Exploring Nature-Based Tourism and Visitor Learning at In Situ and Ex Situ Destinations

by

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Abstract

This research was guided by the following research questions: (1) How does an experience in Churchill, Manitoba (in situ) and at the Assiniboine Park Zoo's (APZ) Journey to Churchill Exhibit (ex situ) impact learning and behaviour change / transformative learning? (2) Additionally, what role does place (in situ versus ex situ) play in influencing the visitor experience, particularly in relation to learning and behaviour change / transformative learning?

This qualitative study is grounded in Constructivist Learning Theory and Transformative Learning Theory (TLT) and is guided by the Contextual Model of Learning (CML). Approximately 30 participants at each site completed personal meaning maps and interviews on-site and post-visit, to examine changes in learning as well as potential impacts of perceptions of authenticity and visitor qualities, such as motivations. A comparative content analysis examined visitor learning at two sites: Churchill, Manitoba (in situ) and the Assiniboine Park Zoo's Journey to Churchill Exhibit (ex situ) in Winnipeg, Manitoba.

This research found that segmenting visitors by Falk's visitor motivation related identities was effective for understanding visitor experiences and learning - more so than comparing in situ and ex situ visitors alone. Transformative learning was illustrated at both sites, especially for visitors with learning centric motivations. Transformative learning that was epochal and facilitated by a disorienting dilemma was unique to a few in situ visitors. However, ex situ visitors were more easily able to identify behaviours that they had changed as attributed to their on-site experiences. This research merges the

fields of free-choice learning and TLT by proposing a model which integrates the contexts of the CML with TLT domains and provides practitioners and researchers with insight into designing and assessing potentially transformative learning experiences.

Contrary to prior research, visitors at both sites did not demonstrate place attachment or a strong sense of place that lead to improved learning or behaviour change. An exploration of visitors 'perceptions of authenticity focused on the polar bears as more or less authentic rather than the places. A critical analysis of how and why these narratives are constructed, and the implications of rendering polar bears touristic symbols for climate change are introduced. Implications for practitioners and futures studies are discussed.

Key Words: Visitor learning, transformative learning, free-choice learning, nature-based tourism, sustainable behaviour change, personal meaning mapping

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List of Abbreviations

APZ: Assiniboine Park Zoo

CML: Contextual Model of Learning

CNSC: Churchill Northern Studies Centre

COY: Cub of the year – a polar bear cub that is less than a year old.

PMM: Personal Meaning Map

TLT: Transformative Learning Theory

NRM: Natural Resource Management

Chapter 1: Introduction

Introduction

Sustainable nature-based tourism has been touted as both hero and villain in its relationship with climate change (Brosnan, Filep, & Rock, 2015; Dawson, Stewart, Lemelin, & Scott, 2010; Pang, McKercher, & Prideaux, 2013). Nature-based tourism can be a means for people living in an urbanized world to learn about and engage with the environment, become ambassadors for places they visit, and ultimately become more environmentally sustainable (Ballantyne & Packer, 2005; Falk, Ballantyne, Packer, & Benckendorff, 2012). However, carbon emissions caused by travel contribute directly to the destruction of these same places, ecosystems, and species (Buckley, 2012; Dawson et al., 2010; Eijgelaar, Thaper, & Peeters, 2010; Kajan & Saarinen, 2013). As of 2014, an estimated 7 billion tourists have been responsible for approximately 8% of global greenhouse gas emissions; 40% of these emissions are directly attributed to airplane travel (Gossling, 2013; Lenzen, Ya-Yen, Faturay, Yuan-Peng, Geschke, & Malik, 2018; UNWTO, 2013). Since high carbon emissions from travel are often considered not ecologically responsible, creative alternatives, such as interpretive sites like zoo or museum exhibits, may become more common in order to reduce air travel carbon emissions and to thereby promote long-term sustainability (Dawson et al., 2010; Gossling, 2013; Mason, 2000; Moscardo, 1996).

With the recognition that nature-based tourism will likely continue to increase, there is a call within tourism studies to better understand visitor experiences and design these encounters to be impactful or hopeful (Ballantyne & Packer, 2005; Brosnan et al., 2015; Falk et al., 2012; Pritchard, Morgan, & Ateljevic, 2011). Hopeful tourism, as

explained by Pritchard et al. (2011), is a perspective that "combines co-transformative learning and action" (p. 942). Higgins-Desboilles and Whyte (2013) further argue that tourism scholars must do more than engage in hopeful research. They challenge tourism researchers to be critical and "to engage in research methodologies that go beyond hope. We live under grave threats as people of power and privilege assert the right to usurp remaining finite resources leaving the majority to struggle with hunger, dispossession and oppression" (Higgins-Desboilles & Whyte, 2013, p. 432). Critical tourism research is needed that goes beyond hope and uses a social science approach to understand how visitors learn about environmental issues, such as climate change in a way that is personally meaningful and engaging (Brosnan et al., 2015; Higgins-Desboilles & Whyte, 2013; Stone & Duffy, 2015).

It is acknowledged that future tourism research must focus on "individual perceptions of responsibility in addressing climate change" (Buckley, 2012, p. 528). A primary barrier for individuals to recognize their role in addressing climate change is that people "often feel helpless to solve general problems" (MacDonald, Milfront, & Gavin, 2015, p. 124). Research conducted by MacDonald et al. (2015) found that people often experience environmental hyperopia - the "perception that geographically distant environmental problems are more severe than local problems" (MacDonald et al., 2015, p. 124) - and that this feeling often results in a disconnect from global issues and from the recognition that their individual actions matter or will have an impact. Their research has demonstrated that the ability to recognize problems on a global scale, and knowledge of how to address them at an individual level on a local scale, are imperative to encouraging sustainable behaviour and environmental learning (Bueddefeld & Van Winkle, 2017,

2018; Hughes, 2011; Hughes, Packer, & Ballantyne, 2011; MacDonald et al., 2015). Recognizing the importance of individual actions, and knowing what actions are effective in addressing local environmental issues has been found to be effective in helping visitors translate their on-site learning into behaviour change (Ardoin & Heimlich, 2013; Ardoin, Wheaton, Bowers, Hunt & Durham, 2015; Bueddefeld & Van Winkle, 2017, 2018; Heimlich & Falk, 2009; Hughes, 2011; Hughes, Packer, & Ballantyne, 2011; Weaver, 2011).

However, without planned interpretation that directly connects environmental learning and behaviour change, research demonstrates highly variable behaviour change intentions and outcomes for visitors (Ardoin, Clark, & Kelsey, 2013; Ardoin & Heimlich, 2013; Dawson et al., 2010; Eijgelaar et al., 2010; Heimlich & Ardoin, 2008; Juvan & Dolnicar, 2014). Eijgelaar, Thaper and Peeters (2010) conducted a survey of 151 Arctic cruise tourists and found that while the three most important motivations for their trip related to "nature experience", "discovery" and "education" (p. 345), 59% of visitors did not feel that their travel impacted climate change and only 7% indicated that they would consider offsetting their emissions. Overall, their research found that people did not gain a greater awareness of climate change, nor did their attitudes about climate change and travel indicate any change (Eijgellar et al., 2010). This led them to conclude that "Nature-based tourism experiences and interpretation may lead to raised environmental knowledge and awareness, but seldom to an increase in pro-environmental attitudes and behaviour" (p. 347). However, Dawson et al.'s (2010) findings varied from Eijgellar et al.'s (2010), where they found that 48% of tourists would make behaviour changes at home after seeing polar bears, and 46% would be willing to pay a carbon travel tax in

addition to the airplane ticket to offset the environmental impacts of their travel. Research that explores the willingness of visitors to engage in behaviour change is highly variable and context specific, as the differences from Eijgellar et al.'s (2010) and Dawson et al.'s (2010) research demonstrates. Both of these studies were conducted in Arctic regions, during a similar timeframe, but demonstrated divergent findings. The research conducted by Dawson et al. (2010) found visitors more willing to make changes after viewing polar bears in comparison to Eijgellar et al.'s (2010) study which explored perceptions of cruise tourists. Some research suggests that wildlife tourism, especially when charismatic megafauna are the primary species observed, can be a particularly effective way for visitors to learn about conservation and other environmental issues (Ballantyne et al., 2007; Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011; Hughes et al., 2011; Higham & Bejder, 2008; Skibins, Powell, & Hallo, 2013). Indeed, studies that have found the most significant and promising results for facilitating visitors' behaviour change have all included wildlife viewing (Ballantyne & Packer, 2011; Ballantyne, Packer, Hughes, & Gill, 2018; Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011; Hughes et al., 2011; Wheaton, Ardoin, Hunt, Schuh, Kresse, Menke, & Durham, 2016). Research is needed that explores and compares different types of wildlife tourism to better understand how visitors learn about environmental issues such as climate change, and the ways in which they may or may not understand their personal responsibility in addressing these issues (Buckley, 2012; MacDonald et al., 2015; Scott, 2011).

Research demonstrates that nature-based tourism, and "free-choice learning venues, such as zoos, museums, and national parks, can serve as places to educate the public about the environment" (MacDonald et al., 2015, p. 130; Mann, Packer, &

Ballantyne, 2014; Tofield, Coll, Vyle, & Bolstad, 2003). Yet, research also shows that the effectiveness of nature-based tourism experiences in facilitating visitor learning and intentions or behaviour change is highly variable (Ardoin, Clark, & Kelsey, 2013; Dawson et al., 2010; Eijgellar et al., 2010; Heimlich & Ardoin, 2008).

Since the effects of climate change are pronounced in the Arctic this issue is particularly important for Canadian tourism destinations and more research is urgently needed to better inform and encourage best practices for local communities, governments, environmental education centres, and tourism industries (Dawson et al., 2010; Eijgellar et al., 2010; Kajan, & Saarinen, 2013; Liggett, McIntosh, Thompson, Gilbert, & Storey, 2011). Tourism research is needed which will help governments and destination communities "interpret climate change science and make appropriate decisions on the risks and opportunities" (Scott, 2011, p. 29). Scott (2011) argues that tourism researchers will need to ask the uncomfortable questions regarding climate change and sustainable tourism to further develop and engage creative solutions. Wildlife tourism can be a contentious issue, especially when ecologically sensitive places or threatened species are involved or when considering captive animals in zoos (Carr & Cohen, 2011; Dawson et al., 2010; Eijgellar et al., 2010; Lemelin, Dawson, Stewart, Maher, & Lueck, 2010; Mallinson, 2003; Packer & Ballantyne, 2012; Powell, Brownlee, Kellert, & Ham, 2012; Ryan & Saward, 2004; Saarinen, 2016; Tribe & Booth, 2003). As wildlife and nature-based tourism continues to rapidly increase in demand, tourism scholars will need to ask uncomfortable questions regarding the impacts of these experiences (Buckley, 2012; Kajan & Sarrinen, 2013; Saarinen, 2016; Scott, 2011).

In order to confront challenging questions and better inform the planning and management of nature-based tourism experiences, research is required to examine tourists' individual free-choice learning experiences of an environmentally sensitive original site and a replicated interpretive experience, with regard to how and why these experiences can impact attitudes and behaviours towards the environment, climate change, and sustainability (Ballantyne, Hughes, Packer, & Dierking, 2007; Falk et al., 2012; Powell & Ham, 2008). Additionally, prior research demonstrates that these questions need to be addressed within the context of place, perceptions of authenticity, and motivations as all of these variables are likely to influence learning and potential behaviour change (Falk, Heimlich, & Bronnenkant, 2008; Heimlich & Falk, 2009; Powell & Ham, 2008).

Purpose and research questions.

The purpose of my doctoral research was to explore how nature-based tourism experiences at an in situ and ex situ site may impact visitor learning and behaviour change. Specifically, my research has been guided by the following research questions: (1) How does an experience in Churchill, Manitoba (in situ) and at the Assiniboine Park Zoo's (APZ) Journey to Churchill Exhibit (ex situ) impact learning and behaviour change / transformative learning? (2) Additionally, what role does place (in situ versus ex situ) play in influencing the visitor experience, particularly in relation to learning and behaviour change / transformative learning?

To examine research question one, this research:

a) Explored and described the overall visitor experience at both in situ and ex situ sites.

b) Explored possible visitor learning, and how learning may change over time, for free-choice learning and transformative learning at both in situ and ex situ sites (within-site analysis).
c) Explored and explained possible connections between the Contextual Model of Learning and Transformative Learning Theory.

The purpose of first exploring and describing the visitor experience was to better understand the context of the case study and the range of possible visitor learning experiences. The research then sought to explore visitor learning and behaviour change both on-site and post-visit at both sites, as informed by the Contextual Model of Learning and Transformative Learning Theory. The goal of this research question was to provide a thick and rich description of the case studies, as well as to contribute to these prominent frameworks and theories in visitor and environmental learning literature.

To investigate research question two, this research:

a) Explored and described how perceptions of authenticity may influence how place affects the visitors' experience and learning at both in situ and ex situ sites.
b) Compared visitor experiences and learning, and how they may change over time, for visitor learning that is potentially transformative (including behaviour change), for both in situ and ex situ sites (across site-analysis).

Research question two focused on how the place itself informs this research. First, this included exploring and describing concepts related to authenticity, and how these conceptualizations inform the visitors' experience and learning at both sites. Next, by comparing visitor learning, in relation to free-choice and behaviour change

(transformative learning), this research question sought to inform how place and the conceptualization of authenticity influence the learning experience.

The broad goal of this research was to first inform the planning and management of, and research about, different nature-based tourism experiences to help practitioners and researchers think about what type of learning outcome they desire, and then to think critically about why they want to facilitate these different experiences. Secondly, this research contributes to the Contextual Model of Learning and Transformative Learning Theory by informing our understanding of visitor contexts and the learning dimensions and how these might align to better understand how different learning contexts and settings may inform different types of learning processes and outcomes. Thirdly, this research has investigated the role of place and how in situ and ex situ experiences may shape the visitor experience and influence the type of learning possible in those different contexts.

Visitor Learning: Definitions and Theories

Visitor learning.

When accounting for the total hours spent in school settings, it is estimated that the average person spends only about 3% of their lives in a formal education environment (Ballantyne & Packer, 2005; Falk & Dierking, 2002). This means that an enormous amount of what we learn comes from our own experiences, from our friends and families, and takes place in leisure contexts, including places that intentionally facilitate free-choice learning such as museums, zoos, aquariums and environmental education centres (Ballantyne & Packer, 2005; Falk & Dierking, 2002). The term free-choice learning is often used in visitor studies, to understand how visitors learn through their experiences.

Free-choice learning is distinct from non-formal learning or informal learning, in that the learner's motivation, choice, and control of their goals are central to understanding learning, rather than the particular setting or context (Falk et al., 2009).

> Falk and Dierking have long argued that terms such as informal, nonformal, and formal learning are problematic because they assume that the critical variable in learning is the educational setting or instructional approach rather than attributes of the learner; in particular these categorizations leave out the key variable of learner motivation and agency. (Falk et al., 2009, p. 14-5)

It is argued that this distinction assists with better understanding the learner's agenda, and therefore, free-choice learning has become the most widely accepted way to conceptualize learning in visitor or leisure contexts, especially for adults (Falk & Dierking, 2000; Falk et al., 2009).

Free-choice learning is understood to be a complex process that is individually created through different contexts of one's life that change over time in relation to different experiences and ways of understanding the world (Falk et al., 2012; Falk & Dierking, 2000). In this way, visitor learning is considered to be constructivist in nature. As this study sees visitor learning as a constructivist process and product, the learning theories and frameworks that inform this study are also grounded in constructivism. Specifically, the learning frameworks and theories that inform this study are the Contextual Model of Learning (CML) and Transformative Learning Theory (TLT). The CML provides a framework for understanding how the visitor experience is shaped through three different visitor-based contexts (personal, socio-cultural, and physical contexts), whereas TLT informs this study by providing a learning focused way of seeing

how visitor learning processes and outcomes are created through different learning dimensions (instrumental, communicative, introspective, and transformative). The CML and TLT will be discussed and described in greater detail, in the chapters that explore visitors' learning (Chapter 4 and 5).

Within this study the term learning is defined broadly and includes learning as process, outcome, and experience. More specifically, this research conceptualizes learning in tourism as per Van Winkle and Lagay's (2012) tourism learning research:

> Learning during tourism is an engaging process of exploring one's self, relationships, other people, cultures and places where reflection about the self, relationships, past experiences and differences between one's own experience that the experience of others forms the basis of a learning experience that allows people to confirm or disconfirm pre-existing knowledge by freely engaging in activities, with people and in spaces outside of the usual environment. (p. 350)

With this definition in mind, learning within this research is conceptualized as more than an outcome, and includes the processes and experiences that tourism learning affords. Additionally, as this research draws on free-choice learning and tourism literature, as well as Transformative Learning Theory literature primarily from natural resource management, the definitional use of 'learning' and 'transformative learning' can be confusing. Within the visitor studies and tourism literature, learning is often identified more specifically as free-choice learning (Ballantyne & Packer, 2005; Falk & Dierking, 2000; Falk, Ballantyne, Packer, & Benckendorff, 2012; Van Winkle & Lagay, 2012). The important feature of free-choice learning, the type of learning commonly found in tourism experiences, is that it includes an element of choice and control, where the visitor

can pick and choose what they wish to learn (Falk & Dierking, 2000; Falk et al., 2012; Van Winkle & Lagay, 2012).

Within this dissertation, transformative learning is often interchanged with behaviour change broadly, as this form of learning requires a form of behaviour change (Mezirow, 2012). This study will discuss Transformative Learning Theory in greater detail in Chapter 5, where it is recognized that the theory includes multiple dimensions which do not all result in behaviour change. Further, as will be discussed in Chapter 4, learning includes both processes and outcomes and can be conceptualized as occurring in a variety of both formal and free-choice contexts.

Constructivist Learning Theory and the Contextual Model of Learning. Constructivist learning theory is widely accepted as the theoretical foundation for free-choice learning (Ballantyne & Packer, 2005; Falk & Dierking, 2000). In general, constructivist learning theory conceptualizes learning as being constructed within personal, socio-cultural, and physical contexts that build upon one another over time (Falk & Dierking, 2000). The Contextual Model of Learning (CML) provides a framework for understanding this constructivist learning experience that takes place in free-choice contexts (Falk & Dierking, 2000). The CML builds on an earlier version of this model called the Interactive Experience Model, which first conceptualized learning as occurring within personal, physical, and socio-cultural contexts (Falk & Dierking, 2000). What makes the CML particularly relevant for free-choice settings is that it was originally conceived through both theory and lived experience with the intent of designing a model that would acknowledge the individual and social aspects of free-choice learning, and would recognize both prior learning and the fact that learning cannot be isolated in time (Falk & Dierking, 2000). Additionally, the CML conceives free-

choice learning as both an ongoing process (that can both decrease and increase over time) and a product, which has important implications for designing learning programs and evaluating their success (see Figure 1).

Specifically, the three contexts of free-choice learning within the CML include the following:

Personal context: motivation, expectations, prior knowledge, interests, beliefs, and elements of choice and control (Falk & Dierking, 2000).

Socio-cultural context: Within-group socio-cultural mediation and facilitated mediation by others (Falk & Dierking, 2000).

Physical context: Advance organizers and orientations, design, and reinforcing events and experiences outside the free-choice learning site (Falk & Dierking, 2000).

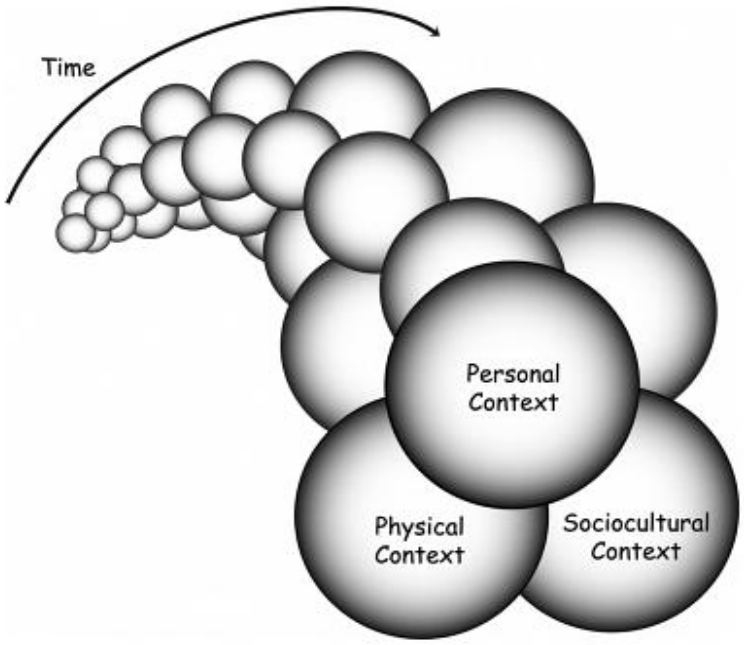


Figure 1. The Contextual Model of Learning (CML) as proposed by Falk and Dierking (2000, p. 12) demonstrates the interaction of personal, physical and socio-cultural

contexts over time for free-choice learning (Falk & Dierking, 2000). Learning from Museums: Visitor Experiences and the Making of Meaning ('the work') John H. Falk and Lynn D. Dierking Copyright © 2000. Used by permission of Rowman & Littlefield Publishing Group. All rights reserved.

Transformative Learning Theory.

In his seminal work, Mezirow (1991) describes how he identified the concept of transformative learning, through his wife's return to school to pursue an undergraduate degree. Theoretically, TLT described by Mezirow (1991) as being embedded in the "context of the insurgence of constructivism, critical theory, and deconstructivisim in social theory… and grows out of the cognitive revolution in psychology and psychotherapy" (p. xiii). The premise of transformative learning is that people can overcome "limited, distorted, and arbitrarily selective modes of perception and cognition through reflection on assumptions that formerly have been accepted uncritically" and that this is central to developing as an adult (Mezirow, 1991, p. 2). In conceptualizing learning, Mezirow (1991) credits Habermas as "mak[ing] a fundamental distinction between the dynamics of learning to control and manipulate the environment (instrumental learning - technical) and the dynamics of learning to understand others (communicative learning - practical). Habermas' understanding of learning was fundamental in Mezirow's (1991) definition of the domains of TLT: "In communicative learning, the learner actively and purposefully negotiates his or her way through a series of specific encounters by using language and gesture and anticipating the actions of others" (p. 79). It is Habermas' third domain of learning, emancipatory learning, which Mezirow (1991) identifies as the transformative process itself which is influenced by both instrumental and communicative learning. Initially, Mezirow (1991) refers to this domain

as emancipatory learning, as per Habermas, but eventually argues that the domain is more appropriately referred to as the transformative learning domain within this theoretical framework (Mezirow, 2012).

In general, transformative learning "is understood as the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one's experience as a guide to future action" (Mezirow, 2012, p. 74). This shift in understanding is conceptualized by Mezirow (2012) as occurring within an individual's meaning structures or frames of reference ("ways of interpreting experiences" p. 82) and their habit of mind ("orienting propositions that act as a filter for interpreting the meaning of experience" p. 83), and that these transformations of the mind can be both epochal or incremental. Specifically, the transformative learning process is conceptualized as follows:

1. A disorienting dilemma
2. Self-examination with feelings of guilt or shame
3. A critical assessment of epistemic, sociocultural, or psychic assumptions
4. Recognition that one's discontent and the process of transformation are shared and that others have negotiated a similar change
5. Exploration of options for new roles, relationships, and actions
6. Planning of a course of action
7. Acquisition of knowledge and skills for implementing one's plans
8. Provisional trying of new roles
9. Building of competence and self-confidence in new roles and relationships

> 10. A reintegration into one's life on the basis of conditions dictated by one's new perspective. (Mezirow, 1991, p. 169)

Additionally, in later work Mezirow (2008) highlights that there are two major elements of transformative learning theory: critical reflection and the ability to "participat[e] fully and freely in the dialectical discourse to validate a best reflective judgment" (p. 27). These elements are particularly relevant and important in thinking about this theory within the context of free-choice learning for sustainable behaviour change.

To elaborate, transformative learning theory commonly conceptualizes learning as occurring in three domains, which are not necessarily mutually exclusive, but are distinct:

Instrumental: "task-oriented problem solving to improve performance" (Mezirow, 2012, p. 77). Instrumental learning is often fact or skill-based learning.

Communicative: "what others mean when they communicate with you" and often includes "feelings, intentions, values, and moral issues" (Mezirow, 2012, p. 77).

Transformative: Learning that results in an altered behaviour due, in part, to a critical reflection or "disorienting dilemma" (Mezirow, 1991; 2012).

Visually, the domains of transformative learning have been conceptualized in a number of ways, but all of these models seek to demonstrate some form of interaction between domains and the possibility of instrumental and communicative learning leading to transformative learning (see Figure 2).

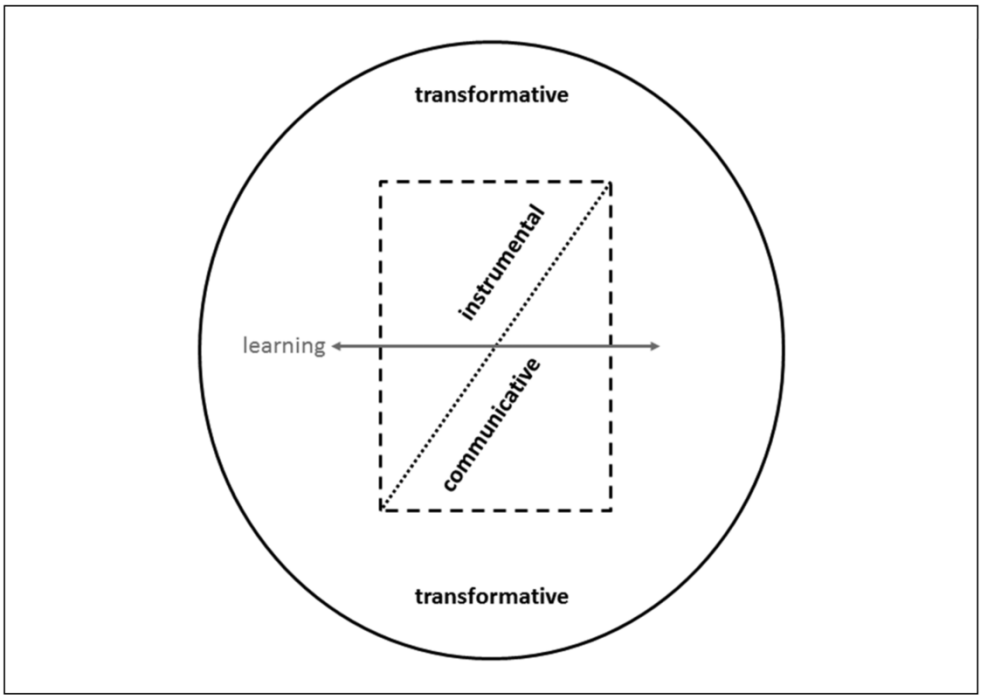


Figure 2. Transformative learning domains reconceptualized by Moyer and Sinclair (2016, p. 51). Used with permission © SAGE Publishing.

Research by Moyer and Sinclair (2016, p. 48) recently proposed adding another domain to TLT: Introspective learning.

> …introspective" domain comprises learning that is personal and internal, and that discovers, develops, and defines one's self-understanding in several areas: world views and beliefs (Vidal, 2008), values and attitudes (Dietz, Fitzgerald, & Shwom, 2005), personal identity and self-image, and faith, in terms of one's deepest commitment or "ultimate concern" (Fowler, 1981, p. 14). (p. 48)

Introspective learning as described by Moyer and Sinclair involves deep self-reflection (2016). They further point out that while introspective learning comprises a relatively small proportion of the data, the learning that is transformative is also introspective

(Moyer & Sinclair, 2016). They argue that since reflection is a key component of transformative learning, the introspective domain adds an important dimension to this learning theory. “TLT emphasizes reflection on world views, beliefs, and values, but from our perspective, the existing domains do not provide a clear space for such learning outcomes in a personal, internal fashion.” (Moyer & Sinclair, 2016, p. 48-49). This internal dimension is considered to be a potentially important part of self-reflection in the transformative learning process (Moyer & Sinclair, 2016). Here I suggest that first that the transformative learning model be reconceptualized to include introspective learning, and then that the model is reconfigured to recognize that learning in each domain may change depending on the context (Figure 3).

