2, I continue to weave together seemingly disparate strands of theory, including the pedagogical theories of John Dewey and Paulo Freire, David Abram's phenomenology of nature, Candace Classen and David Howes' anthropology of the senses and the communication theories of Marshall McLuhan and Joshua Meyrowitz. Each of these theorists contribute to a unique tapestry which demonstrates that environmental consciousness is tied to sensorial experiences, meaningful education depends on relevant experiences, and the media of environmental communication, because they extend our senses, play an important role in how we understand and act toward the natural world.

In Chapter 3, I account for the process I used to explore my theoretical framework at an empirical level. Methodologically, the study involved discourse analysis of the Ontario Ministry of Education's elementary school curriculum, in which I set out to examine how "environment" is being taught—particularly with respect to the role of

media. Observational fieldwork and focus groups in a local school were also completed in order to gain a deeper understanding of how students negotiate that knowledge in practice. This component of the research consisted of a multi-sensory environmental media campaign project, where students were asked to create “advertisements” for an environmental issue using as many of the five senses as possible.

Chapter 4 presents the main research findings, which are organized into three parts: the curriculum, rational bias, and ways of knowing. In the first section, I summarize my analysis of the Ontario curriculum, notably what I argue is a shallow notion of environmentalism, a protectionist approach to media education and a devaluation of the senses from wider processes of learning. Secondly, I consider the results of the environmental campaign project and the students’ reluctance to embrace alternative media and arguments, relying wholeheartedly on what I describe as a “rational heritage”. Finally, I contemplate the students’ comments about the importance of both “mediated” and “real life” experiences with nature.

In conclusion, I review the central components of my research, reinforcing the idea that, in order to stimulate active environmental citizenship, we need to learn the qualitative difference between real nature and mediated nature by adopting a critical form of environmental media literacy. I also outline the hurdles I encountered during the course of my fieldwork, and suggest directions for future study.

Chapter 1 Literature Review

This chapter reviews three bodies of literature that encompass my area of research—environmental communication, environmental education, and media literacy. Attention is directed to key concerns within each area, and their most important theoretical gaps.

Environmental Communication

Communication is a central component of environmental knowledge and literacy. This communication, however, is more than just “talk”; communication also includes, among other things, “art, photographs, street protests, and ... scientific reports as forms of symbolic action” (Cox 2006, p. 11). Drawing from the work of the rhetorician Kenneth Burke, both Herndl and Brown (1996) and Cox note that environmental communication ought to be understood as more than the simple transmission of environmental messages—it is also a body of material that “actively shape[s] our understanding, create[s] meaning and orient[s] us to a wider world” (2006, p. 12). Consequently, I define environmental communication as both pragmatic (informative) and constitutive (Cox 2006, p. 12). Environmental communication informs us of the issues at large, persuades us to a cause, mobilizes us into action, and also simultaneously shapes the ways in which we understand and value nature as a whole (Cox 2006, p. 12; Livesey 2002; Herndl and Brown 1996, p. 3-4). Through various modes of representation, “nature” becomes associated with certain values and ideas that, in turn, influence how we

understand and interact with it. It is this function of environmental communication that I am particularly interested in. For example, if we contrast the different connotations associated with the term “nature” (romantic, mythological, pristine) with the implications found in the term “environment” (pollution, human interference, urbanization) we find that the meanings of these terms are constantly in flux—the result of how they are being constructed through communication, and how various voices within the public sphere are vying to redefine them (Cox 2006, p. 38-39).

My review of environmental communication literature showcases two main threads: environmental discourses and affective communication. The analysis of environmental discourse and rhetoric makes up the bulk of linguistic, sociological and historical investigations of environmental communication. I briefly trace the historical roots of dominant discourses, and describe the current environmental discourse spectrum that informs academic research on environmental communication. The subsequent emphasis on affective communication complements the discussion of discourse since rhetorical approaches presuppose the use of emotions and values in effective persuasion (Herndl and Brown 1996).

The Shifting Discursive Terrain of ‘Environment’

Investigating environmental discourses implies a critical engagement with *meaning*: to peer beyond the surface level of the text to explore the underlying structures that created it, to work out how meanings are constructed and how they may come to be negotiated and understood. Drawing on a “critical realist” understanding of knowledge, I

argue that while our understandings of the real world are constructed through language and action, there is also an objective reality that exists outside of human consciousness. As Danermark et al. argue, “what happens in the world is not the same as that which is observed” (2002, p. 20). In other words, this approach accepts that events happen, but states that in order to be made meaningful all events must be interpreted through discourse. In the words of Laclau and Mouffe (in Mills 1997, p. 45):

An earthquake or the falling of a brick is an event that certainly exists, in the sense that it occurs here and now, independently of my will. But whether their specificity as objects is constructed in terms of ‘natural phenomena’ or ‘expressions of the wrath of God’ depends upon the structuring of a discursive field. What is denied is not that such objects exist externally to thought, but the rather different assertion that they could constitute themselves as objects outside any discursive condition of emergence.

How we come to understand the concepts of nature or environment, or related terms like wilderness, landscape, etc., at any given time depends on the way these have been constructed. The discursive construction of the natural world has shifted several times over the course of the last two thousand years. And, as we shall see, dominant discourses continue to be subject to change.

As Barry (1999, p. 11-12) states, there is no “universally agreed and singular meaning or definition” of “nature”. In much of the literature, however, there are two primary, yet contrasting, denotations of the term (Evernden 1992, p. 18-19; McNeil 2005). In the first sense, outlined by R.G. Collingwood (1945), Evernden (1992), Clarke (1993), and McNeil (2005), “nature” is understood as all that is *real*; the inherent or innate essence of things, as in “human nature” or “natural instinct”. According to Collingwood

(1945, p. 44), “it is something within, or intimately belonging to, a thing which is the source of its behaviour.” This original understanding of “nature”, defined as an essence or guiding principle, is drawn from the ancient Greek word φύσις “*phusis*” (Evernden 1992, p. 19; Collingwood 1945, p. 44-45). Physics—the modern study of the nature and principles that make the world work—is descended from this concept.

There is a second sense of the word that both contrasts with and complements the first. At some point, the meaning of the word “nature” splintered from *everything*, an essence, to *something*, understood more as a *place*, or the “total or aggregate of natural things” (i.e. the world) (Evernden 1992, p. 20). In this sense, “nature” becomes separate from humanity, something outside or apart from the human condition, referring to the material world that surrounds us (McNeil 2005, p. 236). This second meaning, Collingwood (1945) states, emerged after the first. “Nature” as nonhuman is usually contrasted with “culture”, the term that determines the sum total of human things (McNeil 2005, p. 236). This idea of “nature” refers also to the inherent struggle, debasement, and brutality of the “state of nature” compared to the state of civilization, and becomes something to overcome and dominate (Evernden 1992, p. 19). According to Evernden (1992, p. 20), this shift in meaning signaled an important change in the ontological position of humanity—as significant for humans as for fish realizing there is a thing called “water” (Evernden 1992). “Nature” became an identifiable thing, something that could be pointed out and investigated (Evernden 1992, p. 20).

The two meanings are not mutually exclusive, however. The Greeks, for example, continued to see the natural world as being permeated by a “presence of the mind”:

imbued with life and intelligence, nature was endeared to humans as kin (Collingwood 1945, p. 3). Classical Greek philosophers, including Plato (428-348BCE) and Aristotle (384-322BCE), shared the view that all things (human and non-human alike) are guided by a “soul” that gives them purpose (Clarke 1993, p. 31, 35). St. Thomas Aquinas (1225-1274) adapted the Aristotelian philosophy of nature and integrated it into Christian theology, emphasizing that “nature”, like humans, “displays [divine] design and purpose” (Clarke 1993, p. 53). Likewise, in the Qu’ran, the natural world, like humanity, is a creation of Allah, and a certain empathy, or sense of similitude, exists between the two (Clarke 1993, p. 61). Some of the Renaissance’s most notable minds, including Nicolaus Copernicus (1473-1543) and Sir Isaac Newton (1643-1727), believed in the “animation” of nature: nature imbued with spirit and intelligence (Cosgrove 1990 p. 347-349).

It was during the late Renaissance that the modern concept of nature was definitively constructed. Later Renaissance thinkers, specifically René Descartes (1596-1650) and Galileo Galilei (1564-1642), rejected the old ways of thinking and all reference to soul and purpose in nature (Clarke 1993, p. 80). Human elements were perceived as distortions of reality, distractions, and only once removed could the “real properties of nature” be obtained (Evernden 1992, p. 49; Abram 1996, p. 31-32). The elimination of the humanistic qualities from the natural, physical world, helped redefine nature as *automata*: devoid of purpose other than that which is given to it by humans, like a machine (Evernden 1992, p. 60).

In place of a natural world redolent with human analogy and symbolic meaning, ... [humans] constructed a detached natural scene to be viewed and studied by the observer

from the outside, as if peering through a window, in the secure knowledge that the objects of contemplation inhabited a separate realm, offering no omens or signs, without human meaning or significance. (Evernden 1992, p. 107)

Hand in hand with this new ideal of nature emerged the principles of scientific inquiry, i.e. objective observation and experimentation (Clarke 1993, p. 85-86). Philosophers and scientists like Francis Bacon (1561-1626) argued that new empirical methods could not only “give humankind a true understanding of the workings of nature but could [also] give us unprecedented power over nature for the pursuance of human well-being” (Clarke 1993, p. 85). As a result, more precise techniques were developed to measure it, and “scientific” knowledge of “nature” accrued as never before. “Nature” was firmly established as an object of knowledge.

The elimination of “life” in nature was not immediate, but occurred slowly from the 14th to the 18th century. In fact, the “essence” metaphor persisted despite this strong opposition. Enlightenment thinker Immanuel Kant (1724-1804), for example, suggested that, despite the lack of evidence, humans should resist the mechanistic analogy of “nature”, and “view nature ‘as if’ it was purposeful, even if we can never know that this is true of nature ‘in itself’” (Clarke 1993, p. 109-110). Similarly, the massive industrialization that occurred throughout the Industrial Revolutions (~1790-1830 and ~1850-1890) prompted resistance from “Romantics” who vehemently rejected the mechanistic view because it never satisfactorily accounted for the “full richness of the natural world” (Clarke 1993, p. 113). Even today, the definition of nature continues to be altered and debated. Factions who hope for a more spiritual, holistic understanding of

nature continue to voice their dissent in the face of tremendous opposition. Yet, as the next section will demonstrate, these oppositional voices contribute much to the shifting spectrum of environmental discourses.

Current Environmental Discourses

Much like on a political scale, it is possible to situate environmental discourses by degree on a spectrum from dark green/deep environmentalism on the left and light green/shallow environmentalism on the right, with many shades in between (McKenzie 2002, p. 14). Discourses like the “mechanical” one discussed above can be situated on the light green or shallow end of the spectrum. Here, “humans are at the centre of the world” (Stibbe 2004, p. 249). In these anthropocentric constructions, nature is valued only in terms of our demands upon it (Stibbe 2004; McKenzie 2002, p. 18). Shallow green discourses are not considered to be overtly environmental: the relationship between humans and nature is generally one of domination and conquest (McKenzie 2002, p. 18, 21; Cox 2006, p. 39; Milne et al 2003, p. 9). In contrast, deep or dark green environmental discourses assign innate value to nature and all the creatures within it. Instead of prioritizing human wants and needs, deep environmentalists conceptualize the environment as a whole, and prioritize the communal good (the planet’s continued survival) over individual extravagances (Orr 1994, p. 12).

Light green discourses, what Hajer (1993) calls “traditional pragmatism discourses”, make up the *Dominant Social Paradigm* (DSP), the current dominant way of life in our part of the world (Cox 2006, p. 58). This prevailing environmental interpretation

has, however, been challenged by alternative voices. At the turn of the 19th century, when industrialization was at its peak, early American environmentalists like Henry David Thoreau (1817-1862) and John Muir (1838-1914), founder of the Sierra Club, challenged the unmitigated destruction of nature by promoting a preservationist discourse, advocating for the protection of naturally beautiful areas for human enjoyment (Clarke 1993, p. 131; McKenzie 2002, p. 58-59). In addition to the writings of Muir and Thoreau, certain influential visual artists, landscape painter Thomas Cole (1801-1848) and photographer Carleton Watkins (1829-1916) for example, used their respective visual media to showcase the sublime and majestic qualities of the natural environment (Clark et al 1996; DeLuca and Demo 2000). Together, these alternate discourses helped redefine nature from a source of raw materials, savage and empty, to a pristine landscape, a place of refuge, relaxation, and spirituality (DeLuca and Demo 2000). In its day, this perspective no doubt seemed radical, but by today's standards, the discourses of conservation and preservation edge toward the anthropocentric, light green end of the spectrum: constructing the object of environmentalism as "untouched" nature continues the alienation of human from nature and ignores the environments in which we all live (see Clark et al 1996; DeLuca and Demo 2000; Cox 2006, p. 289-327 for further discussion).

Not until environmental concern spread to a mass audience in the 1960s and 70s (in large part due to the publication of Rachel Carson's book *Silent Spring* in 1962), did "radical" discourses begin to make their way closer to the deep green end of the spectrum. *Silent Spring* has been credited with "making ecology a household word" (Briggs 1987, p. 8; Neuzil and Kovarik 1996, p. xi). Carson's work successfully bridged the

technical (scientific) and public spheres by “put[ting] together a diffuse and variable body of data and ... [and] shap[ing] it into a clear account that would not only educate the public but also reach people in authority” (Briggs 1987, p. 5; Cox 2006, p. 18-19). This was not the first time such vehement environmental concern had surfaced—public and political concern over air pollution and deforestation in Britain has a long history, traceable as far back as the mid 13th century (see Brake 1975)—but in this case it sparked the start of an “ecological revolution” which thrust environmental issues into the public eye on an unprecedented scale (Briggs 1987, p. 6). Nature secured a place of importance within the public consciousness, and a variety of environmental pressure groups, including Greenpeace, World Wildlife Fund, EarthFirst!, Friends of the Earth, The Nature Conservancy, and Earth Liberation Front, emerged to defend its interests. Offering a range of discursive perspectives from passably moderate to alarmingly radical, Cooper (1996) notes that environmental groups have enabled a steady shift in “tolerable” environmental attitudes: with every radical action, moderate groups appear more reasonable, thereby advancing the cause of environmentalism generally and incrementally edging the DSP into a deeper green (Cox 2006, p. 277-279; Cooper 1996).

The issues that each environmental group tackles vary, but all of them rely on the modern mass media to disseminate their message, access the public and gain support. Kevin Deluca (1999) posits that the media are so vital to gaining attention that environmental social movements must actively learn how to wield the media as a tool in order achieve recognition. But, because of the organizational structure of the media, many groups, specifically those that challenge the dominant point-of-view have difficulty

gaining media attention and must resort to ‘media stunts’ (Koopmans 2004; Gamson and Wolfsfeld 1993). Even with such tactics, the more “radical” groups—those that strongly challenge the predominant discourse, like Earth First!, The Earth Liberation Front, and even Greenpeace—will usually be portrayed in a negative way. Groups like Greenpeace have been able to bypass the media’s structural bias by harnessing the media as a tool for educating the public: tailoring the content and style of its messages to fit easily into an organizational media structure (Dale 1996, p. 61). Instead of letting others record their “stunts”, Greenpeace creates its own news clips and press releases, what it calls “media mind bombs”: disquieting visual images designed to elicit a strong emotional response, which it then sends out to media outlets thus ensuring the media frames remain positive through the process. Being media savvy—having a thorough understanding of visual mass communication and media organizations—has allowed Greenpeace to become one of the world’s most widely recognizable environmental organizations.

As social movement theorists Koopmans (2004) and Gamson and Wolfsfeld (1993) suggest, media and social movements are “interacting systems”. Despite the emergence of deep green movements and discourses that challenge the limits of the DSP, the traditional pragmatism discourse remains entrenched in our society and continues to pervade the mainstream media (see Carvalho 2005; Harrison and Burgess 1994; DeLuca 1999; Wall 2000; Schoenfeld et al 1979; Taylor, Lee and Davie 2000) and other areas of symbolic action—government policy (McKenzie 2002; Waddell 1996; Kraft 2000; Alm 1997), education (Stibbe 2004; Orr 1994; Mappin and Johnson 2005), corporate advertising

(Livesey 2002) and popular culture (Hope 2004; Rehling 2002; Meister and Japp 2002; Cox 2006, p. 367-409)—often under the guise of deeply committed environmental values.

Affective Communication

Affect has become one of the key components in research on communication and social action and change (Goodwin et al 2004, p. 415). Instant “gut” reactions—“reflex emotions”—can, for example, help “make us more alert and focused on the problem at hand”, while longer lasting emotional commitments—“affective bonds”—“give us our basic orientations toward the world, especially telling us what we care most deeply about” (Goodwin et al 2004, p. 416-417). Our emotions are a “universal component of human functioning, the primary motivating system of all activity” (Callahan 1988, p. 9), they influence our thought processes, even our reactions to physical stimuli (Callahan 1988, p. 9-10). According to Callahan, emotions are the “building blocks of moral thinking”: “a person who wrestles with moral questions is usually emotionally committed to doing good and avoiding evil” (1988, p. 10). Questions of morality and ethics require us to draw on our affective bonds in order to make a choice. But, as Goodwin et al (2004, p. 421) state, these “basic affective commitments need not be conscious to influence our actions and beliefs.”

The environmental movement’s “project” is deeply entrenched in the world of affect: as environmental advocate Al Gore (2006, p. 298) states, the environment is not simply a scientific or political issue, it is also a moral issue, one inextricably linked to our values, ideas, ethics and beliefs. Dunlap (2006) posits that environmentalism can be

understood as a “secular faith.” Like religion, it attempts to make sense of our role in the world and deals with problems on a moral and ethical platform: “it show[s] things as diverse as vanishing wilderness and the alienation of modern society as symptoms of a deeper, spiritual malaise—our failure to live in right relationship with the world around us” (Dunlap 2006, p. 325). Environmental communication in and of itself posits a fundamental choice, echoing Aldo Leopold’s “land ethic”, placing the current way of life—which it paints as morally suspect—up against a new sustainable philosophy that is ethically sound (Dunlap 2006, p. 323). This moral posturing has political implications, including the erosion of the bias of rationality. As Dunlap (2006) states, the environmental movement has traditionally resisted being cast in quasi-religious terms in order to not appear guided by irrationality. The scientific disciplines themselves, however, have become mired in questions of values, specifically when dealing with environmental research. Clinging to a neutral identity, many scientists and academics are apprehensive about becoming involved in the politicized environmental debate. Others, however, stress the ethical responsibility of those with specialized knowledge to caution the public of dangers, and to suggest solutions (Peters 1986; Louv 2005; Cox 2006, p. 355; Malone 2006). This is also evident in risk communication, where the assessment of environmental risk by “experts” for the general “non-expert” public necessarily involves value judgments (Beck 1992, 1999). Cloaked in their own values of objectivity and rationality, “experts” have been shown to both overtly reject the concerns of the public as subjective and emotional, or to recast them in terms of their own preferred discourse (science) in an

effort to deny the influence of such “subjective” material on their analysis (Cox 2006, p. 307-314; Waddell 1996).

Environmental communication also depends on affect at the micro level. Rather than rely purely on informational campaigns, which, alone, are “not sufficient to produce changes in attitude and (...) behavior” (Pooley and O’Connor 2000, p. 712), modern environmental communication battles for the audience’s hearts *and* minds in order to win support. Adding an emotional dimension to communication makes it “more memorable and exciting”, more likely to make an impact (Jacobson et al 2007, p. 7). Thus, we see environmental communication, specifically social movement campaigns, operating in the realm of reflex emotions and affective bonds. Again, Greenpeace is one of the most famous examples of this. Both their print and video campaigns provoke the audience into *feeling*, whether it is sadness, outrage, irony, fear, etc. Their pop-culture sensibilities enable them to “cash-in” on well-established campaigns, such as the Coca-Cola polar bear ads. In their version, however, the adorable polar bears are not frolicking about, enjoying the Great White North— they are dejected animals fearing for their lives. The caption “Global Warming: It’s the real thing” appropriates all the warm and “fuzzy” feelings from those heart-warming Coke ads and redirects it into guilt and heartache (Greenpeace USA 2005).

The “nature symbol” is a very powerful tool. It can be used to evoke romance, glamour, awe, or, alternatively, risk, action, adventure, and isolation—even fear. According to Meister and Japp (2002, p. 3), our “knowledge and understandings of the environment are constructed and maintained via a constant stream of language and

images derived from popular culture.” They are rhetorically constructed in one way or another to “situate [us] in relation to natural environments, create and maintain hierarchies of importance, reinforce extant values and beliefs, justify action or inaction, suggest heroes and villains, create past contexts and future expectations” (Meister & Japp 2002, p. 4). It is important, and unfortunate, to note that the majority of “green messages in popular culture are in no way promoting activism but are, rather, exceedingly consumption oriented” (Meister & Japp 2002, p. 7). Diana Rehling (2002) goes so far as to say that they actually serve to undermine environmental protection:

(...) aspects of our environment omitted from popular culture artifacts, while they may be vital parts of our ecosystem, are devalued by these cultural representations and by their omission are deemed as less important than picturesque, inspirational, or significant. (Rehling 2002, p. 25)

Thus, we might be hard pressed to find “ugly” insects in the Amazon worth saving because we have not developed supportive affective bonds toward them, because they have remained entirely absent from our notion of nature (created on a steady diet of mediated nature). Even those who do not adhere to environmental values may capitalize on it and exploit its positive affect—“greenwashing” includes, for example, a campaign that spins nuclear energy as “clean” or a high-priced hotel that claims to be “environmental friendly” because they save water when they make no similar effort to recycle.

Emotion, beliefs, and values pervade all levels of environmental communication. How we understand “nature” and “environment” at any given time is based on the

values assigned to it through campaigns, policy and popular culture. In our day-to-day lives, these affective factors remain implicit, silent contributors to our discussions of the natural world. Continuing to deny that affect permeates environmental communication means turning a blind eye to what may really motivate environmental behaviors.

Gaps

Environmental communication includes the entire corpus of environmental news, art, photographs, music, street protests, scientific reports, public policy, film, television, advertising, etc. (Cox 2006). The analysis of these has been shown, by and large, to revolve around rhetorical and discursive analysis. Missing from this impressive body of research, however, are the intriguing questions about the *nature* of communication (the modes of symbolic action) used to relay environmental messages. Several researchers have acknowledged the importance of the media for the environmental movement: Neuzil and Kovarik (1996), for example, trace the influence of the traditional mass media—books, magazines, and newspaper articles—on achieving limited environmental social change before the 1960s. Similarly, Deluca (1999) and Dale (1996) posit that the visual media, particularly television news broadcasts, are vital to gaining public attention, and that movements must learn to adapt the requirements of television in order to achieve recognition. Deluca and Demo (2000), Halloran and Woodford (1996), and Frost (2000) have examined the importance of landscape paintings and nature photography, while Krajnc (2000) briefly discusses the role of music. Though they analyze many modes of communication, these researchers do not deal with the influence and effects of the

particular characteristics of the media on the acquisition of environmental consciousness. Medium theories of communication, including those of Marshall McLuhan and Joshua Meyrowitz (explored further below), posit that media can be understood as “extensions of the self” and of the senses, and as such, they have important consequences not only at the individual level, but also at the larger level of human association (McLuhan 1994, p. 7). In other words, the types of media we use the most expand and limit the way we communicate in very specific ways (Howes and Classen 1991, p. 275). Have the dominant modes of communication influenced how we think about the environment? Can a greater understanding about the particular characteristics of the media help improve environmental communication?

The role of experience, and the potential of experiential communication techniques (multi-media experiences), to foster environmental consciousness have also been under-studied (Cantrill 1993, p. 77). Our personal experiences with nature, particularly in childhood, play a foundational role in how we relate to our environment (Louv 2005; Cantrill 1993, p. 77). Advertising theorists Bernd H. Schmitt (1999) and Martin Lindstrom (2005) have examined the potential of experiential marketing and the importance of sensory communication to cultivating brand loyalty. Schmitt (1999) argues, for example, that companies who are able to tap into and combine different types of customer experiences—specifically, the five “Strategic Experiential Modules” [SEMs]: Sense, Feel, Think, Act and Relate—in their advertising campaigns will reap substantial rewards. As Schmitt states (1999, p. 22), in today’s market, “customers take functional features and benefits, product quality, and a positive brand image as a given. What they

want is products, communications, and marketing campaigns that dazzle their senses, touch their hearts, and stimulate their minds.” New, holistic customer experiences are created from intertwining and “hybridizing” as many types of experiential modules as possible (Schmitt 1999, p. 193). New holistic experiences are richer and more intense than the simple sum of their parts. A new quality emerges from the combination, one that, according to Schmitt (1999) and Lindstrom (2005), holds great potential for the future of corporate marketing and brand loyalty. Could experiential and sensorial communication also be used to “enrich” environmental “loyalty” and foster changes to environmental citizenship? These questions have so far remained unexplored within environmental communication research.

Research has, similarly, missed the important opportunity to examine the place of environmental communication, particularly the role of the media, in the learning process. Environmental media and environmental education are constructed as separate entities when, in fact, they should be closely related. Krajnc’s (2000) examination of environmental learning points out the relationship between media, the arts, and environmental education, but she primarily emphasizes informal schooling, leaving formalized environmental education by the way side. Bishop et al (2000) develop an approach to environmental education that uses media and associated forms of symbolic action (arts, literature, music) as the primary tools, however, they focus on textual analysis and do not address the impact of media representations on the conception of nature, nor the experiential dimensions discussed here.

These are substantial questions that have, so far, failed to be considered not only within the field of communication, but, as the next section makes clear, within educational literature as well.

Environmental Education

The literature on environmental education encompasses international conference proceedings and publications, theoretical and applied scholarship, as well as philosophical works. In the following section, I call attention to two key themes within this broad field: curriculum reform and advocacy. The section on curriculum reform examines how environmental education problematizes the current format of formalized education for instilling environmental consciousness, arguing for more holistic, experiential environmental education initiatives. The second section, advocacy, explores difficulties related to teaching environmental education, notably the role of the educator in instilling values, beliefs and morals, and the overall purpose of environmental education.

Curriculum Reform

The first principle of the 1975 United Nations Belgrade Charter, *A Global Framework for Environmental Education*, stipulates: “environmental education should consider the environment in its totality – natural and man-made, ecological, political, economic, technological, social, legislative, cultural and esthetic” (United Nations Educational, Scientific, and Cultural Organization [UNESCO] 1975, p. 4). In other words, environmental education should not solely rely on science and ecological principles, but

on politics, social studies, law, economics and the arts as well—as Orr puts it: “all education is environmental education” (1994, p. 12). Accordingly, research in environmental education has continually asserted that for the appreciation of the natural world to improve, environmental principles must infuse every school subject, in every grade (see Orr 1994; Louv 2005; Havlick and Hourdequin 2005; Working Group on Environmental Education 2007). This entails the integration—or perhaps more appropriately, the infusion—of environmental principles across the curriculum. It is argued that effective education for the environment should be holistic, highlighting the “interconnectedness of reality” (Miller 1988, p. 17). In practice, however, this means a dramatic reformulation of current educational practices. According to Orr, the current practice of breaking down knowledge into constituent parts (subjects and disciplines) is ineffective, even dangerous, because it induces an atomistic worldview:

Students come to believe that there is such a thing as politics separate from ecology or that economics has nothing to do with physics. Yet, the world is not this way, and except for the temporary convenience of analysis, it cannot be broken into disciplines and specializations without doing serious harm to the world and to the minds and lives of people who believe it can be. (Orr 1994, p. 23)

Without a “whole systems” understanding of the world, we are in danger of perpetuating shallow and reductionist answers to complex questions (Orr 1994, p. 23; Stibbe 2004). The holistic approach, on the other hand, recalls the ancient Greek understanding of nature discussed earlier: the natural world permeated by a “presence of the mind”, imbued with life and intelligence (Collingwood 1945, p. 3; Miller 1988, p. 18). Becoming cognizant that we are all interconnected inspires an “ethic of caring”, positive values and

morals that extend to all life, and enables social change to begin from within (Miller 1988, p. 22-23).

Hand-in-hand with holism is an emphasis on experiential, “contextualized” knowledge that seeks to ground abstract and theoretical ecological principles in the everyday by allowing students to explore them *first hand* (Havlick and Hourdequin 2005, p. 386). In *A Natural History of the Senses*, Diane Ackerman suggests that even though we make sense of things with our minds, “*the mind* doesn’t really dwell in the brain but travels the whole body on caravans of hormone and enzyme, busily making sense of the compound wonders we catalogue as taste, touch, smell, hearing, vision” (1990, p. xix, original emphasis). This phenomenological interpretation prioritizes the body as *the* tool that enables us to experience the world, from which we derive all subsequent knowledge (Abram 1996). However, from Classical civilization to the Renaissance, to the Industrial Revolution, even throughout the 20th century, there has been much apprehension over the power of the body and sensory experience (Synnott 1991). For Plato, the senses were associated with “the animal”, the lowest type of humanity. Likewise, Aristotle ranked the senses hierarchically, sight occupying the top position, while the more “animal” senses—taste and touch—were ranked lowest (Synnott 1991). Saint Paul characterized human nature (and the senses) as the enemy of the “Spirit”. But, as Havlick and Hourdequin state, even Aristotle, despite his parochial classifications, suggested that the development of *both* the mind and the body was integral to the formation of complete knowledge (2005, p. 385).

Ackerman (1990) and Louv (2005) emphasize the role of the senses in creating long-lasting memories, and, by extension, the potential benefits to lifelong learning. “Experiential” environmental education taps into this potential by getting students outside the classroom and into nature (Brody 2005; Louv 2005; Havlick and Hourdequin 2005). This is not to say that traditional education does not involve experiences, but rather, as John Dewey noted in *Experience and Education*, that the existing experiences are “largely of the wrong kind” (1959, p. 15). They often result in jaded and apathetic students with negative attitudes that colour all future learning opportunities (Dewey 1959, p. 13-16). Creating positive, worthwhile educational experiences—ones that foster the desire for learning—requires an appreciation of not only the subject matter as it relates to the student’s existing knowledge and life-experiences, but also the manner and setting in which it is taught. More specifically, it demands that educators understand that merely depositing knowledge into students’ minds does not constitute learning (Freire 1970). Advocates of holistic, practical education suggest that subject matter should, instead, be conceptualized as a map:

The map is not a substitute for a personal experience. The map does not take the place of an actual journey. The logically formulated material of a science or branch of learning, of a study, is no substitute for the having of individual experiences. The mathematical formula for a falling body does not take the place of personal contact and immediate individual experience with the falling thing. But the map, a summary, an arranged and orderly view of previous experiences, serves as a guide to future experience, it gives direction; it facilitates control; it economizes effort, preventing useless wandering, and pointing out the paths which lead most quickly and most certainly to a desired result. Through every map every new traveler may get for his own journey the benefits of the results of others’

explorations without the waste of energy and loss of time involved in their wanderings—wanderings which he himself would be obliged to repeat were it not for just the assistance of the objective and generalized record of their performances. (Dewey 1956, p. 20-21, emphasis added)

Several alternative approaches to education have taken this idea to heart. The Reggio Emilia method, for example—named after the Italian city where it emerged after the Second World War—regards children as “natural researchers because of their curiosity, ability to ask questions, willingness to experiment and desire to take time to discover on their own” (Stegelin 2003, p. 164). It is an early childhood education method that resists the idea of organizing learning into discrete subjects, relying instead on the children’s own questions to shape lessons: “project work that takes the students on journeys through language, number concepts, hypotheses, discovery of new relationships, life cycles, and historical perspectives” (Stegelin 2003, p. 164). Its philosophical approach to education is grounded on the idea that “children need many opportunities for hands-on, multi-sensory experiences” to promote learning (Stegelin 2003, p. 164). The arts, therefore, figure strongly within Reggio “lessons.” They are “integrated into the work simply as additional “languages” available to young children not very competent in conventional writing and reading; the arts are not taught as a subject, a discipline, as a discrete set of skills, or treated in other ways as a focus of instruction for its own sake” (Schiller 1995, p. 46). As a result, Mesher and Amoriggi (2001, p. 244) state: “the children produce “art” that astounds most viewers and reflects the creative, communicative and intellectual potential of young children.” For their part, Reggio teachers remain open and flexible, allowing them to “follow the lead and interests of the children” when necessary

(Schiller 1995, p. 46). The Reggio Emilia approach is not afraid, however, to “interfere with the creative process”: teachers *will* offer suggestions and guidance, helping students learn how to efficiently and effectively realize their ideas (Schiller 1995, p. 47). Reggio Emilia succeeds because it “views the child as competent and follows a pedagogy where complexity, diversity and uncertainty are celebrated rather than viewed as obstacles to learning” (Mesher and Amoriggi 2001, p. 241). Consequently, some characteristics of Reggio schools —

attention to the importance of play, children’s needs and interests as guiding principles; the rate and style of a child’s learning; building on previous experience; allowing children to set goals themselves and decide on projects; working in groups; developing harmonious relationships with adults and children; using conflict resolution; and, drawing on a variety of languages to represent their ideas and feelings (Mesher and Amoriggi 2001, p. 243)

—are now being adopted by more traditional programs. Echoing the pedagogical ideas of Dewey and his peers, “the quality of [Reggio Emilia] schools results in large part from the image of a competent child who has rights, especially the right to outstanding care and education, not just needs” (Mesher and Amoriggi 2001, p. 241).

Similarly, environmental education without worthwhile experiences may transmit the knowledge of environmental science, but it does not provide the students with the opportunities to take their own *journeys* through the material. In response to this shortfall, “in-nature” learning is burgeoning: from schools that teach traditional subjects in an outdoor setting, to science lessons taught hands-on in nature, to school gardens created and tended by students (see Louv 2005; Engel and Sturgis 2006; Havlick and Hourdequin

2005; Brody 2005). This type of holistic, experiential EE encourages students “to examine and assess for themselves the ways in which the environment and human activities are intertwined and to discuss with their peers the implications of these connections” (Havlick and Hourdequin 2005, p. 387; see also Orr 1994). By connecting the dots between theory and practice, holistic and experiential EE can help students develop their critical thinking skills and become active environmental citizens.

Advocacy in Education

The ancient Greek understanding of education (*paideia*) affirms: “the goal of education is not mastery of subject matter but mastery of one’s own person” (Orr 1994, p. 13). Knowledge, by this definition, is a tool for developing not only basic skills and memorization, but also a way of building character, instilling values, and promoting ethics. Similarly, some environmental education researchers argue for integrative, holistic learning which recognizes that environmental issues require *ipso facto* the cultivation of ethics, values and moral judgments. Other environmental education researchers, however, caution that such an approach leans dangerously close to advocacy. These researchers warn that education *for a particular purpose* “could easily lead to advocacy to advance particular behavior, policy, or ideology” (Mappin and Johnson 2005, p. 3). Underlying this discussion of advocacy is a more pointed concern about the role of the educator in EE and the overall purpose of environmental education.

Jickling (2005), Orr (1994), and Mappin and Johnson (2005) point out that EE teachers must be particularly wary of letting their own agendas translate into their work

in a prescriptive manner—one leading to indoctrination rather than education. Education for the environment is not about prescribing what students *should* think. Teaching for a particular purpose, such as altering environmental practices, means education is being used instrumentally, as a tool, a means to an end (Jickling 2005, p. 97). Rather, researchers state EE is about offering a wide range of ideas and “enlarging the students’ ability to think” about these kinds of issues (Jickling 2005, p. 97). Environmental education should not only allow learners to take their own journeys through the curricular “maps”, but also encourage these voyageurs to explore and question the map’s blank spots and uncharted areas (here be dragons!) (Jickling 2005, p. 100). The role of the environmental educator is to encourage students to scrutinize and question the knowledge they receive by highlighting the gaps in that knowledge—“what ways of knowing are missing? What do we care about that is absent?” (Jickling 2005, p. 100). Both students and educators are encouraged to be reflexive about what they feel is missing in the environmental curriculum, and to delve into the reasons and implications for these selections and omissions.

Whereas previous approaches to EE taught *about* the environment (teaching scientific principles revolving around the environment), the current trend is toward education *for* the environment, a more social and political perspective designed to spur individual action (Mappin and Johnson 2005, p. 3, 9). This entails examining society’s fundamental assumptions about the environment: the values, beliefs and practices toward nature that are “so deeply buried in our belief systems and lifestyles as to be transparent—unrecognizable on a daily basis” (Jickling 2005, p. 101). But, since

“educators are advised to be value-free or value-fair in their presentation” of subjects, this can pose problems (Mappin and Johnson 2005, p. 5). As Mappin and Johnson explain, this stance is grounded in the idea that schools are not the place to be discussing controversial topics (2005, p. 5). Conversely, however, Orr argues that it is the *responsibility* of educational institutions—“institution presuming to shape minds, perceptions, and values”—to carry out this mandate by dealing with contentious issues (1994, p. 27). Environmental issues in particular, he states, “ought to cause us to take a stand, not retreat into a spurious neutrality” (Orr 1994, p. 137).

The affective motivations behind the presentation of current ‘hot’ topics like the environment conflict with presumptions of rationality and objectivity that permeate the educational institution. EE toes a fine line between advocacy and education—a line that is in constant flux, shifting back and forth depending on the political climate (Jickling 2005; Mappin and Johnson 2005). EE teachers must negotiate their roles as educators and their own attachments to the environment in a way that doesn’t diminish either. Bob Jickling, drawing on his experience as a teacher, suggests that an honest, reflexive approach to both is the best way to cope with the contradictions:

[E]ducators are given the responsibility for guiding learning in spite of inevitable uncertainties and difficulties. To put aside controversial issues and radical questions risks conveying the implicit message that these ideas are not important, are not ones that learners should think about, and that learners cannot make a difference in the outcomes of these issues. On the other hand, if we provide students with the competencies to engage thoughtfully in critical issues and to take citizen actions, and if we exemplify these qualities ourselves, then we will increase educational opportunities. (2005, p. 110)

Instilling an ethic of caring and critique, through an experiential holistic approach, rather than instructing students in a specific strict set of environmental practices or beliefs, offers a more effective and pedagogically responsible way of achieving broader social and political change for the environment.

Gaps

Despite the academic recommendations for a holistic EE curriculum, most educational institutions maintain strong disciplinary boundaries (Stibbe 2004). In practice, environmental education has been dominated by what Foladori (2005, p.127) calls the “bio-physical” framework of the hard sciences: biology, physics, chemistry and geography (Orr 1994; Louv 2005; Jacobson et al 2007). Although ecological science is an important part of environmental education, it is not the only avenue available: all education has the potential to be environmental. Relying solely on “technical dissemination of scientific information ... overlooks[s] other ways of understanding the world” (Jacobson et al 2007, p. 7). The arts and popular culture, particularly the role of media, have been particularly understudied in environmental education (Jacobson et al 2007, p. 7; Cantrill 1993, p. 78-82). This lacuna persists despite evidence that the arts have the power to greatly improve education by “enhancing the grasp of difficult concepts, aiding memory retention, extending attention span, increasing concentration and enjoyment of learning” (Branagan 2005, p. 35). Creative media (music, drama, visual arts, writing) could be particularly valuable to environmental education because they can

often cut across cultural barriers, addressing large diverse audiences (e.g. Krajnc 2000). They also encourage reflexivity and convey emotion, which have a significant influence on environmental action, as well as promote critical thinking (Branagan 2005, p. 36). Engel and Sturgis (2006), for example, have offered a model for practical exercises in environmental ethics using journaling, noting that the self-reflexive quality of the writing process helps “students discover a complex and interesting set of factors that affect their own motivation and actions” (p. 14). Similarly, Jacobson, Mcduff and Monroe (2007) assert: “both reading and writing about the environment promotes reflection about our role in the world” (p. 8). Visual art, music, and theatre also have the ability to provoke reactions that typical education methods do not, using symbolism and emotion to engage the public, and creating greater opportunities for participation in the environmental movement (Branagan 2005). The popular media (film, advertising, television, etc.) also have the power to evoke emotion and nurture reflexivity, but are often overlooked in studies of environmental education.

In *Last Child in the Woods*, Richard Louv (2005) argues that a child’s explorations of nature are indispensable experiences, fostering a long-standing appreciation for the environment. Louv argues for the rejuvenation of outdoor play, indicating a profound connection between effective environmental learning and the sensorial aspects of nature. However, these experiences are steadily being replaced by experiences with mediated nature. Environmental education habitually ignores the significant role media plays in the development of environmental consciousness.

Bishop et al (2000) offer perhaps the only example of media being used as the subject matter of environmental education. Their project—*The Development of Environmental Awareness through Literature and Media Education*—seeks to “expand and explore the scope of environmental education by making use of processes and knowledge bases associated with arts education and converging on issues associated with environmental ethics and aesthetics” (Bishop et al 2000, p. 269). The authors challenge the existing ideas of what it means to be environmentally literate, specifically the idea that environmental education revolves mainly around the sciences. Their project studies the development of teaching materials centered on textual analysis and critical literacy, aimed at improving environmental awareness in elementary school children. Starting from the idea that the environment is both culturally and socially constructed, the researchers posit that there is much to be learnt about the environment from the deconstruction of “texts”. (“Text” is understood in both “a “narrow” view of text as *authored human artefact* (verbal or visual) and a “broad” view of text as *landscape and environment itself*” (Bishop et al 2000, p. 272).) The “textual” themes explored within the project include the analysis of popular literary and media text through an environmental lens (a “green” reading of texts), the study of specifically environmental texts (reading “green” texts), the creation of environmental texts, and the “study of aspects of the environment itself as text” (Bishop et al 2000, p. 273). Developing the project around these broad foci, the authors resisted the urge to simply direct the teachers. Instead, the researchers involved the teachers in every aspect of the process. Instructors were given constructive guidance in terms of project themes but were largely left to produce their own teaching materials. This approach was favored

in order to encourage the teachers to “take ownership”, invest themselves in the process and reflect on the nature of their own ideas about environmental education. According to the research findings, teachers who participated in the project seemed to become “more conscious [of both] environmental issues and (...) the potential for the use of literary and other texts in environmental education” (Bishop et al 2000, p. 274). After their experience in the project, many of the teachers came to “recognize or acknowledge that environmental awareness can be promoted by means other than science” (Bishop et al 2000, p. 282), though the authors admit that only a longitudinal study can ascertain whether any permanent changes are made. Comments from the teachers themselves indicate that students also benefitted from the project, “becoming more observant, looking critically at their immediate environments, and developing their research skills” (Bishop et al 2000, p. 274). The practical nature of the project allowed students to “reveal their experiences of literature and various media” (Bishop et al 2000, p. 280) through their “green” readings and discussions of texts, and through the “green” texts they themselves created.

The Bishop et al (2000) project is unique in that it is one of the only examples I have found that examines the link between environmental education and mediated nature (“texts”). It remains incomplete, however, since its reliance on the textual metaphor simultaneously ignores and maintains the existing sensorial bias. And, although the authors allude to the power of textual analysis to unveil cultural constructions and provoke critical reflection, they do not explicitly acknowledge the process required to achieve these ends. In order to broaden environmental literacy to include mediated

nature, students must possess the “knowledge, skills and competencies that are required in order to use and interpret the media” (Buckingham 2003, p. 36).

Media Education

The modern media have become the most powerful agents of socialization in our society (Buckingham 2003; Orlowski 2007, p. 37). By the age of 18, young Canadians have spent more time with televisions and computers than in school (Duncan 2005, p. 3). As Zettl (1998, p. 83) remarks, “anything that has as much influence on our individual and societal development and behavior as the mass media needs to be carefully analyzed and examined.” This section discusses two main ideas within media education literature: literacy and citizenship. Media literacy is the bread-and-butter of media education, “the knowledge and skills learners acquire” that enable them to “read”, understand and create media. Yet, exactly what media literacy entails, and how it is best accomplished, remains the subject of debate. This much is clear, however: critical engagement with the media gives rise to a critically engaged citizenry. How media education nurtures citizenship is discussed in the second part of this section.

Literacy

Media literacy refers to “the knowledge, skills and competencies that are required in order to use and interpret the media” (Buckingham 2003, p. 36). Renée Hobbs defines it as “the ability to access, analyze, evaluate, and communicate messages in a wide variety of forms” (Hobbs 1998, p. 16). Understood in the traditional sense, literacy is the ability

to read and write the printed word. The pursuit of literacy is considered a legitimate and credible area of education. Yet, the printed word is but one of many media that deliver information. Printed texts are no longer the dominant “means of cultural expression and communication” (Buckingham 2003, p. 5). Other types of media, notably television, film, video games, the Internet, and popular music are increasingly at the center of experience, especially for younger generations. In practice, however, the printed word has remained dominant in education: “schools have been notoriously silent on defining an appropriate relationship between the schools’ mission and the role of the media” (Hobbs 1998, p. 23). David Buckingham (2003, 1998) traces the evolution of media education. In its first incarnation, he explains, media education was primarily taught as a form of *inoculation* against the ‘evils’ of media, used “to expose... the crude manipulateness and cheap emotional falsity of popular culture” (Buckingham 1998, p. 34) and ensure that students became discriminating (i.e., high-brow) media consumers. More recently, media education has been concerned with the *demystification* of ideologies. That is, exposing the “false beliefs” perpetuated by the media, particularly in its representations of gender, race and class. Much like the discrimination approach taught in the 1930s, the demystification approach relies on a fundamental assumption that children are the most vulnerable segment of society, in need of protection from the nefarious influence of the media. In the demystification framework, media literacy means arming children with the critical tools that empower them to resist the influence of the dominant media ideologies. As Buckingham explains, both these approaches are deficient because the knowledge and experience of children as media consumers is ignored—“students are assumed to be

“mystified” and in need of expert (teacher) guidance to gain clarity (1998, p. 38). For these reasons, the “protectionist” model of media literacy is increasingly being challenged, and children are progressively being portrayed as a “sophisticated and critical audience” (Buckingham 1998, p. 37). A new model of media literacy has thus emerged, characterized by a more self-reflexive approach that recognizes that children and adults alike derive genuine pleasure from the media (Hobbs 1998, p. 19). Media literacy, therefore, makes the curriculum “[more] relevant to children’s lives outside school” (Buckingham 2003, p. 5).

Indeed, as Duncan states, “media literacy is no longer seen as a superficial frill, but as an essential component of the curriculum” (Duncan 2005, p. 2). Media literacy—which consists of both *analysis* and *production* of media—is just as important to a citizen’s proper functioning in society as learning how to read and write (Duncan 2005, p. 2; Hobbs 1998, p. 20). Asking critical questions about the media that stand at the centre of their everyday lives—“where media texts themselves are explored in terms of their form, strategies, organization, referents, points of view, and so on”—enables students to reflect on the ways their ideas and beliefs have been shaped and are being shaped by the media, and creates opportunities for them to take a step back and make up their own minds (Hobbs 1998, p. 21-22, 28; Duncan 2005, p. 2, 4). Making the media an object of analysis not only recognizes that learning takes place in settings other than school, “but also alerts students to the educational force of the culture at large” (Giroux 2007, p. 200). Widening the scope of formal learning to include “mediated knowledge forms” enables educators to provide students with “those critical capacities, modes of literacies, knowledge and skills

that enable them to both read the world critically and participate in shaping and governing it”—to which, today, the media are *sine qua non* (Giroux 2004, p. 77).

Citizenship

Every society has an obligation to provide citizens with the capacities, knowledge and skills necessary for them to be, as Aristototle claimed, ‘capable of governing and being governed’. A democracy cannot work if citizens are not autonomous, self-judging and independent, qualities that are indispensable for them to make vital judgements and choices about participating in and shaping decisions that effect everyday life, institutional reform and governmental policy. Hence, civic education becomes the cornerstone of democracy in that the very foundation of self-government is based on people not just having the ‘typical right to participate; they should also be educated [in the fullest possible way] in order to be *able* to participate’. (Giroux 2004, p. 83)

In today’s media saturated world, being *able* to participate in democracy means being familiar with the media systems and messages that are so central to the cultural fabric of daily life. Learning is no longer restricted to formal institutions—advertising, film, television, news, and books all produce and communicate knowledge (Giroux 2007, p. 200). Much of what happens in our society—matters of political and social significance—are heavily influenced by what circulates in the media.