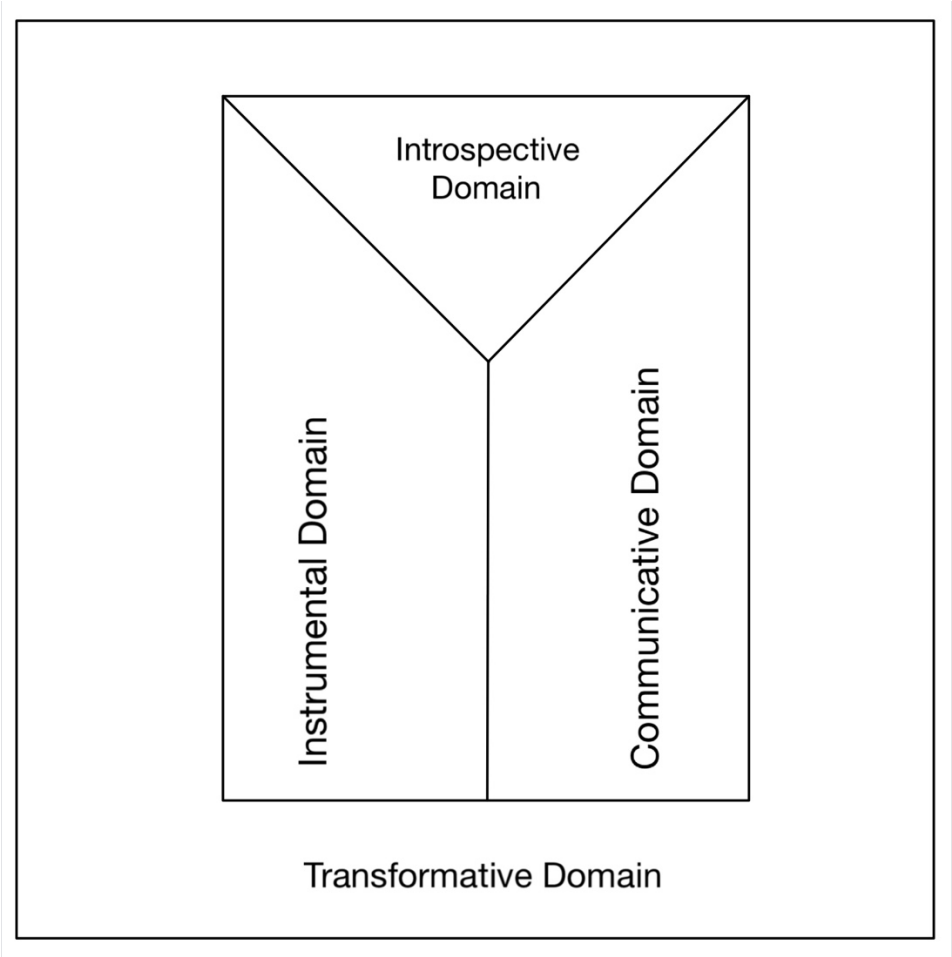


Figure 3. A reconceptualized model of the domains of Transformative Learning Theory, to include the introspective domain.

Epistemology and Research Alignment

With a master's degree in Recreation Management, my background is interdisciplinary. My master's research focused on providing practical information for informing how visitor learning can be expanded beyond the on-site visit to facilitate and encourage sustainable behaviour change. This previous research demonstrated the importance of mixed-methods and multi-methods research to me, in relation to understanding both visitor learning and the complex nature of behaviour change.

Quantitative research is important in understanding the extent and significance of a particular phenomenon. What quantitative research cannot tell us is *why* something is or is not happening. Moreover, it cannot tell us about any variables that are not directly evaluated in our surveys or questionnaires. For this reason, I do not believe that quantitative research can capture the full range of learning and behaviour change outcomes that are possible through visitor experiences. I found through my previous research, that I was interested in learning more about visitor learning and behaviour change in nature-based tourism contexts and that I needed to take a broader approach. For this reason, I chose to conduct this research qualitatively. My reasons for asking the research questions posed were, in part, to inform tourism experiences that have the potential to impact people and encourage them to think critically about the natural world around them. That being said, I do not think that all tourism experiences will be meaningful in this way. Some experiences may simply be a pleasant day out with friends and family. For this reason, I think it is important to understand the broad range of possible visitor learning outcomes and processes within different nature-based visitor contexts (such as in situ and ex situ sites). Broadly, the goal of this research was to better understand the types of learning possible at in situ and ex situ nature-based tourism experiences in order to inform practitioners and researchers in the planning and management of the experiences and learning they wish to facilitate.

The epistemology that informed this research is pragmatic. I had several purposes and objectives which did not all fit neatly within one theoretical perspective. While I ground my understanding of learning in constructivism as identified through the Contextual Model of Learning and Transformative Learning Theory, I do not consider

this to be the only way of looking at the world. Rather, I see that different epistemologies may inform our understanding at different times, and in different contexts. As stated above, I am interested in thinking about why practitioners want to plan for certain experiences and also in the theoretical implications of this research. Foremost, however, I want to contribute practically to this field and inform tourism experiences. In this way, my goals for this research align with my pragmatic perspective and interdisciplinary background, allowing me to effectively address my research questions (Creswell & Poth, 2018; Patton, 2002). Pragmatic research is not committed to any one philosophic view and instead focuses on the outcomes and finding "what works" to answer problems (Creswell, 2012, loc. 821; Patton, 2002).

The methodology and methods that I selected reflect this approach to my research. Patton (2002) states that "…Being pragmatic allows one to eschew methodological orthodoxy in favour of *methodological appropriateness* as the primary criterion for judging methodological quality, recognizing that different methods are appropriate for different situations" (Patton, 2002, p. 72). Reflective of this view of methodological appropriateness, I selected personal meaning mapping as the best way of collecting a breadth and depth of research about a visitor experience as quickly and enjoyably as possible at a visitor site. While this method was time consuming, it allowed for a participant driven approach to understanding free-choice learning and for a more complete understanding of learning change than surveys allow (Bueddefeld & Van Winkle, 2017; 2018). I paired this method with interviews and participant observations to gain a more complete understanding of the visitors' experience (Creswell, 2006; Hay, 2000). To be more critical of both my research and myself, I framed my work within the

context of "why does this matter" and examined my own biases and narrative through a journaling process.

In addition, the case study approach aligned well, methodologically, with the purpose of this research: to gain an "in-depth understanding of the case" (Creswell, 2012, loc. 2139). This research sought to better understand nature-based visitor learning in two specific cases: the in situ location of Churchill, Manitoba and the ex situ location of The Journey to Churchill Exhibit at the Assiniboine Park Zoo in Winnipeg, Manitoba. Using collective or multiple-site case studies permitted analysis both within and across cases, allowing me to compare visitor's individual learning both within each site, and then across sites broadly (Baxter, 2000; Creswell & Poth, 2018).

Analytically, both holistic and embedded analyses are appropriate for case studies (Creswell & Poth, 2018; Patton, 2002). Holistic analyses look at the data as an entire case, whereas embedded analyses look at the data for a "specific aspect of the case" (Creswell, 2012, loc. 2169). Embedded analyses can be both within cases and across cases for multi-site case studies where broader "*assertions"* about the data can be made (Creswell, 2012, loc. 2179). The breadth of these methods of analysis encouraged an in-depth understanding of the cases and questions, while embedding the analyses within their particular context (or case). This aligned with my pragmatic paradigm which sought to address the research in the most practical way to best understand the problem at hand. In this way, these methods of analysis were appropriate for the open-ended (inductive) comparative content analysis method of this research which explored visitor experiences and learning both within and across cases, as well as the deductive axial coding which

explored pre-determined learning dimensions and contexts both within and across the cases (Patton, 2002), which is known as a cross-case synthesis (Yin, 2014).

Methodology: Case Studies

A case study is used when a researcher wants to "develop an in-depth understanding of a single case or explore an issue or problem using the case as a specific illustration" (Creswell, 2012, loc. 2094). A case study can also be thought of as "an intensive study of a single unit for the purpose of understanding a larger class of (similar) units" (Gerring, 2004, p. 342). A case, then, is what is studied and must be bounded in some capacity conceptually, as the "unit of analysis" (Yin, 2014, p. 33), and is often bounded by time or place (Creswell & Poth, 2018). A case study can consist of one site or multiple sites and focuses on one bounded time or multiple time frames to analyze the data both within and across cases, as well as over time (Baxter, 2000; Creswell, 2012; Gerring, 2004; Yin, 2014). The purpose of case study research is broad and can be "explanatory, exploratory, and descriptive" in nature, depending on the purpose of the research questions (Creswell, 2012; Gerring, 2004; Yin, 2014) and seeks to ask "'how' or 'why' questions" (Yin, 2014, p. 11). As this research sought to better understand visitor experiences and learning in relation to learning and non-learning tours at an in situ and ex situ nature-based tourism experience, a multiple and longitudinal case study methodology was selected for this research (Creswell, 2012; Yin, 2014). As such, these case studies are bounded spatially as well as conceptually, in that they seek to only explore the visitors' experiences of polar bear tourism in two locations. The two case studies examined in this research are visitors' polar bear tourism experiences on tours (learning and non-learning), both in situ (Churchill, Manitoba) and ex situ (Assiniboine Park Zoo, Winnipeg,

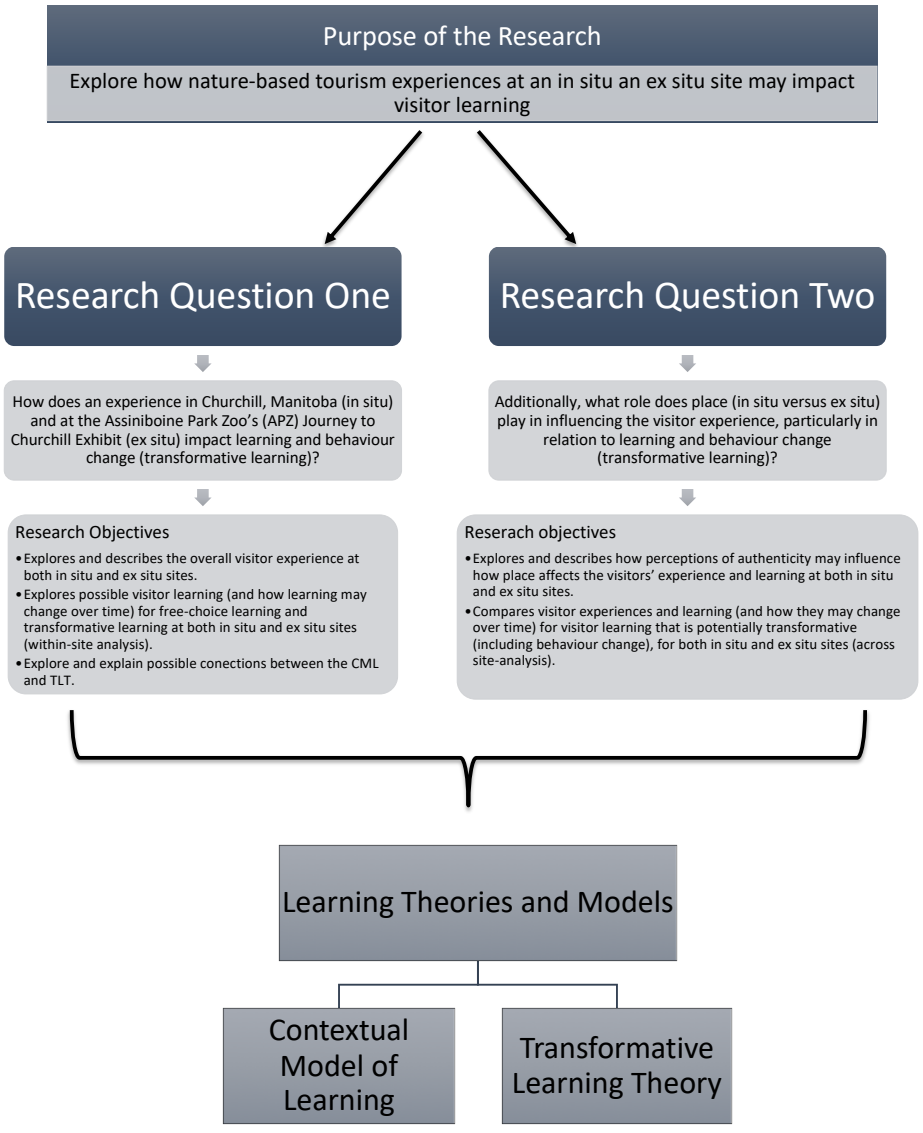
Manitoba). As the purpose of this research was to *compare* in situ and ex situ visitor experiences, the multiple case study approach was considered to be appropriate (Yin, 2014). This case study was also embedded as each case study site was further examined, comparing learning and non-learning based polar bear tourism experiences. The primary disadvantage with the multi-site and longitudinal method is that it is extremely labour intensive and time-consuming. It is not often a methodology recommended for a single researcher (Yin, 2014). The longitudinal aspect of this research was necessary in order to explore potentially transformative learning for both sites, as time for reflection is an essential component of Transformative Learning Theory (Mezirow, 2012). Additionally, previous research that explores tourism learning also found that time for reflection after the experience is an important part of visitor learning (Van Winkle & Lagay, 2012). For these reasons a longitudinal element was built into the study design.

This research was descriptive in the sense that the cases included thick and rich descriptions, and context was provided. It was exploratory in that different learning dimensions and visitor learning contexts were explored within and across the case study sites, and explanatory through potential analyses that included learning theory and visitor and place-based contexts.

To summarize, this research used a longitudinal comparative case study methodology, which involved multiple cases to understand a bounded system, phenomenon or place and how they change (or do not change) over time (Baxter, 2000; Creswell & Poth, 2018). The intention was that the case study, by using multiple cases or sites, would "provide an in-depth understanding of a case or cases" (Creswell, 2006, p. 78) and the longitudinal aspect would provide insight into understanding how visitor

experiences and learning may or not may change over time (Yin, 2014). The purpose of conducting a case study with multiple sites is usually to conduct an analysis both within and across sites, which this research did in relation to the in situ (Churchill, Manitoba) and the ex situ (the Journey to Churchill Exhibit) sites (Creswell & Poth, 2018; Yin, 2014). When multiple sites are selected for case study research the underlying logic is replication, or as it was in this case, that the sites are intended to be compared (Baxter, 2000; Creswell & Poth, 2018). Additionally, by comparing multiple sites and methods for data collection the case study methodology can be strengthened in terms of trustworthiness and credibility or dependability of the phenomena described (Yin, 2014). For geographers, case studies often also contain a spatial element, since geography is an appropriate field to explore "how phenomena may present very differently from one case to the next because of the place itself" (Baxter, 2000, p. 92). This research also sought to highlight the ability of longitudinal and comparative research to provide "opportunities to generate and modify concepts and theory so that they explain commonalities across cases *despite* contingencies or context" (Baxter, 2000, p. 92).

Figure 4 represents a visual schematic of the research design described above.


Purpose of the Research
Explore how nature-based tourism experiences at an in situ an ex situ site may impact visitor learning
Research Question One
Research Question Two
How does an experience in Churchill, Manitoba (in situ) and at the Assiniboine Park Zoo's (APZ) Journey to Churchill Exhibit (ex situ) impact learning and behaviour change (transformative learning)?
Additionally, what role does place (in situ versus ex situ) play in influencing the visitor experience, particularly in relation to learning and behaviour change (transformative learning)?
Research Objectives
•Explores and describes the overall visitor experience at both in situ and ex situ sites.
•Explores possible visitor learning (and how learning may change over time) for free-choice learning and transformative learning at both in situ and ex situ sites (within-site analysis).
•Explore and explain possible conections between the CML and TLT.
Reserach objectives
•Explores and describes how perceptions of authenticity may influence how place affects the visitors' experience and learning at both in situ and ex situ sites.
•Compares visitor experiences and learning (and how they may change over time) for visitor learning that is potentially transformative (including behaviour change), for both in situ and ex situ sites (across site-analysis).
Learning Theories and Models
Contextual Model of Learning
Transformative Learning Theory

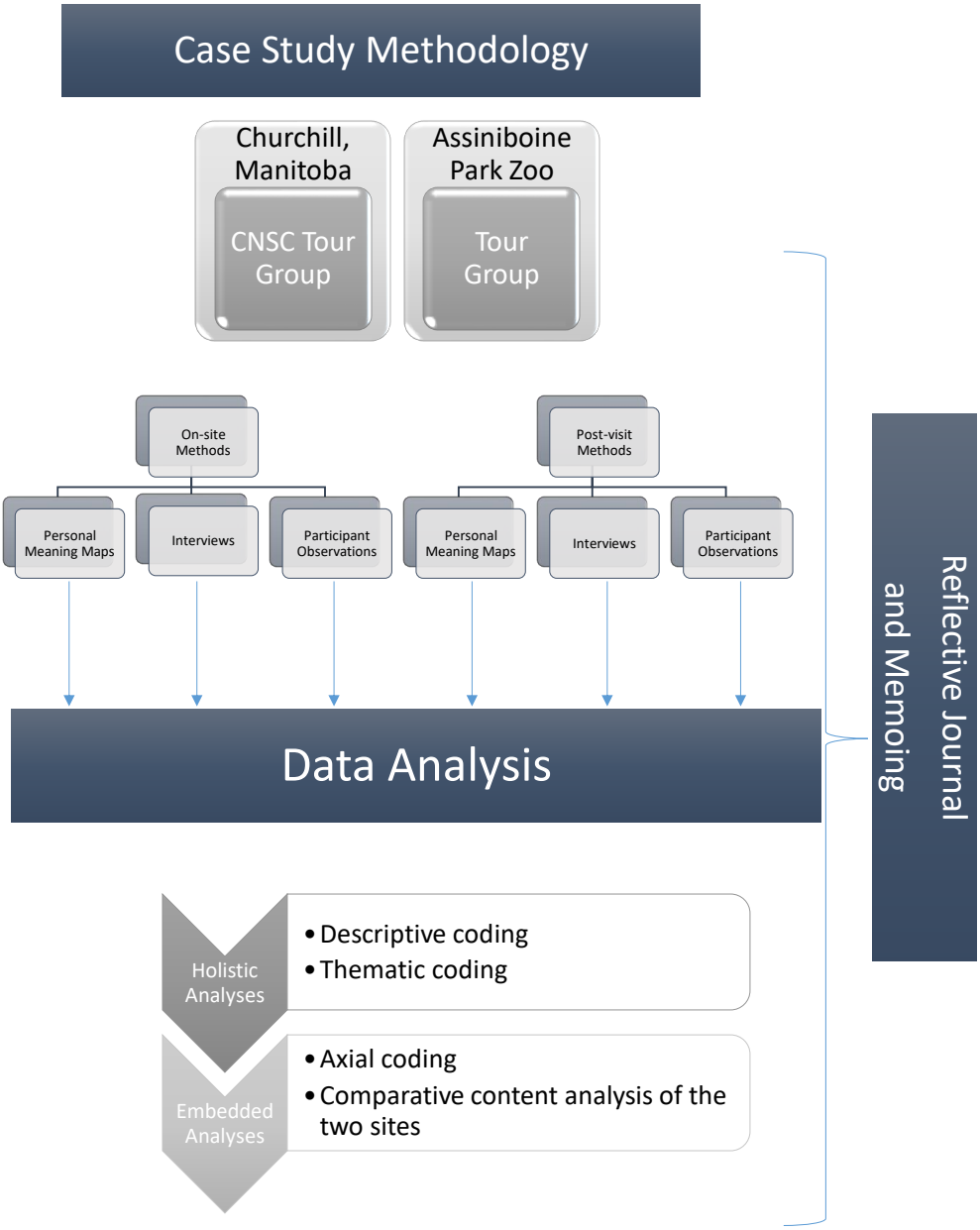


Figure 4. Schematic diagram of the research design.

Methods

Case study research can use a wide range of methods that can be either qualitative or quantitative and is generally open to using the methods that are most appropriate for gaining an in-depth understanding of the cases (Creswell & Poth, 2018; Gerring, 2004; Hay, 2000, Yin, 2014). To provide a general guideline, Creswell (2012) lists several methods that are often recommended in case study research, which include: "documents, archival records, interviews, direct observations, participant observation, and physical artifacts" (Creswell, 2012, loc. 2169).

By using multiple methods to explore visitor experiences on learning and non-learning tours at both sites, I gained a more complete understanding of these tourism encounters. More specifically, as the purpose of this research was to better understand visitor experiences (particularly learning), personal meaning maps (PMMs) were selected as one of the data collection tools. These provided a visitor driven way of understanding the experience, leading to a deep and rich set of data, including information about visitor learning (Bueddefeld & Van Winkle, 2018; Falk et al., 1998; Falk, Scott, Dierking, Rennie, & Jones, 2004; Van Winkle & Falk, 2015). However, it is also recognized that due to the open-ended nature of PMM, this tool alone does not ensure that all of the research questions are addressed in the data collection. For this reason, and to triangulate the data, a semi-structured open-ended interview was also conducted with all participants in order to gather their observations for all forms of polar bear tourism both in situ and ex situ. Participant observations were also included at each site for both learning tours and non-learning tours, to gain insight into the experiences and the potential for learning opportunities. Additionally, the researcher employed reflexive journaling throughout the data collection, as well as practiced memo writing during the analysis, to provide an audit

trail and as a method of self-reflection to address bias and enhance rigour (Richards, 2015; Yin, 2014). To ensure confidentiality, participants were assigned a pseudonym in the coding, analysis, and reporting of this data.

Personal Meaning Mapping.

Personal meaning maps (PMM) have been used in case studies as they provide a visitor driven method of data collection that can capture a broad range of outcomes and learning processes (through the on-site and follow-up process) to better understand the visitor experience and potential learning outcomes about a place or topic (Bowker & Jasper, 2007; Falk & Dierking, 2000; Falk, Moussouri, & Coulson, 1998). They are used in visitor settings or with diverse audiences, including children, as they have been found to be efficient and enjoyable in comparison to traditional survey-based methods (Bowker & Jasper, 2007; James & Bixler, 2008; Van Winkle & Falk, 2015). PMMs were originally created in order to measure free-choice learning about a topic (Falk et al., 1998). First used in museum settings, PMMs have been adapted to other visitor contexts such as zoos, aquariums, environmental education centres, parks, protected areas and heritage and cultural sites (Falk & Dierking, 2000). Within these different contexts PMMs have been used to study: conservation knowledge, attitudes, and behaviours (Adelman, Falk, & James, 2000), nano-technology teaching (Blonder, 2010), children's environmental learning (Bowker & Jasper, 2007), visitor learning in science centres (Falk & Storksdieck, 2005; Falk & Storksdieck, 2010), zoo and aquarium learning (Bueddefeld & Van Winkle, 2017, 2018; Falk, Reinhard, Vernon, Bronnenkant, Heimlich, & Deans, 2007; Moussouri & Roussos, 2013), bone science in children's learning (James & Bixler, 2008), environmental attitudes (Storksdieck, Ellenbogen, & Heimlich, 2005), cultural

tourism experiences (Stylianou-Lambert, 2011), festival and performing arts experiences (Van Winkle & Bueddefeld, 2016; Van Winkle & Falk, 2015), and visitor experiences at museums and science centres (Falk & Storksdieck, 2005; 2010; Falk et al., 2004).

Previous research (Falk & Storksdieck, 2005; 2010; Falk et al., 2004; Storksdieck, Ellenbogen, & Heimlich, 2005) has used PMMs to understand visitor experiences in relation to particular interactive exhibits at museums and visitor experiences broadly at performing arts festivals and found PMM to be an effective method for understanding an array of visitor experiences and learning (Van Winkle & Bueddefeld, 2017, 2018; Van Winkle & Falk, 2015). Specifically, Falk and Storksdieck (2010) used PMMs in museums and science centres to study both learning and visitor experiences in relation to interactive exhibits by using the prompt word "museum" or "science centre" and then asked participants to explain what they thought when they heard those words. The study demonstrated the role of context in which visitor learning experiences take place (notably, the data collection took place on-site at a museum and science centre) and also how PMM can be used to understand both learning and visitor experiences.

Additionally, James and Bixler (2008) found that PMM was an effective method for addressing participants' prior knowledge and the possibility of a 'ceiling effect'; the open-ended nature of PMMs allow for detection of changes in learning where high levels of prior knowledge exist, which would not be possible with a traditional test or questionnaire approach (Bueddefeld & Van Winkle, 2018; Stern et al., 2014). PMM can also be used in collecting data from people with limited English language abilities (as they can draw images) and is suitable for people with disabilities (Van Winkle & Falk, 2015). Van Winkle and Falk (2015) conducted a PMM with a person who had a physical

disability which prevented this person from writing – the researcher simply offered to write for the participant and the PMM was completed without difficulty. In the process of this data collection, the ability for participants to draw was particularly useful for a few participants' who either preferred to draw or, if their first language was not English, were searching for a way to explain their experience.

Finally, in relation to unique contributions of this research, PMMs can be analyzed both qualitatively and quantitatively; however, few studies have analyzed PMMs exclusively qualitatively and more research utilizing this flexible method is required (Adams, Falk, & Dierking, 2003; Bowker & Jasper, 2007; Falk et al., 2004; Van Winkle & Bueddefeld, 2016).

Visitors tend to put a good deal of effort into their personal meaning maps and describing them to the researcher, however, not all visitors will put in the same effort to describe their responses and not all experiences are deeply meaningful or informative. Therefore, researchers occasionally pair personal meaning maps with interview questions in order to obtain both visitor-driven data and data related to specific research questions (Falk & Storksdieck, 2005; 2010; Falk et al., 2004; Van Winkle & Bueddefeld, 2017, 2018). As well, interview questions provide a way to ensure that specific research questions are addressed and provide context for the visitor experience by collecting information on data known to affect visitor experiences such as motivations for visiting and demographic information (such as age and with whom they are visiting).

In practice PMM is a brainstorming process where participants are given a blank piece of paper with a prompt word or phrase written on the middle of the page. They are asked to write or draw any words, phrases, or images that relate to their understanding

about the prompt word topic or experience, and then are encouraged to connect the things they write or draw with a line to show if they think concepts are related. Participants are told that there is no right or wrong way to do this activity and that they can take as much time as they need and let the researcher know when they are finished. How much time spent on a PMM depends upon the individual completing the PMM and how much time they perceive they have. Most participants take several minutes to work on their PMM. The researcher then takes a different coloured pen, to distinguish between prompted and unprompted responses, and asks the participant about what they wrote and also makes sure they can read everything. Questions are asked to clarify and probe the participant's responses, such as: "What does this word say?" or "I see you wrote 'polar bears' and connected it to 'sea-ice', can you tell me what you mean by that?". The probing questions depend on the context. For example, when asking visitors about their festival experience the researcher might ask: "I see you drew a child with a kite. Can you explain why you drew that?" and if the participant responds by saying that they like kites, the researcher can probe further and ask "So, do you just like kites, or how was this a part of your festival experience?". The participant may then reply that it is nothing more than liking kites, or they may explain how they have early childhood memories of coming to the festival and flying kites, and that those memories are a part of how they see and experience the festival. In PMM probing the initial questions will be as general as possible, to encourage the participant to respond in the context that they feel is relevant to understanding the topic or experience. Additional probing questions, however, can be asked if clarity is needed either to get a better understanding of the experience or of how a visitor constructs meaning about a topic.

Using the outlined process, the researcher will probe about each item written or drawn on the PMM. Further follow-up occurs by asking the participant to take a few moments to think about their PMM and whether they would like to make any additions or changes to their PMM based on their understanding about the topic or experience now. The process then follows the same format as previously described as different colours of ink are used to signify participant content and researcher probing.

In terms of the selection of the prompt phrase, it is recommended in the literature, and through my own prior research and pilot testing, that the broader a prompt word/phrase is, the better (Bueddefeld & Van Winkle, 2017, 2018; Falk & Storksdieck, 2010). In pilot testing for previous studies (Bueddefeld & Van Winkle, 2017, 2018), a more specific prompt word (e.g. "Polar Bears" instead of "Climate Change" or "Assiniboine Park Zoo") significantly narrowed the range of participant responses, and visitors heavily self-edited; they believed that certain responses were not appropriate when, in fact, they may have been informative to the study.