The inherent danger is that these forms of knowledge pass through our lives unquestioned. According to Lewis and Jhally, the importance of media education lies not in improving the degree of media literacy (“few people, after all, need to be taught how to make sense of television or, in most cases, to appreciate its “preferred meanings”), but in

improving the degree and scope of media *comprehension* (1998, p. 111). Media are, by definition, *representations* of reality (Buckingham 2003, p. 3; Christ and Potter 1998, p. 8). The stories, points of view, and opinions they present have been *chosen*, and embody a particular set of interests, often at the expense of others (Buckingham 2003, p. 3; Orlowski 2007, p. 33). As Lewis and Jhally state, “to appreciate the significance of contemporary media, we need to know why they are produced, under what constraints and conditions, and by whom” (1998, p. 111). Media education teaches students to step back and become aware of “mediated illusion”, and to take mediated messages with a grain of salt (Galician 2004, p. 9; Lewis and Jhally 1998, p. 119). In Chomsky’s words, it is a form of intellectual “self-defense” (2000, p. 26).

Greater comprehension must also include learning the techniques used to produce the media. In the current landscape, media ownership is becoming concentrated in the hands of a few large multinational corporations. Media education contributes to citizenship by narrowing the gap between media audiences and media producers. Students, being able to perceive and evaluate the media as authored constructions of reality, and being versed in the techniques used to create these constructions, are qualified to challenge and respond to them by creating their own media. In so doing, media education offers the chance to develop the critical thinking skills necessary to becoming an educated media consumer, the means to participate in the media landscape, and, by extension, the *abilities* needed to become an active citizen in a media-rich society (Lewis and Jhally 1998; Giroux 2007; Kozolanka 2007, p. 19).

Gaps

Becoming media literate entails both the analysis and production of media. The analysis component typically deals with media content—the messages relayed by advertisements, television programs, films and news stories. Since media are generally defined by the fact that they carry latent messages, media content is the “most obvious aspect of mediated communications” that can be analyzed (Meyrowitz 1998, p. 98). Literacy also entails an understanding of media production which occurs by learning the “grammar” of the medium through practice: the particular codes, conventions, techniques and other production variables that play a role in the medium’s ability to “alter perception of message content” (Meyrowitz 1998, p. 100). Media education programs in Canada and abroad have widened their scope to include not only the evaluation of content, but also of “grammatical” conventions by making media production integral to the learning process (Anderson 2007; Buckingham 2003).

Media education is however incomplete without an understanding of how the *nature* of the medium influences communication, or what Meyrowitz labels “medium literacy” (Meyrowitz 1998, p. 100). As Meyrowitz (1998, p. 103) explains, “each medium is a type of setting or environment that has relatively fixed characteristics that influence communication in a particular manner—regardless of the choice of content elements and regardless of the particular manipulation of production variables.” Meyrowitz’s argument flows from the idea that media influence our behavior because they allow us to extend ourselves (as sensorial receivers) in ways that wouldn’t be possible without them. Marshall McLuhan’s famous aphorism, “the medium is the message,” coined in his 1964

publication *Understanding Media*, stems from the idea that in order to fully understand media, scholars must not only concern themselves with the content of media, but also with “the media themselves and the total cultural environment within which the media function” (McLuhan 1995, p. 236; 1994, p. 7-8). It is important to understand that, for McLuhan, every technology (be it the telescope, electricity, or broadband) has the potential to be communication because it is, in some way, an extension of the senses (McLuhan 1995, p. 239). McLuhan is adamant that the importance of media resides much less in its content than in its effects on the culture of humanity² (McLuhan 1995, p. 237-238, 247). The electric light bulb illustrates McLuhan’s concept: the light bulb is communication, yet it is not explicitly recognized as such by conventional media scholars until it has some kind of content, in which case it is the *content* (usually writing, “another form of communication entirely”) that is recognized, not the electric light (McLuhan 1994, p. 8-9). McLuhan argues that the light *should* be considered a communication medium in its own right because, like the TV, the radio or telegraph, electric light “eliminates space and time factors in human association”; it permits humans to overcome the natural barriers that would inhibit communication, and therefore has important historical and cultural effects for the capacity of that communication—it must, as a result, be considered a form of communication in itself (McLuhan 1994, p. 8-9). Thus, “the type

² This facet of McLuhan’s argument is heavily influenced by his readings of Harold Innis, whose writings centered on the innate space and time biases of communication (Stamps 1995; Merrin 2002, p. 369; see also Peters 2003 and Frost 2003). Based on historical research, Innis (1951) posited that all media have particular biases and the chosen media of an era could determine the organization of that era (Frost 2003). McLuhan arrived at his own theories by similarly writing an in-depth history of media (McLuhan 1995; Stamps 1995).

of media has impacts independent of the content of the message” (Havick 2000, p. 281). The content of a hand-written letter, a phone call, and a face-to-face interaction may be the same, but the different media (pen and paper vs. telephone vs. person) result in decidedly different outcomes and implications (Meyrowitz 1998, p. 104).

Advertisers themselves are now realizing that the medium they choose to help convey their messages can have a powerful impact on audience interpretations and understandings. Advertising expert Martin Lindstrom (2005, p. 9) states that there is no reason that the senses cannot be fully integrated into branding and advertising the world over. In fact, direct targeting of the senses through media can be a powerful marketing tool (Schmitt 1999; Lindstrom 2005). As Lindstrom (2005, p. 10) explains,

...we store our values, feelings, and emotions in memory banks. Compare that memory to the standard video recorder which records two separate tracks—one for image, one for sound. The human being has at least five tracks—image, sound, smell, taste, and touch. These five tracks contain more data than one can imagine because they have direct bearing on our emotions and all that they entail. They can fast forward or backtrack at will, and stop just exactly on the right spot in a split second.

Some companies *do* pay attention to senses other than sight. And some have been able to establish their brands and products within a broader sense memory. Kellogg’s, for example, “has spent years experimenting with the synergy between crunch and taste” (Lindstrom 2005, p. 12). They created a unique and identifiable crunch sound for their cornflakes and, thus, “expanded the perception of their brand to incorporate four senses (including touch) rather than the more limited sight and taste” (Lindstrom 2005, p. 12-13). Coca-Cola has, similarly, struggled with ways to regain the tactile recognition of their

brand, which has steadily eroded in an industry dominated by the cylindrical aluminum can (Lindstrom 2005, p. 89). The distinctive Coca-Cola touch (from its history in iconic glass bottles) helped establish brand loyalty: “more than 59 percent of the world’s consumers prefer their Coke in a glass bottle”, yet “more than 98 percent of all Coke sold in the United States is served in plastic, metal, or paper—but not glass” (Lindstrom 2005, p. 90). It is interesting to note that, nearly ten years after Coca-Cola seemed to abandon its pursuit of “Project Can”—an initiative to develop an equally iconic aluminum can—a new, bottle-shaped aluminum can has recently been introduced (Lindstrom 2005, p. 89).

As advertisers embrace new and emerging forms of communication in an attempt to tap into our sensory receptors, understanding more about the media themselves will be essential. However, the impacts of how a medium itself affects communication are considerably more subtle than those associated with media content, and this conception of media analysis has yet to be integrated into media education curricula in a meaningful way (Meyrowitz 1998, p. 106).

Similarly, media education has often dealt with issues of gender, race, and class representation. Interrogating how media images and language construct gender, race and class constitutes the main goal of most critical media education. The natural world is similarly constructed through the media, but continues to be pervasively ignored by critical approaches to education (Bell and Russell 2000; Abram 1996). These critical approaches, which claim to “subvert deep-seated humanist assumptions”, habitually neglect, and in some cases reinforce, the chronic devaluation of nature (Bell and Russell 2000, p. 189). As Bell and Russell (2000, p. 191) state, “to treat social categories as stable

and unchanging is to reproduce the prevailing relations of power.” Why not widen the scope of critical inquiry to include social categories like “human,” “animal,” and “nature” (Bell and Russell 2000, p. 191)? Current constructions of humans as separate and unique beings in the biosphere, and animals as slaves to pre-programmed instincts are, as discussed, culturally and historically specific (Bell and Russell 2000; Abram 1996). These discourses did not always hold sway, and alternative perspectives do exist in other cultures (Abram 1996). Even in our own culture, we can find alternative constructions within myth, poetry, and, interestingly, children’s literature and films (Bell & Russell 2000, p. 195). While environmental communication, informed by alternative environmental philosophies, has begun to explore the construction of nature in the media, critical media education research continues to manifest an anthropocentric bias by refusing to look beyond some of its own fundamental assumptions (Bell & Russell 2000). For example, media educators have often scrutinized the children’s media corporation, Disney. It is widely criticized for the latent sexism and racism encoded in the films it presents to young viewers. It is not, however, analyzed in terms of its alternative presentations of the world of animals or nature as agents with languages and histories of their own. If, as has been argued by environmental scholars, the current environmental crisis results from the predominance of “Western concepts of nature”—concepts that are continuously bolstered by most media—a need exists for media educators to face up to and challenge these fundamental assumptions in the hope of promoting meaningful change.

Examining these three bodies of literature, a number of similarities emerge. The reoccurrence of themes like sensorial experiences, literacy and citizenship throughout the fields of environmental communication, environmental education and media education establish the complementary nature of these subjects. My research attempts to bring these areas of literature together. I argue that environmental education *can* benefit from cooperation with media education because both of these deal with very similar ideas, notably citizenship and literacy. In particular, as EE expands to address mediated nature, it may improve further by expanding the importance of the senses and tapping into sensorial communication. In addition to the literature reviewed here, theoretical works on sensorium, citizenship, and pedagogical philosophy act as a base for this research. These theoretical foundations are used to make sense of the research questions, and form the framework for the research study. They are explored in the next chapter.

Chapter 2 Theoretical Framework

Society perpetuates itself by transmitting a wealth of knowledge—“ideals, hopes, expectations, standards, [and] opinions” (Dewey 1921, p. 3-4)—from one generation to the next. “Society,” wrote Dewey, “not only continues to exist *by* transmission, *by* communication, but it may fairly be said to exist *in* transmission, *in* communication” (1921, p. 3). In his analysis, however, John Dewey neglects an equally important, more primordial level of communication that also enables our society to exist. Every day, we experience and interact with our surroundings thanks to our senses. We *depend* on our senses to tell us about the world. They are the basis of all communication because they are the primary “means of entering into relation with all things” (Abram 1996, p. 47). Our senses engage in a “silent conversation ... a continuous dialogue” of sensory information with all that surrounds us—including animals and plants (Howes 1991b, p. 167; Abram 1996, p. 52). According to David Abram, sensory perception is dialogical because it “involves, at its most intimate level, the experience of an interplay ... between the perceiving body and that which it perceives” (1996, p. 57). Communication is, in other words, a reciprocal conversation between our *senses* and the things they sense; between our bodies and the world that surrounds them. And, just as we sense the world around us, other things and creatures sense and react to the world around them. Senses are a kind of universal equalizer.

If we acknowledge the primary role of the senses as communicators, we also redefine our relationship to the “more than human” world. Philosophers from Aristotle to

Descartes have sought to pinpoint the key to “human specialness” by negating the sensorial body and stressing the rational mind in order to de-emphasize the animal-ness of humanity (Synnott 1991; Abram 1996, p. 48). Their legacy means eliminating the subjective/affective quality of experience and writing our *selves* (our tangible bodies) out of the equation. Fundamentally, this approach has distanced us from our environment. Phenomenologist David Abram (1996) posits that in order to reconnect with nature, we need to reassess our place within it. Situating the body at the centre of human experience enables us to recognize not only the inherent sensuousness and subjectivity of life on Earth, but also to re-conceptualize our sense of place—grounded *within* the corporeal world as participants rather than mere observers (Abram 1996, p. 49).

Each culture possesses a specific sensory profile—what Ong (1991) calls a “sensory ratio”: a different way of prioritizing and making sense of the surrounding environment through the senses. Differentiations in the balance of the senses carry implications for the organization of society. As noted earlier, our worldview is dominated by the visual (Howes 1991, p. 4; Synnott 1991; Abram 1996). The implications of our preference can be gleaned through our use of language. As Diane Ackerman (1990, p. 7) describes,

...when we see something, we can describe it in gushing detail, in a cascade of images. We can crawl along its surface like an ant, mapping each feature, feeling each texture, and describing it with visual adjectives like red, blue, bright, big, and so on...

but when it comes to describing a sound, touch, taste or smell, “words fail us like the fabrications they are.” For example, Ong states that, compared to the Korean language, our repertoire of words relating to taste sensations is severely limited (Ong 1991, p. 27).

Similarly, while we most commonly use the expression “I see” as a synonym for “I understand”, the Suyá of central Brazil use the word for hearing, *ku-mba*, to mean “to hear (a sound)” but also ‘to know’ and ‘to understand’” (Howes 1991b, p. 176). The sensory ratio of a culture can be determined by looking at the ensemble of social practices, including language, artistic ideals, child-rearing practices, and, of particular importance to this discussion, its media of communication (Howes and Classen 1991).

According to medium theorists Marshall McLuhan (1994, 1995) and Walter J. Ong (1991), the distortion of Western reality in favor of sight began with the adoption of writing and, later, the expansion of literacy through the printing press. Tracing human history through the anthropological record, McLuhan, following the work of Harold Innis (1951), develops a detailed history of media and its effects on the human condition (Stamps 1995, p. 97-142; McLuhan 1995, p. 239-244; Merrin 2002, p. 376). McLuhan posits that the type of media predominant in any particular society has a specific influence upon the sensory balance of the individuals within that society (McLuhan 1995, p. 240; Stamps 1995, p. 101-103). Perception is intrinsically synaesthetic—the senses perceive the world simultaneously and in continuous overlap— but communication technologies isolate certain senses at the expense of others (McLuhan 1994; Howes 1991b, p. 170; Abram 1996, p. 59). Television, for example, creates a “reality” based solely on images and sounds. In our culture, smell, taste and touch—though also important components of *reality*—are deemed relatively unnecessary to the construction of mediated “reality”. Media blur the *synaesthetic* reality they represent simply by nature of the way they *re-present* it.

In tribal societies, where speech was predominant, McLuhan claims “all the senses were balanced (...) [and] there was little individualism and specialization” because “nobody knew any more or less than anyone else” (1995, p. 239-240). Individuals lived in a world where no single sense was privileged over any other, and all the senses had a significant part to play for survival (McLuhan 1995, p. 239-240). People were more interconnected with each other; they shared a collective affective experience, a community of myth, rituals and values (McLuhan 1995, p. 240). With the invention of the phonetic alphabet, that cohesion was lost (McLuhan 1995, p. 241). Whereas aural cultures necessitate close proximity (to be heard), visuality enables us to survey from afar: our physical presence is no longer required. Thus, literacy disassociated the individual from his balanced senses, privileging the eye –the visual sense– over all others (Stamps 1995, p. 129-131; McLuhan 1995, p. 240-241). Writing necessitates less involvement with a community because it is less ambiguous – all possible meanings are encompassed in “semantically meaningless letters” breeding an analytical, detached culture (Ong 1991, p. 30). Close-knit communities with collective knowledge were supplanted by collections of private individuals with individual knowledge; each specialized in a specific way, detached from emotion and group life (McLuhan 1995, p. 240-242). This process of “de-tribalization” and detachment was accelerated by the invention of the printing press, which made the worldwide spread of alphabetization possible (McLuhan 1995, p. 243). Subsequent events, such as the adoption of the linear perspective in the fifteenth century, continued to reinforce the “natural power of the eye to survey things from afar, while at the same time de-emphasizing the other senses as ways of knowing and communicating”

(Howes 1991, p. 5). In the 1960s, McLuhan believed that the popularity of radios, telephones and televisions had the potential to re-emphasize the synaesthetic quality of communication and result in a “re-tribalization” of our culture (McLuhan 1994, 1995; Ong 1991). Though McLuhan’s claim about “re-tribalization” was premature, his ideas about the influence of writing, the phonetic alphabet, and the predominance of visual media may, according to Abram (1996), help explain our culture’s estrangement from nature.

For many oral societies, culture is inextricably linked to the surrounding environment (Abram 1996). A culture’s mores and morals are rooted in the local landscape and can’t necessarily exist in the same way outside of it. For example, the Australian Aborigines’ Dreamtime songs describe the journeys of their Dreamtime Ancestors as they traveled and created the world (Abram 1996, p. 163-179). The songs are sung while walking specific paths across the landscape (Walkabout)—one part (e.g., the song) cannot be fully achieved without the other (e.g., the walk). With the advent of writing, these stories can be transported away from their “home”. If they are removed from the sensuousness of the landscape that should accompany them, they no longer possess the same spiritual power (Abram 1996). Abram argues that the same is true for Western culture — our language and stories have been stripped of their affective sensorial connections to the Earth. According to Abram, the sensorial connections were “lost in translation” when the ancient Greeks adopted the letter names and shapes of an older Semitic writing system, the *aleph-beth* (1996, p. 102). In the early Semitic *aleph-beth*, both letters and sounds were linked to the things they represented (Abram 1996, p. 101). For

example, the letter *mem*, also the word for water, and was drawn “as a series of waves” that resemble the letter m (Abram 1996, p. 101). When the Greeks adopted the system, the word/thing connections fell apart. The alphabet became purely abstract—“while the Semitic name had served as a reminder of the worldly origin of the letter, the Greek name served only to designate the human-made letter itself” (Abram 1996, p. 102). Our language reflects back on ourselves (the sounds we make as we read the letters) rather than the world that surrounds us. With the introduction of a nonrepresentational alphabet and, later, other media that strengthened the predominance of sight, we steadily lost our grounding within the natural world. Encouraged, both explicitly (through culture and custom) and implicitly (through language and discourse) to experience the world from a distance, we thus seem to favor “contemplation ... at the expense of participation” (Howes & Classen 1991, p. 265).

More recently, new electronic methods of communication have continued this tradition of nonintervention, though in a more indirect way. In his book *No Sense of Place*, Meyrowitz (1985) explains that media have continuously evolved “toward the fuller replication of the means of communication that existed *before* media and technology”, that is, media have steadily “improved”—adding “voice to the telegraph, or sound to silent movies, or color to television” (Meyrowitz 1985, p. 121)—in order to become more like real life. Drawing from the theorist Paul Levinson, Meyrowitz explores the idea that “human beings use media to recreate as “natural” and as “human” a means of communication as possible” (1985, p. 121). Meyrowitz (1985) extends this idea by suggesting that “life-like” electronic media allow for drastic changes in social interaction

because they blur the spatial distinctions that have, in the past, enabled people the “know their place.” Electronic media, Meyrowitz (1985, p. 182) suggests, “remove people socially and psychologically from their physical settings” while simultaneously enabling them to see, hear and experience things that may not previously have been physically accessible. With instantaneous electronic media, physical isolation no longer equals information isolation: “wherever one is now—at home, at work, or in a car—one may be in touch and tuned in” (Meyrowitz 1985, p. 308). As Meyrowitz (1985, p. 181) explains, because of the media’s verisimilitude, “information access opens the door to physical access”—“to have information of an environment is to be partially “in” that environment.” Yet, there are limitations: the massive amount of electronic media that permeates our lives has certainly begun to “outweigh personal interactions” (Meyrowitz 1985, p. 147). The amount of face-to-face time we share with others has dramatically decreased, even though we can continue to claim to be “in touch” with those around us. This is precisely the type of change that, Meyrowitz argues, has deep implications for our social interactions. Meyrowitz (1985, p. 147) cites the example of family time in front of the television set:

Whether media have actually affected the *amount* of family interaction may be less of an issue than the fact that they have changed the *uniqueness* of what goes on in the home. Because many electronic messages within a given home are also experienced simultaneously by many other families, the shared but secret behavior of the family unit is further diluted. A person’s psychological affiliation with his or her nuclear family is weakened when the families of friends, co-workers, and relatives share much of the same information at the same time. The common backdrop of social

experience provided by electronic media creates broader
(and therefore shallower) ties and associations.

Similarly, mediated nature allows people to witness natural phenomena and areas of the world that they may never have experienced otherwise. Mediated nature enables us to virtually be *in* nature, to gain knowledge of the natural world without actually being physically present. This does, of course, promote greater spread of environmental issues throughout the population. Without a doubt, there is greater awareness and knowledge of key environmental dangers in the general population than ever before. Environmental non-governmental organizations [ENGOS] have made sure of it, using the international reach of electronic media to popularize and inform on an unprecedented scale (see Cox 2006; Deluca 1999 for further discussion).

But, there is a difference between knowing about an issue and acting upon that knowledge. Following Meyrowitz (1985), I suggest that the *commonness* of mediated nature experiences—simultaneously experienced by thousands of people—makes developing strong personal affective bonds with nature difficult. Although “electronic media create ties that compete with those formed through live interaction (...) [l]ive encounters are certainly more “special” and provide stronger and deeper relationships” (Meyrowitz 1985, p. 147). However, the number of personal (unmediated) encounters with nature is dwindling drastically, essentially eliminating opportunities for people to have *unique* experiences that will bring them in touch (literally) with nature. In this way, electronic media, like others before it, detaches us from the sensuousness of our local landscape, engenders a superficial understanding of nature, and reinforces perpetual

noninvolvement. This systematic distancing through language and media has important implications for environmental education.

In *Experience and Education*, John Dewey writes: “there is an intimate and necessary relation between the processes of actual experience and education” (1959, p. 7). From the very beginning, we learn through experiences. As Dewey illustrates, our initial experiences of the world are highly localized within our familial surroundings, “a narrow world of personal contacts” (1956, p. 5). As children, we are firmly rooted in place and experience: everything we know grows organically out of a familiar milieu and the people in it. The world reveals itself to us in its raw form, simultaneous vibrant experiences—full of tastes, sounds, smells—permeated with emotion. The transition to school, Dewey posits, makes a harsh break from the world of experience: “facts are torn away from their original place in experience and rearranged with reference to some general principle” (Dewey 1956, p. 6). The Brazilian educationalist Paulo Freire highlights similar limitations, stating: “the contents [of education], whether values or empirical dimensions of reality, tend in the process of being narrated to become lifeless and petrified” (1970, p. 57). The world is taught as “motionless, static, compartmentalized and predictable” (Freire 1970, p. 57).

In the vibrant world of experience, we participate with more than just our eyes and ears; we are fully engaged in an ongoing dialogue of the senses. The formalized education system communicates in a very different way. Many schools rely on passive learning, “the “banking” concept of education in which the scope of action allowed to the students extends only as far as receiving, filing, and storing deposits” (Freire 1970, p. 58).

Without grounding learning in experience, the curriculum remains abstract, disconnected. For many children, making the transition from real experience to school experience is difficult. School *de-sensitizes* us: the old ways of gaining knowledge through sensory-rich experiences are lost and students must reprogram themselves to learn effectively according to accepted (sensory-deprived) methods (Dewey 1956, p. 30; Louv 2000). Implicit in this process is the same ontological position that informed the beliefs of the ancient philosophers: human authority (and uniqueness) comes from our ability to “remove” ourselves, to separate mind from body. Thus socialized, students in our society fall prey to the endemic “denaturing” that goes along with it.