The purposes, then, of using PMM over other methods of data collection in visitor settings are to: a) provide a means of collecting data about an experience or topic from the visitor' perspective, b) collect a wealth of data about a broad range of topics or experiences in a relatively short time period, c) allow for a more enjoyable form of data collection over traditional methods (Bueddefeld & Van Winkle, 2017, 2018; Van Winkle & Falk, 2015).

From the researcher's perspective, being able to understand the visitors' perspective was important to this study, as the research questions sought to understand how visitors made meaning about their experiences in relation to the two sites. From the

participants' perspective, being able to collect the data quickly and efficiently (and even enjoyably) was very important when data collection had to happen on site and visitors' leisure time was disrupted (an important detail when trying to recruit participants). On-site data collection can be difficult, and needs to be completed quickly, and the idea of brainstorming seems to appeal to visitors more so than surveys, based on previous response rates of PMM research conducted at the Assiniboine Park Zoo (Bueddefeld & Van Winkle, 2017, 2018). Additionally, previous research conducted by Bueddefeld and Van Winkle (2017, 2018) demonstrated that post-visit follow-up attrition rates (11%) were lower for visitors who participated in PMMs versus for visitors who participated in questionnaires only (37%), which suggests that PMMs may be more engaging and an effective method for research that requires follow-up data collection.

In this research, the data generated by the PMM allowed the researcher to understand the learning process, the overall experience, and helped to answer research question one, sub-questions (a) and (b), which were intended to understand visitor experiences and learning within each site (with the effect of time). PMM is a particularly effective method for understanding visitor learning, as it encourages participants to record an open-ended understanding of a prompt word or phrase. This open-ended approach tends to create a detailed description of one's understanding of any concept, which can then be expanded upon through researcher clarification and probing. The follow-up process of the PMM serves to trigger participant's memories from their earlier responses and allows the researcher to see what aspects of their experience and learning have changed. Thus, through the open-ended recorded responses and the researcher probing, the learning process and products can be generated, described, and recorded

directly from the participant, rather than directed by the researcher. For example, previous research using PMMs at the Assiniboine Park Zoo used the prompt word "Journey to Churchill". Visitors included comments on their personal meaning maps such as "joy" or "awe" and then described how these emotions made them feel compassion for the bears and concern for their existence in relation to climate change. As demonstrated by this example, the PMM is a tool that can create a deep and rich data set, where the data are driven by the visitor.

As part of the PMM process after the visitor has finished their initial response to the prompt word or phrase, the researcher probes each item on the map for additional detail and understanding. For example, when a participant wrote joy in the research described above, the researcher asked "I see you wrote 'joy'. Can you explain what you mean by that, or why you wrote it?", and "I see you wrote 'awe' and connect it to 'polar bear'. Can you explain why you drew a line to connect these words?". In this example, the participant provided a response that demonstrated their emotional connection to a specific animal at the zoo, and then extended this emotion to include concern for polar bears in general, and how they are affected by climate change. This can then be followed-up in the post-visit PMM as well where the researcher asks if they want to add anything or change anything in relation to their personal meaning map. Here, if the participant writes something in addition to climate change (for example, "a reduction in sea ice is preventing the bears from getting enough food") the researcher can ask why they added this, or even where they heard this information, which may tell the researcher if new information has been learned and where or how this information was obtained. This example is intended to describe why this researcher felt that personal meaning maps were

the best method available for understanding the visitor experience from their own perspective. However, it is recognized that even with the probing questions that sometimes participants may not be able to answer the researcher's questions. For example, if the participant is asked why they wrote "joy" and they respond with "seeing the polar bears made me feel happy", that elaboration does not provide much insight into how the visitor may connect concepts or learn, but rather just provides an elaboration of the content that they have already written.

This PMM data also helped to answer research question two, sub-questions (a) in terms of exploring perceptions of authenticity, and (b) in comparing learning changes over time at each site. PMM data provided context for, and insight into, how visitors understand and make sense of their experience, which was valuable in understanding how learning processes and outcomes may or may not be similar in in situ and ex situ settings.

Interviews.

When undertaking case study research, it is often recommended that multiple methods of data collection be used to better understand the case study in question (Creswell, 2012; Creswell & Poth, 2018; Yin, 2014). Interviews are used as a method of data collection when the researcher wants to "investigate complex behaviours and motivations… to collect a diversity of meaning, opinion, and experiences" (Dunn, 2000, p. 102). Additionally, they have been found to be effective in previous research that explored transformative learning (Moyer & Sinclair, 2016; Quinn & Sinclair, 2016) and learning in free-choice contexts (Bueddefeld & Van Winkle, 2017, 2018; Van Winkle & Lagay, 2012). For these reasons, interviews were used in addition to PMMs to explore the complex nature of visitors' experiences and potential transformative learning. The

intent was that the open-ended semi-structured interview questions would allow the researcher to ask detailed questions to address the research questions that may not have come up in the PMMs (Dunn, 2000; Kvale, 2007). The interview guide was informed by previous research whenever possible, and by previous researcher experience in collecting data about visitor experiences and learning (Falk et al., 2004; Falk et al., 2008; Falk & Storksdieck, 2005, 2010; Marseille et al., 2012; Moyer & Sinclair, 2016; Wheeler Weins, 2011).

Interview questions were asked about visitor characteristics including demographics (age and place of residence) and who the visitor was with (such as family and friends), the motivation for their visit, interest in the content or topics, prior visits to the site, expectations for the visit, and their overall on-site experience (Falk et al., 2004; Falk & Storksdieck, 2010; Marseille et al., 2012). These questions helped provide context for understanding the visitors' experience and were selected based on previous research indicating they are important in understanding visitor experiences, motivation, and learning (Falk, 2011a; Falk et al. 2012; Falk & Storksdieck, 2010; Dawson & Jensen, 2011; Schultz & Joordens, 2014). In addition, participants were asked specific questions about learning, as well as broad questions relating to the visitors' understanding of how the site contributed to their understanding of the content / topics. A general question about behaviour change was asked to determine if there were any instances of a new action that they had implemented (transformative learning). Finally, questions about the site itself and visitors' perceptions of it (as well as the other site that they were not visiting), and their perception of wildlife observed, were included (Falk et al., 2004; Falk et al., 2008; Falk & Storksdieck, 2005, 2010; Marseille et al., 2012). This helped to gain

an understanding of the visitors' perspectives of the place that they were visiting and how they saw the wildlife at these different places. The interview questions addressed research question one, sub-question (a) in providing relevant context regarding demographics, motivation, interests, and prior experiences. The interview questions about visitor learning and possible behaviour change, also helped to address research question one, sub-questions (b) and (c), which sought to explore and explain within-group learning and behaviour change (transformative learning). Research question two, sub-question (a) was addressed by the place-based interview questions, which explored visitor's perceptions of authenticity and sense of place. The interview questions about learning also contributed to research question two, sub-question (b), which sought to explore and explain between-group learning and behaviour change (transformative learning).

Observations.

Participant observations were conducted at both sites for both organized learning tours and non-learning tour polar bear tourism experiences. Participant observations are observations "whereby a case study researcher becomes involved in the activities of the case being studied" (Yin, 2014, p. 240; Creswell, 2012; Kearns, 2000). The purpose of conducting observations, according to Kearns (2000) is to either count, or to provide complimentary evidence or context for the research. In this study, the purpose of the observations was to provide complimentary evidence and a contextual understanding of the case studies (Kearns, 2000).

In Churchill, participant observations were selected instead of direct observations because of the close proximity of the researcher to the participants on the polar bear tours. The majority of polar bear tours took place on Tundra Buggies, where one spends

approximately 8 hours per day with a group of 20 – 40 people. Within this close proximity, I felt it was inappropriate to act as a direct observer (where the researcher does not participate and simply observes), sitting off to the side and taking notes (Kearns, 2000). I believed this would have made the tourists self-conscious of their behaviour and potentially uncomfortable on their holidays. It was not possible, however, to be completely a participant observer (in acting as an equal participant) at the Churchill Northern Studies Centre (CNSC), where I and several of the learning tour groups had our accommodations. Since polar bear season is only approximately six weeks long, seats on a tundra buggy and other activities were at a premium, and as a researcher I was not given the same priority as a paying customer. This was often apparent to the guests (e.g. I was only able to participate in activities when there was an extra spot available) and if I was not coming along on an activity, like the helicopter rides, they were quick to ask why this was so. I believed it was more appropriate to be transparent with the visitors about the fact that I was a researcher and that I would be participating in some aspects of the tour when space and time allowed (Kearns, 2000).

Upon meeting a group of visitors where I would be conducting an observation, I introduced myself, briefly described my research as per my ethics protocol, and encouraged any visitors to let me or a staff member know if they felt uncomfortable with my presence. I also ensured that my business cards were available for any visitors involved in a tour or experience that I observed, and I stated clearly that they were welcome to voice any concerns via email or request a copy of the findings. I further explained that I was there to observe the experience as a participant and would not be taking notes or later noting anything that could be personally identifying (Kearns, 2000).

I also stated at this time that I was grateful for the opportunity to be here for my doctoral research and that I would make every effort to ensure that my research did not interfere with their experience. For example, if there was a polar bear nearby, I first offered my seat to any of the paying visitors to ensure they had the best views and opportunities to see and photograph the polar bears before I would. This meant giving up my seat or my place on the back deck of the tundra buggies to those looking for a better view. The buggies were quite crowded, and I believe this small act often endeared me to the visitors. Similarly, during tours at the zoo, I introduced myself to the tour group as per my research protocol and ensured that I was not in the way of any visitors. There were no concerns voiced by visitors during or after any of the participant observations.

As soon as possible after the participant observations, in a private space, I would record my observations. This was often difficult at the CNSC as I sometimes shared a room with other visitors and had to request private space or seek it out in other areas of the research centre. These observations were recorded on paper and were not transcribed due to the volume of the interviews and PMMs in this study. While this is a limitation of this study, as electronic records in NVivo would be preferable, the paper copies were also analyzed as part of this data set and in many instances, provided valuable context and understanding of the visitors' on-site experiences. For example, through these participant observations I was able to ascertain what the guides and interpreters said (and did not say) and compare this with responses from the participants. During the learning group tours, I was invited to participate in the evening lectures, where it was common for visitors to take notes. Here, I was able to take notes while the guide was speaking, and

this provided me with a valuable record of what was explained to the visitors in terms of polar bear science and climate change.

I was also able to *feel* what some of these experiences were like. For example, I could not understand why the guide at the CNSC claimed that a helicopter ride was important to understand the "scale of the Arctic". However, when I later went up in a helicopter (which happened by chance at the airport when they had to make a test run) and saw the area from that aerial view, as well as the polar bears sleeping either in groups or alone, it was impossible not to feel how vast the region is and how insurmountable it would feel to survive in that climate. For me, this experience is what made me feel the vastness of this region of the Arctic. It was, in fact, a quintessential experience in shaping my perspective of the region.

Reflexive journal and memo writing.

I kept a reflexive journal throughout the data collection, analysis and generally throughout this research process. Reflexive researcher journals are intended to add context to the research and provide the researcher a way of addressing her own biases both through the journaling process and reading the reflections as part of the analysis (Creswell & Poth, 2018; Richards, 2015; Yin, 2014). The journal included a chronology of what happened each day while collecting data, and personal reflections and thoughts about what happened both within and external to the research process (such as what worked well, what did not, and why I thought this was so). The journaling exercise also provided opportunities to make note of occurrences that I thought would be important (e.g. a discussion about climate change and how that impacts life in Churchill), which may not have been mentioned by any participants, thereby potentially capturing not only

what was discussed by participants but what was not discussed. In general, the journal was intended to provide another way of seeing the data through a personal and reflexive lens (Creswell & Poth, 2018; Yin, 2014). The journal was maintained daily during the data collection process to also provide an audit trail for my emergent coding and thought process, and as way to address and make known my own biases within this research (Richards, 2015).

I also practiced memo writing throughout the data analysis to create a detailed audit trail of the data analysis process (Richards, 2015; Yin, 2014). Memo writing during data analysis consisted of keeping brief notes, called memos, in NVivo during the coding and analysis process (Richards, 2015). These were stored by linking the memos directly to the content and also in a NVivo folder labelled memos. This process is similar to journaling in that it provides a written chronology of events and insight into the research coding and analysis process (Richards, 2015).

Conclusion

This chapter described the purpose of my research, the research questions, and outlined the theoretical framework and constructive alignment of the methodology and methods selected for this research. This dissertation follows a hybrid thesis model. Following a more traditional dissertation structure, the data collection methods and methods of analysis will be described in greater detail in Chapter 2. Chapter 3 will follow a case study structure (Yin, 2014) and open with a vignette to provide context, and the rest of the chapter will provide further detail regarding the case study sites and justification for the selection of these particular sites. Chapters 4-6 have been written as journal articles. When appropriate, each chapter will open with a vignette. To reduce

redundancy, elaboration on specific definitions and bodies of literature related to the chapter will be provided in Chapters 4 and 5.

To conclude this chapter, the purpose of this dissertation and my research trajectory will be briefly discussed. Within this dissertation I will explore how nature-based tourism experiences at an in situ and ex situ site impact visitor learning and behaviour change (transformative learning). The conceptualization of this study is based on future recommendations from my master's research (Bueddefeld & Van Winkle, 2017, 2018), where I found that visitors to a zoo had the potential to experience meaningful learning and were able to translate their learning into sustainable behaviour change. However, what made that mixed-methods study particularly interesting was that the behaviour changes were demonstrated, not by the survey methods that were used (Bueddefeld & Van Winkle, 2017, 2018), but rather through the qualitative personal meaning map and interview data. The behaviour changes noted were not the items listed on the survey and hence were not picked up through that methodology. With this in mind, I have designed this qualitative research to explore and to help better understand the ways in which visitors can engage with learning about the natural world and environmental issues, and potentially translate that learning into a wide array of meaningful outcomes.

First, I will lay a foundation for understanding this research project, methodology and methods, as well as the case study sites. Next, this research will add to the literature on free-choice learning and transformative learning in that it will add to the understanding of the learning domains and contexts that are possible in in situ and ex situ nature-based tourism experiences. This research will demonstrate the importance of visitor identity related motivations for facilitating in situ and ex situ visitor learning and

behaviour change. Next, the comparative analysis will provide insight into the differences of transformative learning for in situ and ex situ visitors, illustrating some important distinctions between epochal and incremental transformative learning outcomes. After analyzing the learning data in detail for the contexts of the CML and the domains of TLT I will provide a model which illustrates how these divergent fields of learning literature overlap and collectively better inform visitor learning. Finally, I will explore visitor's place attachment, sense of place and perceptions of authenticity in relation to their experiences and learning. Here, I will introduce a critical analysis of how authenticity narratives are constructed in polar bear tourism and discuss the implications of using polar bears as climate change ambassadors in tourism.

Chapter 2: Data Collection and Analyses

A case study methodology was used to explore how learning may vary for visitors both across and within two nature-based tourism sites. The data collection methods used in this research included personal meaning maps, open-ended interviews, and participant observations. The data collection took place in two phases (longitudinal case study) at two sites (comparative case study) to explore how learning processes and outcomes may change over time, as it is recognized that certain types of learning (for example, transformative learning) may require some time to elapse in order for reflection and critical discourse to occur. This chapter will discuss the data collection and analysis methods in detail.

Data Collection

To address my research questions and better understand the nature-based tourism experiences from the visitor perspective this research used personal meaning maps (PMMs), semi-structured interview questions, participant observations, and a reflexive researcher journal and memo writing. To account for the effect that place (both in situ and ex situ) may have on visitor experiences, PMMs, open-ended interviews, and observations were conducted on-site for both locations. To explore how experiences may potentially lead to learning and / or behaviour change (transformative learning), follow-up PMMs and interviews were conducted with all participants 2 – 3 months after the on-site data collection, as it is recognized that visitor experiences and learning can require time for reflection and critical discourse.

Study sites.

This research occurred at two sites: Churchill, Manitoba and the Assiniboine Park Zoo's Journey to Churchill exhibit. Broadly, these sites provided an interesting context in which to study visitor learning about environmental issues, since issues such as climate change and its consequences are most pronounced in ecologically sensitive polar regions (Ballantyne & Packer, 2005; Dawson et al., 2010; Falk et al., 2012). In tourism research, ecologically sensitive places are considered to be excellent platforms for educating visitors about environmental issues and potentially facilitating learning for behaviour change (Dawson et al., 2010; Powell & Ham, 2008). Beginning with heritage sites, it has been suggested that ex situ sites may serve as alternatives for in situ places that are particularly at risk.

> More controversially, it has been suggested that interpretation could act to preserve especially fragile sites through substitution. In this case, interpretation could provide some alternative experiences and activities for visitors, allowing them some understanding of a built heritage site without them having to be actually at the site. (Moscardo, 1996, p. 379)

Similarly, zoos are increasingly recognized as potentially important sites of learning about the natural world and environmental issues (Falk et al., 2008; Frost, 2011; Skibins et al., 2013; Yocco, Bruskotter, Wilson, & Heimlich, 2015). An abundance of both nature-based tourism learning and zoo tourism learning literature exists, but there is very little research that compares these two experiences (Packer & Ballantyne, 2006; Skibins et al., 2013; Uddin, 2015).

With this in mind these sites were selected because they are exemplary in situ and ex situ sites for comparison. An extensive search of in situ and ex situ sites was conducted, and there were no other locations found that feature such well-matched in situ and ex situ site comparison opportunities. For example, major zoos tend to create exhibits that are meant to broadly replicate ecosystems or general places. An excellent example of this is the Bronx Zoo's "Congo Gorilla Forest" (Wildlife Conservation Society, 2019). While the Congo Gorilla Forest features gorillas and representations of ecosystems similar to what may be found in the Democratic Republic of the Congo, it does not intentionally replicate a *specific* place. After an extensive search that included live animals in any sort of ex situ site (the search included zoos, aquariums, and major environmental education centres and animal refuges/rehabilitation centres), there were no ex situ sites found that featured intentionally replicated places and also featured animals directly linked to conservation and climate change messaging. Since this research is primarily concerned with exploring the ways in which nature-based tourism can potentially influence free-choice and transformative learning, a clear linkage between the primary animals involved in the tourism viewing and climate change or conservation issues was a necessary prerequisite. Examining two sites with reasonably similar content (both experiences focus on polar bears and potentially engage visitors in various forms of learning that may be intentionally or unintentionally transformative) helped make the effects for place more pronounced and the variability of other factors (such as different topics and content) less pronounced. There is very little research that examines visitor experiences and learning at in situ and ex situ nature-based tourism sites (Packer & Ballantyne, 2012; Skibins et al., 2013; Uddin, 2015), and none where the ex situ site

intentionally represents not just the wildlife and ecosystems, but also the town-site and human dimensions of a specific in situ location. Therefore, this research will help fulfil the need to better understand how visitor experiences at in situ and ex situ sites may vary. The Journey to Churchill exhibit provides an exemplary ex situ site, because it is intended to represent the *town* of Churchill as well as the wildlife and ecosystems found near Churchill, Manitoba. In this way, the in situ and ex situ sites selected provided the optimum field conditions to conduct a comparative case study of in situ and ex situ nature-based tourism learning experiences.

Data collection process and sample.

In total, 30 participants were sought to participate in this research from both the Assiniboine Park Zoo and in Churchill, Manitoba, resulting in 60 participants in total. Of the 30 participants from each site, 15 had participated in an organized learning tour at the site. The purpose of this sub-sample was to explore the range of learning processes and outcomes possible, both from general experiences and from guided experiences. In this case, the Assiniboine Park Zoo offered "Signature Canadian Experiences", an in-depth tour with a zookeeper through the Journey to Churchill Exhibit. In the case of Churchill, Manitoba, the Churchill Northern Studies Centre offered learning vacations, where visitors engaged in a week-long tour with a scientist to watch and learn about polar bears in the Arctic. These experiences may have offered more specific learning opportunities and were therefore purposefully sampled within the broader project to account for the variation of possible visitor learning experiences. To summarize, this research sought 30 participants at the Assiniboine Park Zoo (of whom 15 had participated in a guided tour), and 30 participants in Churchill, Manitoba (of whom 15 had participated in a learning

tour). In this way, the sample was both purposeful and random. It was purposeful in selecting from those who had taken part in specific tours, where I asked broadly for any visitors willing to participate in my research. It was random, when I sampled non-tour participants. There, I approached every 3rd visitor within a space (e.g. the cafeteria at the Assiniboine Park Zoo, the airport in Churchill, or the train station in Churchill).

Attrition rates for the follow-up interview were anticipated to be approximately 10-30%, which was projected to result in a total of 20-25 participants (per site) completing both the on-site and the follow-up aspect of the research (Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011; 2013; Hughes, Packer, & Ballantyne, 2011). Participants were asked to complete a PMM lasting approximately 15 minutes and open-ended semi-structured interview lasting 15 minutes (approximately 30 minutes in total). For qualitative research, there is no set gold standard for sample size, therefore, the sample size was determined based on recommendations for previous PMM and interview research (Bueddefeld & Van Winkle, 2018; Van Winkle & Falk, 2015) and projected attrition rates for the follow-up data collection. Kvale (2007) recommends that as a general guideline "In common interview studies, the amount of interviews tends to be around 15 ± 10. This number may be due to a combination of the time and resources available for the investigation and a law of diminishing returns." (p. 44). Using this numerical range, I was aiming for approximately 8-10 participants in each group (tour and non-tour) for both Churchill and the Assiniboine Park Zoo, anticipating attrition rates of approximately 30%. This would result in approximately 16-20 interviews per case study (in situ and ex situ). I chose a number slightly on the high side, taking into account the projected length of the PMM and interview, and the fact that it may be difficult to get

visitors to participate in the full study. From my own previous research, it was apparent that the time to complete the PMM and interviews can be highly variable within the zoo context. In that study the time for an on-site, non-tour visitor at the Assiniboine Park Zoo to complete a similar PMM and interview ranged from approximately 10 minutes to 45 minutes (Bueddefeld, Van Winkle, & Benbow, 2018). Both the PMM and subsequent probing questions as well as the length of time and depth of the interview are determined by the participant. Therefore, given the variable and somewhat uncontrollable timeframe, I determined the maximum number of interviews that could realistically be transcribed and analyzed by a single researcher within the recommended boundaries for interview methods. Additionally, the goal with a large sample size was to ensure that time and resources had been allocated to reach saturation.

As this research intended to add to both free-choice learning and Transformative Learning Theory, I planned to use a grounded theory approach to analyzing some of this data. When using a grounded theory approach, according to Creswell (2006), saturation is reached when "I no longer find new information that leads to my understanding of that category" (p. 240). Since transcribing would take place after the two weeks of intensive data collection in Churchill, it would have been difficult to know when saturation had been reached, thus oversampling was deemed preferable to under-sampling. Furthermore, since this research was exploratory, I was interested in interviewing a wide range of participants and this sample size ensured that I would interview polar bear tourists of all kinds (both tour and non-tour), as well as those who took a flight versus the train to Churchill. Given these objectives my goal, in the end, was to have approximately 15-20 participants for Churchill and for the Assiniboine Park Zoo, completing an on-site PMM

interview of approximately 15-30 minutes and a follow-up PMM interview of 30-45 minutes, for a total of 1 hour per participant. While this number was certainly ambitious, again, I intentionally over sampled since transcription and ongoing analysis was not possible and I could not assume saturation had been reached earlier.

Prior to the commencement of the research, participants were informed of the full nature of the study, including the time requirements involved for both the on-site and follow-up data collection. Follow-up interviews took place via video calling whenever possible, or by phone or Skype depending on the participants' preference. Visitors in Churchill were recruited during polar bear tourism season (November 3 – 17, 2016) in Churchill, Manitoba. Approximately 15 visitors were recruited at the Churchill airport in the common public waiting area. As there are limited flights departing Churchill, I would get the daily flight roster and would interview participants while they were waiting for their flight with minimal disruption to their vacation. I was interested in collecting data post-visit, in part because I was most interested in what visitors felt they had immediately learned after their on-site experience, and how this may have changed over time. This approach was also considered more logistically feasible, as visitors who are just arriving are typically eager to begin their holiday or their visit to the zoo and I believed this would reduce the amount and quality of interviews. Approaching visitors waiting for their flight or train to depart, allowed me to collect data in a way that minimized the inconvenience to their holiday, while still conducting the research on-site, when their experiences remained fresh in their minds. Whenever possible, I approached every 3rd group of visitors, introduced myself and asked if one person from the group would be willing to participate. I used this randomized approach to minimize sampling bias, however, when

there were very few people in the sampling area, I used the 'continual ask' technique to approach visitors, which in this case, consisted of systematically asking all visitors in the seating area (selecting one person per group) to participate in the research (Falk, Reinhard, Vernon, Bronnenkant, Heimlich, & Deans, 2007). With this method, if a visitor declines to participate, the researcher asks the next immediate group. Purposeful sampling was used at times, if different visitor demographics were needed. For example, if only visitors without children at the zoo were agreeing to participate, I specifically approached families to capture a breadth of visitor experiences. Only visitors over the age of 18 were asked to participate in the research, as Transformative Learning Theory pertains to adults. As the interviews were conducted in English, visitors needed to have sufficient verbal English language skills to participate in the research. Since the airport is a public place, I offered to sit in a less crowded part of the airport if the participants were uncomfortable conducting the research in the public space. I would reserve a table or chair that was out of the way (off to one side of the airport or train station) in an attempt to maximize privacy.

For those participating in the learning vacation at Churchill Northern Studies Centre visitors were approached during the last few days of the "Lords of the Arctic: The Ecology of Hudson Bay's Polar Bears" Tour which took place during Nov. 3 – Nov. 10 or Nov. 10 – Nov. 17, 2016. There were approximately 36 participants on each tour, and all were asked, during their week of the tour, if they would like to participate in the study. I indicated that 15 were needed to participate in the study, and the first 15 to agree to participate would be included in the sample – provided no purposeful demographic sampling was needed. The data collection for this group took place at the Churchill

Northern Studies Centre (CNSC) as both the participants and the researcher had their accommodations there. In addition, it would not have been possible to conduct 15 PMM interviews in the 2-hour waiting period at the airport. At the CNSC, participants could be interviewed at their convenience, most often during unscheduled time in the evening, since the CNSC is 20 kilometers from the town of Churchill and people cannot walk outside in the evening due to the risk of encountering polar bears. This allowed ample time for data collection. There are several private rooms at the Churchill Northern Studies Centre and the researcher arranged a private space available for the PMM interviews, or conducted the interview in a location of the participant's choosing (e.g. there are several seating areas as well as a large cafeteria that was comfortable and offered a degree of privacy).

Upon arrival at the CNSC, I learned that there was another learning specific tour group and several volunteer tourists, staying at the centre during my data collection, so I also approached these learning-focused visitors as part of my sub-sample of learning tour participants. The CNSC recruits several volunteers to help with tasks like cooking and cleaning during the polar bear tourism season each year. Volunteers have to apply almost a year in advance and the application process is rigorous and competitive. The volunteers who come to the CNSC during this time are assured they will get to go on at least two full day tundra buggy excursions and are allowed to attend all evening lectures that the tour groups get to attend, once their duties are done for the day. The volunteers then often act as tourists in this setting and use their volunteer experience as an opportunity to afford what would otherwise be a prohibitively expensive trip. My interest in including the volunteers was twofold. First, I was interested in gaining perspectives from all types of

tourists. Secondly, I had been in contact with the Assiniboine Park Zoo and knew that Signature Experience (learning) tours at the zoo were infrequently booked. The zoo staff had offered to run a volunteer tour during my data collection time frame, if there were not enough learning tours offered during this time. Knowing that I may need to interview some volunteers at the zoo, in order to gain some insight into zoo learning tours – it was deemed advantageous to interview a few volunteers in Churchill as well, to ensure I had some comparable volunteer-based data at both sites.