The subjugation of sensorial experience has had adverse effects not only on the environment, but also on people themselves (Louv 2005). Richard Louv dubs the problem “Nature-Deficit Disorder,” a condition caused by a chronic lack of interaction with the natural world from childhood into adulthood, with repercussions at the individual, family, and societal levels (2005, p. 34-35). Nature-deficit disorder delineates the “human costs of alienation from nature,” including attention disorders, depression, obesity, and even, at the extreme, high crime rates (Louv 2005, p. 34). It is the product of the long-standing and systematic elimination of nature from our lives. Already, through language, we are at arm’s length from the environment, looking from the outside, in. In school, we learn about nature from inside a classroom. In our photography, television and film, we peer at nature from the safety of the living room. In our homes and offices, we lock nature out with climate-control and windows that don’t open. In our communities, we stress the dangers of the outdoor exploration, warning our children about the dangers of climbing

trees and keeping them well occupied with organized, structured activities and making laws discouraging unorganized outdoor play (Louv 2000, p. 31-34).³ We have created a society that has systematically shut out real experiences with nature, whether because of fear, greed, or mere discomfort, and it is slowly debilitating us.

To cure nature-deficit disorder and, by extension, environmental degradation, we must break our cultural habit of non-participation, re-discover nature first hand, and re-connect with the land that shapes our lives (Louv 2005, p. 157). This concept is not foreign to us: programs like Project D.A.R.E.⁴, and other forms of wilderness therapy, propose to assuage “anti-social behaviors” (a “history of defying rules, anger management concerns, truancy, drug dependency, and conflict with the law” (Project D.A.R.E. n.d., Youth-at-Risk Program))—by bringing individuals into communion with nature. As the theorists and theories above illustrate, de-emphasizing the senses has led us down a dark

³ Some recent examples are instructive: in 2006, an Ottawa family was issued a by-law infraction because the children were playing games in the front yard and street, citing safety and noise concerns (Ma 2006); in Calgary, a similar incident occurred in 2004, after a neighbour complained about the noise levels involved in after-school street hockey games (McGinnis 2004); in 2007, a Vancouver architect was ordered to take down a pirate ship treehouse he built for his two sons because he didn't have a permit and the structure was in the front corner of his lot: “not an appropriate form of development in the front yard” (Colebourn 2007); and in Waterloo in 2003, a by-law officer put informal soccer games to an end because the players hadn't paid for time on the field (Goodwin 2003).

⁴ Project D.A.R.E., or “Development through Adventure, Responsibility and Education”, is an “intensive group-based experiential education and wilderness adventure” (Project D.A.R.E. n.d., Custody Program) program based in Wendigo Lake, Ontario. Programs for both young males “at-risk” and males youths in open custody are designed to promote responsibility, autonomy and accountability. The project imparts the five core values of the R.E.A.C.H. program (Responsibility, Effort, Attitude, Community and Honour) through nature exploration, team challenges, community service and schooling (Project D.A.R.E. n.d., Custody Program). Students progress through the developmental stages of the R.E.A.C.H. program, from Grey Jay, Otter, Wolf and Bear, through teamwork, individual achievements, and motivation, allowing them to return home with “an intrinsic motivation to achieve” (Project D.A.R.E. n.d., Custody Program). Outdoor wilderness exploration, including “backpacking, orienteering, snow-shoeing, cross-country skiing, flat water and whitewater canoeing, sea kayaking, camping and reflective experiences (group, duet, midnight reflection, solo reflection)” (Project D.A.R.E. n.d., Custody Program) comprises nearly half of the student's time while in placement.

path, one that enables and even permits students to possess knowledge without acting on it. Taking a page from Paulo Freire: if, through problematization of the status quo, students become conscientious participants, taking a more critical approach to environmental learning can enable students to see the world as “a reality in process, in transformation”—to better see the connections, the interdependence, between themselves and the environment (Buckingham 2003, p. 142; Freire 1970, p. 71). A participatory, “problem-posing” model of environmental education can help students develop “their power...to perceive critically *the way they exist* in the world *with which* and *in which* they find themselves” (Freire 1970, p. 70-71). This process must begin by making the familiar strange in order to begin understanding it (Freire 1970, p. 101, 108). It requires the application and blending of three distinct critical approaches—critical pedagogy, critical media literacy, and “sensorial consciousness.”

Critical pedagogy is strongly influenced by the writings of Paulo Freire, particularly from his 1970 book *Pedagogy of the Oppressed*. In that book, Freire stresses that in order to create meaningful change in a situation of oppression, those who are oppressed must first “critically recognize its causes” (1970, p. 31-32). The pedagogy of the oppressed, Freire writes,

must be forged with, not for, the oppressed (whether individuals or peoples) in the incessant struggle to regain their humanity. ... [T]his pedagogy makes oppression and its causes objects of reflection by the oppressed, and from that reflection will come their necessary engagement in the struggle for their liberation.” (1970, p. 33)

Essentially, Freire outlines the idea that, for any meaningful change to take place, students must learn to recognize that the world as it appears is not immutable: it can be changed, and *they can change it* (Freire 1970, p. 34). It is vital, however, that the students arrive at this notion—the idea that they *can* and *should* change things—on their own: “this conviction cannot be packaged or sold; it is reached, rather, by means of a totality of reflection and action” (Freire 1970, p. 54). The embodiment of this “reflection and action” is critical thinking; “those who through reflection perceive the infeasibility or inappropriateness of one or another form of action” simultaneously develop new ideas and actively seek new knowledge (Freire 1970, p. 123). Critical thinking is in itself a form of action because knowledge, perception and ideas are the foundation of all social action (Giroux 2004, p. 74). The problem-posing method of education relies on the critical dialogue between teachers and students—where both parties examine their “perception of the previous perception” and their “knowledge of the previous knowledge”—in order to develop “*conscientização*,” or critical consciousness (Freire 1970, p. 108, 112).

Noam Chomsky (2000) echoes this sentiment. According to Chomsky, the goal of education is “to help create “wise citizens of a free community,” to encourage a combination of citizenship with liberty and individual creativeness” (2000, p. 38). It is important for pedagogy to regard the student not as an empty glass ready to be filled—but rather “as a gardener regards a young tree, as something with a certain intrinsic nature, which will develop into an admirable form, given proper soil and air and light” (Chomsky 2000, p. 38). Students must be made a part of the learning process—“we should be speaking not *to* but *with*” them—and they ought to be recognized as active

agents with their own ideas and reason. Critical pedagogy acknowledges that, “the best way to help students learn is to allow them to find the truth by themselves. True learning comes through the *discovery* of truth, not through the imposition of an official truth” (Chomsky 2000, p. 22, emphasis added).

Much of the literature on critical pedagogy focuses on social injustice and political action. Critical pedagogy is tied to notions of citizenship and civics because it understands the function of education as “the need to educate students as citizens capable of defining and implementing democratic goals such as freedom, equality, and justice” (Giroux 2007, p. 195). As Henry Giroux describes,

Education is not only about issues of work and economics, but also about questions of justice, social freedom, and the capacity for democratic agency, action, and change, as well as the related issues of power, exclusion, and citizenship. These are educational and political issues, and they should be addressed as part of a broader effort to re-energize the global struggle for social justice and democracy. (2007, p. 197)

However, several theorists, including McLaren and Houston (2004) and Bell and Russell (2000), have made a case for including the environment within the scope of critical pedagogy. The lack of an environmental focus within critical pedagogy is, as it turns out, a sore point within the field: “not only opponents of critical pedagogy, but also its most fervent supporters, have long insisted that critical educators in the industrialized West have failed to address environmental issues in their work” (McLaren and Houston 2004, p. 28). As it happens, critical pedagogy is well suited to adapt environmental critique (McLaren and Houston 2004, p. 29).

McLaren and Houston (2004, p. 29, 35), for example, take a “green Marxist” approach, arguing that “increasingly, the politics of the environment, which includes a palimpsest of social and ecological ills, has been translated onto the terrain of justice for humans as well as toward nonhuman nature.” They posit that there are two distinct forms of justice, “environmental justice (unequal distribution of harmful environments between people) and ecological justice (justice toward nature)” (McLaren and Houston 2004, p. 30). Both of these examine the human/nature relationship under an “exploitative class system,” (McLaren and Houston 2004, p. 35) and call attention to “the intractable connection between capitalism and ecological devastation” (p. 36). Bell and Russell (2000) take the argument further. Poststructuralist theories, they argue,

drawing attention to the cultural and historical specificity of all human knowledge, ... have been used to disrupt assumptions about objectivity, the unified subject, and the universality of human experience, and thereby to expose the classist, racist, sexist, and heterosexist underpinnings of Western humanist thought. (Bell and Russell 2000, p. 189)

This approach has, however, failed to provide a similar challenge in terms of the concept of nature. Rather, as Bell and Russell (2004, p. 189) describe, poststructuralism, “as it is taken up within critical pedagogy, tends to reinforce rather than subvert deep-seated humanist assumptions about humans and nature by taking for granted the “borders” that define nature as the devalued Other” (Bell and Russell 2000, p. 189). Bell and Russell (2000) posit that critical pedagogy has not only ignored the fact that the “exploitation of nature is not separate from the exploitation of human groups” (p. 190), but also its own anthropocentric assumptions about humans and nature (p. 191). That is, humans are

unique and somehow separate from nature; “[the] human/animal opposition upon which [this idea] rests is taken for granted, its cultural and historical specificity not acknowledged. And therein lies the problem” (Bell and Russell 2000, p. 192). An environmental critical pedagogy would not only examine the ways exploitations of nature are tied to exploitations of people, but it would also shine the spotlight on the taken-for-granted categories of human and nature, especially in what relates to the “natural” distinction between the two. For example, it would examine the alternative ways of conceptualizing nature found in history, in other cultures and, surprisingly, within our own.

It is the responsibility of “public, higher, popular and adult education” to ensure that these issues are being addressed, but this does not mean that formal institutions are the only places where education takes place. As Giroux notes (2004, p. 77), “other spheres such as advertising, television, film, the Internet, video games and the popular press” all contribute to the public knowledge and constitute a “public pedagogy”. The emergence of public pedagogy makes the development of critical formal pedagogy all the more important:

Formal spheres of learning ... unlike their popular counterparts – driven largely by commercial interests that more often mis-educate the public – must provide citizens with those critical capacities, modes of literacies, knowledge and skills that enable them to both read the world critically and participate in shaping and governing it. *Pedagogy at the popular level must now be a central concern of formal schooling itself.* (Giroux 2004, p. 77, emphasis added)

Addressing the role of the media in the education of citizens directly intersects with the mandate of critical media education. As Paul Orlowski notes, “the two main sources of information in society are the mainstream media and the public education system” (2007, p. 35). Both Giroux (2004, 2007) and Orlowski affirm that the media “have become part of our ways of perceiving the world” (2007, p. 27) and, as such, require special attention from educators; their influence can no longer be viewed as insignificant and their power cannot easily be ignored. According to Buckingham (2003, p. 34), “the media are inextricably tied up in broader networks of social, economic and institutional power; and it is vital that young people should understand the complex and sometimes contradictory ways in which these operate.” Teachers, therefore, have a responsibility to ensure that students develop the analytical skills suited to a media rich environment (Orlowski 2007, p. 36).

The focus of critical media literacy is to allow students to discover how the media shape and alter the landscape of public debate, enabling them to arrive at the “epistemological position that all knowledge is socially constructed. By corollary, all knowledge serves the interests of some groups of people, often to the disadvantage of other groups of people” (Orlowski 2007, p. 42). Students arrive at these conclusions through a “self-reflexive style of teaching and learning, in which students are enabled to reflect on their own activity both as readers and as writers of media texts” (Buckingham 1998, p. 40). The critical reflection component of media education, like in critical pedagogy, pushes students to examine their own positions, how those positions “filter their ways of seeing,” and to realize that the media have similar biases that shape their

various texts (Orlowski 2007, p. 40-41, 43). As Buckingham (2003, p. 38-39) states, media literacy is

more than simply a *functional* literacy – the ability to make sense of a TV programme, for example, or to operate a camera. Literacy is not seen here merely as a kind of cognitive ‘tool kit’ that enables people to understand and use the media. And media literacy is thus rather more than a kind of training course or proficiency test in media-related skills. For want of a better term, media literacy is a form of *critical* literacy. It involves analysis, evaluation and critical reflection. It entails the acquisition of a ‘metalanguage’ – that is, a means of describing the forms and structures of different modes of communication; and it involves a broader understanding of the social, economic and institutional contexts of communication, and how these affect people’s experiences and practices.

Much of the focus in media literacy is also on social issues, including gender, race and poverty. Developing strong social criticism and strong social action are the cornerstones of democratic citizenship. Media education, like critical pedagogy, advocates a shift “away from the providing of answers and toward the process of asking questions” (Hobbs 1998, p. 27). Students come to their own realizations through a process of “awareness, analysis, reflection and action—all designed to enable [them] to fully comprehend and act on the content, form, purpose, and effects of media messages” (Bergsma 2004, p. 156). Yet, few media analyses have critically examined the representation of nature, nor challenged students to examine their own ideas of nature for bias. The shortage of scholarship in this area can likely be traced to the same critical anthropocentric bias that allows us to take terms like “nature” for granted in the first place (Bell and Russell 2000, p. 191). Environmentally-based media literacy would delve

into popular media texts and pursue an “ecocritique” of the representations of nature found within those texts, taking into account the various alternative conceptualizations of nature (Bishop et al 2000, p. 272).

Also often neglected in media literacy is the importance of the media itself—the *medium* that relays the message rather than the content. As Meyrowitz (1998, p. 105) explains, understanding significance of the medium can be significant at both the micro (“single-situation”) and macro (“societal-level”) levels of analysis. Micro medium analysis “look[s] at the implications of choosing one medium versus another for a particular communication,” (e.g., acquiring news from a newspaper versus the television newscast) (Meyrowitz 1998, p. 105). For example, advanced research into the ways in which a particular medium, or combination of media, can be used to best replicate the sensorial qualities of a real experience, is being adapted and applied by large corporations in order to improve brand loyalty and boost sales of products and services (Lindstrom 2005). Macro medium analysis, on the other hand, looks at “how the widespread use of a new medium leads to broad social change” (e.g., the difference between schooling in “print culture” versus “electronic culture”) (Meyrowitz 1998, p. 105). For instance, how the increased availability of mediated nature through electronic media has changed the “nature experience.” Examining the effects and affects of a particular medium requires both students and teachers to become aware of a completely different, and generally ignored, facet of human understanding: the human body.

The body—specifically the negation of the body—has played a big part in how we have come to define our role in the world, particularly in terms of our relationship with

the environment. A “critical sensorial consciousness” demands that we question the status quo and reengage in the ancient debate between mind and body. As explored earlier, the disaccord between the body and the mind permeates nearly every part of our culture. Yet, these notions are rarely questioned nor challenged. As Chadowski and Egan (2008, p. 1) state, “most educational theorizing, and practice, seems to go on as though humans were disembodied brains.” Closer attention to the body is warranted not only in terms of how it relates to media education—the media as extensions of the body and the senses is only one part of the equation—but also because it is central to learning in general, and, as I suggest, environmental learning in particular.

According to Chadowski and Egan (2008, p. 2-7), the body’s “toolkit” —including “senses, emotions, pattern and musicality, humor, and mimetic intentionality”—are the building blocks of understanding. These “tools” exist apart from language, at least for the first few years, and contribute to the development of one’s personality and character. Language, therefore, “does not mark some distinct beginning of that individual person; rather, language allows each individual a new kind of expression” (Chadowski and Egan 2008, p. 7). Once added to the mix, however, “language begins to invade our bodies and our bodies’ tools reciprocally invade language” (Chadowski and Egan 2009, p. 7-8). Nonetheless, the toolkit remains the primordial component of human and educational development, something that has powerful implications for those looking for ways to make education more engaging.

As noted above, David Abram (1996) posits that language is, at least initially, based on our physical experiences with the natural world. Similarly, Chadowski and Egan

(2008, p. 10-11) explore the link between gesture and language, the relationship between words and their referents, and the many bodily-based metaphors that “pervade our understanding of many of the world’s most fundamental physical forces and operations.” The authors state, for example: “In numerous languages, the vowels [e a o u] are used to name large slow moving animals (like elephants and whales, while the vowel [i] is used in names that are smaller and faster-moving (such as insects and squirrels)” (Chadowski and Egan 2008, p. 10). And, likewise:

We subconsciously continue complex orientation and meaning in language from the orientation to the world first established by our bodies in our use of such bodily-based metaphors as “in,” “out,” “force,” “balance,” and so on. These basic concepts, while grasped by individuals in slightly different ways as a result of our particular bodily experience and our emotional responses to that experience, are, of course, somewhat culturally bound, but generally publicly shared and understood by everyone. (Chadowki and Egan 2008, p. 11)

The cultural and linguistic connections between the body and the environment support the need for critical engagement with the concept of nature from an affective and sensorial point of view. As Bell and Russell (2000, p. 199) explain, more and more theorists in both environmental education and critical pedagogy are making the link between the body and education, particularly in terms of our “relatedness to the more-than-human world” (Bell and Russell 2000, p. 199). Both areas stand to gain significantly by sharing ideas.

It is important for students to become aware of how our bodily experiences, our sensory inputs, “attach” us, emotionally, to the environment, and filter the way we understand the world. Given the expansion of advertising into the areas of experiential and affective communication (see for example Schmitt 1999), they also need to be able to understand how their senses can be intentionally manipulated. It is particularly important for us to examine our own experiences with nature—often in the form of nature excursions, trips, or mediated nature (films, television and other texts)—as well as the views espoused by our culture as a whole—human specialness, nature at a distance—and reflect them back at ourselves in ways that challenge our existing knowledge and foster new ideas. One way to sensitize students to the sensorial biases in our culture and the impacts these have on our understanding of nature is to compare and contrast them. Placing our most rampant cultural artifacts—media—in centre stage, we can discover the shortcomings of our one-sidedness, and open up discussion for alternative ways of knowing (and feeling) nature. Specifically, demonstrating that mediated and technological re-presentations of nature are not sensorially or affectively equivalent to real first-hand experience, and exploring the social and environmental implications of our growing addiction to these imitations to our relationship with nature. In addition, students should be reacquainted with nature *in person*, experiencing the sensorial richness first hand and as often as possible. Louv (2000) has noted that innovative outdoor education programs have already begun to flourish in the United States. However, these programs, though desperately needed, don’t go far enough. They are incomplete without a component that enables students to critically assess how our society thinks and *feels* about nature. As

Dewey notes, each experience is informed in some way by all the experiences that came before and informs all experiences that come after (Dewey 1959, p. 27). Creating positive experiences, “good habits”, that help situate us *within* nature rather than outside it builds a feeling of membership and community. Becoming an environmental citizen or, more appropriately, a “citizen of the environment” entails not only contemplation *but also* critical participation in the environment as fully sensing bodies (Bell 2005, p. 182).

Chapter 3 Methodology

This study examines three broad areas: what students are being taught about the environment at the curricular level (and how), new opportunities within media literacy for developing critical awareness of environmental issues, and ways to promote active environmental citizenship through participation of *both* the mind and body (senses). More specifically, it engages the following list of research questions:

1. Where does environmental education occur in the Ontario curriculum?
2. What environmental discourses are being imparted to elementary students by the curriculum?
3. What is the role of media and popular culture in environmental education in Ontario?
4. Are there sensorial biases in Ontario's environmental curriculum, and how might these biases manifest on environmental consciousness?
5. What kinds of sensorial information are associated with environmental experiences in school/in media/in situ, and how do we negotiate environmental information learned in a school setting/in media/in situ?
6. Are the differences between lived experiences with nature, scholastic teachings, and media representations being addressed?
7. What are the dominant perceptions of mediated nature? Can a greater understanding about the particular characteristics of the media themselves help improve environmental communication?
8. Could experiential media and sensorial communication be used to build environmental consciousness and give rise to environmental action?
9. Could greater environmental media literacy contribute to the development of environmental citizenship?

To attempt to answer these questions, I used a two-pronged research strategy incorporating textual analysis and fieldwork. An analysis of the Ontario elementary curriculum helped to identify how environmental issues are being taught, as well as highlight aspects of citizenship, the importance of the senses and the connections to media literacy. The data gathered not only provided a number of insights but also served as preparation for the fieldwork component. The fieldwork consisted of participant-observation, interviews and focus groups with the grade 6 students and teachers of a local private elementary school. The focus of the fieldwork was the trial of an environmental media project that aimed to develop a critical sensorial awareness vis-à-vis the typical modes of communication while simultaneously promoting a stronger appreciation of nature.

Part 1: Textual Analysis

Traditions of Discourse Analysis

The term “discourse analysis” was first introduced in the writings of linguist Zellig Harris in 1952. In its original usage, discourse analysis described the purely linguistic examination of the relationship between sentences, grammar forms and functions (Pennycook 1994, p. 117-119). Its prominence in the field of linguistics grew quickly and discourse analysis soon became one of the cornerstones of linguistic research (Pennycook 1994, p. 119). However, as other disciplines embraced the idea of discourse analysis, the circumstances surrounding its execution began to change. As Alistair Pennycook explains, whereas the discourse analysis of applied linguistics is primarily descriptive, other versions

of discourse analysis are geared toward explanation, asking “why, at a particular time, out of all possible things that could be said, only certain things were said?” (1994, p. 116). A great number of these variants and adaptations have emerged, but most important to this research are the “critical” approaches to discourse analysis. These approaches are *critical* because, as William Carroll writes; “they focus explicitly on dynamics of power, knowledge and ideology as they surround and partially constitute discursive processes (not simply on the ways in which social reality is discursively *constructed*)” (2004, p. 226, original emphasis).

Discourse analysis examines communication “embedded in its social contexts” (Pennycook 1994, p. 121-122), probing language as it is really used. The intention is to make “visible or apparent that which may previously have been invisible or seemingly natural” (Pennycook 1994, p. 121). In every situation, certain factors—discourses—define, describe and delimit what is possible to say and what is not possible to say (and by extension, what is possible to do and not to do) (Pennycook 1994). In every act of communication, these mitigating factors influence the reality—the meaning—of what it communicated. As we have seen in the case of the natural world, “the object that a discourse refers to may have an independent reality outside of discourse, but it is given *another* reality by discourse” (Parker 2004, p. 254). “The metaphors, analogies, and pictures discourses paint of a reality can be distilled into statements about that reality” (Parker 2004, p. 255) and, most of the time, this reality is taken as fact when it has actually been created over time by a society’s powerful institutions. As Ian Parker states, “the advantage of DA is that it reframes the object and allows us to treat it not as truth,

but as one “truth” held in place by a language of power” (2004, p. 261). Critical approaches to discourse analysis seek to illuminate these underlying factors and, in some cases, propose ways to change them.

Doing discourse analysis means distancing yourself from language: “when discourse analysts read texts, they are continually putting what they read into quotation marks” (Parker 2004, p. 252), asking questions about not only the reality the discourse is referring to, but also about the discourse itself. All forms of critical discourse analysis involve this kind of deep reflexivity. As a result, however, discourse analysis itself always involves the use of other discourses, which should themselves be read with quotation marks. It is important to note that when doing critical discourse analysis, we are not studying a discourse in its entirety but rather “a piece” (Parker 2004, p. 254) or instance of discourse in use.

The major contributions to critical discourse analysis, including the works of Norman Denzin, Michel Foucault and Norman Fairclough, all believe that power, history and (with the notable exception of Foucault) ideology contribute to the creation of meaning. Foucault’s genealogy and Denzin’s deconstruction are both “methods” of examining discourses (Carroll 2004, p. 227). Foucault’s approach is premised on the idea that hegemonic discourses, despite their precedence, are “always vulnerable to criticism” (Carroll 2004, p. 227). For Foucault, discourse is where “power and knowledge are joined together” (Pennycook 1994, p. 127): power dictates what discourses will be deemed appropriate and these, simultaneously, translate into the organization of qualified knowledge and practices. In turn, those who adhere to these formalized ways of

understanding establish influence and power, ensuring the preservation of the discourse. As Foucault writes, genealogy, by digging into the history of “qualified”, institutionally approved knowledge, unveils “those blocs [sic] of historical knowledge which were present but disguised... a whole set of knowledges that have been disqualified as inadequate to their task or insufficiently elaborated” (2004, p. 248). It is through the revelation of these “local popular knowledges” that discourse analysis enables them “capable of opposition and of struggle against the coercion” of dominant discourse, and thus reframes the qualified version of “reality” as fluctuating and fragile (Foucault 2004, p. 250).