For the data collection at the Assiniboine Park Zoo, adult visitors were approached in the Tundra Grill and at the main entrance / exit to the Journey to Churchill exhibit. Previous research demonstrated that this is a logistically sound location to recruit participants as both of these locations offer a single entrance / exit point that can be easily monitored (Bueddefeld, Van Winkle, & Benbow, 2018). It also provided a location in which to conduct the on-site PMM interview in relative privacy. There were usually several tables available in the Tundra Grill, or the option of the play area or outside picnic tables, pending weather. Data collection at the Assiniboine Park Zoo took place on all days of the week (including alternating weekends), during regular operating hours (9:00 – 5:00 p.m.), for approximately 2 weeks or until the required sample size had been obtained (and after scheduled tours). The last PMM interview took place a minimum of 45 minutes prior to closing time. The same recruitment strategies for approaching visitors was followed. If someone in a group agreed to participate and the group had children with them, the researcher offered to do the data collection in the indoor play area beside the Tundra Grill. Previous research (Protocol #: J2014:140) found this to be an effective strategy as there was a place to sit with the participants while they could still supervise

their children playing (Bueddefeld, Benbow, & Van Winkle, 2018). For the sub-sample of participants on a learning specific tour, all tour participants were approached at the end of their tour and asked if they were willing to participate in the research.

Phase 1: On-site data collection methods.

On-site PMMs were used to collect visitor experiences and learning data. Participants were provided with a piece of paper with the words 'Journey to Churchill' or 'Churchill, Manitoba' in the centre of the page (this prompt depended on the location of the data collection) and were then asked to 'write or draw any relevant words, images, or phrases that relate to your understanding of your experience here'. Once participants had indicated that they had written or drawn all of the concepts that they felt were related to the topic, they were asked to elaborate on what was drawn/written and notes were made directly on the map (in a different colour of ink). Once participants felt they had finished their PMM, probing questions were asked by the researcher. The purpose of the PMM data collection was to provide data that could answer research question one, and specifically address the sub-questions (a) and (b), which sought to explore visitor experiences and learning broadly. Additionally, depending on the data provided by participants the PMM data could also address research question two, sub-question (a), which explored authenticity and differences between the in situ and ex situ site in relation to visitor experiences and learning.

The on-site PMM interviews were projected to last approximately 15-30 minutes (based on previous research), were conducted with all participants and were audio-recorded for later transcription. Previous research guided the PMM interviews, both in terms of PMM methods and the specific interview questions (Falk et al., 1998; Falk et al.,

2004; Falk et al., 2008; Falk & Storksdieck, 2005, 2010; Marseille et al., 2012; Moyer, 2012; Wheeler Weins, 2011). See Appendix A at the end of this document to see an example of a PMM from a published study and Appendix B for an example of a PMM from this research. See Appendix C for the full interview guide with references to specific interview questions from previous studies that informed this interview guide.

After the PMM was complete, an open-ended semi-structured interview was conducted to understand visitor characteristics, demographics, learning, perceptions of authenticity and sense of place constructs (see Appendix C for the complete interview guide). The open-ended interview questions were modified according to the PMM responses. For example, if motivations had already been clearly discussed in detail through the PMM process, the visitor was not asked about this again. When this occurred, I would verbally state the interview question, describe the PMM response that I felt covered this topic and then asked the participant if that was an accurate response to the interview question, or not.

Phase 2: Post-visit data collection methods.

Two to three months after the on-site data collection, all participants were emailed a copy of their PMM and were called, either via Skype for a video or audio call, for the follow-up interview regarding the PMM they had completed (this was also audio recorded for transcription). Collecting data from the same individuals at a later point in time is referred to as a longitudinal case study approach (Baxter, 2000). The purpose of a longitudinal case study approach is to allow the researcher to "address what may be considered the enduring versus the ephemeral by exploring the robustness of the original concepts and explanations (theory)" (Baxter, 2000, p. 91). In this way, the follow-up

research can determine if the understanding of the visitor experience and learning has remained the same or changed over time. For this reason, many of the follow-up interview questions followed the same or a similar format to the on-site interview. Questions relating to the PMM followed the same format as the first PMM and asked participants to make any changes to their PMM they wished and to discuss their PMM. The purpose of the follow-up PMM data collection was to provide data that could answer research question one and sub-questions (b) and (c), which explored and explained possible within-site learning processes and outcomes, and how they changed over time. The follow-up PMM data also addressed research question two (sub-question (b)), which compared on-site and post-visit learning processes and outcomes across sites. Research demonstrates that some forms of learning require time in order to become meaningful to people and in the case of transformative learning, time may be required for critical reflection and rational discourse to take place (Mezirow, 1991, 2012; Van Winkle & Lagay, 2012). Additionally, depending on the data provided by participants the PMM data could also address research question two, sub-question (a), which explored concepts in relation to perceptions of authenticity and the sites of the visitor experiences and learning.

Upon completion of the follow-up PMM, participants were interviewed about what they wrote, to facilitate a deep understanding of concepts and ideas (Falk et al., 1998). Open-ended questions were guided by previous research whenever available and were intended to probe further into visitor motivations, interests, post-visit experiences, learning, and place-based constructions of meaning. For example, the researcher asked: "*Have you returned or been to any other similar places since your visit when we spoke*

last?" and ‘‘*Looking back, what do you think you took away from your experience*?’’ See Appendix C for the full interview guide. All participants were sent a copy of their final written transcripts for their approval and to allow them to provide the researcher with feedback if anything was inaccurate or they were uncomfortable with any part of the PMM interview.

Data Analyses

An open-ended, conventional and directed content analysis was conducted to examine pre- and post-visit PMM interview responses for both groups to examine within and between group differences (Bowker & Jasper, 2007; Falk & Storksdieck, 2005; 2010; Hsieh & Shannon, 2005; Kvale, 2007; Richards, 2015). A conventional content analysis consists of creating coding themes that have emerged from the data, and a directed content analysis codes data according to codes based on pre-existing theory (Hsieh & Shannon, 2005; Richards, 2015). These distinctions between types of content analysis are important, as they are often conflated with summative content analysis, which includes counting concepts or content of some sort and is usually quantitative in nature (Hsieh & Shannon, 2005). More specifically, this research used both holistic and embedded analyses to look first at the distinct case study sites (holistic analysis), and then at the data as a whole to look for learning across cases (embedded analysis) (Creswell, 2012). The between group analysis examined the impact of place, while the within group analysis examined effects of personal attributes, such as sense of place, perception of authenticity, motivation and interests, on visitors' learning or transformative learning.

All interview data was first transcribed and added to NVivo software in order to organize the coding and analytic process. PMMs were scanned and added to the data set

in NVivo, where the PMMs could be coded directly by highlighting content on the digital PMM. In this way the visual aspect of the PMM was not lost through the use of NVivo software. The observation data was not added to the NVivo project as it was hand-written in a notebook and not conducive to scanning and coding using computer software. This data was analyzed and incorporated separately.

The data analysis began as holistic and explored each case study individually. The purpose of this analysis was to understand the visitor experience broadly and the possible learning processes and outcomes, which addresses research question 1, sub-questions (a) and (b), and research question 2(a). Then the embedded analysis compared sites and looked for learning across sites to address research question 1(b) and (c).

In more detail, to address research question 1(a) and (b) and research question 2 (a), the researcher conducted inductive (or emergent) coding of both the PMM and interview data (Patton, 2002). This consisted first of descriptive categories, then the researcher looked for common classifications of the data, and finally for emergent patterns and themes in the researcher's interpretation of the data (Creswell, 2012; Richards, 2015). An evolving codebook was maintained throughout the coding process which provided examples (and definitions when appropriate) of coding categories and themes as they evolved. The in vivo descriptive categories began as many broad descriptions and gradually became more detailed and specific in relation to the coding definition and interpretation, as the level of analysis changed from description, to classification, and finally to looking for interpretive patterns and themes within the data (Cope, 2000). In qualitative research, themes "are broad units for information that consist of several codes aggregated to form a common idea" (Creswell, 2012, loc. 3556). In

coding for themes, several things suggested to look for are: “conditions; interactions among actors; strategies and tactics; and consequences” (Cope, 2000, p. 288). For example, thematic conditions in this research included looking at both cases and their physical context, and interactions could include interactions between visitors and groups of people visiting together. In this way the researcher sought to understand, from the visitor’s perspective, what their experience meant to them both through the PMM and interview data.

Interview questions were coded first for each question. Each interview question had its own layer of coding so that nodes of data could be compared (for example, one node would be one question, which allowed the interviewer to quickly see all of the responses for that particular interview question). These forms of coding could also be applied to sets of questions. For example, all questions that related to motivation and demographic questions could be coded in blue, and all questions relating to learning could be coded in green, allowing the questions to be easily identified as collective groups for comparison and analysis. Next, the researcher coded examples of instrumental, communicative, introspective, and transformative learning as well as different forms of free-choice learning (to address research question 1(b)). Then the researcher coded examples of data that related to the Contextual Model of Learning and the three visitor contexts (personal, socio-cultural, and physical). The inductive and deductive sets of coding categories were then compared both within and across data collection sites to look for place-based differences and similarities (to address research question 1(c)). Additionally, the researcher could then look for overlap between learning outcomes that the researcher believed may be similar. For example, did instances of learning in the

personal context align with examples of instrumental learning? If they were not similar, in what ways were they different and which visitor learning contexts did these learning outcomes/processes fit within? To illustrate, a visitor may have described a new fact about climate change that they had learned from their child. This would then be an example of communicative learning that took place within the socio-cultural context. In this way different patterns of transformative learning domains may become visible as being related to certain learning contexts.

Through these coding processes the emergent (inductive) coding sought to address research question one (a) and (b) to better understand the visitor experience broadly and to look for themes within the data that provided context and a deep understanding of how visitors experienced both sites (see Chapter 4 for a discussion of these findings). The research journal was used to provide context and reflect on researcher bias, as well as to look for "silences" or what was unsaid. The journaling and memo writing process also served to maintain a chronology of events during the data collection process, and an audit trail to follow the logic of the researcher during the coding process (Richards, 2015). The deductive coding helped to understand how possible free-choice learning outcomes related to transformative learning dimensions (research question 1(b)), and secondly how free-choice learning contexts may have related to transformative learning dimensions (research question 1(c)). To address research question 2(a) and (b), additional comparative holistic analyses compared the two sites to look for the effect that place had on visitor experiences and learning as well as investigated the change in responses over time (the longitudinal aspect of the research).

Trustworthiness and Credibility

In qualitative research dependability and confirmability is sought rather than reliability, as reliability is a quantitative term that suggests that data are consistent (Baxter, 2000; Creswell, 2012; Cresswell & Poth, 2018). Similarly, validity is also not typically an appropriate term in qualitative research as it suggests that there is an absolute or valid point which can be achieved. Qualitative research calls the idea of finding this "truth" trustworthiness or credibility. To encourage the trustworthiness or credibility of a case study "triangulation of data sources, methods, and investigators" is recommended (Creswell, 2012, loc. 4555). The data sources were triangulated in this study by collecting data from participants by using PMMs, interviews, observations, and through the reflexive researcher journal. Yin (2014) uses the terms construct validity, internal validity, external validity, and reliability to judge the quality of case study research. Using this language, the use of multiple sources of evidence (or data) as well as the establishment of a chain of evidence (or an audit trail) are ways to address construct validity (Yin, 2014). Internal validity is addressed through pattern matching, building explanations, addressing rival explanations, and using logic models (Yin, 2014). Replication logic is employed in multiple case studies to address external validity; in this case, using on-site and post-visit data helped to either confirm or question data provided regarding the visitor experience and learning, and using the multi-site data allowed me to determine if theoretical findings were transferable or not (Yin, 2014). Reliability is addressed through a well-documented study protocol and by developing a case study database or record (which was established through NVivo) (Yin, 2014).

Another way of ensuring dependability and confirmability is an audit trail, which can be kept through memo writing or daily coding activities in NVivo, as well as by

maintaining a researcher journal (Creswell, 2012; Creswell & Poth, 2018; Richards, 2015). Other ways to address trustworthiness of the data is to address researcher biases and include member checking. Member checking involves obtaining participant feedback in order to "solicit[s] participants' views of the credibility of the findings and interpretations" (Creswell & Poth, 2018, p. 261). Within this research member checking took place at two different times, first when the participants were sent a copy of their PMM to review prior to the follow-up interview, and then a second time when a copy of the transcripts were emailed to the participants. Participants were asked if they felt that the interview was accurate and reflected what they had intended to say. They were also encouraged to ask any questions or provide further comments at this stage. Member checking is considered to be the most important technique for establishing credibility (Patton, 2002). This research addressed researcher biases through the reflexive journal kept throughout the research and by laying open her own agenda and thought processes throughout the research. Member checking occurred through the probing process for the PMMs and by sending the participants their transcripts after the interviews to check them for accuracy and ensure that the participants felt the interview reflected their opinions.

While qualitative case study research is not statistically generalizable, it can be analytically (theoretically) transferable depending on the topic and content (Baxter, 2000). For example, generalizations cannot be made about one nature-based tourism site that will apply to all others, but contributions to theory can be made as certain principles learned from an in-depth analysis can be applied to better understand certain experiences or phenomena. When qualitative case study research seeks transferability, descriptions must be thick and rich in detail (Creswell, 2012; Creswell & Poth, 2018). "Thick

description means that the researcher provides details when describing a case or when writing about a theme" (Creswell & Poth, 2018, p. 263). Details provided need to be sufficient for the reader to understand the interconnectedness of the descriptions and can "…emerge through physical description, movement description, and activity description" (Creswell & Poth, 2018, p. 263). This research attempted to provide a thick and rich description of both the context, the data, and the analytic process.

In relation to the methods, PMM is designed to emphasize dependability over credibility as the method seeks to get at visitors' understanding about a topic or experience and to look at how that understanding changes over time (Adams et al., 2003). Over the course of the past two decades of research using PMM, there is arguably face validity in PMM as a method. Face validity refers to the idea that the data or, in this case, the research tool, makes sense to those using it. In other words, "On the face of it, is the report believable? Are the data reasonable? Do the results connect to how people understand the world?" (Patton, 2002, p. 561). In this way, PMM offers face validity to the research, in that the data is directly generated and driven by the participant. The follow-up aspect of the PMM research also incorporates a built-in form of member checking, as discussed earlier.

For interviews, there are several ways that a researcher can enhance trustworthiness in their data. The first is that the transcribed interviews should be carefully recorded and transcribed, and then re-checked by the researcher for accuracy (Cresswell & Poth, 2018; Dunn, 2000; Kvale, 2007). Secondly, transcribed interviews should be sent back to the participants to ensure accuracy of the transcript and that the participant feels that what they said is reflective of their views. Finally, as a graduate

student researcher, our work is reviewed by our advisor(s) and committee members who act as an additional layer of source checking. In these ways I have endeavoured to enhance dependability and trustworthiness of the data that I have collected and the analyses that I have conducted, and to ensure the overall quality of this research.

Chapter 3: The Case Studies

Introduction

For context, I have provided a brief description of the study sites in Chapter 2. This chapter will now elaborate on the case studies in Churchill, Manitoba and at the Assiniboine Park Zoo, in Winnipeg Manitoba. The intent is to provide a profile as well as an overview of the organizations involved in polar bear tourism at each site. The profiles will include a discussion regarding the historical context of polar bear tourism at each site, and an overview of tourism operators and potential learning experiences offered at both sites. Vignettes that feature both a learning tour and non-learning tour, based upon my participant observations, will also be provided within this chapter. Further, the case study profiles will also include insight into government involvement in creating opportunities and space for polar bear tourism to occur at each site. In relation to the research questions, this chapter addresses research question 1(a), which explored and described the overall visitor experience at both in situ and ex situ sites.

In Situ: Churchill, Manitoba

Churchill, Manitoba is located a little more than 1000 kilometers north of Winnipeg, Manitoba and has a current population of approximately 1000 people (see Figure 5) (Town of Churchill, 2016). Known as the "polar bear capital of the world", Churchill, claims to be the best place in the world to have a close encounter with polar bears (Dawson et al., 2010; Lemelin, 2006; Town of Churchill, 2018).

Figure 5. Map of Manitoba in relation to Canada, showing the location of Churchill and the Journey to Churchill exhibit in Winnipeg (Travel Manitoba, 2014).

Humans have occupied the area as early as 4000 years ago, with first the pre-Dorest, then Dorest and Inuit people (Travel Manitoba, 2014). Inuit, Cree, and Dene people used the Churchill River and surrounding area as part of a well-developed trading route, long before Henry Hudson, the first European, came to the region in 1670 and established what is today called the Hudson's Bay Company (Travel Manitoba, 2014). While the Hudson's Bay Co. was founded out of York Factory, it utilized the Churchill River and area as part of its primary trading route (Manitoba Historical Society, 2019d; Travel Manitoba, 2014). The first military establishments in the area were Fort Churchill in 1717, and then the Prince of Whales Fort in 1731. The Prince of Whales Fort was eventually overthrown, by the French, and was operated for a short time by the Hudson's

Bay Company until it was eventually abandoned (Manitoba Historical Society, 2019d; Travel Manitoba, 2014).

After a seaport and the rail-line were established in the 1920s, Churchill became part of a larger trading route for the Hudson's Bay Company and an important location to ship grain from the prairies (Travel Manitoba, 2014; Town of Churchill, 2016). Infrastructure was further developed in the 1940s and 1950s as the military base became more established (Town of Churchill, 2016). The 1982 National Geographic documentary *Polar Bear Alert!* is credited with bringing the town of Churchill fame, as it depicted polar bears as aggressive "man-eaters", featured interviews with locals who had been attacked by polar bears, and told the harrowing tale of living in a northern frontier town (Mooallem, 2013, p. 30). The very first Tundra Bus style vehicle was created for the filming of this documentary, and the airing of the series prompted the first wave of tourists seeking to interact and photograph the ferocious beasts they had seen on television (Mooallem, 2013).

Churchill soon became a popular place to view polar bears and its success in this respect was due in large part to the accessibility afforded by pre-existing infrastructure, namely, the railroad, built for shipping wheat to the port, and the airport, built to support the military. With this in place, Churchill was able to become a prime location for polar bear tourism. It is described by Travel Manitoba (2014) as being "located on the edge of the Arctic, (offering) the feel of a frontier town with the amenities of an international tourist destination". Churchill appeals to a broad tourism audience and has had visitation rates of around 8000 visitors per season (Dawson et al., 2010, p. 322). It has been selected as the in situ site of this research, as it provides opportunities for nature-based

tourism - specifically polar bear tourism - in a setting that has the necessary modern infrastructure and amenities in place to appeal to a mass tourism audience.

The town of Churchill is marketed as the 'polar bear capital of the world' and has become world renowned as the best place to see and experience polar bears in close proximity. This species is of particular interest as the polar bear is often the 'poster child' for climate change. Therefore, nature-based tourism in Churchill provides a unique opportunity to understand how tourism experiences may or may not impact learning, particularly in relation to learning that leads to critical thinking and a change in one's actions (in this case in relation to climate change and sustainability).

A short history of Churchill and polar bear tourism.

To better understand the context of the relationship between polar bear tourism and the town of Churchill, it is worth noting some events influencing the area's economy over the past 300 years. The Hudson's Bay Company established Churchill River Post as a major fur trading center in 1670 and the Prince of Whales Fort, as it was named in 1719, functioned as such until its abandonment in 1782 (Gilmore, 2016; Manitoba Historical Society, 2019b; Travel Manitoba, 2014). Subsequently another fort was built a short way up the river and the fortunes of Churchill fluctuated with those of the fur trade over the next 120 years (Manitoba Historical Society, 2019d). After World War I, and with the rise in the importance of western agriculture, a grain shipping port was proposed for the shore of the Hudson Bay and ultimately Churchill was decided upon as the site (Manitoba Historical Society, 2019d). With this came the construction of the railway, which was slowly completed by 1929 (Manitoba Historical Society, 2019d).

In 1942, the United States Military, with the permission of the Canadian government, constructed a military air base and corresponding infrastructure, Fort Churchill, (Manitoba Historical Society, 2019b) which became the present-day Churchill Airport. In 1956 the Churchill Rocket Research Range was constructed for the International Geophysical Year (IGY), a program which lasted only until 1958. The Research Range was reopened a year later due to interest from atmospheric scientists from the National Resource Council and the Canadian Upper Atmosphere Research Program (Manitoba Historical Society, 2019a) but this program was also abandoned in 1970 and the Rocket Range was closed. It was designated a historic site (Manitoba Historical Society, 2019a) and is currently the location of the Churchill Northern Studies Centre. In addition, a Royal Canadian Navy base, HMCS Churchill, was established in 1950 to serve as a research station and signals intelligence station, but was abandoned in 1968 (Manitoba Historical Society, 2019c). It was then, in the 1970s, after the most recent Naval base and Rocket Range closures, that polar bear tourism began to develop as an alternative economic activity for what was now the small, but fully established town and community of Churchill, Manitoba (Nelitz, Wedeles, Lemelin, Beardmore, & Abraham, 2015). At this point, the Churchill Wildlife Management Area (CWMA) had not yet been formed; it was only in 1978 that the CWMA was established by the Government of Manitoba in order "to protect polar bear staging and denning areas, nesting grounds for geese, and habitat for caribou" (Nelitz et al., 2015, p. 7). In 1998 a "large portion of the CWMA, including Cape Churchill, was transferred from the Government of Manitoba to the Government of Canada and Wapusk National Park was formed" (Nelitz et al., 2015, p. 7). This historical context of the creation of parks for

polar bear tourism is important to note, as these governmental processes created official space for polar bear tourism and subsequently restricted and regulated access to the areas for locals. This has certainly had an impact on the polar bear tourism industry and created points of tension among operators who have unequal access to the CWMA.

Due to its remote location Churchill, Manitoba is somewhat difficult and expensive to access (see Figure 5); visitors have to take a short (but expensive) flight or a 24-hour train ride. Flights are regularly interrupted due to extreme weather conditions and the train is especially slow as the tracks are situated over the layer of permafrost, which shifts when it thaws or freezes, and as a result services are frequently disrupted, and the tracks require repairs. Flooding is another hazard that the rail line must deal with and on May 23, 2017 the train tracks washed out in several locations resulting in no rail access to Churchill between May 23, 2017 and December 2, 2018 (Brohman, 2018). The length of the closure of the rail line was not just due to the technical difficulty of repairing the line, but also the high cost of the endeavor, which was estimated at $60 million dollars (Geary & Kavanagh, 2017). The American-owned company, Omnitrax, which, under different names owned both the rail line and the port of Churchill, announced that, since the Port of Churchill had been closed due to financial concerns as of July, 2016, repair of the tracks was not financially feasible (Kives, 2017).

The Port of Churchill and railway was owned by the Government of Canada until 1997. The Port had been operating at a net loss for the majority of the preceding decade (Ewins, 1997) and a 1994 report by a government/industry task force projected a cost of "$91 million over the next 20 years to repair and maintain the line from The Pas to Churchill" (Ewins, 1997). In other words, the cost to maintain the railway was already

then considered to be unfeasible and in 1997 the railway and port were sold to the private corporation Omnitrax. Over the next 15 years, while the Canadian Wheat Board was operational, the Port was viable and earned a profit. However, when the Canadian Wheat Board was dismantled in 2012 and grain prices dropped, the port and railway became less economically viable and in July 2016 the port closed, resulting in a significant economic downturn for the community with approximately 100 people losing their jobs (Atkins, 2017). Thus, when the railway washed out in 2017 Omnitrax considered the cost to repair it to be prohibitive. The issue then became whose responsibility it was to repair the railway and that took 18 months to resolve.

Ultimately, the railway and the port in Churchill came under the ownership of a consortium known as Arctic Gateway Group (Brohman, 2018). The consortium includes Manitoba communities, First Nations, Toronto-based Fairfax Financial Holdings and Saskatchewan-based grains company AGT Food and Ingredients (Brohman, 2018). AGT and Fairfax together hold 50 percent ownership and 50 percent is held by the communities who have signed a 99-year management agreement (Brohman, 2018). The Canadian federal government was also involved and provided $117 million dollars to facilitate this deal and the repairs of the railway (Kavanagh, 2018).

From a larger perspective, the issue of access to the town of Churchill is not only about the town itself. It involves access to food and other necessary supplies for many small, even more remote, populations. It is estimated that the railway provides access to an additional 30,000 people in First Nations and other northern communities (Kavanagh, 2018). Thus, the railway is also consequential for the governance and long-term

economic sustainability for a large area. With this historical and geographic context in mind, access to Churchill has become a topic of national debate and discourse.

For this research the data was collected between November 3-17, 2016 (peak polar bear viewing season) and occurred in the context of the above noted history – in a town which was experiencing yet another closure, that of the shipping port. With the closure of the port, tourism had thus become an increasingly important economic activity for the Town of Churchill. At the time of the data collection, the railway had not yet washed out, and there was an abundance of hope that polar bear tourism alone would be enough to sustain the town. The prominent local fixture, Gypsy's Restaurant and Bakery, had also not yet burned down (it would in May 2018) and the local entrepreneurs were holding fast (Dacey, 2018). However, all that has happened in the two years since this data was collected must also be acknowledged as part of understanding Churchill, Manitoba and what polar bear tourism means to the town of Churchill.

Overview of tourism operators.

There are 14 different hotels or lodges in the area as well as several bed and breakfasts and one hostel (Town of Churchill, 2016; Travel Manitoba, 2014). Many of the lodges and hotels offer guided tours to see wildlife, and there are 22 different tour operators in the area (Travel Manitoba, 2014). Tours focus on different wildlife during distinct seasons. During the summer months beluga whale watching tours are offered, where visitors can either watch the whales from a boat, kayak, stand-up paddle board, or swim in the river to see them (Travel Manitoba, 2014). Other tours offer visitors bird watching experiences or opportunities to view the northern lights. Polar bear tourism, though, is the primary form of tourism in Churchill, and the majority of tours are offered between the months of October to November when the bears are waiting along the shore

of the Hudson Bay for the sea-ice to form, so that they can go out onto the ice to hunt seals, their primary food source (Travel Manitoba, 2014). Importantly, only two tour operators have access to the Churchill Wildlife Management Area and only 18 tundra vehicles are given permits to this area, which is where most of the polar bears are located prior to the sea ice forming (see Figure 6) (Nelitz et al., 2015).

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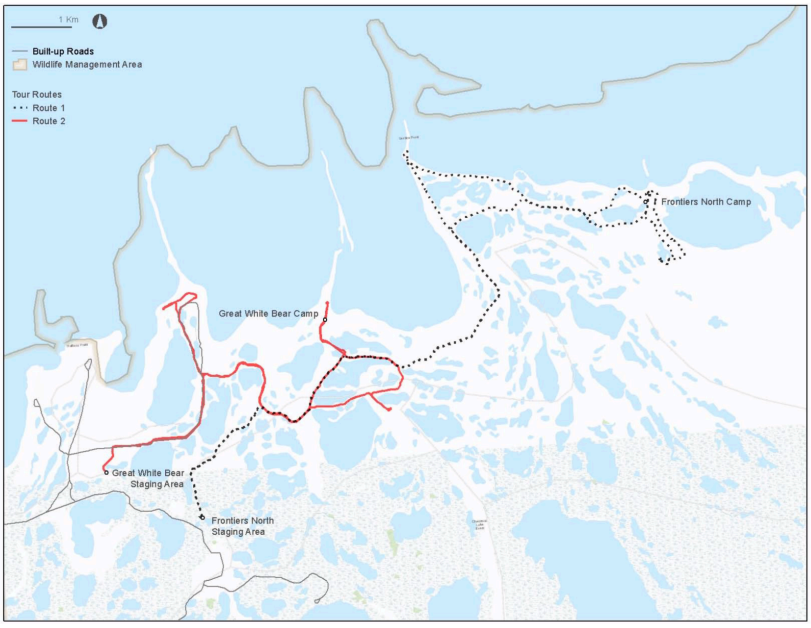

Map of vehicle routes driven by tour operators on the designated off-road trail network in the Churchill Wildlife Management Area during two separate outings in October of the 2014 polar bear season. Route data recorded on separate outings with each operator, distinguished by different route lines.

Figure 6. Image of vehicle routes and tour operator camps in the Churchill Wildlife Management Area (Nelitz et al., 2015, p. 8).

The tour operators who have access to the Churchill Wildlife Management Area are Frontiers North Tundra Buggy Tours and Great White Bear Tours (Nelitz et al., 2015). The most recent report published by the Manitoba Government, *Tourism Carrying Capacity Review of the Churchill Wildlife Management Area: Summary, Key Findings,*

*and Recommendations (*Nelitz et al., 2015), does not provide information on how it was decided which two tourism operators would be given a collective total of 18 vehicle permits to the area, but clarity on this process and "changing allocation of vehicles among existing/new permit holders" is on the list of recommendations for future management (Nelitz et al., 2015, p. x-xi). However, the report does state that the "current distribution of tundra vehicles between tour operators is the result of private financial transactions (e.g., sale and transfer of licenses) among operators that occurred over recent decades (Nelitz et al., 2015, p. 7). Among operators in Churchill, this is a point of contention, as new operators have not had the opportunity to purchase licenses. Additionally, the number of permits does not seem to be based on the impact of the tundra vehicles on the polar bears. Research suggests that recreational activities may have a negative impact on polar bears due to increased energy expenditure required, especially for polar bears fasting while on shore (Rode, Fortin-Noreus, Garshelis, Dyck, Sahanatien, Atwood…Wilder, 2018). Rode et al.'s (2018) research included a survey of experts that live and work in polar bear habitats, which asked them to rank the likelihood of defense kills, displacement, change in behaviour, and habituation in relation to different types of interaction with polar bears (Rode et al., 2018). The types of interaction were divided by fasting and feeding bears, and recreational activities such as ATVs, boating, tundra vehicle viewing, and foot viewing (Rode et al., 2018). Their research found that experts believed that "in places where most or all bears summer onshore, participants perceived a higher rate of interaction with recreationists" (Rode et al., 2018, p. 128) and that the Western Hudson Bay sub-population was considered to have the highest proportions of interaction with recreationists leading to habituation (57%) (p. 129). On-foot viewing of

polar bears was considered be among activities with the greatest likelihood of defense kills (Rode et al., 2018).

Research conducted by Dyck and Baydack (2004) found that "vigilance behaviour of polar bears in the Gordon Point area at Churchill, Manitoba was significantly affected by the presence of tundra vehicles" (p. 347). Vigilance behaviour in polar bears is defined as the act of lifting their head to visually scan "the surroundings beyond the immediate vicinity" (p. 344) and is considered to have a potentially negative impact on polar bears stress and input of energy and time. This research found that vigilance behaviour increased for male bears, but there were no differences between responses for one vehicle or more. Female polar bears had an opposite response, where their vigilance behaviour decrease, and the authors theorized that the female bears "…may use them as a 'safety buffer' to protect their offspring from male bears" (Dyck & Baydack, 2004). Dyck and Baydack (2004) recommend future research that investigates what distance the tundra vehicles need to be to affect vigilance behaviour. The data from these studies examining the impacts of tourism and recreationists on polar bears does not seem to currently influence management practices in Churchill.

The tundra vehicles are specially designed to drive over the rough coastal terrain and provide safe viewing opportunities for visitors (so that the polar bears cannot tip the vehicles over or reach in through the windows). Frontiers North Adventures Inc. owns the trademark for the Tundra Buggy vehicles which are oversized slow-moving vehicles that can negotiate the rough terrain and permit visitors to watch the polar bears from a safe distance (as the vehicles are very high due to the extra-large tires). Other tundra vehicles exist in the area, but Frontiers North states on their website that the Tundra

Buggy name is exclusive to their company and that all other vehicles are tundra vehicles (Frontiers North Adventures Inc., 2016). While there are many different opportunities to see polar bears and experience wildlife in Churchill, being aware that only certain companies have access to the Churchill Wildlife Management Area is important in understanding what the visitors may or may not have seen or had access to. For this reason, an interview question specifically asked study participants which tour operator (if any) they were with during their time in Churchill.

Frontiers North Adventure Company.

Frontiers North Adventure Company describes their operation as a "family business that has been operating in Canada's north for three decades" (Frontiers North Adventures Inc., 2019c).

> Our programs are designed for small groups of guests with specific interests in experiential travel, photography, wildlife, culture and adventure.
>
> Since day-one we have built our business on the principle of working closely with the communities and locals within the communities we visit. It's these relationships with people on the land that makes the difference between a cool vacation and an amazing, authentic and intimate adventure.
>
> Wide-open landscapes, incredible wildlife, and warm-hearted people of the north leave their mark on all who travel here, providing you a deeper appreciation for the beauty and wonder of Canada's North. Find Your True North on an authentic experience with Frontiers North Adventures. (Frontiers North Adventures Inc., 2019c)

The "our story" section of the company's website describes its corporate social responsibility, highlighting its environmental practices and sustainability reports,

employee practices (including the percentage of Aboriginal people and women employed), educational outreach initiatives, and corporate giving (Frontiers North Adventures Inc., 2019c). While the company began with polar bear tourism, it now offers tours to see different kinds of bears, whales, bison, moose, and the northern lights in a variety of ways, including their trademarked Tundra Buggies as well as Arctic cruise ships (Frontiers North Adventures Inc., 2019c). These trips also venture beyond Manitoba, and include locations in British Columbia, Newfoundland, Nunavut, Quebec, and Greenland (Frontiers North Adventures Inc., 2019c). The polar bear tours in Churchill range from 5-12 days and offer guests the option to stay in the town of Churchill or on a Tundra Buggy either in the Churchill Wildlife Management Area or in the more remote location of Cape Churchill (Frontiers North Adventures Inc., 2019b). Depending on the length of stay and remoteness of the experience, the prices for these tours range from $3,249 - $12,699 and include flights from Winnipeg, Manitoba and all meals and accommodations (Frontiers North Adventures Inc., 2019b). Frontiers North Adventures is also the only polar bear tourism company to currently offer a learning specific tour, the *Conservation Journey* (Frontiers North Adventures Inc., 2019b). This tour offers a limit of 20 people per Tundra Buggy (compared to the usual 40 – meaning that every guest will get their own window seat for optimum viewing). Guests stay overnight on the Tundra Buggies in the Churchill Wildlife Management Area and are accompanied by Dr. Steven Amstrup, the lead polar bear scientist for the non-governmental organization *Polar Bears International* (Frontiers North Adventures Inc., 2019c). Visitors going on the *Conservation Journey* are promised “behind-the-scenes” access to the science of Polar Bears International and the broadcast for Explore.org, as

well as the opportunity to learn about climate change in order to partake in helping to preserve polar bear habitat.

> Frontiers North Adventures' Tundra Buggy Lodge is our base for the adventure, which includes three full-days on the tundra, and a behind-the-scenes glimpse of Buggy One, a mobile broadcast and research station that also serves as operation central for the live polar bear cams operated by Polar Bears International, explore.org and Frontiers North Adventures. Evenings are spent on the Tundra Buggy Lodge, where you will learn about polar bear habitat and species conservation awareness from PBI researchers and scientists, including PBI's Chief Scientist Dr. Steven Amstrup.
>
> You will return home with valuable information about how climate change is impacting polar bear habitat, along with valuable wildlife experience from the frozen Hudson Bay coast. Join us to see first-hand the work we're doing and learn how you too can help preserve polar bear habitat. (Frontiers North Adventures Inc., 2019c)

It is worth noting that, whereas some other polar bear tours offer 20 visitor limits and often also have a staff member from Polar Bears International come along on their buggies for one day, this is the only tour that is described as a specific learning experience. While the majority of tours take place within the CWMA, Frontiers North Adventure Company does offer a photography tour once per year to Cape Churchill (Frontiers North Adventure Inc., 2019d).

Great White Bear Tours.

Great White Bear Tours, Inc. is "family owned and operated" by Don and Marilyn Walkoski (Great White Bear Tours Inc., 2019a). They describe how they came

to live in Churchill, before moving to Winnipeg in 2002 and now spending approximately 5 months in the Churchill area annually (Great White Bear Tours Inc., 2019a). Incorporated in 1994, this tour company is relatively new but boasts to be the home of the Polar Rover, which Don builds (Great White Bear Tours Inc., 2019a). The company "boasts a fleet of 12 custom built Polar Rovers and a mobile Tundra Lodge that is situated outside of Churchill on the Tundra" (Great White Bear Tours Inc., 2019a). They are the only other company to hold permits to access the Churchill Wildlife Management Area.

Figure 7. Image of the Great White Bear Tours Tundra Lodge (Great White Bear Tours Inc., 2019c).

"LIVE THE DREAM"
Immerse yourself in the worlds most unique accommodations in the world! Great White Bear Lodge is situated in the *Churchill Wildlife Management Area* were the

> ice first begins to form on the Hudson Bay, attracting the bears and making the area an ideal spot for optimal viewing.
>
> Tundra Lodge guest will find no more exciting, higher quality polar bear adventure out there... This is it! (Great White Bear Tours Inc., 2019c)

To book any of the tours that Great White Bear offers, customers are immediately redirected to the Natural Habitat website when clicking on a link to tour details (Great White Bear Tours Inc., 2019b). So, while Great White Bear tours seems to provide accommodations and transportation, the tour company that is directly organizing and managing the tours is Natural Habitat.

Natural Habitat Adventures.

The company Natural Habitat, referred to by the locals as "Nat Hab" is owned and operated out of Boulder, Colorado (Natural Habitat Adventures, 2019a). Natural Habitat describes themselves as "leaders in responsible adventure travel and ecotourism" and as "the world's first 100-percent carbon-neutral travel company – and the conservation partner of World Wildlife Fund-'' offering "eco-concious expeditions from Antarctica to Zambia with a multitude of adventures in between!" (Natural Habitat Adventures, 2019a). Offering tours to 44 different regions and every continent, they are a global force in nature-based travel, catering to an affluent population with tours ranging from several thousand dollars to over $23,990 (not including airfare) for a tour featuring Antarctica (Natural Habitat Adventures, 2019b). Natural Habitat's "expedition leaders" must have a minimum of 5 years of experience leading multi-day tours, and at least a bachelor's degree in a natural sciences related field (Natural Habitat Adventures, 2019c). They have a reputation among tourists as being a premier nature-based tourism company

and boast that their "Expedition Leaders are the best in the business" and that many even have master's or doctoral degrees – suggesting that one's learning experience will be exceptional (Natural Habitat Adventures, 2019c). In Churchill, "Nat Hab" visitors are easily identifiable in their matching Natural Habitat branded parkas, which visitors are given to wear during their visit to Churchill, so that they will have the appropriate winter gear. This creates a college fraternity/sorority feeling while in Churchill as all the "Nat Hab" visitors and guides are identified to be a part of the same tourism "club".

Natural Habitat tours advertise that they are one of only two tour operator that hold permits to access the Churchill Wildlife Management Area:

> There are just two polar bear tour operators in Churchill that hold permits to access the full range of the Churchill Wildlife Management Area where the best—and often only—polar bear viewing happens. Naturally, in our commitment to running the world's greatest nature journeys, the Natural Habitat/Great White Bear team possesses this critical permit. Operators without it are consigned to offering trips aboard school-bus-type vehicles along the road to Halfway Point, which, as you might guess, is just halfway to the *best polar bear viewing* area. (Natural Habitat Adventures, 2019d)

However, it is the company Great White Bear Tours, Inc. (see the above section) which holds this permit and also owns the Polar Rovers (the tundra vehicles used by Natural Habitat). Natural Habitat Adventures Inc. acts as an intermediary to facilitate these tours (Great White Bear Tours Inc., 2019b, 2019c). The Natural Habitat Adventures website continues to describe how their "Polar Rovers" are an improvement over the original Tundra Buggies, and offer a virtually unbreakable drive train, the best suspension and

onboard flush toilets. In other words, the marketing of these tours is aimed at visitors wanting the best luxuries available for viewing polar bears (Natural Habitat Adventures, 2019d).

North Star Tours.

North Star Tours is a locally owned nature-based tourism operator in Churchill Manitoba (North Star Tours, 2019a). Their website describes their company as:

> Locally owned and operated for **four generations!** Serving adventurers since the 1930s. Natural history, wildlife, Aboriginal cultures and heritage. Unique tours on the shores of the Hudson Bay. Groups and individuals welcome. (North Star Tours, 2019a).

Also operating under the name Sea North Tours, this tour company is most well known for their beluga whale tours. They boast a fleet of boats that are considered "Beluga friendly" and have "no exposed or moving parts under the water" (North Star Tours, 2019b). North Star Tours offers five different tour options to see polar bears, ranging in price from $115 for a tour of the town and surrounding area, to $185 for a tour of Brian Ladoon's Canadian Eskimo Husky Dog Kennel and polar bear tour (North Star Tours, 2019c).

Brian Ladoon was for many years a controversial icon of Churchill, Manitoba. He owned an area of land referred to as Mile 5 (short for the Mile 5 Dog Sanctuary) along the shore between the town of Churchill and the Churchill Wildlife Management Area (National Geographic Society, 2018). There, he had an outdoor kennel and bred what he claimed to be the last of the Canadian Eskimo Dogs – in support of his foundation: The Canadian Eskimo Dog Foundation (Canadian Eskimo Dog Foundation, 2012). The dogs

were chained to pegs in the ground, with no kennels or shelter. Brian Ladoon both denied and admitted to over-feeding his dogs and effectively feeding polar bears on several occasions (Brulliard, 2016; Hoye, 2016). A video was shared and went viral mid-November of 2016 which showed a polar bear "petting" one of Brian Ladoon's dogs (Brulliard, 2016; Hoye, 2016). Later that weekend one of Ladoon's dogs was eaten by a polar bear and, in an interview with a CBC reporter Ladoon stated: ""That was the only day we didn't feed the f--king bears, the only night we didn't put anything out," he said." (Hoye, 2016). Feeding or baiting bears is illegal in Manitoba, as it encourages human / bear interactions and is especially problematic for female bears with young cubs, as it teaches their young behaviours that involve interacting with humans for food (Hoye, 2016). Experts on polar bear behaviour say that this will increase the likelihood of interactions in Northern communities, both Churchill and farther North within the polar bear's habitat – in communities such as Arviat and Rankin Inlet (Brulliard, 2016; Hoye, 2016).

Brian Ladoon faced many allegations of feeding polar bears since he began his kennel in the 1970s, and was a divisive figure in Churchill, Manitoba where he garnered both support from locals (including the mayor) and criticism from polar bear scientists (CTV Winnipeg, 2016; Hoye, 2016). Dr. Ian Stirling, one of the world's leading polar bear experts, said in an interview with the CBC:

> "The dog was chained up and they're totally vulnerable," he said. "Inuit [hunters] over the years in the high Arctic have told me that if you want a dog to act as a guard dog, you have to leave it off a chain. Because if it's on a chain it knows it's vulnerable and it won't bark."

> Stirling said what appears to be friendly relationships between Ladoon's dogs and polar bears is artificial and would never happen in the wild.
>
> "Any situation that brings bears in to feed in an unnatural situation in association with human beings, I think, should not take place at all," he said.
>
> David De Meulles, who filmed the viral video, said the dog in that footage was not the one that was killed by a polar bear last week.
>
> Stirling said it's possible bears that learn to associate dogs and humans with food could get in trouble down the line. If they encounter other remote northern communities while out on the Arctic sea ice, Stirling said polar bears might try to enter them and get killed by locals out of safety concerns.
>
> "It's basically a death sentence for the bears," he said. (Hoye, 2016)

Despite the tension between Ladoon and polar bear scientists, he further became an icon in Churchill through his involvement with the Smithsonian Channel television series: *Polar Bear Town* (Smithsonian Channel, 2019). Ladoon was featured prominently in the television show and was portrayed as a modern-day frontiersman: chasing polar bears away from his dogs in his truck, yelling at them, and firing off rubber bullets (Smithsonian Channel, 2019). He was also featured in the film *The Last Dogs of Winter* (IMBd., Inc., 2019). These films provided him with a degree of fame and created curiosity that brought travellers to see the polar bears and Eskimo dogs interact. Using a chain across his access road, he restricted access to his kennel, and charged a fee for any visitors brought there either by locals, taxi, or North Star Tours.

Brian Ladoon passed away in August of 2018. There are no available news stories or information about what has happened to the Mile 5 Dog Sanctuary. North Star Tours, however, still describes the location as one of the places they will take their visitors in order to see polar bears (North Star Tours, 2019a) and personal communication with North Star Tours (2019) confirmed that they will continue to operate the Mile 5 Sanctuary as part of their polar bear tours. The Mile 5 Sanctuary is unique in that it is a place outside the CWMA, where visitors are almost guaranteed to see polar bears (and often up close). Local taxi drivers and residents also take visitors here as it is unregulated by permits and government designation. While this local area has certainly been a controversial place to view polar bears, it is an important place for locals to access polar bears on an almost guaranteed basis.

Churchill Wild.

Churchill Wild is a family owned, and self-proclaimed "ecotourism company" (Churchill Wild Polar Bear Tours, 2019). The "About Us" section of their website describes the couple, Mike and Jeanne Reimer, and Jeanne's roots and childhood growing up in Churchill, Manitoba (Churchill Wild Polar Bear Tours, 2019). The couple now owns four luxury eco-lodges and boast that they offer "the world's first and only polar bear walking tours" (Churchill Wild Polar Bear Tours, 2019). Their lodges are remote, with three lodges located along the shores of the Hudson Bay, and one inland for polar bear den tours (see Figure 8).

Figure 8. Map of Churchill Wild Lodges (Churchill Wild Polar Bear Tours, 2019d).

The Seal River Lodge is the most common lodging location during peak polar bear season in fall and is listed under National Geographic's list of "Unique Lodges of the World" (Churchill Wild Polar Bear Tours, 2019d). Churchill Wild describes their lodges as: "…the epicentre of flora and fauna… The remoteness of our exclusive fly-in lodges ensures undisturbed wildlife in a pristine unique setting" (Churchill Wild Polar Bear Tours, 2019c).

Churchill Wild's walking polar bear tour is met with criticism from many polar bear experts and scientists. Dr. Andrew Derocher, one of the world's most well-recognized polar bear scientists, working as a professor at the University of Alberta, is known to critique the walking tours on his twitter account (see Figure 9 and 10). Dr. Derocher points out that the danger of this practice is that the polar bears are the ones

who will be shot if any sort of conflict or danger arises (see Figure 9). Research by Rode et al. (2018) corroborates that experts living in polar bear habitats believe that on-foot walking tours are the most likely form of polar bear tourism to result in "defense kills" (p. 127).

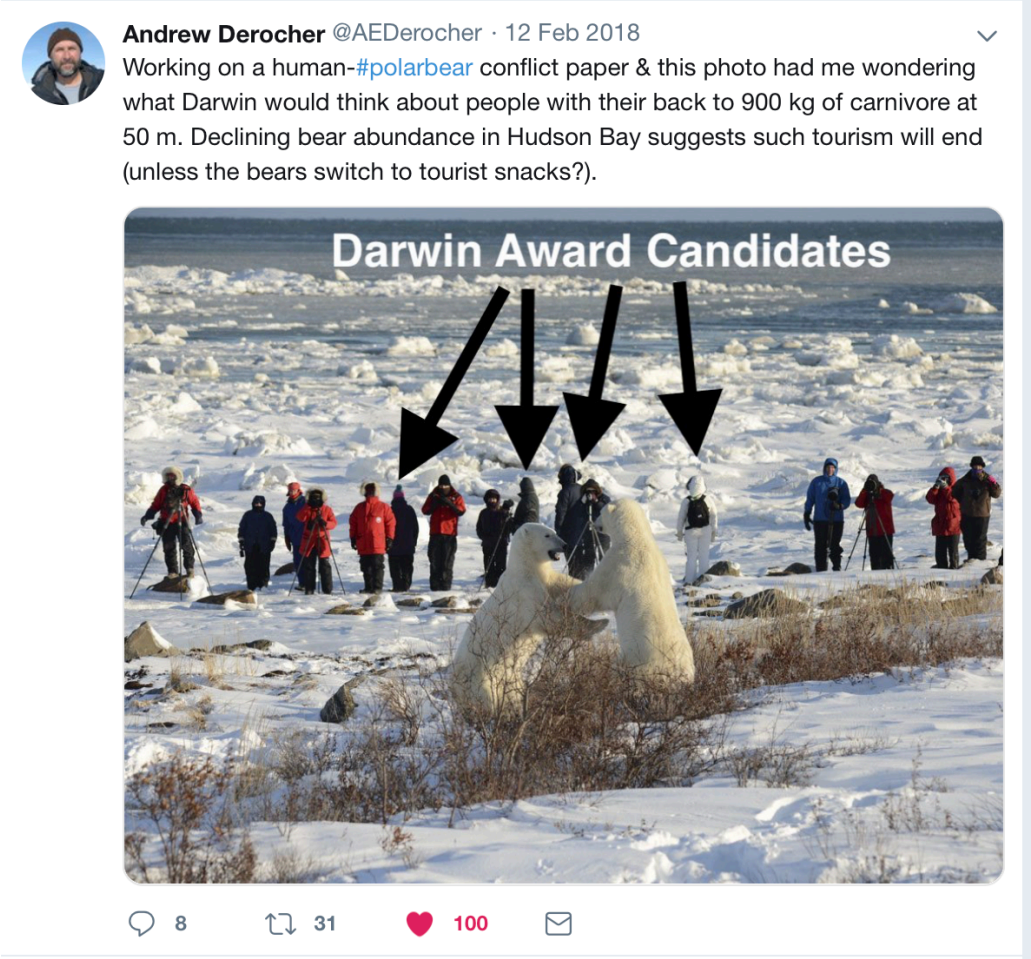

Figure 9. Dr. Derocher's tweet, critiquing polar bear walking tours (Derocher, 2018a).

Figure 10. Dr. Derocher's tweet, critiquing polar bear walking tours (Derocher, 2018b).

The tension between polar bear scientists and Churchill Wild is also evident in a statement under the FAQ section on the company's website where they dispute the findings of wildlife biologists based on their own experiences:

> **Where are all the skinny polar bears we have been reading about?**
>
> Our family has been in the wildlife business on the Hudson Bay coast for over 80 years. During this time our observations would suggest that the polar bear population is static and it may even be growing. From all outward appearances the polar bears are healthy and thriving.
>
> Some wildlife biologists say that their studies show polar bears are in trouble, losing weight, having fewer cubs, and generally under stress due to climate

> change. This has not been our experience in the areas we operate in, and we are optimistic that future generations will be able to continue to enjoy the exceptional wildlife experience that the Hudson Bay polar bear population provides.
>
> We are deeply committed to minimizing the footprint that our presence represents to the unique bear habitat we operate in. Our policies and procedures are focused on avoiding all disruptive impact that our presence might have on the bears and our guides are highly trained and committed to this level of sensitivity. (Churchill Wild Polar Bear Tours, 2019c)

There are some clear tensions between the views of polar bear scientists, research and the personal experiences and opinions of Churchill Wild. Notably, Churchill Wild makes an effort to communicate to their guests how they believe they are acting responsibly within this environment. In terms of sustainability, their website states that they attempt to minimize their footprint by using grey water, local and recyclable building materials, energy efficient appliances and lights, biodegradable cleaning products, by offering a recycling and composting program and by using locally sourced food whenever possible (Churchill Wild Polar Bear Tours, 2019e). They also describe how Churchill Wild was the recipient of the Sustainable Tourism Award in 2015, from the annual Manitoba Tourism Awards (Churchill Wild Polar Bear Tours, 2019d).

Churchill Wild offers 11 different tours ranging from 6 nights to 14 nights, varying in price from $11,495 - $16,995 CDN per person (Churchill Wild Polar Bear Tours, 2019b). Their tours focus on viewing or photographing wildlife, primarily polar

bears, during different seasons of the year and they boast that they have 100% success rate even in summer and on land (Churchill Wild Polar Bear Tours, 2019b). Luxurious accommodations and food are a selling feature for Churchill Wild, as many other accommodations in the town of Churchill are considered to be outdated and lack the extreme luxury that many expect from luxury eco-tours.

Churchill Northern Studies Centre.

The Churchill Northern Studies Centre (CNSC) is a non-profit, independent research centre built in 1976 (Churchill Northern Studies Centre, 2013). The brochure reads:

> Founded in 1976, the Churchill Northern Studies Centre is an independent, non-profit field station focused on research and education in the subarctic and is located 23 km east of the town of Churchill, Manitoba. We provide accommodations, meals, equipment rentals, and logistical support to scientific and social researchers working on a diverse range of topics of interest in the north. We also facilitate learning programs throughout the year for non-credit learning vacations, university credit courses, and youth programming. We host conferences focused on northern issues and offer day tours of our LEED Silver facility, local ecology, and the historic Rocket Range.

In other words, the CNSC operates as a research centre, but also hosts visitors and provides learning experiences for them, which serves as an additional source of revenue for the centre. The centre hosts school groups year-round and has hosted a few tour groups as well during bear and beluga season. Groups such as the Great Bear Foundation lodge their guests in the bunk rooms and rent a school bus from the centre to transport

them on the few roads that exist in Churchill, in the hope of sighting polar bears (note the CNSC does not have permits to access the CWMA directly). Rotary also offers tours to see wildlife and the aurora borealis, and has been guiding guests on educational tours to Churchill for decades. In recent years, the CNSC has hosted two learning focused polar bear tours per year (each one week in length) during polar bear season.

Learning tours in Churchill.

The majority of tours to Churchill are primarily for viewing wildlife, and a few are offered as conservation themed tours, such as Frontiers North's Conservation Tour (Frontiers North Adventures Inc., 2016). Most of the tours, however, are not advertised as educational (Travel Manitoba, 2014). The Churchill Northern Studies Centre (CNSC) is unique in that it is a scientific "non-profit research and education facility" (CNSC, 2013) whose goal is to assist with and facilitate research in the area and provide educational opportunities to the public and students alike. The CNSC (2013) markets their tours on their website as unique learning vacations:

> Have you always dreamed of visiting Churchill, Manitoba, but want more than the usual package tour experience? Why not consider the Churchill Northern Studies Centre (CNSC), an active research facility located 23 km from town where the northern reach of the boreal forest meets the southern extent of arctic tundra? Each five to seven-day course is a true learning experience led by professional scientists and expert guides. Participants will develop a deeper understanding and appreciation of the culture, history and wildlife of the Churchill area through daily interaction with visiting scientists and fellow travellers. There are no tests and no grades, but guided tours and presentations will open new doors to learning for even the most seasoned traveller.

The CNSC learning vacation presented an opportunity for the researcher to look more closely at not just visitor experiences broadly, but tours that are marketed as providing visitors with a "true learning experience" (CNSC, 2013). It provided the researcher with some participants that may have had motivations for learning, or opportunities for learning, which were not present on other tours in Churchill. As part of the purpose of this research was to explore how visitors may have been learning as part of their nature-based tourism experience, a sub-sample of visitors to the CNSC was included to increase the possibility that learning was a part of the experience.

The CNSC also provides accommodations for other learning focused tour groups during the peak of polar bear season. Road Scholar Tours offers 3 different polar bear tours during the month of October (Road Scholar, 2019). The Great Bear Foundation, based out of Missoula, Montana also offers learning-based tours 3 times per year (Great Bear Foundation, 2019). Great Bear refers to these tours as field courses:

> Spend your days in the field, observing polar bears, beluga whales (summer trip), and other arctic wildlife in their natural habitat. Great Bear Foundation's seasoned instructor/guides offer educational programming on ecology, natural and cultural history of the region, and teach you to interpret bear behavior. We'll explore tundra, taiga, and beaches, and visit some of the region's fascinating natural features and important cultural sites.
>
> At night, we offer programs and slideshows on ecology, conservation, and photography, and invite guest speakers from the local community. If we're lucky, we might watch the northern lights from an elevated outdoor deck (for the hardy) or the comfort of a glass observation bubble on the roof of the research and

> education facility where we'll stay, in the heart of terrestrial polar bear habitat. (Great Bear Foundation, 2019)

Their field courses are also accredited with the University of Montana Faculty of Environmental Studies and Lifelong and Extended Learning (Great Bear Foundation, 2019). They advertise that "100% of the proceeds from our field courses directly fund bear conservation projects" (Great Bear Foundation, 2019). In addition, they also make a practice of encouraging all of their participants to take only the train to and from Churchill, to reduce their environmental impact.

Polar bear viewing in Churchill.

An important reason that Churchill is a particularly good place to view polar bears is the local geography. The town of Churchill is located beside the Churchill River and on the coast of the Hudson Bay. The freshwater flowing into Hudson Bay is one of the first places to freeze in winter and scientists / local guides believe that this is a cause for polar bears to have traditionally congregated in this region. As seals are the polar bear's primary food source, and can be hunted only on sea ice, the advent of the freezing of Hudson Bay is a much-anticipated event for hungry polar bears, resulting in the area surrounding Churchill, Manitoba to be teeming with polar bears. Previous tourism research has demonstrated that visitors often see five to ten bears per day trip (Lemelin, 2006) and dozens over the course of their stay in Churchill, depending on the length of their visit. Add to this the relatively good accessibility by train (though tenuous in recent years due to flooding) and air, a consequence of Churchill's past role as a shipping port and military base, and you have the self-proclaimed "Polar Bear Capital of the World" (Town of Churchill, 2018).