Deconstruction, drawing from similar post-structural philosophy and theory, endeavors to showcase a discourse’s innate contradictions and, consequently, challenge the discourse’s authority and consistency (Carroll 2004, p. 227). It is a method that perceives everything as “text” and is particularly well suited to the analysis of “social and cultural texts, including film, music, news, fiction and social science writing” (Denzin 2004, p. 234). As Denzin states, deconstruction is the attempt to “take apart and expose the underlying meanings, biases and preconceptions that structure the way a text conceptualizes its relation to what it describes” (2004, p. 234). It begins with the premise that there are no definitive answers about meaning. Discourses have many potential readings; we each draw on a variety of culturally available understanding to make sense of them. The process of deconstruction reveals both the hegemonic, dominant reading, as well as possible oppositional readings of the same discourse, creating “openings for

transforming concepts as well as the social practices informed by [those] concepts” (Carroll 2004, p. 227).

This research, though largely informed by the approaches above, draws in a particular way on the “explanatory critique” framework proposed by Lilie Chouliaraki and Norman Fairclough (2004). In contrast to post-structuralist methods—which can “degenerate into “discourse idealism””, restricting everything, including critique, to the realm of discourse (Carroll 2004, p. 228) —Chouliaraki and Fairclough’s approach recognizes the importance of practice not only to social life but also to the “fully contextualized” analysis of discourse (Carroll 2004, p. 229). Chouliaraki and Fairclough (2004, p. 265) propose that critical discourse analysis starts with the identification of a discourse-related problem, something that may be analyzed not only in terms of the discourse itself—what enables and constrains the discussion—, but also of the social practices that are shaped by the discourse. To that end, Chouliaraki and Fairclough (2004, p. 266-267) acknowledge that DA can only establish part of the picture when it comes to social practices. DA must work in conjunction with other methods, specifically ethnography, to fill in the blanks and provide “precisely the sort of knowledge that CDA often extrapolates from text, that is, knowledge about the different moments of a social practice: its material aspects, ... its social relationships and processes, as well as the beliefs, values, and desires of the participants” (Chouliaraki and Fairclough 2004, p. 267). The important difference in their framework is that the research not only describes the problem but also proposes ways to change it, or, as Chouliaraki and Fairclough write it “shift[s] from explanation of what it is about a practice that leads to a problem, to

evaluation of the practice in terms of its problematic results” (2004, p. 269). The research should, therefore, provide ways to overcome the barriers to change identified in the analysis, notably by highlighting “resources for changing things in the way they currently are” (Chouliaraki and Fairclough 2004, p. 269), that is, potential avenues within the current state of affairs. In this way, discourse analysis becomes, as Ian Parker states, a form of action research, geared toward not only challenging the dominant discourses but also changing them (2004, p. 260).

The Ontario Curriculum

The transmission of knowledge from one generation to another is a vital part of the human experience. Education is a “process of building awareness and sensitizing an individual” (Carty 1996, p. 115). It is an intrinsic part of the socialization process: developing and instilling the values, beliefs and practices that define society (Carty 1996, p. 115). As such, the place accorded to the environment in formal education plays an important role in defining how a generation will perceive and act toward the natural world (Carty 1996, p. 115). In Canada, education is a provincial responsibility. Each province and territory is responsible for the educational development of its own residents. I undertook an analysis of the Ontario elementary curriculum, issued by the province’s Ministry of Education [MoEd]. This was an easy choice since I am a resident of Ontario and have experienced the Ontario school system first hand. It also made possible the participatory research I conducted at a local school. The ways in which Ontario addresses environmental education is important because this province’s education system is

responsible for the educational development of one in three Canadians (Government of Ontario 2008). How the provincial government approaches environmental education in Ontario arguably has repercussions for environmental literacy across Canada (Carty 1996, p. 115; Wilson 2004, p. 25).

In 1984, the Ontario MoEd recognized that educational institutions must “reflect and honour the values and ideas” that are deemed important by society (Carty 1996, p. 119). Before 1993, however, environmental studies were not part of the formal curriculum (Carty 1996, p. 121). Environmental education was considered “a topic of interest and not a core consideration”—an add-on subject—leaving individual schools to develop their own ‘home-grown’ environmental programs (Carty 1996, p. 121). Significant curriculum reform in 1998 established new guidelines and goals for how the environment should be taught to students. In particular it stressed the importance of relating subject matter to the world outside the school, introducing the notions of sustainability, environmental citizenship and economic responsibility.

Research Texts

The curriculum guides selected for this analysis reflect what students were being taught in the 2007-2008 school year. Since my research examines not only environmental learning but also media literacy and the role of the senses, I felt it was important to cast a wide net and take a close look at how these topics are addressed in a variety of subjects.

The Ontario curriculum is reviewed on 7-year cyclical schedule (Ontario Ministry of Education [MoEd] 2009). For each subject, the MoEd undertakes a lengthy information gathering process, including:

Comparisons with other jurisdictions; focus groups comprised of educators from all Ontario school boards; technical content analysis conducted by subject experts; [and] consultations with [the] Minister's Advisory Council on Special Education, faculties of education, employers, parents, students, universities, colleges, other branches of the Ministry of Education, other ministries, [and] NGOs (Non-Governmental Organizations). (MoEd 2009, FAQ Section 5)

Data gathered through this process serves as the knowledge base for recommending changes. A curriculum council made up of “knowledgeable, committed community leaders and educators,” supported by a working group, also provide “strategic advice” and analysis on each selected topic (MoEd 2009, FAQ Section 7). Each new curriculum guide is then formulated in both English and French.

The texts examined in this research include: Science and Technology (MoEd 1998a), Social Sciences/History and Geography (MoEd 2004 [revised]) curricula, Language (MoEd 2006 [revised]), Health and Physical Education (MoEd 1998b), and Arts (MoEd 1998c). Each document was read closely and critically. My objective for each guide was to:

- 1) Examine the document’s main themes and ideas,
- 2) Ascertain whether the environment factored into the teachings as they were written and, if present, examine the text’s wording for evidence of particular environmental discourses,

- 3) Isolate any mention of communication media in general, and examples of media in particular, and assess the curriculum's perspective on media in education/media education,
- 4) Locate "sensory words" (e.g. look, watch, see, hear, listen, etc.) and discussion of senses in order to formulate the curriculum's "sensory profile."

I followed Stibbe's (2004) "double-reading" approach: reading the entire document once in keeping with its preferred reading, and a second time in order to question and challenge its fundamental assumptions. Finally, using data from each specific guide, I studied the curriculum's motifs in order to reveal the Ministry's educational strengths, biases and omissions.

Part 2: Fieldwork

Traditions of Fieldwork

Observational fieldwork, including ethnography, participant observation and interviews, is an attempt to gain insight into the social milieu of those being observed. It stems from the literary tradition of anthropologists like Bronislaw Malinowski and the philosopher and sociologist George H. Mead, who established the practice of long-term immersion into other cultures in order to understand them from the "native's point of view" (Malinowski 1966, p. 3). Early fieldwork was more strictly scientific than its modern counterpart. It had very specific aims—discover the inner workings of *alien* cultures—and adhered to systematic data collection methods and techniques—infiltrate, observe and interview without disrupting (Malinowski 1966, p. 6). This observational work was founded on the invisibility, objectivity, and seamless integration of the researcher within

the observed group. However, the posthumous publication of Malinowski's personal research diary, *A Diary in the Strict Sense of the Term*, exposed the anxieties, prejudices and fears he had kept hidden within his published research (Geertz 1983, p. 56). This "unveiling" marked an important shift in the approach to fieldwork: "the myth of the chameleon fieldworker, perfectly self-tuned to his exotic surroundings, a walking miracle of empathy, tact, patience and cosmopolitanism, was demolished by the man who had perhaps done most to create it" (Geertz 1983, p. 56). As a result, fieldwork became more attuned to itself and to the dilemmas associated with observational research.

Rather than perceive culture as a strict structure to be discovered, Geertz posits that culture should be looked at as "webs of significance" which require a more fluid, interpretive kind of analysis (Geertz 1983, p. 5). Geertz characterizes this interpretive approach to cultural research as "sorting out" the structures that give everyday actions and behaviors meaning (1983, p. 9). Culture is not, as he explains, "a power, something to which social events, behaviors, institutions, or processes can be causally attributed; it is a *context*, something within which they can be intelligibly—that is, thickly—described" (Geertz 1983, p. 14, emphasis added). Obtaining these "thick descriptions" requires immersion into the context itself through some form of participant observation—"getting data by subjecting yourself [the researcher] (...) to the set of contingencies that play upon a set of individuals, so that you can physically and ecologically penetrate their circle of response (...) So that you are close to them while they are responding to what life does to them" (Goffman 1989, p. 125). Being "close" does however present its own set of challenges. Ethnography, including techniques like participant observation, interviews

and other forms of qualitative research, are intensely personal situations. As such, the experiences captured, and conclusions drawn, during research will always be “tainted” by each individual researcher. For that reason, observational research must be examined through a critical lens: “How much and what kinds of explanations we [researchers] provide are choices that we make from a position of power and information control” (Fine 1993, p. 276). The key to making these varying factors work *for* rather than against the final product is critical awareness and *reflexivity*.

Although the concept of reflexivity—in the sense of “thought bending back upon itself” (Tauber 2005, p. 50)—has always been a part of social inquiry (Weber made reflexivity essential to sociology through his emphasis on the subjective social actor (Bonner 2001, p. 268)), social science has recently renewed its interest in self-awareness. Reflexivity is constructed as a technique to ensure the respectability of qualitative research (Karakayali 2004, p. 352). It entails questioning assumptions and ‘unpacking one’s conceptual baggage’, helping researchers turn the critical eye back upon themselves and become conscious of their own “(latent) presuppositions” and how these may be informing data analysis and interpretation (Karakayali 2004, p. 354; Smith 2005, p. 1, 6; Pels 2000, p. 2). More broadly, being reflexive can be understood as the ‘elocution’ of self-consciousness, which requires the researcher to ask him or herself questions about the nature of her knowledge, her research, to expose her doubts and concerns about the legitimacy of her work (Smith 2005, p. 10).

The unpredictability of fieldwork is such that, as Gary Alan Fine (1993, p. 279) writes: “the ethnographic picture will always lack details and shading, and sometimes

these absences are material in that other ethnographers might have reached sharply different conclusions from highlighting other material.” Addressing the possibility of distortions in one’s work helps to avoid perpetuating further distortions (Heilbron 1999, p. 302). Only by being “rigorously reflexive” can the researcher be held accountable to his or her readers (Doucet and Mauthner 2002). As such, being reflexive/engaging in reflexivity is not just a methodological issue, but an epistemological and ethical issue as well (Doucet and Mauthner 2002, p. 125). Reflexivity is an *ethical* issue because it involves “being as honest, transparent and accountable as possible” (Doucet and Mauthner 2002, p. 134; see also Bonner 2001, p. 287-288). Researchers presuming to study culture must, therefore, come to terms with the idea that qualitative, observational research can only yield *partial* truths about the reality being observed (Clifford 1986, p. 7). As Clifford (1986, p. 6) writes, observational data is “made or fashioned”, it is a depiction of reality mediated through the researcher and, inevitably, altered (Clifford 1986, p. 7). It is important to remember that “everything is capable of multiple interpretations, and *mis*understandings stem not from incompetence but from competencies in other domains” (Fine 1993, p. 279). Whether it is through participant observations or in-depth interviews, the researcher him or herself—their abilities, interests, history—always factors into the research findings. Fieldwork (and other forms of qualitative research) benefit from this richness of human difference, but only insofar as pains are taken to elucidate and explain the origins of the research through conscientious self-reflection. This approach to fieldwork also helps researchers come to terms with their subconscious intentions—as Fine (1993, p. 287) writes, “participant-observation often become participant-

intervention: finding a problem, we wish to fix it". Reflexivity, both throughout the process and in the final incarnation of the research, fortifies this type of participatory research by permitting not only the reader to become aware of the research motives, but the researcher as well. Acknowledging their presence in the field and their personal investment in their research allows observational researchers to shed the final remnants of Malinowski's "do not disturb" philosophy and embrace their roles as truly *participant-observers*.

Going into the Field

Gaining access to public schools is often a long and difficult process. It requires the permission of the governing school board, and requires the researcher to undergo an ethics review process separate from the university process before access is granted. Logistically, entering a private school was a much simpler and faster process involving a meeting with the school's director. In addition, private schools must adhere to the same curriculum as public schools. However, with smaller classes, more teacher-student interaction, and greater access to resources, private schools constitute "ideal" learning environments and make "ideal" locations for education research. Whatever shortcomings are revealed within the "ideal" learning environment could manifest more severely elsewhere. With these ideas in mind, I chose to undertake my fieldwork in a private school in Ottawa.

Turnbull School is a private elementary school in central Ottawa. I initiated contact with the owner and director of Turnbull School, Mary Ann Turnbull, six months

prior to the research to introduce the topic and determine whether there would be interest on their part in becoming involved as project participants. Mrs. Turnbull has a keen interest in environmental issues and, as a result, her school has a number of environmental initiatives in place, including composting, a no idling policy for vehicles on school grounds, and litter-free lunches. The school is also a participant in the SEEDS Foundation Green Schools Program. The SEEDS Foundation is a Canadian organization that supports environmental education and sustainability. The Green Schools Program offers certification for schools that demonstrate environmental awareness and environmentally sound practices. Green status, the first level of certification, is achieved when students create a total of 100 environment-related projects. Higher levels are achieved by increasing the amount of projects: 250 for Jade, 500 for Emerald, and 1000 for Earth School status. Turnbull School is currently certified as a Green School, but is actively working toward Jade status. As such, the director enthusiastically endorsed the project and gave her permission to proceed.

During my initial meetings with the director and principal of Turnbull School, I described the idea to have students create environmental projects that made use of all five senses. Because of the demands of the project, the students needed to be within the older age bracket, between grades 6 and 8, in order to succeed. After discussing the options, the sixth grade cohort was determined to be ideal for two reasons. First, Turnbull has only two grade 6 classes, 6A and 6B. In total there are only 27 students, creating a small, manageable research group that would be logistically easy to work with. Second, although the grade 6 students participate in class rotation, they have fewer time

constraints than the higher grades. Thus, they would arguably have more time to dedicate to the project.

After meeting with the grade 6 homeroom teachers, the information technology teacher and the school principal, it was decided that the research project should be integrated into an existing classroom activity to minimize disruption to both the students and teachers. At this stage, I was still unclear about the exact nature of the project, and how best to incorporate it into the classroom. The two grade 6 teachers, Ms. 6A and Ms. 6B, were very helpful in determining which areas could be expanded to include a new class project. Ms. 6B, who also teaches science, immediately noted that the science curriculum, though most relevant, was too full to accommodate such an activity. However, Ms. 6A drew similarities between the kind of project I wanted to create and an existing project within the media education module. She stated that the environmental project could be fitted into the “advertising campaign” project that is usually assigned later in the year⁵. If the research were situated within the media awareness unit, part of the Language-Arts curriculum, the students would also benefit from a significant amount of time to work on it (40-80 minutes per day). Thanks to this insight, and some additional research into the components of the media literacy curriculum, I began to see how media literacy could greatly complement the goals of my environmental project. Due to this collaboration with the teachers, media education became a crucial part of my research

⁵ The advertising campaign project, in its original form, is meant to introduce students to the uses, goals and organization of the advertising industry through the production of a small-scale advertising campaign. The teacher felt that the advertising module was a good fit for the environmental campaign because it asked students to do many of the same things: for example, understand the conventions of media production and create a multifaceted, multi-media campaign.

project and later informed the re-development of my literature review and theoretical framework.

After establishing a timeline, the teachers supplied me with all the materials they use to teach the media literacy unit and project, including the textbook, assignment and grading sheets. After reviewing the material, we worked together to modify the assignment sheet to reflect the aims of a sensorial environmental campaign (see Appendix A). My hope was to let the students choose whatever topic they wanted, but both teachers counseled that suggestions ought to be provided to give structure and provide guidance. A list of possible environmental issues was developed, and included deforestation, climate change, oil spills, smog, solar power and composting, among others (see Appendix A). The teachers also felt that I should make a presentation to the students about the basics of sensorial communication in order to get them excited about the project. This presentation was to be given after the media unit basics had been taught but before the project began.

I was not present in the classroom while the teachers taught the media unit, which in hindsight would have been valuable. During this time, the teachers followed the textbook, which focuses mainly on advertising in the media. Reading the textbook provided me with a good grasp of the main concepts the students would be familiar with, and a good starting point for creating my presentation. The teachers, unfortunately, were nearly two weeks behind schedule when they completed the unit. This delay affected both the scheduling of my fieldwork and the amount of time that would subsequently be available for the project to be completed.

I met the students for the first time as a guest speaker. My presentation made extensive use of the visual, auditory and tactile aids in order to introduce the idea of sensorial communication. It also stressed the idea that “media” is not limited to movies, television and newspapers, but also includes theatrical presentation, packaging, photography, architecture—in short, anything that communicates or through which we communicate can be understood as “media”. At the close of my presentation, I briefly explained to the students the premise of the project they would begin the following week, and the reasons behind my participation. Before leaving, each student received two consent forms: one for themselves and one for their parents (see Appendix B and C). I also gave one to the teachers (see Appendix D). The letter explained that a guest researcher would be entering the classroom during the class project, and asked permission to include them/their child as a participant in the researcher’s study of environmental education and communication. The letter indicated that the identities of the students would be kept confidential. Students (and parents) were free to refuse participation in the study, but would be required to complete the environmental campaign project as per the class requirements. I asked that each student read the form carefully and, if necessary, contact me with any questions. Fortunately, all parties proved to be enthusiastic about the project.

The following week, I returned to Turnbull to formally introduce the project. The students reviewed with me what they had learned about advertising over the past weeks. Together, we drew parallels between advertising campaigns for products or services and information campaigns for environmental issues. The students were asked to create

environmental campaigns using a variety of media (i.e. film, photography, poems, performance, posters, artistic installation, etc.) using the principles they had been taught as part of their media unit. There would, however, be an extra dimension to this campaign: it would pay special attention to the senses. Students were encouraged to explore the lesser-used senses (smell/taste, touch) as part of their campaign strategy. I made it clear that I would not be involved in the evaluation of the projects. My role was to observe, answer questions about the project, and pose questions of my own.

Over the course of ten days, the students researched and worked on their environmental media campaigns. I was present in the classroom for a total of seven days, alternating between classrooms during the Language-Arts periods allotted for the project (40 to 80 minutes per day). The students also used Computer periods to do research and create two of their project requirements, a brochure and fact sheet. By the conclusion of my fieldwork I had completed approximately 20 hours of observation.

I acted primarily as an observer, circulating among the groups and listening to their conversations and discussions about the media project. The teachers occasionally called on me to answer questions about the project and to help navigate issues derived from the need to have a sensorial component in the project. I also took the opportunity to ask the students questions about the environmental topic/concept they had chosen to represent; the types of media they were using to create their environmental campaign; and what they considered to be the strengths of different types of communication technologies in terms of meeting their project goals. At the end of each day, I recorded

detailed fieldnotes about the progress of the students' projects, their responses to my questions, and general thoughts about the day.

Once completed, the media projects were presented to the class, as well as fellow students, teachers, and parents at the school during a "World Issues Fair." The students were asked to "pitch" their campaign to the audience, and explain their choices. Specifically, they were asked to explain the rationale behind their choice of media, the concept or idea they were trying to communicate, and the strengths and possible limitations of their projects as real information campaigns.

After the final presentation of the projects, I was able to sit down with the 6A students for a brief (20 minute) focus group discussion. We all sat down on the floor, in a circle, in order to create a more casual atmosphere. I hoped that this would generate more natural responses. The discussion was semi-structured, following a list of questions concerning the environmental project and environmental learning in general, but leaving opportunities for students to explore alternate topics and tangents. I decided to not invite the teacher as a participant in this discussion in order to ensure the students would feel comfortable sharing their experiences in completing the project without having to worry about being observed or unofficially graded.

I also met with both classroom teachers outside of school time to discuss environmental and media education in the Ontario curriculum. Again, I used a semi-structured interview. I followed a set of questions but also tried to develop and expand on points I thought were relevant and interesting. The interview lasted approximately 60 minutes and explored the topics of environmental and media education in the

curriculum, teaching resources, governmental (institutional) support for EE and media education, as well as general thoughts on the teachers' personal motivations and ideas about teaching. The interview was completed at an early stage in the writing process. As the thesis evolved, the data I collected from the teachers became less relevant to the specific argument I decided to make. Thus, though informative, the teacher interviews do not figure into the research findings below.

Approximately five months after the projects were completed, I returned to Turnbull to conduct follow-up focus group interviews with the students. Each class was interviewed as a group because time did not allow for smaller discussion groups to take place. Each interview lasted approximately 50 minutes. I again asked that we sit in a circle, to facilitate discussion. Contrary to the first focus group I had conducted with the students of 6A, this time the teachers *did* participate in the group discussion. Their presence and participation seemed to have an impact on the students' responses (or, in some cases, lack of responses). This time, the questions focused more on the impact of the senses to the learning experience, and the differences between real life, mediated, and scholastic environmental learning. Using their own responses as evidence, I challenged the students to question their assumptions about visibility, rationality and statistics in getting people to care about an issue. All three focus groups, the interview with the teachers and the final in-class presentations were audio recorded and transcribed verbatim for analysis.

The fieldwork data, combined with the results of the critical discourse analysis, enabled me to draw inferences about the importance of media education, the role of the senses, and the bias of environmental education in Ontario schools.

Chapter 4 Research Findings

The Curriculum

The environmental discourses at work within the curriculum over the last ten years have established a particular approach to the natural world. However, the students' engagement with this material is rife with paradoxes and inconsistencies that highlight a number of deficiencies.

The 1998 Ontario curriculum reflects and reinforces the discourse of “light green” or “shallow” environmentalism. As discussed in the literature review, “light green” discourses embody what Hajer (2003) calls the *dominant social paradigm*; they reflect the way environmental matters are predominantly understood in our society. The curriculum promotes this decidedly human-centered approach to environmental education through a major emphasis on the economic value of natural resources, and the importance of advanced science and technology to understand and rectify environmental problems.

More often than not, the curriculum discusses the environment in human terms. That is, environmental issues are usually discussed in terms of how they impact the human population, rather than the biosphere or planet as a whole:

... “environment” refers to physical surroundings and conditions, particularly as they affect people’s lives. (MoEd 1998a, Themes of Geographic Inquiry, Gr. 7, p. 66)

... explain how the health of human beings is affected by environmental factors (e.g., smoking, smog, and pollen affects the respiratory system). (MoEd 1998a, Life Systems, Gr. 3, p. 24)

... explain how advances in technology and science have enabled humans to make predictions about the weather (...) [and] understand and explain the importance of weather forecasts for people in certain occupations. (MoEd 1998a, Earth and Space Systems, Gr. 5, p. 98)

Despite the pedagogically sound notion that “introductory” (early) learning should centre on the student and the student’s world, this anthropocentrism does not give way to other points of view. It persists throughout the entire curriculum.

The consistent use of economic language in the curriculum further supports the idea that the natural world is only a resource to be “used”, “managed”, and “adapted” to human needs. Widespread references to nature as an industry, and the valuation of nature as a “resource” demonstrate this as well:

... civilizations *shaped* and *used* the natural environment to meet their physical needs. (MoEd 2004, Heritage and Citizenship, Gr. 5, p. 29, emphasis added)

... describe how humans *acquire, manage* and *use natural resources*. (MoEd 1998a, Natural Resources, Gr. 7, p. 70, emphasis added)

... identify the importance of plants in the *Canadian economy* (e.g., in farming, forestry, drug manufacturing, the nursery industry) and describe the impact of the *industrial use* of plants on the environment. (MoEd 1998a, Life Systems, Gr. 7, p. 28)

Regrettably, critical reflection on this “market model” is limited to considering the conservation of non-renewable resources, and exploring the hypothetical consequences if these resources were to run out. Though important, these issues arguably do not delve into the deeper, underlying social causes of environmental damage, nor do they impart the true likelihood of such degradation if the issues remain unaddressed. Instead, the

curriculum implies that scientific and technological advancements can be relied on to maintain our present quality of life:

... technology has revolutionized the way we communicate and made vast changes in our lives through the discovery of new drugs and materials. (MoEd 1998a, Introduction, p. 4)

... in using fossil fuels such as natural gas for heating our homes we deplete natural resources but improve our quality of life. (MoEd 1998a, Energy and Control, Gr. 5, p. 63)

... technology has improved human mobility. (MoEd 2004, p. 76)

Innovation, it is argued, has solved problems in the past, and can (and should) be depended on to solve the problems of the future. However, depending on technological and scientific innovation to cure the problems of environmental degradation does not address the underlying possibility that human lifestyles may be the source of many environmental problems and thus in need of change.