The most common way for visitors to view polar bears is by booking a tour on a very large custom-built vehicle with oversized tires (to minimize the impact on the tundra vegetation) and a raised platform (to ensure the polar bears cannot get into the vehicles) (see Figure 11). These large vehicles, called Polar Rovers or Tundra Buggies depending on the tour company, include washrooms and floorboard heaters to warm the vehicle quickly. They have custom windows that can be opened from the top down, similar to modern school buses, allowing passengers with large lens cameras to take unobstructed photographs of the polar bears. At the back of the vehicles there are metal platforms or decks where tourists can, when the vehicle is stopped, go out to take photographs and possibly even see bears roaming around below their feet or pressing up against the metal platform on their hind legs (see Figure 12). These oversized vehicles lumber at an astonishingly slow pace along a pre-determined road of sorts to minimize the impact on the taiga's delicate vegetation in the Churchill Wildlife Management Area. The driver will stop the vehicle any time a polar bear is spotted, and tourists will take innumerable photos. The more expensive tours offer seats that have their own window, which is the most desirable commodity on the tours. Good visibility and unobstructed views are everything for tourists who have paid upwards of $500 CDN for a single day trip and consider this their one chance to see and take photographs of polar bears. Some tours include guides that are knowledgeable about polar bears, and some conservation themed tours even include polar bear scientists available to answer questions that visitors have about polar bears. Typically, the more knowledgeable the guide, the steeper the cost of the tour. An exception to this are the tours offered by bear-focused non-profit organizations and the Churchill Northern Studies Centre (a research centre which doubles

as a tourism operator during bear season to help offset their research-related costs). These tours, available at a more affordable rate, require visitors to stay approximately one week in bunk rooms and offer the services of scientists and knowledgeable guides and staff.

Figure 11. Vehicles used for polar bear viewing in Churchill, Manitoba (photo credit: Jill Bueddefeld).

Figure 12. Iconic image of getting close to polar bears in Churchill, Manitoba (Frontiers North, 2018).

Another option to view polar bears is through local operators who do not have permits to the Churchill Wildlife Management Area and who drive their jeeps or trucks on accessible roads or on private lands where polar bear sightings are frequent. Some day trip visitors, who take the train in to Churchill in the morning and out in the evening, hire taxi drivers to take them around for a few hours or for the day in hopes of seeing polar bears.

The following vignettes offer context and insight into the different types of polar bear viewing tours that are available in the Churchill Wildlife Management Area. The first vignette describes a learning tour, offered by the CNSC, which is a week-long tour that must be booked months in advance. The second vignette describes a polar bear viewing experience that is more common in Churchill, and while expensive, is more

readily available. These observations provide context for beginning to understand visitors' motivations, interests and potential learning opportunities while watching polar bears.

Vignette: A learning tour in Churchill.

Approximately 40 people on the 'Lords of the Arctic' polar bear tour leave the Churchill Northern Studies Centre (CNSC) at 8 a.m. and take a 2-minute drive to the loading area where visitors board the Tundra Buggies with Frontiers North (who own the majority of Tundra Vehicles and permits to the Churchill Wildlife Management Area). We have to drive here because of the risk of encountering polar bears if the group were to walk over. Any time the tour group gets on or off a vehicle an armed bear guard has to get off first and look all around the vehicles or behind any nearby structures to ensure that the area is safe. This is my first time on a Tundra Buggy, and even though it is the second time for the rest of the group, there is still a buzz of excitement in the air. We get on the buggy and I make sure to get on last, so that everyone else can claim their preferred seats. I watch some people making a beeline for specific seats. At this point I am not sure why some seats are preferred over others; has it to do with optimal viewing, being near the heaters, being away from the bathroom, or avoiding particular social conflicts? I later learn that reasons for seat selection are probably a combination of all of these factors. Once everyone is seated, we begin to drive. There is a quiet chatter, but most people are silent and looking out of the windows. We drive for about an hour, with neither our guide nor the driver (who apparently is the same from the previous day) saying anything about polar bears. Then we see the first polar bear of the day sleeping at the side of the road, about 5 feet away. As the buggy approaches, the driver stops before the bear acknowledges our approach. The driver then turns off the engine and people start to get

up to get a better look. After a while the polar bear gets up and comes over, seemingly to check out the buggy. It actually walks up nearest my window, but I look around to see if there is anyone seeking a better view and let one of the other visitors take my window seat. The person I offer my seat to is very grateful and takes several photos while the polar bear is so close. The bear then walks toward the back of the vehicle and everyone rushes to the back deck. The back deck of the tundra buggy features metal grates around the bottom and side of the deck, allowing visitors to look through and see the bears but making it impossible for the polar bears to reach anyone, even when standing on their hind legs. Everyone is craning their necks to see, but jostling is limited and most everyone takes turns standing at the best locations to see the bears. Eventually this polar bear wanders off and we drive on. We drive over to where the Tundra Buggy Lodge is located (a series of buggies that are parked in the Churchill Wildlife Management Area during polar bear season, see Figure 7 for a similar example). Guests of Frontiers North have the opportunity to stay overnight at the Tundra Buggy Lodge – and pay a premium to do so. On a later trip, a driver tells me that they often stop the buggies for snacks or lunch in view of the lodge because, as he surmises, there always seem to be a lot of bears nearby; he attributes this to all of the food smells that waft from the Tundra Buggy Lodge. So, stopping near the Lodge, we are told that we are waiting for a bear to walk by. While we are parked the driver serves us hot chocolate (I will note that for the more expensive tours this is upgraded to Baileys Irish Cream liqueur and hot chocolate) and watch the bears in the distance. The guide, speaks softly to people nearby if they have questions, but there is no formal talk.

Even if you are not actively watching the bears, you can tell whether something interesting is happening just by the sound of camera shutters. If the clicking becomes rapid or frequent, people will generally pause their conversations or whatever they are doing to go see what the excitement is about. At times quite a commotion can develop, and the guide or other guests will occasionally shush the group if the volume begins to rise excessively. The group also frequently whispers, in what I interpret as a reverential tone, whenever polar bears are nearby. I later find out that the group had been informed of rules the day before: 1) no standing while the buggy is moving, because it is dangerous; and 2) you need to be quiet while the bears are near: no shouting, or taunting, or feeding. In general, the group seems respectful of these rules and also of each other, in taking turns at optimum viewing locations. Every now and then, experienced tour guests will observe a new member who is not as familiar with the rules and will exchange knowing glances and smiles. In general, the group is congenial, and people are often helping each other to identify bears as either male or female and to guess the approximate age of the bear. They use the criteria they have previously learned from the guide about how to identify these characteristics of bears: pee stains, neck size, large forehead brows, as well as front leg fur of males – which is longer than that of females. This group is also notably helpful with loading food crates, cleaning up their mess, and ensuring the buggy is tidy when they leave. This is noticeably different from the other groups that I observed, that are not learning focused.

Near the Tundra Buggy Lodge, we watch a young male bear (as identified by the guide) approach several other bears and then move on when they respond with hostility. This young male bear eventually lays down in the kelp – he seems to circle the way a dog

does and makes himself a sort of kelp-bed. This is relatively close to the buggy and we have a fairly good view of this male. Many visitors at first take photographs, and then put their cameras down to just watch the polar bears. The visitors with more substantial camera lenses often spend more time taking pictures or trying to get a particular shot – waiting for the polar bear to get up or face the camera.

At times, if the volume of the group continues to rise, indicating that people are getting restless, the driver will pick up on this and move to a new location. Shortly after our group moves on, the driver spots a mother and cub in the distance. He is exceptionally good at finding polar bears, and often sees bears where the rest of the group, even with telephoto lenses and binoculars have seen none. The driver says to the group that there is a mother and cub off in the distance and that he is going to approach but will take care not to get too close. He explains that we will approach slowly and move on if the mother bear seems stressed. I note that the driver frequently mentions not getting too close, but he never describes what this means and I cannot determine any pattern or specific distance that would identify as "too close". The mother bear lifts her head and looks in our general direction. She slowly maneuvers her cubs a little bit further away. Our guide indicates that he does not think she is stressed. I had previously thought that moving away from the buggies indicates that the polar bears are uncomfortable with the proximity of people, but this information seems incongruent. Our guide looks through the binoculars and explains to the group that the mother bear has a "cub of the year" or what is referred to as a COY, which means that the cub was born in spring of the current year and has not yet spent a winter out on the ice. He then provides additional information on how to identify males and females in relation to their urine stains on their backsides,

under their tail. We stay for a while until it becomes apparent that the group is growing restless. The driver starts the buggy up again and polls the group on whether we should go get a closer look at a few of the bears nearby or if we should “go exploring”. The group choses to go exploring. We drive around on some of the trails for a while and see a very large male bear who is sleeping when we first see him. He then gets up and playfully rolls around on his back and wanders off. We also see ptarmigans and a silver fox. We then drive toward an area called “the Cape” or Cape Churchill, and do not see any more wildlife. We do see the sunken ship, the Ithica, one of the iconic landmarks of Churchill, in the distance. Churchill has a lot of these abandoned relics, including those that have been recognized as official icons - like the Ithica and Miss Piggy (an airplane) - as well as those that are unofficial – like all of the abandoned vehicles and appliances that can be seen in people’s yards.

We then are told that we are making our way back, and people begin to get louder and are laughing and socializing in groups by talking over their bench style bus seats. Others are quiet and are looking out the windows. The ground is not frozen, and I have wondered a few times if we will get stuck. Several guests look a bit alarmed at times during the drive, and you can hear people wondering aloud about what we will do if we get stuck. The weather is extremely warm for this time of year - only near freezing - which makes it very pleasant for people to take pictures out of the open windows. The top of these windows slide down, and are at eye level if you are sitting, but very difficult to look out of if you are standing. Today, according to the photographers, has been excellent for taking pictures as it has been mostly overcast. As we arrive back at the boarding / de-boarding “dock” it is just starting to get dark. Later that evening there is a

formal learning talk about bears in general - not just polar bears - and I wonder if this is because people are tired of hearing about only polar bears for the past few days.

Vignette: A non-learning tour in Churchill.

I meet approximately 20 visitors from the Frontiers North group at the buggy dock, who are going on their first tundra buggy ride. We start quite late. I am here at 8:15 a.m. since most buggies leave around 8:30am. Apparently the Aurora Borealis had been visible near town the night before, so a few people from this tour group had gone out to take photos and had gotten back quite late, so several people have slept in. Surprisingly, these visitors are willing to start their tour later, when they only have two days on the tundra buggy and most have travelled very far (and spent a great deal of money) to see polar bears. I note that I do not hear any visitors complain about the late start.

We see our first bear that day not long after we leave the dock. It walks around the buggy and then sits up and rolls around on the ice. We watch it for about half an hour and then move on. Everyone is excited, and most of the visitors take a few photos and then sit back down. The level of excitement seems much less than on my previous tour and I am surprised at how quickly we move on. The guide then provides a little talk about how to identify the sex of the bear.

The same instructions given to the learning tour visitors, are conveyed on this tour (about being quiet as we approached the bears) but these instructions are framed in a different context: visitors are supposed to be quiet, not because it might disturb the polar bears, but because this might affect the quality of the visitors' photography opportunities. At 11:00 a.m. we approach several other buggies in the nearby area. You can see that there are two bears, and one is carrying away a large black object. Someone brings out a pair of binoculars and others look through their telephoto lenses and someone shouts: "he

has someone's purse!". I am immediately concerned that the bear will ingest the purse, but instead this statement was met with a round of laughter from most of the group. The guide does not comment on how dangerous this is for the bears, nor do they remind guests not to dangle their belongings over the edge or to place camera straps where bears can reach them. Instead, this seems to be treated as a humorous experience to watch and no information is shared about the dangers for bears who ingest garbage. We move on after 20 minutes of watching the two bears chase and fight over the purse. Our tundra buggy drives off the road to pass another tundra buggy (which I thought was not allowed) and we see a very large sleeping bear right next to the road. Visibility of the polar bear's face is excellent, and a few people take some close-ups, but the group grows restless quickly and we move on after only five minutes. We arrive near the Buggy Lodge a few minutes later and see two bears circling the lodge and placing their paws up on the tires of the buggies that comprise the lodge. There is a distinct smell of roast beef in the air. It is hard to imagine that the bears are not following the source of that smell. Another polar bear walks by the buggy and by this point people are still watching the polar bear, but are markedly less excited – and it is only noon. At 12:30 p.m. we watch two males sparring and only a handful of the guests move closer to get a better look. Everyone is watching, but the visitors' reactions are tempered compared to that of the CNSC learning tour guests whom I had observed several days earlier. By 12:45 p.m. we can see five male bears. Three are sparring at different times (for about an hour), while two of the bears keep sleeping or lying nearby while this happens. Many people go to go get their food instead of watching the bears. I am surprised that they choose not to continue watching or taking photos and will potentially miss this encounter, as sparring apparently does not

happen that often or for that long. It strikes me later that the visitors have probably not been informed that this is a unique experience, and not something that one sees all the time. We stay near the Tundra Buggy Lodge while we eat lunch which, I note, is even a hot lunch with soup. Again, I wonder what the effects of the smells of warm food are, in attracting bears to us.

While we eat lunch there is some discussion between the guide and the group about bears, their need to catch seals, and how polar bears are tagged and researched. The guide also discusses climate change at one point during the day. The majority of this talk focuses on how polar bears need seals to survive and that they have to have sea ice in order to hunt seals, but it ends notably differently from the climate change talk that the guide at the CNSC had given. The CNSC guide, had ended his climate change talk by explaining how climate change will ultimately kill polar bears and they will not be able to refill the niche that grizzlies have. The guide on the Frontiers North tour, in contrast, ends her talk by saying that in 100 years this local population in Churchill will likely be gone, but that otherwise polar bears as a species will likely be fine. This variation in climate change messaging certainly results in visitors having a very different understanding of the long-term outcomes of climate change; in one scenario climate change is framed as impacting an entire species irreversibly, while in the other there are only localized impacts.

By 2 p.m. we see two large males get up and wander about the Tundra Buggy Lodge and we leave shortly thereafter. At 2:30 p.m. our driver spots a mother and a cub lying down. We stay at this location for a while, waiting to get a better view of the mother and her cub. Most people have their cameras poised and are waiting for a picture.

After a while, a second cub pokes its head above its mother and the group goes into an excited whispering frenzy with cameras clicking away and people trying to get a better look at the second cub. Both cubs lie back down, blocked by their mother, and we wait several minutes to see if they will emerge again. When they do not, the driver tells everyone to get their cameras ready. He then turns the buggy back on and revs the engine. Both cubs pop their heads up and it sounds like the paparazzi have just spotted an A-list celebrity. The driver laughs, says it is a trick of the trade, and turns the buggy back off as we prepare to watch the bears again. I am surprised that the guide does not say anything about this behaviour, since it has clearly startled and disturbed the bears. After a while, when we do not see the cubs again, the group returns to their seats and the driver moves on towards the docking station.

This group of visitors has a buggy that is less full than normal (only 20 people for 20 two-person seats), and everyone has a window seat. I had wondered if there would be more jostling out on the back deck for optimum photos, since this tour is considerably more expensive than the learning tours, but everyone has been just as courteous and respectful of taking turns for photos and prime viewing locations. People on this tour, compared to the CNSC learning tour, seem to be less interested in watching the polar bears for an extended period of time, despite the fact that we have seen more bears moving around and less bears sleeping or lying down. One person on the buggy had even fallen asleep while we were watching bears sparring, and the Instagram influencer had taken out her laptop to read a book. I believe this sort of behaviour has also reduced the excitement for others in the group. Some are happy just to have watched the bears and have not necessarily taken photos. In general, there seems to have been more expensive

and larger camera lenses and equipment with the guests on the Frontiers North tour. The visitors with large cameras seem to be looking for a particular photo and will typically take only a few shots, quickly glance at the bears, and then be ready to move on. Contributing to this is the fact that it is much colder than a few days ago when I had been on the learning tour. Though the bears seem to be more active this also means that it is much colder to keep the windows open to take pictures and this group has been quick to take a few quick pictures and then close their windows.

Ex Situ: The Journey to Churchill Exhibit, Assiniboine Park Zoo, Winnipeg, Manitoba, Canada

This section will begin by describing a brief history, first of bears in general and then polar bears specifically, at the Assiniboine Park Zoo. How the exhibits were created and have evolved is important in understanding how polar bears have been historically, and are currently, experienced in Winnipeg, Manitoba.

A short history of polar bears at the Assiniboine Park Zoo.

Bears have been on display at the Assiniboine Park Zoo since 1904 (Penner, Johnson, & Petersen, 2012). The first bear enclosure was simply a bear pit that confined brown bears and grizzly cubs at different times and allowed visitors to peer down at them over the railings (see Figure 13 and Figure 14). This pit included one water trough and a tree and housed bears until 1955 (Penner et al., 2012). This enclosure represents how bears were conceptualized at the time: they were looked down upon, both literally and figuratively. Notice the debris in the bottom of the bear pit. Whether the debris was tossed in, as seems likely, or blown in, the bears are clearly sitting in garbage. The concrete, and bare exhibit was typical of zoo exhibits at the time, where visibility of the

animals on display was the priority (Packer, Ballantyne, & Luebke, 2018).

Figure 13. Looking look down into the bear pit at the Assiniboine Park Zoo in 1904 (Used with permission: Penner et al., 2012).

Figure 14. Grizzly bear cubs wrestle in the bear pit at the Assiniboine Park Zoo (Used with permission: Penner et al., 2012).

In 1957 a new bear enclosure was completed, and polar bears were introduced to the Assiniboine Park Zoo (see Figure 15) (Penner et al., 2012). This enclosure, which consisted of cement terraces was designed to provide the bears with more space, a pool to swim in, and allowed both visitors and the bears have a better view (Penner et al., 2012). Here the bears have been elevated, likely to give visitors improved sight lines of the bears.

Figure 15. Polar bears at the Assiniboine Park Zoo enclosure (between 1957-1968) (Used with permission: Penner et al., 2012).

This new enclosure included a water moat and a high cement wall and barbed fence to prevent the bears from escaping. The hard-terraced concrete and no visible shelters made the bears appear very exposed, while the deep moat and high wall separated them from people. The posture of the bears in Figure 15 makes it seem that the bears are watching

the people just as closely as the people are them. In 1968, the bear enclosure was upgraded again when larger pools were added for the bears to swim in and the terraced steps were removed (see Figure 16).

Figure 16. The upgraded bear enclosure in 1968 with larger swimming pools (which are not filled in the image) (Used with permission: Penner et al., 2012).

This redesign suggests the intention was to provide the bears with more access to pools, both for entertainment and to cool off during the warm summer months. Here the bears' physical quality of life appears to have been given greater consideration through the additions to the enclosure, enriching the bear's well-being.

In 1985 the pools were further enlarged, and molded concrete was added to make the enclosure appear more natural (Penner et al., 2012). At the same time items such as rocks and branches were added to the enclosure to increase the naturalization of the bear enclosure (see Figure 17) (Penner et al., 2012). These additions were part of an effort to

reduce stereotypic behaviour in zoo polar bears and improve what is referred to as behavioural enrichment and living conditions for animals in captive settings.

Figure 17. Polar bear enclosure between 1985-2010, featuring molded concrete and natural features such as rocks and branches (Used with permission: Penner et al., 2012).

This enclosure was a first attempt at creating a space that was more like the polar bears' 'natural' habitat, though the changes may have appeased human visitors more than the bears.

The naturalization of the bear enclosure continued in 2010 with the beginning of the building of the Journey to Churchill exhibit, which will be described in greater detail below. The polar bear enclosure pictured in Figure 17, currently acts as a holding area for newly captured bears that have been deemed by Manitoba Conservation to have been abandoned, and who are fit for captivity as per the Assiniboine Park Zoos' breeding and health mandates. This area primarily holds new cubs, providing a safe area for them while they grow and allowing for regular medical check-ups. This exhibit now includes

"exterior shade and climbing structures, varied terrain, and natural substrates" (Penner et al., 2012) and allows the bears to be easily monitored from a distance (see Figure 18). However, it still features chain link fences and wide spaces of separation between the exhibit and visitors.

Figure 18. Arial view of the polar bear enclosure 2010-present (Used with permission: Penner et al., 2012).

With regard to the polar bear population in the Assiniboine Park Zoo, between the year 1938 and 1990 there were a total of 17 cubs born in the zoo and an additional 37 were cubs that had been born in the wild and brought to the zoo (Penner et al., 2012). Accounting for mortality rates of first and second year cubs, Penner et al. (2012) estimate that there were "55 polar bears housed at the Assiniboine Park Zoo" between 1938 and 2012. During this time 23 polar bears left the zoo to go to other facilities around the world, but due to inadequate international data management systems it is unknown what

happened to 18 of these bears after they left the Assiniboine Park Zoo (Penner et al., 2012). With the advent of the International Species Information Systems (ISIS) database and international studbooks data from other ISIS associate zoos and aquaria, this type of information is now better available and more easily accessible (Penner et al., 2012). After the introduction of the Polar Bear Protection Act (2002), all polar bears from Manitoba remain the property of the province in perpetuity and, as such, polar bears sent to facilities outside of the province are obligated to provide health and care records of these polar bears (Government of Manitoba, 2019; Penner et al., 2012). It should be noted that this historical overview emphasizes the enclosures and physical space of the polar bears, as this is what was documented and available in the archival records available at the Assiniboine Park Zoo and in the Manitoba Archives. It would have been preferable to also discuss interpretive materials and the focus of educational experiences, but these records were not available.

The Assiniboine Park Zoo's Journey to Churchill Exhibit.

In 2014 the Assiniboine Park Zoo opened their Journey to Churchill exhibit to the public (Assiniboine Park Conservancy, 2014). The exhibit was created with $34 million dollars of support from the Government of Manitoba, and another $28.1 million dollars from the City of Winnipeg (Assiniboine Park Conservancy, 2014). The opening of the exhibit was announced as follows:

> "This unique, world-class facility offers tremendous opportunities for learning about our northern environment and the importance of conservation as well as promoting all that Manitoba has to offer as a tourist destination," said Manitoba Premier Greg Selinger. "I am proud that the province was able to provide support that helped turn this exhibit from a great idea to the reality we see today."

> "Today's opening is truly a historic moment for Winnipeg, and the City of Winnipeg is proud to provide $28 million in funding for the Journey to Churchill exhibit," said Mayor Sam Katz "The Journey to Churchill is a world-class facility that houses the greatest northern species in exhibit in the world, right here in our city and our zoo. Not only is the exhibit an educational and engaging experience – it's a great way to teach and inspire our families, our students, and our visitors in an entertaining way. It will undoubtedly be a must-see tourist attraction for years to come." (Assiniboine Park Conservancy, 2014)

Support for the exhibit stemmed from a desire to promote tourism in Winnipeg, with the zoo as the attraction, but also to provide learning opportunities for visitors and to allow them to engage with Northern Manitoba (Assiniboine Park Conservancy, 2014). This exhibit was built, in part to make Churchill accessible to the average Manitoban who may never be able to visit the northernmost part of the province and also to act as a centre for polar bear conservation and research (Assiniboine Park Zoo, 2016).

The Journey to Churchill exhibit includes ten acres of space and is home to nine polar bears as well as seals, caribou, snowy owls, wolves, arctic fox, and muskoxen (Assiniboine Park Zoo, 2016b). The Journey to Churchill Exhibit can host a total of 12 - 13 polar bears, but 7 is considered ideal (Stephen Petersen, Director of Conservation at the Assiniboine Park Zoo, Personal Communication, 2019). The exhibit begins in a space called the "Wapusk Lowlands" (see Figure 19 for a map of the exhibit). The word Wapusk has its origins in the Cree word *Wâpask,* meaning white bear (Town of Churchill, 2018). Wapusk is also the name of the National Park near Churchill, Manitoba which is home to snowy owls, arctic hares, muskox, caribou and wolves. The exhibits in

Journey to Churchill feature barrier free viewing, meaning that there are no visible fences, and instead the barriers are created by natural looking rock walls (meant to replicate the shield-type rock found in Churchill, Manitoba) and glass barriers. The exhibits have also been terraced, so that visitors can see multiple animals along the same sight line – to create illusion that they are not in a zoo. For example, one can see muskox and wolves at the same time but they are, in fact, in their own separate enclosures. The terracing and landscaping also provide all animals some space to go where they are not visible to the public, so visitors have to take a bit more time to watch for the animals or to find them within the large exhibits.

Figure 19. The Journey to Churchill Exhibit at the Assiniboine Park Zoo (Photo credit: Jill Bueddefeld).

Next along the exhibit path is the Gateway to the Arctic building. This building features large glass walls and an underwater tunnel viewing area where visitors can see polar bears swimming and sometimes catching fish to eat. The immersive encounter is an icon for the exhibit and is certainly the most popular space within the entire zoo. Visitors from around the world flock here, as it is one of the few places in the world where you

can see polar bears swimming and be completely surrounded by their aquatic environment. Adults and children alike are frequently seen squealing with delight as they run into the underwater tunnel and place their hand on the glass next to a swimming polar bear or a polar bear paw if the bears are standing on the glass tunnel (which is common). Next to the underwater polar bear enclosure is an exhibit containing seals. There is another underwater tunnel separating the two enclosures, which affords visitors the ability to view seals and polar bears seals simultaneously. The saltwater in the two tanks is actually shared, which means the bears and seals can smell one another but cannot access each other. According to zoo staff this is an element of sensory enrichment for the animals. Polar bears are frequently seen watching the seals, as they swim past on the other side of the tunnel's plexiglass.

The Gateway to the Arctic building is also especially popular in winter, because it is an indoor place to warm up. There are interactive games and elements for children and adults to learn about different animals in the Arctic, the sounds they make, and their connection to Indigenous peoples. There is also a 360-degree movie theatre with a film featuring an Indigenous family living in Churchill, where the grandmother is shown teaching her granddaughter about the importance of caring about nature and wildlife. The film shows visitors what it is like to visit Churchill and features everything from the arrival by train, to the aurora borealis.

The next exhibit encountered on the path of the Journey to Churchill exhibit is the Leatherdale International Polar Bear Conservation Centre (LIPBCC). The LIPBCC features information about scientists and professionals that work in conservation, information about what polar bears eat, how they are researched and information about

climate change and actions that visitors can take to become more sustainable and lessen their individual environmental impact. Within the same building (but not available for public viewing) are the research and conservation labs and office space. Here an array of scientific studies are conducted and include polar bear denning and genetics research (Assiniboine Park Zoo, 2018a).

The last section of the exhibit is called the Churchill Coast. This features elements of the town of Churchill, such as kayaks, all-terrain vehicles, a helicopter as well as sign posts (such as the same polar bear warning signs that exist in Churchill, Manitoba) and the Tundra Grill (the Tundra Inn and Grill is one of a handful of restaurants in Churchill, Manitoba). Within the Tundra Grill is an indoor polar bear themed playground, which is a common destination in winter for families with small children.

The Tundra Grill provides a unique polar bear viewing experience where visitors can sit and eat lunch while watching polar bears in the Churchill Coast part of the exhibit. The bears can choose where they want to go, and do not have to be visible to the public and are not always visible in this area. However, since they move around and are curious, they will often wander by this area if one waits long enough. They will also sometimes come right up to the glass and inspect the people watching them, occasionally even licking the glass or pressing their nose up against it. People were observed to react to this behaviour in a variety of ways - typically, with excitement at the individualized recognition of the animal, occasionally with fear, especially if a child was told that the bear ‘‘is trying to eat you”, which parents seemed to find humorous. At times, jokes were made to children that they would be thrown in and eaten by the polar bears. Parents would laugh and I would watch as the child walked away, glancing back over their

shoulder, clearly concerned that they would be eaten. I wonder how the latter experience would shape a child's attitude to polar bears, and wildlife in general, for the future. However, most of the time these encounters were met with awe and presented a teaching opportunity for the child to "be nice" to the bear and not bang on the glass because it is too loud for their ears. These prolonged opportunities to watch the bears will likely influence how polar bears are perceived, as longer periods of observation afford a different perspective than walking past an exhibit or only stopping for a moment.