The curriculum presents environmental science and technology as a “one-two” combination. One is never far from the other (case in point: the most environmental module in the curriculum is Science and Technology). The curriculum describes both science and technology as “forms of knowledge” and “ways of knowing” (MoEd 1998a, p. 3-4). Yet, unlike within the Social Science curriculum, the idea of bias is noticeably absent. The idea that scientific knowledge—undeniably an important facet of education in general and environmental education in particular—is only *one* way of gaining knowledge of the world, is not addressed. As a result, the ministry’s scientific environmental education reinforces and reproduces the power of the scientific discourse

as the dominant way of understanding. Despite the ideal of presenting and promoting alternative or competing points of view, the curriculum's approach to environmental education reproduces a scientifically biased worldview at the expense of equally valuable and complementary forms of knowledge (e.g. aesthetic, affective, cultural, literary, philosophical, etc.). As the results of the environmental media project suggest, this approach seems to have important ramifications for how students interpret and react to environmental issues.

Despite the MoEd's emphasis on empirical science, the curriculum seems to disregard one of the most vital tenets of scientific inquiry: the use of the senses. The scientific process revolves around empirical observation. Though the term *observation* implies watching, observation really entails taking note of various phenomena by any and all sensory means, including not only sight, but also sound, smell, taste and touch. The curriculum, however, pays little attention to the senses in general. The words *sense* and *senses* appear only 20 times within the over 110 pages of text that make up the Science and Technology module. Even more surprising is that *all* discussion of the senses (exploration of the sensory organs, the value of sensorial information) is restricted only to the most basic and introductory level of the curriculum— Grade 1:

Grade 1 – Life Systems

In all their investigations, students will continually refine their ability to observe, using all five senses, and will attempt to describe their observations as accurately as possible. (...)

By the end of Grade 1, students will:

- identify the location and function of each sense organ;
- classify characteristics of animals and plants by using the senses; (...)

- compare ways in which humans and other animals use their senses to meet their needs;
- describe ways in which people adapt to the loss or limitation of sensory or physical ability (...)
- describe ways in which the senses can both protect and mislead; (MoEd 1998a, p. 16-17)

Grade 1 - Matter and Materials

In Grade 1, students are introduced to the concept of materials through exploration of various objects in their immediate surroundings. Students will use their senses to identify various materials and objects. (...)

By the end of Grade 1, students will:

- identify each of the senses and demonstrate understanding of how they help us recognize and use a variety of materials;
- describe various materials using information gathered by using their senses; which materials can be changed to alter their appearance, smell, and texture. (MoEd 1998a, p. 34)

Other modules, even those that seem to have more of a “sensorial affiliation” do not fare any better. The Arts module, for example, which could be said to depend on the power and exploration of the senses, offers only two statements:

... organize their art works to create a specific effect, using the elements of design (e.g., create a still life depicting their favourite foods, and explain how they used colour, texture, and shape to appeal to the viewer’s senses. (MoEd 1998c, Grade 5, Visual Arts, p. 38)

... identify performance techniques that have an effect on the audience’s emotions and senses (e.g., senses of hearing and sight), and evaluate their use in a performance. (MoEd 1998c, Grade 7, Drama and Dance, p. 61)

Apart from these and a few other statements within the whole curriculum text, the senses seem to be entirely taken for granted. Post-Grade 1, students are merely asked to “describe, using their observations”—a far more general terminology, used to encapsulate

the totality of sensorial information. More often than not, the “descriptions” suggested are highly visual, whether it is through drawings, graphs or organizational tables:

... make a graph that shows the number and kinds of trees found in different yards. (MoEd 1998a, p. 20)

... make a display board and record the results of their testing of chalk on different materials. (MoEd 1998a, p. 34)

... use drawings to illustrate the process of manufacturing a product from the collecting of raw materials to the end use of the product and its disposal. (MoEd 1998a, p. 47)

... list the names of some devices used in the home that change energy from one form into another, and record in a table the types of energy transformations for each device. (MoEd 1998a, p. 63)

In fact, the explicit discussion of the senses seems to be inversely proportionate to the preponderance of the visual: the former decreases dramatically while the latter seems to increase. The curriculum shows a growing dependence on charts, graphs, and data tables, and the use of “multimedia”, or computer-based, presentations as students progress through the grades. In the midst of this privileging of the visual, however, the use of models, maquettes and dioramas—decidedly more tactile, 3-dimensional forms—remains strangely permanent. An example exists in each grade:

... design and construct models of structures that would provide protection against local weather conditions (e.g., bus shelters, umbrellas, houses). (MoEd 1998a, Science and Technology, Grade 1, p. 89)

... explain how a caterpillar feeds, using a model constructed of modelling clay and a tree branch... (MoEd 1998a Science and Technology, Grade 2, p. 18)

... design and construct a terrarium or garden that reproduces the conditions that they found to be requirements of specific plants. (MoEd 1998a, Science and Technology, Grade 3, p. 20)

... make magnifiers from a glass jar half filled with water; make drums from boxes or margarine containers with lids. (MoEd 1998a, Science and Technology, Grade 4, p. 39)

... make a model of the structure of the bones and muscles in an arm, using cardboard rolls and elastic bands. (MoEd 1998a, Science and Technology, Grade 5 p. 23)

... describe, using models or simulations, how the earth's rotation causes the cycle of day and night, and how the earth's revolution causes the cycle of the seasons. (MoEd 1998a, Science and Technology, Grade 6, p. 99)

... prepare a model demonstrating volcanic activity. (MoEd 1998a, Science and Technology, Grade 7, p. 102)

... create a simulation illustrating movement of water and nutrients between cells and through various organs and systems. (MoEd 1998a, Science and Technology, Grade 8, p. 30)

The examples of dioramas and maquettes are also scattered within the Social Science module, particularly to facilitate the creation of small-scale structures with historical or geographical significance. Despite their minority status, these “anomalies” remain important fixtures in the curriculum, apparently fulfilling a vital, largely untapped, need for sensorial communication. While “multimedia” computer presentations incorporate pictures, text, sound, and sometimes film, they remain chiefly visually based endeavors. The hands are used to input the data into the computer, but only in a repetitive and mechanical way. The central component of the presentation—the screen—remains two-dimensional and cannot literally be manipulated. Models, dioramas and props, on the

other hand, offer a more multi-sensory experience, involving not only the eyes, but also the hands, which are used to cut, paste and sculpt the model as well as touch, use and examine it; and the nose, which takes in the smell of the construction paper, glue, markers, or other materials. On certain occasions, even the mouth may be involved if foods become part of the presentation. Yet, despite the presence of such multi-sensory tools within the curriculum, when left to their own devices, students struggle to employ them. Instead, they put into practice the methodology they are taught most of the time.

Rational Bias

One of the central elements of the Environmental Media Campaign was to encourage students to explore the entire range of senses. The students were asked to make use of as many senses as possible in their media projects. Based, in part, on the preference in the curriculum for the visual, I had hoped to improve the students' understanding of sensory communication and to expand their command of non-visual communication tools. After presenting the idea of the media campaign, and giving a basic introduction to sensorial communication, students appeared to already have a grasp of what role senses like smell and sound play in communication. Big brands were especially effective examples. When discussing McDonald's Restaurants, for instance, one student hummed the jingle "I'm Loving It", another noted the beeping sound from the deep fryers, while the majority agreed that the smell of the French fries, in particular, was most obviously associated with the company: "They own it", one student stated. Coca-Cola, too, proved to be another effective example. The curving shape of the classic glass Coca-Cola bottle,

the bright red colour, the particular taste and mouth-feel, and the sound, “Pshhht! Glug, glug, glug, fizz” of opening and pouring out a can. The students were highly receptive to the ideas of sensorial branding and communication. When the teachers asked for a few examples of the types of sensorial components the students might include in their media campaigns, a few students even offered some of their own, excellent ideas. As an example for a recycling campaign, one suggested that a heap of recyclables be placed in a small enclosure where participants could walk through, with difficulty, so that they could grasp the volume of materials that can be reused. Another, who was interested in deforestation in South America and the consequences clear cutting can have on local and global ecologies, noted that mud could be used to represent landslides. The students had many great ideas for interactive presentations, and a great enthusiasm for putting them into action.

Yet, once they got started, it became obvious that the admittedly more difficult senses—smell, taste, and touch—would take a backseat to vision or sight. Apart from popular music used for the commercials, even sound seemed to be neglected. However, once completed, nearly all the groups had incorporated one of these undervalued senses in some way. The Hybrid Cars campaign, for example, offered a recorded sound comparison to demonstrate how quiet hybrid cars operate; the Recycling campaign brought in an array of aluminum cans, plastic bottles and paper to show the different types of recyclables; while the Litter Reduction group created and sung a promotional jingle. The Genetically Modified Food Awareness group had a taste test comparing different kinds of potato chips, and, similarly, the Water Conservation campaign asked

participants to drink and compare the taste of spring water versus “dirty” water (actually tonic water). Both the Oil Spill Prevention and Save the Oceans campaigns used touch-based components. Oil Spill Prevention simulated the effect of crude oil on bird feathers by using corn syrup, and demonstrated how difficult it is to clean such feathers with and without soap. Save the Oceans filled an old aquarium with water, vegetable oil, vinegar, rocks, garbage and plastic bags to imitate the polluted seas, then asked participants to pretend their hands were sea creatures, and feel what it would be like to swim there.

Some of these cases did not exactly correspond to the subject matter, nor greatly advance the messaging of the campaigns, but they fulfilled the requirements of the project.

In the majority of cases, the non-visual sensorial components played second string to the visual devices: pictures, video, text, and multimedia presentations, though the latter did include sound. When asked about their preference for the visual, the students were adamant about the power of images to “really affect” the audience:

It touches them more, the pictures. You create an image in your mind when you see a picture. (Group A)

You can really scare the person if they’re watching it, like really get them to remember it, make them really emotional, and not let them forget it. (Group A)

Pictures can kind of depress the person a bit more. If you just say, “The forest will be ruined”, they don’t really know what’s actually going to happen by just saying that. But if you show them a picture of no animals, nothing, it kind of affects them more. (Group B)

Images, they also said, were more effective because they enable the audience to actually see for themselves. According to the students, photos, images, and films are more tangible

than verbal descriptions:

I think if you see, for example, a sad picture of a dead whale, it makes you sadder than just a piece of paper saying 5000 whales have been killed. Seeing the picture would make you feel sorry for them. (Group A)

I find that people don't really believe what they hear, like if you just told them 6000 animals have died in the past year, sometimes they'd be like, "Well, yeah." But if you show them a picture or a commercial or something they'd actually know that people are doing this to the animals. (Group A)

An interesting connection exists between the students' preference for images and their simultaneous ambivalence toward the use of words and facts. While discussing the use of images, many of the students hinted that images, because they trigger emotion, were far more effective than words. However, when separately assessing their use of statistics and facts in the presentations, the students attributed equally great significance to the importance of facts and figures to educate and enlighten the audience about a particular issue. The students seemed to be torn. Their conflicting reasons for why each technique would be more effective hint at an important paradox within the students' understanding. They recognize that, independently, both emotional and rational devices are important to winning support in an environmental campaign. However, they struggle to reconcile the two poles. Without knowing it, the students replicated the methodology used in the curriculum, where reading and watching play a pivotal role in gaining knowledge. Despite the students' appreciation of their affective potential, visuals are inadvertently grouped with the rational arguments because they provide tangible 'evidence'. In the context of the environmental media campaigns, visuals and words

fulfilled essentially the same function: demystifying the audience. The other experiential components—smell, taste, touch and sound—remained secondary tools. They offered an entertaining complement to the more explicative visual and verbal presentation.⁶

The media literacy framework also contributed to how the students envisioned their environmental communication campaigns. During the initial introduction of the media project, the students expressed a great deal of disapproval for both the means and motives of the advertising industry. In their eyes, the media as a whole, and advertisers in particular, are dishonest and manipulative, using any means necessary to trick and swindle the audience into “buying” their stories and associated products. This condemnation could explain why the students, not wanting to deceive or dupe their audiences, steered away from using the more “tricky” techniques of modern advertising. Despite their extensive exposure to contemporary, lifestyle-type advertising, the students produced campaigns that more closely resemble the common-sense advertising from the turn of the last century. This pessimistic attitude toward the media may be borne and reinforced by the demystification approach in the media literacy curriculum. In its bid to ensure that students “become reflective, critical, and independent learners and, eventually, responsible citizens” (MoEd 2006, p. 5), the Language and Media Literacy curriculum is very self-reflective: encouraging students to examine their own knowledge and evaluate what they learn as they learn it. However, its approach to media is geared more towards exposing the dark inner workings of the media industry than

⁶ This rational approach to the media campaign echoes the scientific way environmental issues are taught in the curriculum. In each campaign, the students assumed that, once provided with the appropriate facts and evidence, the audience would change their behavior and beliefs. They relied on rational argumentation even though, when probed, they acknowledged that this isn’t necessarily the way people make decisions.

acknowledging the students' day-to-day experience with the media as an enjoyable pastime or place of learning:

Students must be able to differentiate between fact and opinion; evaluate the credibility of sources; recognize bias; be attuned to discriminatory portrayals of individuals and groups, including women and minorities; and question depictions of violence and crime. (MoEd 2006, p. 13)

At each grade level, students are asked to read between the lines of various media texts to “identify overt and implied messages” without also asking them to reflect on what they enjoy about their interactions with the media. Being constantly critical of the media in the classroom means that students, when asked about media in an official class setting, consistently assume a negative stance: “the more children perceived there to be an ‘educational’ agenda, the more ‘critical’ they [become]” (Buckingham 2003, p. 111). When asked in a more informal atmosphere, however, the students reveal themselves to be avid media consumers who are uncertain about the place media holds in their lives.

Ways of Knowing

During the focus groups, students expressed real affection for the way media allows them to see the world outside of their immediate experience, especially when it comes to environmental issues. Unlike our discussions during the media project, their responses were positive and constructive. When framing the questions in terms of what *they* liked, the students were not preoccupied by the tricks and conventions used within the media text—though they were aware of them. Instead, they demonstrated great fondness for learning about nature through their media of choice, TV:

On Discovery, there's this show and it sometimes has underwater creatures. I like it because I can't go into the sea everyday to look at the animals. (Group B)

Usually on TV, it's a lot more interesting stuff [compared to school]. (Group B)

When we're watching it on TV I'm sort of amazed by it because I actually get to see what their everyday life is, but in school you only get to see pictures and talk about it. You actually get to see the animal in real life when you watch it on TV. (Group A)

I like how there's more detail. You get to know more on TV. It's sort of more cool. (Group A)

I like watching on TV because you actually learn more because the teachers wouldn't have had that much experience with the actual animal. (Group A)

In school, you're learning from a textbook in a class with a whole bunch of other people and the teacher, but the thing with TV is, when you do it right, with music and great shots, you just sort of enjoy it more. You see it better. (Group A)

Clearly, television offers students a treasure trove of positive experiences. It presents an exciting world of action and movement, while textbook learning is, by comparison, experienced by students as static and lifeless. Though the students noted that mediated environmental education does have its drawbacks ("you can't ask questions"), in general, they agreed that it is much more illustrative and stimulating than typical classroom learning. The curriculum, however, seldom considers the multitude of other places where children acquire knowledge, including the media. While school emerges as the initial location of environmental education—many of the students' first memories of learning about the environment occurred while they were in school—media, television in

particular, surfaces as the major source of general environmental knowledge, especially channels like Discovery, Animal Planet and TVO. Their enthusiasm for these mediated experiences seemed to falter, however, when the students began to reflect on the appeal of being physically outside, or of making a connection with something in their environment:

When you're watching these programs you're sitting down and not really doing anything; when you're actually out there in nature then it's so much easier to get it, *breathe* it and *hear* things. (Group A, emphasis added)

In real life you can see what's going on. Like you're going through a forest and you come to a spot where all these trees have been cut down. If you see it on TV sometimes you think it's fake or something but then you see it in real life and you just get it—you get it so much more than if it was on TV. (...) When you see it in real life you have all these emotions. You can *touch* it and *feel* it. You don't just see it. (Group A, emphasis added)

I like the outside better because it *smells* nice. On TV you just kind of look at it. [Outside] is more real, 3D, than just watching this flat thing move around on TV. That's so boring. (Group A, emphasis added)

I definitely want to be the explorer because if you're just watching it on TV instead of seeing it for real... if you'd watch it on TV it would be a lot different because you'd be seeing what the animal is doing but it's not real—they could be trained in captivity or something, but if you were outside, you could see the animal the way it actually is in real life. (Group A)

Measured against the multi-sensory stimulus of outdoor experiences, mediated nature becomes less appealing. The students had ranked television higher than the classroom for learning about the environment because it permits them to “actually see”

the world. But physical interactions with nature ranked higher still. The uniqueness of these outdoor experiences was attributed to their ability to “breathe”, “feel”, “smell”, and “touch” what surrounded them. The students’ descriptions of their own lived experiences were also peppered with similar sensorial terms, the tickling of caterpillar legs on skin or the smell of a particular park. Particularly interesting are the feelings associated with the students’ experiences in nature: fun, awe, love, calm, risk and fear. More than any other topic, the *in situ* experiences they described evoked the most sentimental responses: the students were much more forthcoming about their feelings for the natural world. One theme within their recollections was security. This theme surfaced in two ways. It manifested, on one side, as peace of mind, tranquility and confidence. Nature offers a nonjudgmental place (or creature) to share your thoughts without worrying about being embarrassed or criticized. Having their own space in nature gives the students a sense of security similar to being comforted by a loving parent, but it also offers them a chance to be out on their own:

[Student 1] Sometimes on the weekend I’ll talk to my Easter Lily. She grew really fast. I talk to her because I heard either on TV or in a book that if you talk to plants, they grow faster because of the carbon dioxide you breathe out. I talk to it and it will listen with no criticism.

[Student 2] Like a dog. (Group B)

There’s a park really close to me and there was a spot with a hole—branches overlap and make kind of a hut. In this hut there were lots of caterpillars, dozens and dozens, so I went almost every weekend. I felt calm. (Group B)

In my backyard there’s a forest and they were going to tear it down. But the farmer put a restriction on it for a year and

we bought the land from him. I kind of have a place there where I go and there's no one there. (Group B)

The theme of security also manifested as consternation, vulnerability and fear of the wild. Students who had close encounters with wild animals or who had had their outdoor experiences limited because of wild animals expressed anxiety about the natural world. The subtle notes of sadness coupled with their worry exposes the difficulty of reconciling nature as both a place of enjoyment and uneasiness:

When I lived in Florida, there was a little forest just off my street and one time when I was sitting in my room looking out the window, I saw a bobcat. There were little paths going into the forest. Me and my friend would sneak down those paths on our way back from school. We just wanted to go everywhere but I was afraid because I didn't want to be sneaking by a bobcat. (Group B)

Near my house, two minutes away, there's this place and a year ago there was a coyote there. Me and my friends really like to go there. After, when the coyote wasn't there, my mom wouldn't let me go there because she was afraid that the coyote would just pop out—she heard her friend saw one walking her dog. So I haven't been there for a year now, but I think the coyote is gone by now. (Group B)

I have a house in Florida where my grandma lives. Once, me and my sisters were going out for dinner at the club and we ran into these three huge bobcats and started to run away. It was really weird and scary. My mom was screaming: 'Get in the house!' (Group B)

Even more interesting than the particular experiences themselves, however, is the recurring notion of “real life”. Throughout the focus group discussions, the students repeatedly referred to “real life” in different ways, establishing “degrees” of reality within lived experience. Television, for example, offers a “real life” glimpse of wild animals and

environments. It offers the students a chance to actually see “real life” for themselves, rather than reading a description of it in a textbook. However, when compared to personal explorations of the outdoors, television becomes a decidedly poor imitation of “real life” because, while it may offer the same facts, it lacks the “flavour” of all the senses working together. In contrast, even though they are physically present in the classroom, the students do not necessarily view those personal experiences as “real life”. There is an impression that “real life” occurs somewhere outside the classroom rather than within it, and that when inside the classroom the student somehow stands at an objective distance.

The preferred use of the terms “real life” in this way allocates importance to media-based learning. Students use television and other visual media to learn about the environment in a way that differs dramatically from what they are taught in the classroom. While the curriculum’s environmental education centers on theories and experiments, mediated nature nurtures a bond with the natural world with more in depth information, beautiful images, descriptions and sounds. Mediated nature complements classroom learning because it allows students to explore avenues that teachers may not have the expertise or time to tackle.

The students characterize the knowledge gained both in the classroom and through the media as observational rather than participatory. Distinguishing classroom from media from real life in this way, the students reveal that they *know* that mediated learning is not equivalent to personal experience. They *know* that the knowledge they gain in class textbooks, discussions and scientific experiments is not the same as the environmental experience gained outdoors. Their desire to become “the explorers” is

tempered somewhat by the idea of risk. The students brought up again and again the idea that “real life” exploration of the environment could be dangerous. Journeying into the rainforest or surveying the Arctic, they stated, certainly presented threats that were quite detached from their daily lives. Here again, security plays a pivotal role in the students’ perception of the natural world. Interestingly, when asked about the reasons people ought to take action on environmental issues, the students overwhelmingly agreed that the security of individuals, and of the planet itself, should be a major motivator. Fear, in this case, is a call to action, to explore “real life”, rather than a reason to stay inside.

These “degrees” of reality illustrate that students need to be more reflective about how they learn about the natural world. During the fieldwork, exploring the sensorial differences between the experiences gained in the classroom, through the media and in person served as a critical debriefing and offered students the chance to scrutinize their own ideas about nature. These kinds of reflections will help them strengthen not only their existing ideas about the importance of real life experiences, but also their ability to value each way of gaining knowledge on its own terms.

Conclusion

What we need to change...

For more than two thousand years, we have struggled to define our place, our role, and our relationship with the world that surrounds us. Our ambivalence and, over time, our apprehension about what connects us to nature has, some would say, led us down a path of self-destruction. We are out of balance: many people no longer identify with the ecosystem that supports them, while a relative handful of others continue to pour their hearts into saving it from devastation. Even the system itself is experiencing tempestuous “mood” swings in an attempt to regain stability. What has led us down this path? And how can we regain our footing before the ground slips out from beneath our feet?

As this research has attempted to show, our attitudes toward nature are the result of an intentional shift of attitude over the last two thousand years. While some other cultures see an affinity between themselves and their environment, our Western philosophies have been grounded in the dissociation of humans from nature and the objectification of the environment as a place devoid of intelligence and spirit. This abhorrence was not only for nature, but also for that which most resembled nature within humanity—our “animal” senses. The subhuman senses—smell, taste and touch—were banished along with the intense feelings they provoke. These “irrational” tendencies were systematically erased from the human repertoire, although some pockets of resistance appeared here and there. With the emergence of literacy, the primacy of the visual was

assured and our fate, sealed—almost. The critical nature of scholarly inquiry contributed to the emergence of alternative visions of nature, while also allowing emotions to reappear as a valuable component of the human experience and, with that, the foundations of modern environmentalism were built. Despite the fact that wide-spread environmental activism would have to wait until the full penetration of the television to achieve substantial influence, it has, since then, been able to make significant environmental gains in terms of government policy. Yet, when it comes to meaningful, individual action and the strengthening of environmental citizenship, it falters. There seem to be major obstacles between acquiring knowledge about the environment and taking action.

The Argument

There are many settings for environmental education. While the classroom remains the most organized, the media has asserted its place as the most prolific and ubiquitous. Mediated nature—the presentation of the environment through various forms, including photography, film, and television—has become the main source of environmental education for two reasons: 1) children's ever increasing consumption of media in the home and 2) the inversely related decreasing exposure to the outdoors. The media, particularly television, remains a key influence for students: it has considerable reach, and imparts valuable environmental lessons in an understated way. It is unlike school in that it is, first and foremost, a source of entertainment. Students are enthusiastic and positive about the media they consume for personal enjoyment. Television in particular offers them a way to glimpse the world outside their immediate experience.

Mediated nature, though limited to visual and/or auditory stimuli, tells particularly compelling, affective and realistic stories. In fact, the grade 6 students in this research implied that mediated nature appeared more “real” to them than the environment taught in the classroom.

In a school setting, environmental education tends to be largely fact-based and isolated within the sciences. In the past, it has suffered from a lack of funding and consideration, and so, inevitably, has also suffered from an inconsistent application. The 1998 revamp of the Ontario curriculum helped establish environmental education as a teachable subject in this province, however the curriculum’s treatment of environmental issues continues to reflect the predominantly anthropocentric approach to the natural world. The classroom may offer structured environmental education for all students, but it only encourages exploration of nature through scientific inquiry, which is only one way of knowing nature. Despite its endeavor to inform students about a wide variety of environmental issues, the curriculum fails to give them more than this single point of view. Mediated and outdoor forms of environmental exploration are largely ignored.

In situ environmental experiences are distinguished from mediated experiences by their completeness and their uniqueness. By virtue of the fact that they require the audience to be physically present, in situ environmental experiences benefit from access to sight, sound, touch, taste and smell. Moreover, they are singular, personal events—experienced by the recipient alone—and unlike anything that is portrayed through the media. Students are thus able to express a level of attachment, both sensorial and

affective, about their unique personal interactions with nature that simply didn't exist with mediated nature or school lessons.

This research has argued that the development of environmental consciousness is not only tied to exposure to environmental ideas but also to the manner in which those ideas are set forth. At the most basic level, learning occurs through the senses. Each of the three major “teachers” of environmental education—the school, the media and the environment itself—depends on a different sensorial ratio to get its message across. Taking what has been observed about how students negotiate the school's version of environmental education with the knowledge they acquire outside the classroom, this research has suggested that students are already vaguely aware of the differences in the *quality* of the environmental education from each of these sources. The term “quality” is used not to declare that one source is necessarily better than any other: as the research makes clear, each method has its own purpose. The term “quality” as used here refers to the distinctive sensorial characteristics that make each method unique and suited to different goals. The curriculum sets out specific theoretical knowledge primarily through textbooks and lessons, with opportunities for dialogue between students and teachers; the media delivers coverage of a variety of environmental issues and ideas, often with entertaining visual and aural support; outdoor experiences, on the other hand, impart environmental sensibilities through a kind of sensorial osmosis, nurtured by sustained contact between the body and the natural world. Each facet contributes something, but the exclusion of one results in a loss of complexity to the detriment of the whole. The curriculum, with its bias toward observational techniques and the scientific method, fails

to consider the contributions of mediated and in situ experiences to the formation of environmental consciousness and glosses over the importance of the senses almost entirely. The result is a disproportionately abstract understanding of the natural world.

The Media Project

The environmental media campaign projects completed by the students were intended to enhance the importance of the media in environmental education, while also helping students explore the role of sensorial communication. While the students' final campaigns did not make extensive use of sensorial techniques, creating them did help the students make some important discoveries about the difficulties of replicating real world experiences through the media and the editorial power of media production. A big part of why the students struggled with how to bring more sensorial components into the project can be linked to their familiarity with mainly visual methods of communication and to the structure of the media assignment itself.

As a final assessment of the media campaign, I think the goals of making students cognizant of the importance of the senses in mediated communication and the larger issues of promoting critical media consumption and critical environmental citizenship were only partially achieved. A number of stumbling blocks impaired the results, and a similar number of improvements could be made to ameliorate the project should it be undertaken in the future.

First, taking a page from Bishop et al (2000), a greater degree of teacher involvement, particularly in terms of teaching materials, could have helped improve the

project simply by virtue of the fact that in order for teachers to teach, they must also fully understand the materials. If the teachers had been provided with general themes from which they, themselves, could have developed congruent activities, they would have been able to employ their substantial knowledge in order to arrive at the best pedagogical approach, rather than having to follow a technique created based on my own, admittedly limited teaching experience. A more co-generative approach to lesson planning and project design would also have enabled the teachers to “reflect on their underlying values and beliefs and to consider the influences which may affect their teaching” (Bishop et al 2000, p. 275). Performing this kind of reflexive exercise might have led *them* to take ownership of the project, rather than simply view it as mine, and encouraged them to integrate components of the research theory into other lessons over time.

Secondly, the decision to begin the project after the lessons were completed greatly reduced the amount of time the students had to brainstorm ideas, research topics and execute the final project. A more inductive method—having the lessons derive from issues in the campaign production—would have been a more interesting way for the students to learn about the ins and outs of the media. It also would have facilitated a greater focus on mediated nature by getting students thinking about environmental messages from the beginning. However, the nature of the curriculum’s approach to education combined with the overwhelming amount of material that needs to be taught during the school year means that there is little flexibility in the scheduling of lessons. Open-ended lesson plans may be theoretically desirable, but practically impossible from the perspective of a classroom teacher.

Equally, despite the recommendation from the teachers to provide students with options for the campaign issues, I think that, ultimately, this reduced the students' creative freedom. None of the student groups deviated from the list of suggested topics. Letting the groups come up with their own topics for the media campaigns could have provided more insight into where the students' environmental affections truly lie. Requiring more specificity in the topics would also have been helpful because many of the issues the students tackled turned out to be far too vast to communicate effectively. The deeply creative nature of this project, derived in part from a background in visual and interactive arts, could have been greatly enhanced by involving the arts teacher into the planning and execution of the media campaigns. Advertising is a creative process. It would be interesting to see how the students' ideas about how to integrate sensorial components into their project would differ if they were nurtured by a specialized teacher, like the Reggio Emilia art specialists, who may be more likely to push the creative envelope.

The entire question of evaluation would also need to be revisited. It is arguably easier to assess the use of written ideas and decisions about visual texts, but how does a teacher assess the students' use of multiple senses? Students were asked to complete a visual display board, a fact sheet and an informative brochure as part of the requirements of the media campaign project. Not only did these stipulations tend toward rationalization, they were also fundamentally *visual* and, therefore, enabled the students to rely on their visual expertise instead of asking them to think outside the box. Instead, the addition of a reflexive tool, like daily journaling during the course of the project, could

have helped the teachers find something less prescriptive to assess, as well as expand the students' critical thought-process. Self-reflexive writing allows students to reflect on their own thought, ideas and approaches to the material and enables them to "make their implicit knowledge explicit, to systematize it and thence to question it" (Buckingham 2003, p. 150). When supported by regular discussions and "de-briefings" with teachers, this approach provides students with opportunities to connect theory and practice, as well as trace the evolution of their thought process.

Future researchers in this area may want to consider carrying out a similar project with both younger primary school students, and older high school students in order to compare, for example, different age groups' facility with sensorial communication, or the difference in their perceptions of the natural world. Students could also benefit by obtaining a real audience for their work by targeting their campaigns at younger or older students. David Buckingham (2003) suggests that an exchange format, where the students could view other students' work, are provided with opportunities to reflect on their interpretations of other students' work, and get feedback on their own campaigns, would promote more reflexive critical thinking, encouraging students to see their work from other points of view and lead them to "recognize that some of their intentions were not clear, or had changed as the work had progressed; and that some of the outcomes did not correspond to their intentions, and may have led to them being misinterpreted" (p. 153).

It would also be interesting to see if the English-language discourses identified in this research translate into the French-language texts and schools. Do Franco-Ontarian schools and students differ from their Anglophone counterparts? More broadly, a

national comparison of environmental curricula is warranted to see if the scientific/rational bias found in Ontario is typical of most Canadian schools. Similarly, does the environment make an appearance in any of this country's media awareness curricula? Longitudinal research projects involving teachers imparting environmental education, or students exposed to this kind of environmental media critique could also be quite compelling.

Toward Critical Environmental Citizenship

Giving media literacy a more environmental texture is crucial in an age when much of our information about the environment comes from mediated sources. Alerting students to gender bias and social injustice in the media is no longer enough: critical citizenship today must include an understanding of how nature is portrayed as well. To this end, curricula should be revised to take into account not only the growing importance of environmental education, but also the powerful role the media plays in the development of environmental consciousness. Fostering environmental citizenship means students need to ask questions about the mediated representations they encounter in their daily lives, including in the classroom, as well as the ideas they have based on their personal experiences. An understanding of how the senses and sensory information define and affect these portrayals is an integral part of this process.

Educators should embrace the value of sensorial communication for imparting information and fostering critical thinking, particularly in terms of environmental education. If students are to be encouraged to become active environmental citizens, the

environmental education they receive in schools must go further toward enabling this goal. Not only do students need these tools to critically evaluate the environmental discourses they encounter around them, they also need them to understand and distinguish the qualitative sensorial difference between their interactions with environmental media (mediated nature) and the environment itself. A greater awareness about the effects of different types of sensorial communication and, correspondingly, the different sensorial biases of environmental media can help students obtain a deeper understanding of why mediated EE can be a useful device for developing interest in environmental issues, but cannot, in the end, be a viable substitute for personal interactions with the natural world. Given the opportunity and armed with these reflexive techniques, students will be better prepared to make responsible and well founded environmental choices. Students will have the flexibility to explore and empathize with different ways of understanding nature, the knowledge to critically analyze and intelligently respond to how nature is presented to them, and the wisdom to get outside and experience nature for themselves.

Postscript

In late 2007, the Ministry of Education's *Working Group on Environmental Education* released its report and recommendations for improving environmental education in Ontario. A newly revised Science and Technology curriculum was also introduced, putting many of those recommendations into practice. As of September 2008, the curriculum analyzed in this research had become outdated. In the interest of the project, a brief review of both the Working Group's report as well as the new Science and Technology curriculum is warranted.

Formed at a time of growing concern for environmental issues, the Working Group, composed of prominent scientists and environmental educators, proposed to create a "comprehensive framework" (Working Group on Environmental Education 2007, p. 1) for environmental education. Given the findings of this research on the environmental curriculum, I was curious to see if any major changes would be made. I was encouraged to find that the Working Group assessed the current application of environmental education in Ontario as both *inconsistent* and *fragmented*. Environmental education is described not only as a teachable subject but also as "an approach to critical thinking, citizenship, and personal responsibility" (Working Group on Environmental Education 2007, p. 10). The Working Group stated that more opportunities for EE would be required if the province wants to achieve its goal of creating active environmental citizens. Consistent with my own findings, they also argued that environmental education should be applied more coherently throughout and across the entire curriculum. Each subject in

the curriculum—from math, to the arts and sciences—should make the environment a priority by stressing “the importance of environmental education in Ontario, ... with strategies pertinent to [each] subject area.” (Working Group on Environmental Education 2007, p. 13).

Building on the previous approach to EE, the new Science and Technology curriculum (MoEd 2007) emphasizes the importance of critical thinking and environmental literacy, especially as it relates to students’ interactions with the natural and social worlds. The curriculum text has been thoroughly reworked and communicates several new “big ideas”, or themes, including “Sustainability and stewardship”, and “Change and continuity.” These themes are designed to help students connect with both systems thinking and the futures approach⁷ to environmental thought.

Yet while the new Science and Technology curriculum provides many new opportunities for critical reflection on environmental discourses and overall, uses more flexible, evenhanded language, it is still, by and large, lacking in many of the same areas as before. The Science and Technology curriculum continues to be chiefly preoccupied with *light green* environmental discourses, though it is decidedly more *critically anthropocentric* than its predecessor. Outside of Grade 1, it continues to ignore the fundamental role of the senses in environmental experiences. Similarly, while it finally acknowledges the importance of outdoor education—it, like integrated, cross curriculum environmental

⁷ Futures studies are based on the concept of utopia. “Utopia is where we store our hopes of happiness,” (Stevenson 2006, p. 667) and creating a positive vision for the future inspires people to enact it. However, futures studies holds that utopian thinking must do more than simply *imagine* this place of happiness: the vision must serve as “the basis for reclaiming and redefining the value of political agency and struggle” (Stevenson 2006, p. 667).

learning, is now considered a core component of EE in Ontario—it continues to neglect the role of mediated nature in formation of environmental citizenship. Since this is only the first curriculum to be revised under the Working Group’s recommendations and organizational changes may take months or years to be put in place, it is impossible to know at this stage what lies ahead for environmental education in Ontario. Only time will tell if other subjects will, in fact, embrace the environmental motif or if the Ministry of Education will provide adequate support for the development of resources for teachers and students alike. Until then, many of the issues identified in this research remain pertinent to the improvement of environmental education in Ontario.

References Cited

- Abram, D. (1996). *The Spell of the Sensuous*. New York: Vintage Books.
- Ackerman, D. (1990). *A Natural History of the Senses*. New York: Vintage Books.
- Alm, L. R. (1997). "Scientists and the Acid Rain Policy in Canada and the United States." *Science, Technology, & Human Values*, 22(3), pp. 349-368.
- Anderson, N. (2007). "Media education snapshots across Canada: A healthy evolution." *Our Schools, Our Selves*, 17(1), pp.111-118.
- Barry, J. (1999). *Environment and Social Theory*. London: Routledge.
- Beck, U. (1999). *World Risk Society*. Malden, MA : Polity Press.
- Beck, U. (1992). *Risk Society: Towards a New Modernity*. London: Sage Publications.
- Bell, D. R. (2005). "Liberal Environmental Citizenship." *Environmental Politics*, 14(2), pp. 179-194.
- Bell, A. C. and Russell, C. L. (2000). "Beyond Human, Beyond Words: Anthropocentrism, Critical Pedagogy, and the Poststructuralist Turn." *Canadian Journal of Education*, 25(3), pp. 188-203.
- Bergsma, L. J. (2004). "Empowerment Education: The Link Between Media Literacy and Health Promotion." *American Behavioral Scientist*, 48(2), pp. 152-164.
- Bishop, K., Reid, A., Stables, A., Lencastre, M., Stoer, S. and Soetaert, R. (2000). "Developing Environmental Awareness through Literature and Media Education: Curriculum Development in the Context of Teachers' Practice." *Canadian Journal of Environmental Education*, 5, pp. 268-286.
- Bonner, K. M. (2001). "Reflexivity and Interpretive Sociology: The Case of Analysis and the Problem of Nihilism." *Human Studies*, 24, pp. 267-292.
- Brake, W. H. T. (1975). "Air pollution and fuel crises in preindustrial London, 1250-1650." *Technology and Culture*, 16(3), pp. 337-359.
- Branagan, M. (2005). "Environmental Education, Activism and the Arts." *Convergence*, 38(4), pp. 33-50.

- Briggs, S. (1987). "Rachel Carson: Her Vision and Her Legacy". In Marco, G., Hollingsworth, R., and Durham, W. (Eds.), *Silent Spring Revisited* (pp. 3-11). Washington: American Chemical Society.
- Buckingham, D. (2003). *Media Education: Literacy, Learning and Contemporary Culture*. Cambridge: Polity Press.
- Buckingham, D. (1998). "Media Education in the UK: Moving Beyond Protectionism." *Journal of Communication*, 48(1), pp. 33-43.
- Callahan, S. (1988). "The Role of Emotion in Ethical Decisionmaking." *The Hasting Center Report*, 18(3), pp. 9-14.
- Cantrill, J. G. (1993). "Communication and Our Environment: Categorizing Research in Environmental Advocacy." *Journal of Applied Communication Research*, 21(1), pp. 66-95.
- Carroll, W. K. (Ed.) (2004). *Critical Strategies for Social Research*. Toronto: Canadian Scholars' Press, Inc.
- Carson, R. (2002). *Silent Spring*. Boston: Mariner Books. (Original work published 1962)
- Carty, P. C. (1996). *Thinking Environmentally: Environmental Information and Environmental Education* [M.A. thesis]. Ottawa: Carleton University.
- Carvalho, A. (2005). "Representing the politics of the greenhouse effect: Discursive strategies in the British media." *Critical Discourse Studies*, 2(1), pp. 1-29.
- Chadowski, A., and Egan, K. (2008). "The body's role in our intellectual education." *The Imaginative Education Research Group*. Retrieved January 27, 2008 from: <http://www.ierg.net/assets/documents/publications/IERGBodyrole.pdf>
- Christ, W. G. and Potter, W. J. (1998). "Media Literacy, Media Education and the Academy." *Journal of Communication*, 48(1), pp. 5-15.
- Chomsky, N. (2000). *Chomsky on MisEducation*. Lanham, MD: Rowman & Littlefield Publishers.
- Chouliaraki, L. and Fairclough, N. (2004). "The Critical Analysis of Discourse." In W. K. Carroll (Ed.), *Critical Strategies for Social Research* (pp. 262-271). Toronto: Canadian Scholars' Press Inc.
- Clark, G., Halloran, S. M., and Woodford, A. (1996). "Thomas Cole's Vision of "Nature" and the Conquest Theme in American Culture." In C. Herndl and S. Brown

(Eds.) *Green Culture: Environmental Rhetoric in Contemporary America* (pp. 261-280). Madison, WI: The University of Wisconsin Press.

Clarke, J. J. (1993). *Nature in Question: An Anthology of Ideas and Arguments*. London: Earthscan Publications Limited.

Clifford, J. (1986). "Introduction: Partial Truths." In J. Clifford and G. E. Marcus (Eds.), *Writing Culture* (pp. 1-26). Berkeley: University of California Press.

Colebourn, J. (2007, February 21). Treehouse fate hangs on appeal: City says front yard is 'inappropriate' [Final Edition]. *The Province*, p. A13.

Collingwood, R. G. (1945). *The Idea of Nature*. London: Oxford University Press.

Cooper, M. (1996). "Environmental rhetoric in the age of hegemonic politics: Earth First! and the Nature Conservancy." In C. Herndl and S. Brown (Eds.), *Green culture: Environmental rhetoric in contemporary America* (pp. 236-260). Madison: University of Wisconsin Press.

Cosgrove, D. (1990). "Environmental thought and action: pre-modern and post-modern." *Transactions of the Institute of British Geographers*, 15, pp. 344-358.

Cox, R. (2006). *Environmental Communication and the Public Sphere*. Thousand Oaks, CA: Sage Publications Inc.

Dale, S. (1996). *McLuhan's Children: the Greenpeace message and the media*. Toronto: Between the Lines.

Danermark, B., Ekstrom, E., Jakobsen, L., and Karlsson, J. C. (2002). "Science, reality and concepts." In Danermark, B., Ekstrom, E., Jakobsen, L., and Karlsson, J. C. (Eds.), *Explaining Society: An Introduction to Critical Realism in the Social Sciences* (pp. 15-40). London: Routledge.

DeLuca, K. (1999). *Image politics: The new rhetoric of environmental activism*. New York: Guilford Press.

DeLuca, K. M. and Demo, A. T. (2000). "Imaging Nature: Watkins, Yosemite, and the Birth of Environmentalism." *Cultural Studies in Media Communication*, 17(1), pp. 241-260.

Denzin, N. K. (2004). "Postmodernism and Deconstructionism." In W. K. Carroll (Ed.), *Critical Strategies for Social Research* (pp. 232-245). Toronto: Canadian Scholars Press Inc.

Dewey, J. (1959). *Experience and Education*. New York: The Macmillan Company. (Original work published 1938)

Dewey, J. (1956). *The Child and the Curriculum*. Chicago: Phoenix Books. (Original work published 1902)

Dewey, J. (1921). *Democracy and Education*. New York: Macmillan. Accessed November 10, 2007 from Carleton University NetLibrary:

<http://catalogue.library.carleton.ca/search?/adewey/adewey/1,59,146,B/l856~b2306793&FF=adewey+john+1859+1952&7,,63,1,0>

Dobson, A. (2003). *Citizenship and the environment*. Oxford: Oxford University Press.

Doucet, A. and Mauthner, N. (2002). "Knowing Responsibly: Linking Ethics, Research Practice and Epistemology." In Mauthner, M., Birch, M., Jessop, J. and Miller, T. (eds.), *Ethics in Qualitative Research* (pp. 123-145). Thousand Oaks, CA: Sage Publications.

Duncan, B. (2005). "Media Literacy: Essential Survival Skills for the New Millenium." *Orbit*, 35(2), pp. 2-4.

Dunlap, T. (2006). "Environmentalism, a Secular Faith." *Environmental Values*, 15, pp. 321-330.

Engel, J. P. and Sturgis, D. (2006). "Ethics in action: Adopting an Environmental Practice." *Green Teacher*, Spring, pp. 11-15.

Evernden, N. (1992). *The Social Creation of Nature*. Baltimore, MD: John Hopkins University Press.

Fine, G. A. (1993). "Ten Lies of Ethnography: Moral Dilemmas in Field Reseach." *Journal of Contemporary Ethnography*, 22(3), pp. 267-294.

Foladori, G. (2005). "A Methodological Proposal for Environmental Education." *Canadian Journal of Environmental Education*, 10, pp. 125-140.

Foucault, M. (2004). "Two Lectures: Lecture One: January 7, 1976" In W. K. Carroll (Ed.), *Critical Strategies for Social Research* (pp. 246-251). Toronto: Canadian Scholars' Press Inc.

Freire, P. (1970). *Pedagogy of the Oppressed*. New York: The Continuum Publishing Company.

- Frost, J. (2000). "Modernism and a New Picturesque: The Environmental Rhetoric of Ansel Adams." In N. Coppola and B. Karis (Eds.), *Technical Communication, Deliberative Rhetoric, and Environmental Discourse: Connections and Directions* (pp. 113-138). Stamford, CT: Ablex Publishing Corporation.
- Galician, M. (2004). "Introduction: High Time for "Dis-illusioning" Ourselves and Our Media." *American Behavioral Scientist*, 48(1), pp. 7-17.
- Gamson, W. A. and Wolfsfeld, G. (1993). "Movements and Media as Interacting Systems." *Annals of the American Academy of Political and Social Science*, 528, pp. 114-125.
- Geertz, C. (1983). "Chapter 3: 'From the Native's Point of View': On the Nature of Anthropological Understanding." In *Local Knowledge: Further Essays in Interpretive Anthropology* (pp. 54-70). New York: Basic Books, Inc.
- Giroux, H. A. (2007). "Educated hope in dark times: Critical pedagogy for social justice." *Our Schools, Our Selves*, 17(1), pp. 195-202.
- Giroux, H. A. (2004). "Cultural Studies and the Politics of Public Pedagogy: Making the Political More Pedagogical." *Parallax*, 10(2), pp. 73-89.
- Goffman, E. (1989). "On fieldwork." *Journal of Contemporary Ethnography*, 18(1), pp. 123-132.
- Goodwin, C. (2003, August 6). Weekend players get boot. *The Record*, p. B1.
- Goodwin, J., Jasper, J. M. and Polletta, F. (2004). "Emotional Dimensions of Social Movements." In D. A. Snow, S. A. Soule, and H. Kriesi (Eds.), *The Blackwell Companion to Social Movements* (pp. 413-432). Oxford: Blackwell.
- Gore, A. (2006). *An Inconvenient Truth*. New York: Rodale.
- Government of Ontario. (2008). About Ontario, People and Culture, Population and Densities. Retrieved April 12, 2008 from: http://www.ontario.ca/en/about_ontario/EC001035?openNav=people_and_culture
- Greenpeace USA. (2005, December 15). "Protecting the Polar Bears." [News Release] Retrieved February 26, 2009 from: <http://www.greenpeace.org/usa/news/global-warming-it-s-the-real>
- Hajer, M. A. (1993). "Discourse Coalitions and the Institutionalization of Practice: The Case of Acid Rain in Britain." In F. Fischer and J. Forester (Eds.), *The argumentative turn in policy analysis and planning* (pp. 43-76). Durham, NC: Duke University Press.