Learning tours at the Assiniboine Park Zoo.

Destination Canada, the organization officially responsible for overseeing and promoting tourism in Canada, has created and curated a list of "Canadian Signature Experiences" (Destination Canada, 2019). An advertisement for the list states: "Officially curated, the Canadian Signature Experiences are once-in-a-lifetime travel experiences. They are offered by Canadians who are passionate to share their part of the country with you." (Destination Canada, 2019). Of the six polar bear tourism experiences on the list, four take place in Manitoba, Canada (3 in Churchill and 1 in Winnipeg). The Winnipeg experience takes place at the Assiniboine Park Zoo and is called "Journey to Churchill: Discover the Magic of The North in the Heart of the Continent". This experience offers visitors a guided tour of, and "behind the scenes look" at, the Journey to Churchill exhibit for a minimum of 6 visitors, at a cost of $75 per person (Assiniboine Park Conservancy, 2019). Individuals or, as is more common, tour groups can book this tour as part of a larger trip either in Winnipeg, or across Canada. The tour is marketed as a "once in a lifetime" experience that offers visitors the ability to see the North, without actually going to the North, where visitors have an opportunity to:

> Go deep into the heart of Manitoba's north - without leaving the City of Winnipeg! Join us for an exclusive tour of the Journey to Churchill exhibit at the Assiniboine Park Zoo, one of the world's best Arctic zoo exhibits. This immersive experience offers travelers a convenient and comfortable opportunity to discover the wildlife, geography and culture of Manitoba's majestic north and visit one of Winnipeg's must-see attractions. It is ideal for large and small groups and those with limited time. (Assiniboine Park Zoo, 2016a)

In addition, the tour includes a behind-the-scenes tour of the research facility where visitors are informed that they will: "Meet a researcher, learn about the importance of polar bear research and how the work being done in zoos around the world are impacting wildlife conservation and environmental protection" (Assiniboine Park Zoo, 2016a). This tour offers an excellent comparison to the CNSC's learning vacation, as it is also a guided tour provided with the (at least partial) intent of the visitors learning about polar bears and environmental issues. In this research, for the purposes of comparison and for an opportunity to potentially look more closely at visitor learning ex situ, participants of this tour were included as part of a purposeful sub-sample of zoo visitors. There were many school group tours available, but because this was the only guided tour available to adults visiting the Assiniboine Park Zoo, participants on this learning tour were well-suited to be part of this study.

Unfortunately, there was only one Canadian Signature Experiences Tour booked at the Assiniboine Park Zoo during the fall and winter of 2016-2017. During this timeframe the Assiniboine Park Zoo organized a tour for zoo volunteers and their friends, and offered that this group of adults might also present an opportunity to observe a

typical learning tour and interview both regular guests (the volunteer's friends) and some volunteers. This volunteer tour consisted of approximately 15 zoo volunteers and 5 additional visitors (friends of the volunteers). The majority of zoo volunteers are aged 65+, and this was reflected in the participants on the tour as well. The format of this learning tour for the volunteers was similar to the Canadian Signature Experiences tour and was intended to allow the volunteers to learn more about the exhibit first-hand from the educational staff.

Vignette: A learning tour at the Assiniboine Park Zoo.

This learning tour has been scheduled from 9:00am – 10:45am with a tour company facilitating a cross-Canada tour by train for a group of British tourists (all approximately aged 50+). I meet the Assiniboine Park Zoo's interpretive guide and tour group by the main gate. There are approximately 40-50 people on the tour group. Many in the group do not seem to know their itinerary and are asking what they are doing at the zoo as they get off their bus and enter the zoo.

The zoo's interpretive guide begins the tour by the Bison paddock, large cat enclosures and elk (which is not part of the Journey to Churchill exhibit). Her descriptions focus on the physiology of the animals and are clear and interesting. I am standing at the back of the group and can hear her clearly at all times. The guide explains that the baby elk are hiding in the grass and are extremely well camouflaged. Almost as if on cue, one baby elk stands up. It is very near to us, and no one in the group had seen it – it is an excellent demonstration at how well they can hide in very low grass. The group loves this and are fascinated and extremely enthusiastic about everything the guide is telling them. This extends to the animals at the zoo that are not actually part of the exhibits, like the squirrels and prairie dogs. The group asks several questions about the

squirrels here and compares them to the “black tree rats” they have at home. There seem to be just as many photos taken of the squirrels and prairie dogs as of the animals in exhibits.

The tour of the Journey to Churchill exhibit begins as we approach the snowy owl enclosure. Everyone is so busy taking pictures that I do not think they hear anything the guide is saying about the owls. The guide’s descriptions of the animals are short, concise, and focus on facts about the animals and their habitat. Next, we go to see the caribou, where the guide explains that the clicking sound we can hear is caused by the caribou’s hooves. She describes how the caribou’s hoof anatomy makes this noise. We then move on quickly to the fox and muskox. Here our guide passes around a sample of the fur from the muskox and gives a description of them and how their fur is some of the softest in the world and very valuable. Everyone is keen to touch the samples and most remark on how soft it was. The next visible exhibit is the wolves, and they are indeed very visible at this time (which is unusual). On seeing the wolves, the group becomes very focused on that area. Our guide picks up on this and we quickly go for a closer look. At first, everyone is very busy trying to take pictures of the wolves. The guide informs the group on how these wolves had actually worked in films and were not originally intended to be part of this exhibit. They needed to be placed somewhere and were brought in as part of a temporary exhibit until other accommodations could be made. She explains that the wolves were so popular and were considered to be such a good fit with the Journey to Churchill exhibit, that they eventually became a permanent part of the exhibit. The guide continues to point out the pack leaders and explains each wolf’s name and different role within the pack.

Next, we move to the Gateway to the Arctic building and go into the 360 degree movie theatre because the movie is about to start (there is a large count-down clock telling visitors when the next showing is and it is one of the first things you see when you enter the building). Everyone seems to be enthralled during the film and based on comments I hear as we exit the theatre it seems to have been very well received. There are several people who had difficulty standing for the duration of the film as there were very few chairs available. I wish there had been more seats to offer some of the people who appear to have had a more difficult time walking and standing.

We then exit the theatre and go to see the polar bears, who are swimming in the underwater tunnel area. Everyone is completely captivated. One man nearly loses his footing on the steps because he is watching the polar bears and not watching where he is going. People take a lot of pictures from every angle possible and many put their hands up to touch the glass, trying to place their hands near the polar bears' paws. As I look around at the group, there is not a single person that does not have a broad smile on their face. The tour group wanders slowly in and out of the tunnels and many walk over to see the seals. We stay as a group in this general area for a relatively long time (approximately 15-20 minutes). As we exit the building, we briefly look at the climate change graph, and the guide notes some key points about how the graph demonstrates the dramatic changes we have had in our climate in recent years.

We then go to see the polar bear cubs in the older area of the polar bear enclosures. This area features two metal fences and a few people try to take pictures, then put their cameras away and just watch the cubs for a while. At this point the organizer of the tour points out that we should wrap up soon since they have lunch reservations.

Apparently, there are several heavy horse enthusiasts who have been promised some time at that exhibit, so we rush past the rest of the Journey to Churchill exhibit in order for the group to be able to see the horses. The people interested in horses are very impressed with the barn, but the horses are not in the barn and are further away in the paddock. The horse enthusiasts really enjoy seeing the horses, but clearly had been hoping for a closer encounter. Everyone is told they have about another 5-10 minutes and then they have to make their way back to the bus for their lunch reservation. The tour ends abruptly. Most of the group does not have a chance to go into the Tundra Grill, which also offers excellent views of the enclosure and, often, of the polar bears.

Vignette: A non-learning tour experience at the Assiniboine Park Zoo.

It is a cool fall day, and reasonably busy considering that children are back in school. There are approximately a dozen adult females (who do not appear to all be together) and one child standing outside the enclosure where the zookeepers provide talks on positive reinforcement training. Zookeeper talks are not regularly scheduled but are offered when keepers are available. The time of the zookeeper talk today was conveyed to the visitors by volunteers, who passed this information along as they came across the visitors. This particular talk is supposed to take place by a large glass window, where there is also a sectioned off area with metal fencing for the keepers to access. This area is referred to as the Positive Reinforcement Training area. It is only accessible to zookeepers, since here they can pass the polar bears food as a reward for cooperating with the training. The signage for the Positive Reinforcement Training area is small and not very visible, so I am wondering if I am in the right place for the zookeeper talk. The group of visitors waiting in this area appears to be watching two polar bears in the background and it is unclear if the visitors gathering here are waiting for the talk or just

happen to be watching the polar bears from this vantage point. The talk is supposed to start at 11:30 a.m., and I arrive shortly before this time. There are no zookeepers to be seen, nor are there any volunteers or other staff. After a few minutes, I walk back towards the Gateway to the Arctic building where I had seen a volunteer on my way in, to ask if I have the time and location correct. I meet one of the polar bear keepers on my way there, and she confirms that it is starting right now. I miss the start of the talk because of this, but the polar bear keeper is the one giving most of the talk, so I do not believe I have missed too much. This, however, has been a common occurrence during other observations. I have often been waiting for talks in order to conduct my observations and other visitors will approach me to ask if I know when and where various talks are happening.

The zookeeper begins her talk about how the bears are fed, what they are fed (horse meat, something called "chow", and their "salad bar" – the grass). She also talks about how smart they are and explains that they are as smart as they need to be to survive in their environment – "pretty smart, since their environment is so harsh". She continues to explain that polar bears are often compared to dogs because they are smart, trainable, and playful, but that this is not very appropriate because dogs live in houses and bears live in the Arctic which, she says, make them quite different. Her talk continues to explain that the polar bears at the zoo "know different people" and treat new keepers the same way children treat substitute teachers. They try to get away with getting extra food or pretend not to understand what is asked of them in training, feeding, or when they are moved to different sections of the enclosure. This is met with laughter from the group in general. A few members of the group do not appear to speak English, and one of these

seems to be quietly translating for the rest of them – since their reactions always mirror those of the larger group after the translator has finished. I believe it is difficult for the translator to keep up, since the zookeeper just continues with her talk and does not pause between ideas. I am not certain whether or not she is aware of the translation going on.

The zookeeper continues with her talk at a very rapid pace, leaving little time for questions or for people to digest the information she has just provided. She continues to explain why the polar bears require training: they are trained for health reasons and this is called "Positive Reinforcement Training". There is signage in this area of the enclosure that also explains what this is and why it is done. The zookeeper then explains that it is much easier to do blood tests, give medication, or treat minor injuries using positive reinforcement than by sedating the polar bears. While this is not discussed here, I have been previously informed by the head of Conservation and Research that sedation can actually be quite dangerous for some large megafauna and can even result, on rare occasions, in death of certain animals. For this reason, animals are sedated as rarely as possible. The keeper giving the talk also explains that the positive reinforcement training is useful for providing the polar bears with medical treatment in a less stressful and invasive way. By getting the bears to come close to the positive re-enforcement areas, where there is metal fencing, the keepers can draw blood or weigh them without actually having to go inside the enclosure – which is safer for both polar bears and the zookeepers. By getting bears to go into different parts of the enclosure voluntarily they can then partition the enclosure and more easily and safely enter to clean up feces or hide food and scents for enrichment activities. This is a benefit for both the bears and keepers, as it reduces stress for the bears if they go willingly.

The keeper then talks about how the bears' food source in the Arctic is primarily seal blubber, and the rest of the seal is left for other animals like foxes. She elaborates on the seals and describes how fast seals can swim and that the only way for a polar bear to catch a seal is through a hole in the ice. She physically demonstrates this by pretending to be a polar bear, looking down in imaginary hole, and catching a seal out of it. The bottom line of this talk is to expound on the fact that polar bears need sea ice in order to hunt and survive. From here, she explains that this is an issue due to climate change. Climate change has resulted in the ice melting approximately 3 weeks earlier on average and often freezing later; that this is "horrible, horrible, horrible" for the bears. She continues to explain that we need to do our part to reduce climate change. Recycling, using less water and shopping locally are choices, she tells the crowd, that "all of us can do", acknowledging that just one person will not make a difference, but that if we all do our part it will make a large difference. The keeper ends her talk at this point and asks if there are questions. Almost everyone in the group asks a question. One woman asks the names of the two bears behind us. Another asks about a sign she had seen that described the bears' 'glitter poop'. The keeper described how a different colour of glitter is placed in each polar bears' food, so that when they defecate the zookeepers can tell which poop came from specific bears. This allows them to test the poop and ensure that the polar bears are getting a well-rounded diet. Another woman asks if the bears each find their own den or if they are assigned one. I am surprised that the dens are assigned. Each polar bear gets a den and a feeding station that is exclusively theirs. This is intended to reinforce habits of coming to the feeding area when the keepers want them in a particular place, and it keeps them separate and ensures they all know they will get their own food,

to avoid any food aggression. The feeding stations even have a colour and shape unique to individual bears. Each bear is able to identify their unique shape and their name. This allows the keepers to call them by name to go to their marker (the shape). The visitors also ask about polar bears' swimming, and if they float. The zookeeper explains how their fur is hollow, which makes them float better, and that their fur does not hold much water, but since they are so big the water still weighs them down. She gives an example of one bear weighing 30 pounds more when wet. The polar bears slide down hills and roll in the grass to get the water off. The zookeeper then ends the talk, but people are not in a hurry to leave. I believe they would continue to ask questions if they were given the opportunity.

Provincial Government Involvement in Polar Bear Tourism

The Government of Manitoba has contributed significantly to the creation of the polar bear tourism industry, both in Churchill, Manitoba and at the Assiniboine Park Zoo, and remains heavily involved in its regulation. Through the creation of the Churchill Wildlife Management Area, the Government of Manitoba gained control over the area most heavily accessed by polar bears and tourism operators. This now extends to controlling which tourism operators have access to the area and to what extent (by controlling how many vehicle permits are given out each year). At the Assiniboine Park Zoo the Government of Manitoba acted as a major donor to support the building of the exhibit.

The Government of Manitoba also directly governs and regulates polar bear tourism and polar bears through the Ministry of Sustainable Development. According to the Polar Bears section on the Manitoba Sustainable Development Branch's website:

"Polar bears have historically always had some form of protection in Manitoba since they are wildlife within the meaning of *The Wildlife Act*, ie., wild by nature in Manitoba." (Government of Manitoba, 2019). The Wildlife Act was proclaimed in Manitoba in the year 1987, and polar bears are protected under this act though, historically, a number of measures taken for protection of polar bears predate this act. The hunting and killing of polar bears in Manitoba was first regulated in 1949, when these practices were "limited to bona fide residents of the Hudson Bay coastal area" (Government of Manitoba, 2019). By 1954, the selling and disposing of polar bears or any part of a polar bear was prohibited, and "any person other than a native was prohibited from being in possession of a polar bear or any part thereof" (Government of Manitoba, 2019). Polar bears were actually listed as "Big Game" species in 1963, although the Government of Manitoba (2019) website states that this never resulted in the actual hunting for sport of polar bears and that in 1991 this classification was changed to Protected Species.

Polar Bears are also regulated and listed as a threatened species under The Endangered Species and Ecosystems Act (1990), which protects both polar bears themselves and their habitat. This act also regulates and prohibits the ownership or capture of polar bears, which has important implications for polar bears that are taken to zoos.

In 2002 the Polar Bear Protection Act was passed. According to the Government of Manitoba (2019) website, this act was created to prohibit the export of polar bears and to:

> …prevent the use of Manitoba polar bears in an unacceptable manner such as by a circus. The regulation permits orphaned cubs-of-the-year (COY) to be donated to

> zoos that meet or exceed the specified facility and husbandry standards and prohibits the capture of polar bears specifically for donation to zoos. Manitoba's facility and husbandry standards have been widely hailed as among the best published standards in the world. The Act recognizes the contribution of zoos to wildlife conservation and conservation education and that zoos with appropriate facilities and husbandry practices can provide an acceptable quality of life for polar bears.

The Polar Bear Protection Act regulates (rather than necessarily protects) polar bears in three important ways. First, it regulates how and when it is considered appropriate to capture polar bears in their natural habitat and "remove a polar bear from the wild" (Government of Manitoba, 2019). Second, it states that "polar bears have unique needs that require specialized facilities and care" (Government of Manitoba, 2019) and third, that facilities are needed to provide this care. The act specifically states that a facility needs to be established as part of the act: "WHEREAS the establishment of a world-class facility dedicated to polar bear conservation and education will benefit the long-term well-being of polar bears around the world" (Government of Manitoba, 2019). In effect, the act is largely responsible for the creation of the Assiniboine Park Zoo's International Polar Bear Conservation Centre as the place to provide this world class care, conservation and education (Government of Manitoba, 2019). Further, this act established polar bears as the property of the Government of Manitoba, even if they are sent to other facilities (Government of Manitoba, 2019).

The Polar Bear Protection Act, and the subsequent Polar Bear Protection Amendment Act of 2010 are important in Manitoba for establishing grounds for, and

regulation of, removal of polar bears from Churchill. An example of the application of this legislation is the management of orphaned polar bear cubs by Manitoba Sustainable Development (formerly Conservation Manitoba). This practice began when it was identified in Churchill, Manitoba that at least one orphaned cub was found annually in the Churchill area. The reasons why cubs are orphaned or abandoned is not always clear. Scientists believe that cubs are orphaned when the mother cannot supply enough food to herself and her cub(s) and abandons them for this reason, or accidentally. Polar bear cubs that are less than one year old are called cubs-of-the-year or COYs by scientists, and since they do not have the experience of learning from their mothers about how to catch seals on the ice, they cannot survive on their own if they are orphaned at this stage of their lives (Nelitz et al., 2015). The Government of Manitoba website describes a study conducted with the Born Free Foundation, which attempted to determine if female polar bears with one COY would accept a second cub that had been abandoned. No details from these studies in 2000/2001 and 2009/2010 are provided, except to say that the studies were "terminated due to a lack of success" (Manitoba Government, 2019). It is worth noting that abandonment of offspring by many different animals is relatively commonplace in the wild, and that the regulation and governance of this situation in the case of polar bears demonstrates the value of the polar bear as a perceived resource. Under the Polar Bear Protection Act, the Province of Manitoba has the capacity to take orphaned polar bear cubs and place them for conservation and education purposes in the Assiniboine Park Zoo's Journey to Churchill Exhibit. When a COY is found in the Churchill area, the protocol is to contact Manitoba Sustainable Development, whose officers will monitor the cub for several days (often with the help of local tourism

organizations and the non-governmental organization Polar Bears International) in order to determine whether the cub has, in fact, been abandoned. The information on the Assiniboine Park Zoo's "Polar Bear Rescue Team" website gives the following reason for rescuing cubs:

> If polar bear cubs under the age of two are orphaned in the wild, there is no chance that they will survive on their own. In their first two years of life, polar bear cubs need their mother to teach them critical survival and hunting skills. If Manitoba Sustainable Development identifies a polar bear in need of rescue, the Polar Bear Rescue Team will help transfer them to the Leatherdale International Polar Bear Conservation Centre. (Assiniboine Park Conservancy, 2019)

Once the Sustainable Development officers feel certain that the cub has been abandoned or orphaned, they will tranquilize it, take it to the polar bear holding facility and contact the Assiniboine Park Zoo's veterinary team who then fly to Churchill to determine if the cub is healthy enough to make the flight to Winnipeg and live in the Journey to Churchill exhibit. If the cub is considered viable it will be transferred to the Assiniboine Park Zoo, where it will be placed in a separate holding facility for quarantine to ensure that it and the other polar bears do not contract any diseases, and will slowly be exposed to other polar bears. The Assiniboine Park Conservancy (2019) says that the rescued cub will:

> …act as ambassadors for their species, helping to educate visitors about life in the north and climate change issues. It is our hope that by seeing and learning from these bears, people will be inspired to make changes in their own lives that can have positive effects on climate change and wildlife conservation.

Today there are nine polar bears that live in the Journey to Churchill exhibit, all of whom are from Churchill, Manitoba (Assiniboine Park Conservancy, 2019). Of the nine polar bears, 8 were rescued as abandoned cubs that were too young to survive on their own (Assiniboine Park Conservancy, 2019). One bear, called Storm, was a three-year-old bear that attacked a man in Churchill, Manitoba (The Canadian Press, 2013). It was advocated that this polar bear be transferred to the Assiniboine Park Zoo, rather than euthanized, as "conservation officials deemed it not fit for the wild following the attack in early September" (CBC News, 2013). The man's injuries included a bite on his glute, and were not life threatening. Storm is affectionately referred to as the "wild bear" by zookeepers and is credited with teaching the other bear cubs how to be polar bears. Zookeepers explain how Storm will teach the others to fish or fight or act out other "wild" bear behaviours. This particular set of circumstances has allowed for an interesting encounter of polar bears from Churchill, Manitoba at the Assiniboine Park Zoo.

Another example of Polar Bear management by Manitoba Sustainable Development, is the Polar Bear Alert Program which deals with "problem" polar bears - ones that threaten human safety or property in or around Churchill (Manitoba Conservation, 2019). If a "problem bear" in Churchill comes into contact with people, it is brought to a holding facility (referred to by locals as the polar bear jail) by Manitoba Sustainable Development workers. The holding facility consists of five jail-like cells, which are designed to safely house polar bears until the ice freezes over on the Hudson Bay. Then the polar bears are released via helicopter to a distance far enough away from the community of Churchill to be considered safe.

Conclusion

By providing an overview and vignettes of each of the case study sites and different types of visitor experiences (both learning tour and non-learning tour), I have outlined the history and context of polar bear tourism in Churchill, Manitoba and at the Assiniboine Park Zoo, in Winnipeg Manitoba. These two sites provide a particularly unique setting in which to examine in situ and ex situ nature-based tourism. The scant literature on research exploring in situ and ex situ nature-based tourism compares zoo and aquarium experiences in general with safari experiences (Packer & Ballantyne, 2012; Skibins et al., 2013), or compares an ex situ zoo experience, set generally in 'Africanized' space, that is intended to take visitors back to another era and place that is loosely based on the in situ setting (Uddin, 2015). This research is the first of its kind to compare in situ and ex situ nature-based tourism, where the ex situ site intentionally replicates both the place and modern era of the in situ site. This creates a unique opportunity to explore and compare visitor experience and learning, as the places are as similar as possible and even the polar bears are the same – in that they are all from Churchill, Manitoba. What this chapter also highlights, is the importance of the Government of Manitoba's role in establishing both places as sites for polar bear tourism. The vignettes provided in this chapter demonstrate the important role that formal guides and other knowledge keepers (such as Tundra Buggy drivers and zookeepers) can play in visitors' potential learning experiences. These vignettes also demonstrate some of the important, but subtle differences in the way that interpretive messages are framed within the larger context.

Chapter 4: Visitor Experiences and Learning

This chapter will further explore visitor experiences, particularly in relation to visitor motivation and learning. Specifically, this chapter will further describe the visitor experience in situ and ex situ as per research question 1(a) and addressed research question 2(b):

1. a) Explored and described the overall visitor experience at both in situ and ex situ sites.
2. b) Compared visitor experiences and learning (and how they may change over time) for visitor learning that is potentially transformative (including behaviour change), for both in situ and ex situ sites (across site-analysis).

The subsequent chapters 5 and 6 focus on the findings of this research and each will begin with a brief introduction to remind the reader of the specific research questions that the chapter addresses, often followed by a vignette that relates to content of the chapter. Beginning with visitor learning and experiences this research seeks to better understand in situ and ex situ nature-based tourism and provide context for understanding the visitors in this study and the possibilities of their learning. Drawing from a broad range of visitor studies and environmental psychology literature this chapter explores variables identified as important in learning for behaviour change and compares these findings for in situ and ex situ visitors (Bamberg, & Möser, 2007; Falk, 2005; Falk et al., 2012; Halpenny, 2010; Hines, Hungerford, & Tomera, 1987; Marseille et al., 2012; Steg & Vlek, 2009; Schultz & Joordens, 2014; Stern, 2001, 2011).

Vignette: Visitor Motivation and Choosing a Tour You Can Feel Good About

I arrive on the same flight as the first group of Churchill Northern Studies Centre (CNSC) learning tour visitors. As we descend, the dense fog prevents us from seeing the

town of Churchill or getting a sense of where we are. The fog is thick and all around us as we land. We land, deplane, gather our luggage and are loaded onto the CNSC vehicles in record time. The windows fog up as we drive towards the CNSC and I feel extremely disoriented. I write one word in my notes: remote. We arrive at the CNSC by 10 a.m. and by 11:30 a.m. we have all read and signed waivers on bear safety (see Appendix D for a copy of this waiver). Just when everyone is starting to wonder how seriously they need to take this waiver about bear safety, a polar bear is seen near the building. The group is abuzz, and everyone is rushing to windows to see some of the action. The two leaders of the CNSC tour group, Grant and LeAnne, rush into a truck, toting a gun, and they drive at full speed in the direction of the polar bear. They rev the engine and we are told they are trying to scare it off without firing blanks or "poppers". When this does not work, a few rounds of poppers are fired, and the tour group is beyond excited that they have already seen their first polar bear.

While the group has lunch two more bears are seen, one of which has apparently returned from earlier. As I am being briefed by Grant and LeAnne - the two main tour organizers and research scientists at the CNSC - another polar bear is seen, and they physically jump into action to go scare it off. By the time it is 5 p.m. I have watched Grant and LeAnne give several tours of the facility, pick up guests, haul their luggage inside, and, in addition, they also run the CNSC as an organization and do research. I am surprised at how helpful and accommodating everyone is, given how busy they are.

After dinner this first evening, the group has their first lecture given by the tour guide. The guide begins by telling us where we are: in the subarctic, and he expounds that the Arctic technically begins at 66.3 degrees, and that Churchill is located at 58 degrees.

He then takes a poll of why everyone is here. Eight are on the tour because of a friend's recommendation, one is a repeat visitor with the CNSC who has previously been on an aurora borealis tour, and another is on her eighth visit to the CSNC - she began her tours to the CNSC with Rhodes Scholars over 20 years ago. One person admits, somewhat sheepishly, to coming on the trip just because their spouse wanted to. Another is a Winnipeg resident who has always wanted to visit Churchill. Three people are on the tour because they have been on other tours with this particular guide and enjoyed him. One couple is replicating a trip that their parents had taken them on as children and are taking their kids on this trip. The guide then asks the group what they want to get out of the trip. A few people say that they want to visit "the North" and "see bears". Several more agree that they want to learn and "not just ride around in a buggy". There are several teachers on the tour, at least two of whom received grants to support their trip. There are two people who say they are here to be on a spiritual journey. They feel polar bears are powerful and state that they are concerned about climate change. After that discussion the guide begins to discuss the advantages of visiting Churchill and this particular tour. "When you're up here, all that other stuff falls away – here it's just the bears and ice". He continues to discuss the direct connections between being a tourist at the CNSC and supporting research: "You should feel really good about that" – in relation to choosing this trip instead of the average Churchill tour. The guide then describes that the CNSC is a non-profit and discusses the research that is done here and that the group will have the opportunity to participate in research.

Introduction

As this brief vignette demonstrates, visitors choose experiences for a number of reasons, with a wide variety of motivations and expectations for their visits (Falk & Dierking, 2000). The idea that visitors are empty vessels, whose visits are influenced purely by planned on-site experiences, has long been overturned within the field of visitor studies (Bond & Falk, 2013; Falk, 2009; Falk & Dierking, Falk et al., 2008). Seeking to understand visitor's motivations has been an important part of tourism literature broadly (Crompton, 1979; Iso-Ahola, 1982). Using Maslow's Hierarchy of Needs (Maslow, 1943), tourism literature recognizes visitors as seeking experiences that provide some form of self-actualization, and explores internal motivations (McIntosh & Goeldner, 1990) and psychographics (Plog, 1972) and acknowledges both push and pull factors in leisure decision making (Kim & Lee, 2002). Within this visitor research literature it is widely recognized that visitors' learning is influenced by their own identity, motivation for visiting (Bond & Falk, 2013; Dawson & Jensen, 2011; Falk, 2007, 2009; Falk et al., 2008; Schultz & Joordens, 2014), companions during the visit, and their prior interest and expectations (Falk & Dierking, 2000; Storksdieck et al., 2005). With the rise of the experience economy (Pine & Gilmore, 1998; Mehmetoglu & Englen, 2011), the importance of carefully and intentionally crafting and co-creating visitor learning experiences has been increasingly recognized (Ardoin et al., 2013; Bond & Falk, 2013; Falk 2007, 2009; Falk et al., 2008). As the vignette at the start of this chapter demonstrates, the visitors' experience and learning will stretch far beyond the evening lectures. For many visitors, seeing these first few polar bears around the CNSC within their initial hours in Churchill was extremely memorable. Even the excitement of watching Grant and LeAnne chase off polar bears was a highlight and taught these

visitors how seriously the CNSC takes bear safety and about the practicalities of continuously trying to scare bears away from human settlement. All of these unplanned and social elements played a part in an incredibly memorable polar bear tourism experience and visitor research needs to account for these types of unplanned encounters and interactions.