- Havick, J. (2000). "The impact of the Internet on a television-based society." *Technology and Society* 22, pp. 273-287.
- Havlick, D. and Hourdequin, M. (2005). "Practical Wisdom in Environmental Education." *Ethics, Place and Environment*, 8(3), pp. 385-392.
- Heilbron, J. (1999). "Reflexivity and its Consequences." *European Journal of Social Theory*, 2(3), pp. 298-306.
- Herndl, C. and Brown, S. (1996). "Introduction." In C. Herndl and S. Brown (Eds.), *Green culture: Environmental rhetoric in contemporary America* (pp. 3-20). Madison: University of Wisconsin Press.
- Hobbs, R. (1998). "The Seven Great Debates in the Media Literacy Movement." *Journal of Communication*, 48(1), pp. 16-32.
- Hope, D. S. (2004). "Gendered Environments: Gender and the Natural World in the Rhetoric of Advertising." In C. Hill and M. Helmers (Eds.), *Defining Visual Rhetorics* (pp. 155-177). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Howes, D. (1991). "Introduction: To Summon All the Senses." In Howes, D. (Ed.), *The Varieties of Sensory Experience* (pp. 3-21). Toronto: University of Toronto Press.
- Howes, D. (1991b). "Sensorial Anthropology." In Howes, D. (Ed.), *The Varieties of Sensory Experience* (pp. 167-191). Toronto: University of Toronto Press.
- Howes, D. and Classen, C. (1991). "Conclusion: Sounding Sensory Profiles". In Howes, D. (Ed.), *The Varieties of Sensory Experience* (pp. 257-288). Toronto: University of Toronto Press.
- Innis, H. A. (1951). *The Bias of Communication*. Toronto: University of Toronto Press.
- Jacobson, S. K., McDuff, M. D., and Monroe, M. C. (2007). "Promoting Conservation through the arts: Outreach for hearts and minds." *Conservation Biology*, 21(1), pp. 7-10.
- Jickling, B. (2005). "Education and advocacy: a troubling relationship." In E. Johnson and M. Mappin (Eds.), *Changing Perspectives of ecology and education* (pp.91-113). Cambridge: Cambridge University Press.
- Karakayali, N. (2004). "Reading Bourdieu and Adorno: The Limits of Critical Theory and Reflexive Sociology." *Sociology*, 38(2), pp. 351-368.

- Koopmans, R. (2004). "Movements and Media: Selection Processes and Evolutionary Dynamics in the Public Sphere". *Theory and Society*, 33, pp. 367-391.
- Kozolanka, K. (2007). "Reading between the lines and crossing borders: Critical media literacy, good citizenship and democratic media." *Our Schools, Our Selves*, 17(1), pp.17-25.
- Kraft, M. E. (2000). "U.S. Environmental Policy and Politics: From the 1960s to the 1990s." *Journal of Policy History*, 12(1), pp. 17-42.
- Krajnc, A. (2000). "The Art of Green Learning: From Protest Songs to Media Mind Bombs". *International Politics*, 37, pp. 19-40.
- Lewis, J. and Jhally, S. (1998). "The Struggle Over Media Literacy." *Journal of Communication*, 48(1), pp. 109-120.
- Lindstrom, M. (2005). *BrandSense*. New York: Free Press.
- Livesey, S. (2002). "Global warming wars: Rhetorical and discourse analytic approaches to ExxonMobil's corporate public discourse." *Journal of Business Communication*, 39(1), pp. 117-146.
- Louv, R. (2005). *Last Child in the Woods*. Chapel Hill, NC: Algonquin Books.
- Ma, S. (2006, October 20). Children playing on street run afoul of Ottawa bylaw [Final Edition]. *The Ottawa Citizen*, p. F1.
- McLaren, P. and Houston, D. (2004). "Revolutionary Ecologies: Ecosocialism and Critical Pedagogy." *Educational Studies*, 36(1), pp. 27-45.
- Malinowski, B. (1966). "Introduction: The Subject, Method and Scope of this Inquiry." In *Argonauts of the Western Pacific*. London: Routledge & Kegan Paul Ltd. (Original work published 1922)
- Malone, K. (2006). "Environmental education researchers as environmental activists." *Environmental Education Research*, 12(3-4), pp. 375-389.
- Mappin, M. J. and Johnson, E. A. (2005). "Changing perspectives of ecology and education in environmental education." In E. Johnson and M. Mappin (Eds.), *Environmental Education and Advocacy* (pp.1-28). Cambridge: University of Cambridge Press.
- McGinnis, S. (2004, May 12). Neighbours want end to street hockey sessions: Bylaw warning sent to family [Final Edition]. *Calgary Herald*, p. A3.

McKenzie, J. I. (2002). *Environmental Politics in Canada*. Don Mills, ON: Oxford University Press.

McLuhan, M. (1995). "Playboy Interview." In E. McLuhan and F. Zingrone (Eds.) *Essential McLuhan* (pp. 233-269). Concord, ON: Anansi.

McLuhan, M. (1994). *Understanding Media*. Cambridge, MA: MIT Press. (Original work published 1964)

McNeil, M. (2005). "Nature." In T. Bennett, L. Grossberg, and M. Morris (Eds.) *New Keywords: A Revised Vocabulary of Culture and Society* (pp. 235-239). Malden, MA: Blackwell Publishing, Ltd.

Meister, M. and Japp, P. M. (2002). "Introduction: A Rationale for Studying Environmental Rhetoric and Popular Culture." In M. Meister and P. Japp (Eds.) *Enviropop: Studies in Environmental Rhetoric and Popular Culture* (pp. 1-12). Westport, CT: Praeger Publishers.

Merrin, W. (2002). "Implosion, simulation and the pseudo-event: a critique of McLuhan." *Economy and Society*, 31(3), p. 369-390.

Meshner, P. and Amoriggi, H. (2001). "Adapting to change: Can the Reggio Emilia approach help with the implementation of the new Quebec curriculum?" *McGill Journal of Education*, 36(3), pp. 239-250.

Meyrowitz, J. (1998). "Multiple Media Literacies." *Journal of Communication*, 48(1), pp. 96-108.

Meyrowitz, J. (1985). *No Sense of Place*. New York: Oxford University Press.

Miller, J. P. (1988). *The Holistic Curriculum*. Toronto: OISE Press.

Mills, S. (1997). *Discourse*. New York: Routledge.

Milne, M., Kearins, K., and Walton, S. (2005). *Business makes a 'journey' out of 'sustainability': creating adventures in Wonderland?* Working Paper. Department of Accountancy and Business Law, University of Otago, Dunedin, New Zealand. Retrieved online February 12, 2008 from:

<http://www.business.otago.ac.nz/acty/research/pdf/Sustainability%20as%20Journey%20paper%20.pdf>

Ministry of Education [MoEd] (2009). The Ontario Curriculum. Retrieved March 11, 2009 from: <http://www.edu.gov.on.ca/eng/curriculum/elementary/#review>

- Ministry of Education [MoEd]. (2007). The Ontario Curriculum, Grades 1-8 – Science and Technology [Revised]. Retrieved August 18 2007 from:
<http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec.html>
- Ministry of Education [MoEd]. (2006). The Ontario Curriculum, Grades 1-8 – Language [Revised]. Retrieved August 18 2007 from:
<http://www.edu.gov.on.ca/eng/curriculum/elementary/language.html>
- Ministry of Education [MoEd]. (2004). The Ontario Curriculum, Social Sciences – Grade 1-6; History and Geography – Grades 7-8 [Revised]. Retrieved August 18 2007 from: <http://www.edu.gov.on.ca/eng/curriculum/elementary/ssstudies.html>
- Ministry of Education [MoEd]. (1998a). The Ontario Curriculum, Grades 1-8 – Science and Technology. Retrieved August 18 2007 from:
<http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec.html>
- Ministry of Education [MoEd]. (1998b). The Ontario Curriculum, Grades 1-8 – Health and Physical Education. Retrieved August 18 2007 from:
<http://www.edu.gov.on.ca/eng/curriculum/elementary/health.html>
- Ministry of Education [MoEd]. (1998c). The Ontario Curriculum, Grades 1-8 – The Arts. Retrieved August 18 2007 from:
<http://www.edu.gov.on.ca/eng/curriculum/elementary/arts.html>
- Neuzil, M. and Kovarik, W. (1996). *Mass Media & Environmental Conflict: America's Green Crusades*. Thousand Oaks, CA: Sage Publications Inc.
- Ong, W. J. (1991). "The Shifting Sensorium." In Howes, D. (Ed.), *The Varieties of Sensory Experience* (pp. 25-30). Toronto: University of Toronto Press.
- Orlowski, P. (2007). "Bob Dylan was right—It is a political world: The case for critical media literacy." *Our Schools, Our Selves*, 17(1), pp. 33-49.
- Orr, D. W. (1994). *Earth in Mind: On Education, Environment and the Human Prospect*. Washington, DC: Island Press.
- Parker, I. (2004). "Discovering discourses, tackling texts." In W. K. Carroll (Ed.), *Critical Strategies for Social Research* (pp. 252-261). Toronto: Canadian Scholars' Press Inc.
- Pels, D. (2000). "Reflexivity: One Step Up." *Theory, Culture & Society*, 17(3), pp. 1-25.

Pennycook, A. (1994). "Incommensurable Discourses?" *Applied Linguistics*, 15 (2), pp. 115-138.

Peters, J. D. (1986). "Institutional Sources of Intellectual Poverty in Communication Research." *Communication Research*, 13(4), pp. 527-559.

Pooley, J. A. and O'Connor, M. (2000). "Environmental Education and Attitudes: Emotions and Beliefs Are What is Needed." *Environment and Behavior*, 32(5), pp. 711-723.

Project Dare. (n.d.) Official Website. Retrieved March 3, 2009 from:
<http://www.projectdare.com>

Rehling, D. L. (2002). "When Hallmark Calls Upon Nature: Images of Nature in Greeting Cards." In M. Meister and P. Japp (Eds.) *Enviropop: Studies in Environmental Rhetoric and Popular Culture* (pp. 13-30). Westport, CT: Praeger Publishers.

Schiller, M. (1995). "Reggio Emilia: A Focus on Emergent Curriculum and Art." *Art Education*, 48(3), pp.45-50.

Schmitt, B. H. (1999). *Experiential Marketing*. New York: Free Press.

Schoenfeld, A. C., Meier, R. F. and Griffin, R. J. (1979). "Constructing a Social Problem: The Press and the Environment." *Social Problems*, 27(1), pp.38-61.

Smith, R. (2005). "Does reflexivity separate the human sciences from the natural sciences?" *History of the Human Sciences*, 18(4), pp. 1-25.

Stamps, J. (1995). *Unthinking Modernity: Innis, McLuhan and the Frankfurt School*. Montréal: McGill-Queen's University Press.

Stegelin, D. A. (2003). "Application of the Reggio Emilia Approach to Early Childhood Science Curriculum." *Early Childhood Education Journal*, 30(3), pp. 163-169.

Stevenson, T. (2006). "From vision to action." *Futures*, 38, pp. 667-672.

Stewart, K. (2007). "Re-imagining media education: Exploring new strategies for elementary students' emotional and social engagement." *Our Schools, Our Selves*, 17(1), pp. 71-84.

Stibbe, A. (2004). "Environmental Education Across Cultures: Beyond the Discourse of Shallow Environmentalism." *Language and Intercultural Communication*, 4(4), pp. 242-260.

- Synnott, A. (1991). "Puzzling over the Senses". In Howes, D. (Ed.), *The Varieties of Sensory Experience* (pp. 61-76). Toronto: University of Toronto Press.
- Tauber, A. I. (2005). "The reflexive project: reconstructing the moral agent." *History of Human Sciences*, 18(4), pp. 49-75.
- Taylor, C. E., Lee, J. and Davie, W. R. (2000). "Local Press Coverage of Environmental Conflict." *Journalism and Mass Communication Quarterly*, 77(1), pp. 175-192.
- Tolkien, J. R. R. (1965). *Lord of the Rings: Return of the King*. Boston: Houghton-Mifflin Company
- United Nations Educational, Scientific, and Cultural Organization [UNESCO]. (1975). "The Belgrade Charter: A Global Framework for Environmental Education." Retrieved March 18, 2008 from http://portal.unesco.org/education/en/files/33037/10935069533The_Belgrade_Charter.pdf/The%2BBelgrade%2BCharter.pdf
- Waddell, C. (1996). "Saving the Great Lakes: Public participation in environmental policy." In C. Herndl and S. Brown (Eds.), *Green culture: Environmental rhetoric in contemporary America* (pp. 141-165). Madison: University of Wisconsin Press.
- Wilson, E. B. (2004). *Environmental Education: Goals and Challenges* [M.A. Thesis]. Ottawa: Carleton University.
- Working Group on Environmental Education. (2007). *Shaping Our Schools, Shaping Our Future: Environmental Education in Ontario Schools*. Retrieved November 17, 2007 from <http://www.edu.gov.on.ca/curriculumcouncil/shapingSchools.pdf>
- Zettl, H. (1998). "Contextual Media Aesthetics as the Basis for Media Literacy." *Journal of Communication*, 48(1), pp. 81-95.

Appendices

Appendix A: Student Handout for Environmental Media Campaign Project

Media Unit Final Project

You are a member of an environmental group (select a name for your organization). Your organization is preparing to launch an educational/information campaign about an important environmental issue.

In order to create your environmental campaign, your group will:

- Choose an issue, research the issue and brainstorm a new, innovative way to present it.
- Select a target audience for your campaign. Whom do you want to reach?
- Create a slogan or catchphrase for your campaign (consider your target audience). What's your message?
- Identify how your environmental issue affects your or another community/region/country.
- Create a campaign to inform others about your issue. You will be presenting your campaign to the class and on International Day. You will be creating a whole marketing strategy, not just one ad, to inform your target audience about your issue.

Your campaign must include:

1. A display board (either Bristol board or a three-sided display board) that will be set up like an information booth.
2. A fact sheet about your issue (that includes the 5Ws and H)
3. An informative brochure to promote your issue.
4. Two other "Ads" that use at least *two* sensory media. Examples:
 - ♣ Photograph – Visual
 - ♣ Film/TV Spot – Visual, Auditory
 - ♣ Poster – Visual
 - ♣ Props – Visual, Touch and/or Smell
 - ♣ Interactive/Dramatic Presentation – Visual, Auditory, Touch
 - ♣ Radio Spot – Auditory
 - ♣ Music/Sound Effects – Auditory
 - ♣ Food – Taste and Smell

Mix and match these media to create a **multi-sensory** experience (make the media work together to tap into many senses) OR highlight one sense in particular. Since different senses create different kinds of emotional reactions, there is a better chance that your message will *resonate* (connect) with the audience (and that they'll remember it!) if you are engaging the senses in an "unusual" way.

- Be creative and think outside the box!
- You will present your entire campaign on **December 18th** to your class and **December 19th** at International Day.
- Be prepared to answer questions about the issue you've selected, your campaign strategy, and the different kinds of media you have used.
- You will have several classes to complete your campaign, but may wish to work with your group outside of school as well.
- Use the given planning sheet to help you organize your ideas.

Examples of Environmental Issues:

Deforestation/Save the Forest!
 Habitat Loss/Land Conservation
 Climate Change (Global Warming)
 Oil Spills
 Electricity Conservation
 Water Conservation
 National/Provincial Parks
 Industrial Waste
 Recycling
 Wind Power/Solar Power/Alternative Energy
 Littering
 Air Pollution/Smog
 Carpooling/Public Transit
 Genetically Modified Foods/Organic Foods
 Acid Rain
 Composting
 Hybrid Cars
 Endangered Species
 Bio-fuels
 Save our Oceans!

Appendix B: Student Letter of Information and Assent Form

Dear Grade 6 Student,

My name is Teresa Ellis. I am a graduate student at Carleton University. I am working towards my Master's degree. In order to complete my degree, I am doing a research project on how people form ideas about the environment, and how different communication media—tools through which we “talk” to each other, including poetry, music, movies, and dramatic presentations—influence how we learn about the environment. I'd like to include you in my research project.

Your parent/guardian knows about this project. If you (and your parent) decide to be part of this study, you will be asked questions about media, Nature and the environment, and the environmental campaign you are doing in class. I will not be grading you or your projects. I will be with you in class up to three days per week during your Language-Arts period and will ask you questions during class time. I might want to ask you and your parent to participate in a group interview after the project is done. I may also want to tape some of our discussions, to help me remember them better.

I won't ask you to do anything that makes you uncomfortable: there are minimal risks involved in participating in this research project. Participating could help you by developing your knowledge of the media and the environment. It may also help your school achieve “Jade” school status from the Seeds foundation.

When I am finished with the research study, I will write a thesis (final report) about what I learned. This report will not include your name or any photos, videos or recordings that could identify you: your identity will be kept confidential. If you want to, you will be able to read my final report. It will be available through both the Carleton University Library and Library and Archives Canada. It will be called *Planting Seeds of Green: Sensory Communication and Environmental Education*.

You do not have to be in the study if you don't want to be: your **participation is voluntary**. If you decide to stop after we begin, no one will be angry with you. **Your grade for the environmental campaign assignment will not be affected by your participation in this research.**

If you have any questions and/or worries about the project, please call me at XXX-XXXX. You can also send me an email at tellis@connect.carleton.ca.

Sincerely,

Teresa Ellis, Student Researcher
School of Journalism and Communication,
Carleton University

Dr. Josh Greenberg, Thesis Supervisor
Assistant Professor, School of Journalism and Communication,
Carleton University

Is this OK?

If you decide you want to be in this study, please write your name on the line, and sign below.

I, _____, agree to participate in the research. The research study has been explained to me and I have had all my questions about it answered. I understand what I am being asked to do. I have had the opportunity to ask questions. I understand that I can drop out of this study at any time and no one will be angry or disappointed.

Student Signature

Date

Appendix C: Parental Letter of Information and Consent Form

Dear Parent/Guardian,

My name is Teresa Ellis. I am a Master's student in the Journalism and Communication department at Carleton University. To complete my Master's degree, I am writing a thesis entitled *Planting Seeds of Green: Sensory Communication and Environmental Education*, a research study that looks at how different communication technologies (media) affect our sense of environmental consciousness. I am also researching how environmental citizenship is formed and working on ways to improve environmental education. I would like to include your child in my research study.

As part of my thesis research, I will be visiting the grade 6 classrooms of Turnbull School during the months of November and December 2007, up to three times per week during the Language-Arts period (40 to 80 minutes per visit). There will be no significant disruption to the class: no additional work will be assigned. I will not be grading or evaluating student work. During my visits, I will observe the students working on their environmental media campaigns and ask questions. I will, for example, ask questions about the media they are using, the environmental concept or theme they are representing, and how they feel about Nature/the environment. I may also conduct follow up focus group interviews with both parents and students. Some focus group discussions may be audio taped for my reference.

Student and parent identities will be kept confidential. Photos, video and/or audio recordings that contain identifying markers (names, faces) will not be included and no real names will be used. All research related information will be kept securely locked in my home and will only be accessed by my research supervisor and myself. The data will be kept for a period of five years, after which I will personally destroy it.

This study offers students a chance to explore the concepts of Nature/the environment, the media and the senses more deeply, as well as gain valuable experience by developing media awareness, technological abilities and environmental citizenship. It also benefits Turnbull School by helping them attain "Jade" school status from the Seeds foundation. Possible risks as a student or parent involved in this study are minimal.

The completed thesis will be available at the Carleton University library should you wish to consult it. Hardcopies and digital copies will also be held by Library and Archives Canada, and will be available to the public. The data may also be disseminated through published articles and conference presentations. It may also be used in future research projects.

Your **participation is voluntary**, and there are **no penalties** if you decide not to participate or if you want to stop after the research begins. If you decide to withdraw, all relevant data will be removed. If, at any time, you have questions or concerns about the research study and your participation in it, or if you wish to withdraw your participation, please contact me by phone at XXX-XXXX or by email at tellis@connect.carleton.ca.

You may contact also the chair of the Research Ethics Committee with questions about this project and your rights as a participant: Prof. Antonio Gualtieri, Chair, Carleton University Research Ethics Committee, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario, K1S 5B6, Telephone: 613-520-2517, Email: ethics@carleton.ca.

Sincerely,

Teresa Ellis, Student Researcher
School of Journalism and Communication,
Carleton University

Dr. Josh Greenberg, Thesis Supervisor
Assistant Professor, School of Journalism and Communication,
Carleton University

I give permission for my child, _____, to participate in the research study entitled *Planting Seeds of Green: Sensory Communication and Environmental Communication*. I have read the description of the research and understand what is involved in joining this study. I have had the opportunity to ask questions. I understand that I may revoke my consent at any time, without penalty. I have received a copy of this letter and consent form to keep for future reference.

Parent/Guardian Signature

Date

Appendix D: Teacher/Participant Letter of Information and Consent Form

Dear Grade 6 Teacher/Participant,

My name is Teresa Ellis. I am a Master's student in the Journalism and Communication department at Carleton University. To complete my Master's degree, I am writing a thesis entitled *Planting Seeds of Green: Sensory Communication and Environmental Education*, a research study that looks at how different communication technologies (media) affect environmental consciousness. I am also researching how environmental citizenship is formed and ways to improve environmental education. I would like to include you in my research study.

As part of my thesis research, I will be visiting the grade 6 classrooms of Turnbull School during the months of November and December 2007. I will be present up to three times per week during the Language-Arts period (40 to 80 minutes per visit). I will not be grading or evaluating student work. During my visits, I will observe the students working on their environmental media campaigns and ask questions. I will, for example, ask questions about the media they are using, the environmental concept or theme they are representing, and how they feel about Nature/the environment. As a participant in this research study, you will be asked to participate in focus groups. Topics may include "the environment" as a subject in the Ontario curriculum, and the advantages or disadvantages of a sensory approach to environmental education. Some focus group discussions may be audio taped for my reference.

Participants' identities will be kept confidential. Photos, video and/or audio recordings that contain identifying markers (names, faces) will not be included and no real names will be used. All research related information will be kept securely locked in my home and will only be accessed by my research supervisor and myself. The data will be kept for a period of five years, after which I will personally destroy it.

This study may benefit some participants. This study offers students a chance to explore the concepts of Nature/the environment, the media and the senses more deeply, as well as gain valuable experience by developing media awareness, technological abilities and environmental citizenship. Benefits to teachers may include learning an innovative, alternative way of teaching environmental/media related material. It may also benefit Turnbull School by helping it attain "Jade" school status from the Seeds foundation. Possible risks as a teacher involved in this study are minimal. There are minimal risks involved for all participants.

The completed thesis will be available at the Carleton University library should you wish to consult it. Hardcopies and digital copies will also be held by Library and

Archives Canada, and will be available to the public. This data may also be disseminated through published articles and conference presentations. It may also be used in future research projects.

Your **participation is voluntary**, and there are **no penalties** if you decide not to participate or if you want to stop after the research begins. If you decide to withdraw, all relevant data will be removed.

If, at any time, you have questions or concerns about the research study and your participation in it, or if you wish to withdraw your participation, please contact me by phone at XXX-XXXX, or by email at tellis@connect.carleton.ca.

You may contact also the chair of the Research Ethics Committee with questions about this project and your rights as a participant: Prof. Antonio Gualtieri, Chair, Carleton University Research Ethics Committee, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario, K1S 5B6, Telephone: 613-520-2517, Email: ethics@carleton.ca

Sincerely,

Teresa Ellis, Student Researcher
School of Journalism and Communication,
Carleton University

Dr. Josh Greenberg, Thesis Supervisor
Assistant Professor, School of Journalism and Communication,
Carleton University

I, _____, consent to participate in the research study entitled *Planting Seeds of Green: Sensory Communication and Environmental Communication*. I have read the description of the research and understand what is involved in joining this study. I have had the opportunity to ask questions. I understand that I may revoke my consent at any time, without penalty. I have received a copy of this letter and consent form to keep for future reference.

Teacher/Participant Signature

Date