Research in visitor studies suggests that one way to better plan for intentional experiential outcomes is to segment visitors (Dawson & Jensen, 2011, Falk, 2009; Falk et al., 2008; Schultz & Joordens, 2014). While visitor segmentation has its background in market research, and has certainly been recognized as important in creating competitive leisure experiences, it can also provide predictive capacity in terms of visitors' experiences and possible outcomes – including satisfaction and learning (Dawson & Jensen, 2011, Falk, 2009; Falk et al., 2008; Schultz & Joordens, 2014). Visitor studies literature suggests that using visitor's motivations is one potentially effective way to segment visitors (Dawson & Jensen, 2011, Falk, 2009; Falk et al., 2008; Schultz & Joordens, 2014).

Literature Review

This research conceptualizes visitor learning as free-choice and employs the Contextual Model of Learning (CML). First, the CML is used as a framework for understanding the visitor experience. The interview questions intentionally focused on factors known to affect visitors learning such as prior interest, prior knowledge, expectations, choice and control, motivations, and the social organization of the visit (Falk & Storksdieck, 2005, 2010; Falk et al., 2008; Falk et al., 2004; Marseille et al., 2012). This research is also firmly situated in the physical context, as it seeks to explore

differences between in situ and ex situ nature-based tourism experiences. Secondly, the CML is used to code learning examples found in the visitors' PMM and interview data, in relation to each context of the CML. The purpose of this is to explore broad patterns of learning in relation to visitors' experiences. Previous research that explores learning within the CML, tends to focus on analyzing different types of learning processes and outcomes (Falk et al., 1998; Falk & Storksdieck, 2005, 2010). This free-choice learning research is often mixed-methods or quantitative and analyzes free-choice learning in relation to the quality of learning in terms of the extent, breadth, depth, and overall mastery of the learning demonstrated by visitors (Bueddefeld & Van Winkle, 2017, 2018; Falk et al., 1998; Falk et al., 2008; Falk & Storksdieck, 2005, 2010). Further, it is recognized that the CML is more appropriately a framework, rather than a model, as it is not capable of offering predictive capabilities (Falk, 2011a). Falk (2011a) contends that:

> A true leisure-learning model would need to be prescriptive and yield not only descriptions but actual predictions about what visitors will do and learn; such a model will need to accommodate both the site and the visitor sides of the equation. (p. 226)

In addition, previous research has demonstrated the utility of identity-related visitor motivations in studying visitor learning in museum settings (Falk, 2011a; Falk et al., 2008; Falk & Storksdieck, 2010) and in zoos (Helimlich et al., 2004; Shultz & Joordens, 2014), and in this research visitor motivation plays a particularly salient role. Using the CML framework, this research explores how visitor identity related motivations may relate to visitors' learning within these particular contexts; the central concept being that some visitor's motivations may influence learning in different contexts of the CML or

domains of Transformative Learning Theory. While there is no prior research that explores visitor learning as it relates to the contexts of the CML (it is rather always assumed that these contexts inherently contribute to how learning is acquired by people over time), I believe this is an important next step in the free-choice learning literature. Here, I must be careful to clarify that my purpose was to explore free-choice learning in relation to the context of CML, rather than to assess the type or quality of free-choice learning (e.g. extent, bread, depth or mastery). As this study was exploratory in nature, I believe this approach to exploring potential connections between visitor motivations, learning and the CML is an appropriate and an important next step in better understanding how and why visitors learn or do not learn.

The Contextual Model of Learning.

Personal context.

Within the visitor learning literature there is often a focus on the personal context of learning (Falk, 2009; Storksdieck & Falk, 2005; 2010; Heimlich et al., 2004). Falk (2009) attributed this to the fact that even the most well-designed visitor experiences and physical sites do not ensure that all visitors will learn something, and especially not the same things.

> …as this book suggests and in particular, the research that my colleagues Martin Storksdieck, Joe Heimlich, Kerry Bronnenkant, and I have conducted over the past decade attests to, these experiences do not unilaterally determine how visitors behave in museums, let alone what they ultimately learn and remember from the experience. (p. 97)

Understanding the nuances of individual learning is challenging, as there are many factors that contribute to the overall visitor experience. The personal context of learning

provides an outline for identifying some of these factors such as visitor motivations, prior interest and experiences, expectations, and choice and control.

Visitor motivations.

In research exploring visitor's learning and motivation at science museums, Falk and Storksdieck (2005) were surprised to find that rather than seeing myriad ways that visitors might describe and segment themselves by their motivations for visiting, their descriptions tended to cluster around a few common situated identities (Falk et al., 2008). Falk (2009) theorized, based on his 2005 research with Storksdieck, that visitor motivations could be effectively understood within 5 identity-related motivational categories: Explorers, Facilitators, Professionals/Hobbyists, Experience Seekers and Rechargers/Spiritual Pilgrims. This concept was tested in a large-scale national study exploring visitor learning and motivation of zoo and aquarium visitors (Heimlich, Bronnenkant, Witgert, and Falk (2004). Heimlich et al.'s (2004) research found that the majority of visitors were able to identify with at least one primary motivational category, and that this categorization proved useful in predicting visitors' learning and behaviour. With this knowledge in mind, Heimlich et al. (2004) began to develop a survey tool that could be used to isolate visitor motivations. Heimlich et al. (2004) began with 125 individual items used to describe visitor motivations. These scale items were pilot tested and refined by Heimlich et al.'s (2004) research team until 20 items had been selected to identify the five visitor motivational factors – which worked out to be 4 items per motivation. The five categories are described by Falk (2011a) and Falk et al. (2008) as follows:

> **Explorers**: Visitors who are curiosity-driven with a generic interest in the content of the site. They expect to find something that will grab their attention and fuel their learning.
>
> **Facilitators**: Visitors who are socially motivated. Their visit is focused primarily on enabling the experience and learning of others in their accompanying social group.
>
> **Professionals/Hobbyists**: Visitors who feel a close tie between the site content and their professional or hobbyist passions. Their visits are typically motivated by a desire to satisfy a specific content-related objective.
>
> **Experience Seekers**: Individuals who are motivated to visit because they perceive the site as an important destination. Their satisfaction primarily derives from the mere fact of having "been there and done that".
>
> **Rechargers/Spiritual Pilgrims**: Visitors who are primarily seeking to have a contemplative, spiritual and/or restorative experience. They see the site as a refuge from the work-a-day world or as a confirmation of their spiritual beliefs. (p. 147-148; p. 57)

The 20 items used to identify the five visitor motivations, used in the study by Heimlich et al. (2004), were further examined by Falk et al. (2008), who had visitors at zoos and aquariums rank the motivational scale items in order to determine visitors' motivations upon entry. Within this research, Falk et al. (2008) introduced the idea of big "I" and little "i" identities to the field of visitor research, segmenting visitors by their little "i" or situated identities, to better understand visitors' motivations.

> Like Bruner and Kalmar (1998) and Neisser (1988), we acknowledge the important evolutionary influence on identity of innate and learned perceptions about the physical environment. From this perspective, identity emerges as malleable, continually constructed, and always situated in the realities of the physical and socio-cultural world: both the immediate social and physical world of an individual, and the broader social and physical world of an individual's family, culture, and personal history. Each of us maintains numerous identities, which are expressed collectively or individually at different times, depending upon need and circumstance (see Cooper 1999; McAdams 1990). Although each of us possesses and acts upon a set of enduring and deep identities—"big 'I' identities"—we also enact a series of **"**little 'i' identities" that respond to the needs and realities of the specific moment and situation. This latter kind can be thought of as "situated" identities. (p. 56)

Falk et al. (2008) theorized that visitors use their situated or little "i" identities to "describ[e] themselves within a specific situation" (p. 57) and that these situated identities can be useful in segmenting visitors to better understand both the visitor experience and the potential for different learning and affect outcomes (Falk et al. 2008). Their research found support for this theory and, importantly, also found the interview data to be most informative for understanding visitors by the motivation segmentation:

> Perhaps the strongest indication of the value of segmenting visitors according to their entering identity-related motivations was revealed by the qualitative interview data collected immediately following the visit and seven-to-11 months post-visit… By inference, visitors' long-standing self-aspects helped to shape

> their entering identity-related reasons for visiting, which in turn were used as a way to help organize their experience and relate it to themselves.

In other words, these situated identities help reinforce visitors' ideas about themselves, but also influence how visitors reflect on and see their experience (Falk et al. 2008). Their research describes how Explorers tended to view the experience from a self-centric perspective, focused on what they found interesting (Falk et al., 2008). Whereas Facilitators were concerned primarily about what others experienced, and "Experience Seekers reflected on the gestalt of the day" (Falk et al., 2008, p. 72). Additionally, this research found that these visitor motivations informed expectations and that visitors sought out experiences which would reinforce their expectations or motivations for visiting (Falk et al., 2008). What Falk and colleagues have found in their visitor motivation and free-choice learning research in museums, zoos, and aquariums is that "…all of these factors [of the CML] do influence the museum visitor experience, but that not all factors equally influence all visitors" (Falk, 2009, p. 217). Social interaction is an excellent example of this. For Facilitators social interaction is the quintessential aspect of the experience, but for visitors with a Rechargers motivation it could have no effect or even a negative effect. Based on his previous research, in his book *Identity and the Museum Visitor Experience*, Falk (2009) outlines a few key findings relating to each visitor motivation category, which are summarized below.

Explorers.

Explorers are "seeking to satisfy their personal interests and curiosities" (Falk, 2009, p. 217) and often comprise a large proportion of museum visitors. He states that they tend to avoid tours, unless they can be customized to reflect their individual interests

and the ability to pick and choose what they will learn more about. Explorers will look for exhibits that "…support browsing and are rich in detail and information that allow them to exercise their minds"; discovery is part of their exploration, and they "do not wish to be spoon-fed information" (p. 219). These visitors desire clearly labelled spaces and experiences designed to facilitate an ease of decision making about which they will focus their attention. Explorers also tend to be repeat visitors to museums. Hence, layered information – potentially through technology assisted methods – can enhance exhibits catering to these visitors, as it will provide them with multiple avenues for exploration on different visits. Visitors with explorer motivations are just as likely to visit by themselves as with others. They will likely engage with their social group at least for some portion of their visit and are "…thrilled when they encounter knowledgeable staff with whom they can interact and ask questions about the content of the exhibit" (Falk, 2009, p. 220). In terms of physical use of space, explorers will also be the visitors that will frequent the cafes in the middle of their visit, in order to recharge and reflect before continuing their visit. Explorers, with their keen desire to learn, will also be the ones interested in public lectures, workshops, and other programs available to them, provided these are relevant to their specific interests.

Facilitators.

Visitors with Facilitator motivations are "visitors who arrive at the museum with a strong desire to support what's best for their loved one or companion" (Falk, 2009, p. 221). They can be further categorized as Facilitating Parents or Grandparents and Facilitating Socializers (Falk, 2009). This category of visitors are more concerned with the prior interest, knowledge, and learning of their companions. With this in mind Falk (2009) recommends that museums ought to consider how they can best support

adult/parent facilitators in this role. He recommends they can do this by creating physical spaces and signage at the entrance that is easy to read and follow, given that children are often excited and eager to get started and may not provide time to obtain relevant information such as directions or daily events. Facilitating parents are interested in demonstrations, especially ones in which their children can directly participate in (Falk, 2009). Facilitating socializers, such as adults bringing friends or guests to see their local exhibits, typically select what Falk refers to as a "chosen adult", and it is this one person's motivations that the group revolves around (Falk, 2009). Both types of Facilitators will likely be repeat visitors and visit more frequently. Falk (2009) also notes that Facilitating parents are likely to frequent the gift shop to purchase an "educational book, game, or toy at a reasonable price that they can use to carry on the educational experience at home"(p. 224); for Facilitators, providing off-site and continued engagement is important.

Experience Seekers.

For Experience Seekers the "goal in visiting the museum is not to become a subject matter expert, but to have a great experience" (Falk, 2009, p. 225). These visitors are drawn to the 'Top 10' lists, and 'Best of' guidebooks. Falk (2009) states that these visitors are most likely to follow the crowds, but that this may not result in the most satisfying experiences for them. Spending some time with Experience Seekers to determine what they are most interested in seeing, and then planning their visit according to the time they have is essential in meeting their visit goals. Any audio guides or tours should emphasize the highlights and the bigger picture, rather than nuanced details. Experience seekers also value customer service and well-designed physical space, since for them, the entire experience – including the washrooms, ticket counter, and cafes will

all contribute to their overall experience (Falk, 2009). Visitors with this motivation are often the "highest users of museum food services" – which has important implications for where and how food services are designed and whether they are integrated into the exhibits. They are also extremely likely to frequent gift shops and desire to purchase mementos as a part of their memory making. The more meaningful and aligned with the organization's mission the memento is, the better the gift shop experience. Falk (2009) emphasizes: "The gifts purchased at the shop are likely to be one of the most salient aspects of the visit for Experience Seekers" (p. 227). Since Experience Seekers are most interested in new experiences, they are less likely to return to the same exhibit, but they will encourage their friends and family to visit. These visitors are effectively targeted for return visits only with changes or updates in exhibits.

In terms of socializing, this group of visitors is also "likely to be highly social visitors; their goal is to "make memories" (Falk, 2009, p. 226). Taking pictures and having iconic settings in which to do so, in order to link the place to their memories, is important to them. Falk (2009) recommends that museums intentionally create spaces for such photo opportunities.

Professionals/Hobbyists.

Professionals and Hobbyists are most likely to visit museums for very specific reasons that reflect their prior interests and experiences. If these are content based, they will be almost exclusively interested in the related content and exhibits. If they are related to photography or other interests, this group will similarly reflect those interests, and will likely ignore the majority of the content, labels and prescribed way of seeing the exhibit. They are very unlikely to make use of any interpretive materials such as brochures, signage, and audio or in-person tours. "What they are seeking is an intense access to the

objects or displays, particularly those Professionals/Hobbyists with a content objective, they'd love to get behind the scenes and see the objects up close, without crowds and without disturbance" (Falk, 2009, p. 228). Creating specialized experiences, such as workshops or tutorials for Professionals/Hobbyists will be important for creating meaningful experiences for these repeat visitors. Socially, Professionals/Hobbyists are less likely to be interested in socializing within their own groups. They do value interactions with knowledgeable staff, but often only in relation to orientation or in providing relevant information germane to their interests – everything else will be extraneous for them. These are the visitors that see themselves as the "*real* museum visitors" and are seeking experiences that they perceive to be authentic. The physical aspects of the space in terms of amenities and design will at times be relevant to these visitors, if this aligns with their purpose. For example, if a visitor is interested in photography, the physical space will matter as it affects their ability to take the sort of pictures they desire.

Rechargers/Spiritual Pilgrims.

Rechargers are the visitors who are the easiest to please, since "all they want is a peacefully and aesthetically pleasing corner of the world in which to relax" (Falk, 2009, p. 230). For this reason, Falk (2009) states that the physical space is most important for this type of visitor. These visitors are the ones who will care the most about the design, lighting, space for sitting and reflecting, and will be the most irritated by crowds (Falk, 2009). Falk notes the ongoing issue with museums providing inadequate seating spaces, especially ones that are in "beautiful places and out of high-traffic areas" (Falk, 2009, p. 230). Rechargers are often repeat visitors and are the least likely to use facilities that are not related to the exhibits such as cafes and gift shops; if they do it will often be in

settings that are aesthetically pleasing. They are also unlikely to attend workshops or lectures and other programs, since, while they are frequent visitors, they are most interested in coming to relax and recharge (Falk, 2009).

With additional research, Bond and Falk (2013) and Falk (2011a) proposed two additional categories to encompass a wider range of visitor motivations, which included Respectful Pilgrims and Affinity Seekers.

> **Respectful pilgrims:** Visit out of a sense of duty or obligation to honour the memory of those represented by an institution/memorial.
>
> **Affinity seekers**: Are motivated to visit because a particular museum or more likely exhibition speaks to the visitor's sense of heritage and/or personhood. (Falk, 2011a, p. 147-148)

Their research suggests that utilizing these categories of visitor motivations can be useful in better understanding visitors' experiences and in planning experiences to enhance satisfaction or particular outcomes, such as free choice learning (Bond & Falk, 2013). The Respectful Pilgrims and Affinity Seekers in the context of polar bear tourism, were not found to be relevant, so for the purpose of this research the following motivation categories will be used: Explorers, Facilitators, Professionals/Hobbyists, Experience Seekers, and Rechargers. Considering how informative the understanding of these museum visitor identity-related motivations is for designing experiences, research is needed that further explores this in the context of nature-based tourism and visitor learning.

Critique of segmenting visitors by motivation.

Falk's (2006) approach to segmenting visitors by these motivations has been both praised (Falk et al., 2009) in the literature and critiqued as being overly simplistic and reductionist (Dawson & Jensen, 2011).

> It is highly problematic that Falk's (2009) model ignores the importance demographic factors hold for visitors and that it assumes visits to cultural institutions are perceived in similar ways regardless of ethnicity, age, class background, or personal history. Demographic factors influence people's attitudes, experiences, and behaviours, as demonstrated by a wealth of research in sociology, cultural studies, and educational research, as well as in visitor research. (Dawson & Jensen, 2011, p. 132)

This critique argues that concentrating on motivations alone fails to account for the demographic and contextual differences in visitors, which are known to impact both learning, satisfaction, and visitor experiences broadly (Dawson & Jensen, 2011). Dawson and Jensen (2011) argue that contextual factors and demographics, such as age, education and sex, ought to be incorporated in research in order to gain a more complete understanding of visitors.

Previous research examining free-choice learning and visitor motivations has found some evidence that Experience Seekers tend to demonstrate more learning than visitors with other motivations (Falk et al., 2008; Schultz & Joordens, 2014). Falk, Heimlich and Bronnenkant (2008) found that "Experience Seekers showed significant changes in their understanding of conservation over the course of their visit, while visitors categorized as Facilitators, Explorers, Professional/Hobbyists and/or Spiritual

Pilgrims experienced no significant gains in their knowledge of conservation-related topics during their visit" (p. 71). Similarly, in a study exploring free-choice learning and motivations of zoo visitors, Shultz and Joordens (2014) found that "the data suggest that both Spiritual Pilgrims and Experience Seekers may be more successful learners than Facilitators, with the former group also being more likely to donate personal resources to conservation initiatives" (p. 769). Within that research the Experience Seekers tended to be predominantly female and both Experience Seekers and Spiritual Pilgrims had less children on average than other visitors. Given the differences found with regard to gender and family size for these visitors, in relation to their motivational characteristics, further research is needed to explore motivation and visitor learning in conjunction with these demographic factors. Schultz and Joordens (2014) found that zoo visitors at the Toronto Zoo in Canada varied in their motivations from the visitors in the American portion of their research project. This suggests that motivations may be location and context specific, and not necessarily transferable to all zoo visitors, and that research must take this into account.

Prior interest and experiences.

Other variables that have proven to be important factors in visitor learning are prior interest and experiences (Falk & Dierking, 2000; Storksdieck et al., 2005). It has long been understood that "… visitors do not arrive as *blank slates*, but rather bring with them well-formed interests, knowledge, opinions and museum-going experiences" (Falk & Dierking, 2002, p. 31). Falk and Dierking (2000) refer to this as the personal context of free-choice learning, but it is also referred to as visitors' entry narratives (Falk & Dierking 2002). Within this body of knowledge, research on personal identity is intertwined with the examination of these variables (Falk & Dierking, 2002; Leinhardt &

Knutson, 2004). In general, people will seek experiences that reinforce their visitor identities or entry narratives, and "…visitor's perceptions of satisfaction will be directly related to experiences that resonate with their entry narrative" (Falk & Dierking, 2002, p. 31).

Further, selection of free-choice learning experiences is considered to be a particularly meaningful expression of one's self identity, as leisure time and tourism activities in particular are carefully chosen; they are intentional and important to the individual, as time and money are both carefully invested (Falk & Dierking, 2002; Falk, 2009). Prior interest, then, is a factor when visitors select where they would like to travel to and in which activities they choose to engage. "When people like something, they attribute positive feelings and values to it; the result is a high probability that they will follow up on that interest with action" (Falk & Dierking, 2000, p. 23). Along this line of inquiry, Falk, Heimlich, and Bronnenkant (2008) examined visitors' identity-related motivations with regard to free-choice learning outcomes and found that visitors entering with Experience Seeker motivations demonstrated significant increases in their free-choice learning, but that visitors with motivations such as Explorers, Professional/Hobbyists, or Spiritual Pilgrims did not demonstrate significant knowledge gains (Falk et al., 2008; Falk & Dierking, 2002). With this knowledge, it appears one cannot simply assume that if visitors already have an interest in the topic, they are going to be likely to learn more during their free-choice learning experiences. Thus, subsequent research that explores visitor learning must include information on both motivation and prior knowledge.

Additional research on visitor identities, motivation and free-choice learning has demonstrated differences in learning between visitor motivational identities, in that Spiritual Pilgrims and Experience Seekers demonstrated notably more learning than Facilitators (Schultz & Joordens, 2014). Further research is needed to determine if there are any transferable outcomes that may be useful for informing the issue of visitors' free-choice learning in relation to visitor identity and motivation.

Expectations and choice.

Expectations have also been shown to play an important role in visitor learning. If expectations are met or surpassed visitors will be satisfied; similarly, if expectations are not met visitors will most often be dissatisfied (Falk, 2009). In targeting visitor satisfaction, then, it is important to identify and understand their expectations. Since expectations are intricately linked to visitor motivations, understanding motivations becomes an important part of predicting and ensuring that expectations are met (Falk, 2009). Studies often demonstrate high levels of satisfaction for all visitors in free-choice settings (Falk, 2009; Shultz & Joordens, 2014). Falk (2009) suggests that this is likely due to an overall understanding of museums and experience providers, of who their guests are and what expectations they have. He also theorizes that expectations are often met as part of a self-fulfilling prophecy, where "…. In part due to human nature; we have the propensity to want our expectations to be met and work hard, often unconsciously, to fulfill them…" (Falk, 2009, p. 159). In other words, as visitors we likely select places and activities that we are already interested in and are likely to find enjoyable (Falk, 2009; Shultz & Joordens, 2014). If the experience is disappointing this may impede visitors' learning, as they may be more focused on their unmet expectations than on what they are

experiencing. For these reasons, satisfaction and expectations are important variables in understanding visitors' experiences and learning.

In addition to being bound up with motivation, expectations and satisfaction are tied to choice and control. The motivation for the visit may have been decided upon by all members of a group, just a few, or even one person may have been the decision maker (Falk et al., 2008). This factor will also influence the motivations, expectations, or satisfaction of the visitors who were not the primary decision makers. For example, a mother and daughter on a trip to Churchill, Manitoba may have very different motivations for their visit. If the mother has had a lifelong interest in polar bears and desire to learn more about Churchill, her visit will reflect that of an Explorer. If the daughter is interested more in taking a trip with her mother, she will be acting as a Facilitator; she is more interested in, and concerned with, the social aspect of the trip and will be satisfied if her mother is enjoying herself and is meeting her own internal expectations (Falk, 2009). With this example, these motivations are not necessarily at odds. If, on the other hand, the daughter is more interested in the experience broadly, and thinks of the trip as a "bucket list" experience, she may be more interested in seeing and doing all of the "must see" experiences and less interested in the details that her Explorer mother would be concerned with. This can create conflict within groups and can be important for understanding and navigating multi-day experiences with complex social dynamics or in instances where visitors are forced to participate socially within a group.

Socio-cultural context of visitor experiences.

The socio-cultural context includes the "the within- and between-group interactions that occur while in the museum and the visitor's cultural experiences and values" (Falk, 2009, p. 159). The within-group social interactions refer to the people that

one may visit a site with, such as family and friends. Between group interactions refers to the ways in which visitors may interact with other groups of people that they either did not attend with, or are not acquainted with – the other people sharing the experience. It is the within group social interactions that are considered to be particularly powerful in their ability to influence the visitor's experience and learning (Falk, 2009).

> These conversations can ultimately have more impact on a visitor's memory of the experience than the objects and labels themselves. This socio-cultural mediation, either direct or indirect, plays a critical role in personalizing the experience for visitors, facilitating their efforts to learn and find meaning from museums. (Falk, 2009, p. 100)

The social aspects of learning, the casual conversations before and after an experience, help to shape our memories and meaning-making over time (Falk, 2009). Social interactions and the learning that results from these experiences may be difficult to measure, especially before and after a visit, but they are arguably important. Understanding who someone is visiting a site with is an important component of understanding their visit motivations and potential learning outcomes.

Another element that has not received sufficient attention in the free-choice learning literature is the role that exposure to programs and organized tours may play in visitor's experience. Free-choice learning is about choice and control, so it may be that visitor studies researchers feel that tours do not fit within free-choice learning. I would argue that visitors choosing to participate in a tour, whether in situ or ex situ, maintain their element of choice and control as they can opt to skip aspects of the tour or simply leave if they are uninterested. In this way, tours provide an interesting avenue of free-

choice learning research within visitor studies, as these facilitated experiences will guide visitors through a physical space and provide them with more specific learning material in a socio-cultural context. It seems likely that tours will attract visitors with motivations that relate to learning, and provide an interesting sub-set of visitors in which to study optimum conditions for free-choice learning and behaviour change. Within nature-based tourism research, multi-day tours provide added elements of interaction with physical spaces and ongoing between-group and within-group social dynamics. This research specifically explores the large-scale environment and the exposure of visitors to both guided tours and non-guided experiences.

Physical context of visitor experiences.

The physical context of a visitor's experience is an inherently important component. The act of travelling or physically going to visit a space provides people with a change in settings and surroundings. There is a wealth of travel research that finds this physical context important in enabling people to feel removed from their everyday lives, and allowing them to see things from a new perspective (Crompton, 1979; Falk, et al., 2012; Mannell & Iso-Ahola, 1987; Packer, 2006; Pearce & Foster, 2007; Van Winkle & Lagay, 2012). Within museum and art studies, this field of research has explored the importance of the design of spaces and even visitor traffic flows or stay-times at exhibits (Falk, 2009). However, within the field of visitor experience and learning, the effect of physical context on these experiences remains poorly understood. Research has begun to explore the important role of post-visit engagement in relation to visitor experiences (Ardoin et al., 2015; Ballantyne & Packer, 2011; Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011; Hughes, Packer, & Ballantyne, 2011), however, other aspects of the physical context of visitors experiences often remain neglected in visitor studies research.

The physical context of learning includes the following:

a) Advance organizers

b) Orientation to the physical space

c) Architecture and large-scale environment

d) Design and exposure to exhibits and programs

e) Subsequent reinforcing events and experiences outside the museum

(Falk, 2009, p. 159)

In more simplified terms, the physical context includes: "the specifics of the exhibitions, programs, objects and labels [that visitors] encounter" (Falk, 2009, p. 159). Within the field of museum studies, well-designed exhibits will use colour, texture, lighting, negative space, and carefully constructed narratives and signage in order to capture and direct the visitor's gaze (Falk, 2009). Falk (2009) posits that the quality of the designed experience is directly related to the "quantity of what was learned" (p. 97). He further explains that Facilitators and Experience Seekers are the most strongly influenced by exhibit design and content, and Professionals/Hobbyists the least influenced (Falk, 2009). Rechargers are influenced by the aesthetics of the site, but not in relation to content (Falk, 2009), while Explorers are said to fall somewhere in between.

In situ and ex situ visitor experiences.

Despite how much attention museum studies, and even zoo research, have paid to the physical design of the exhibits there is a lack of research that explores and compares in situ and ex situ experiences (Skibins et al., 2013; Tribe & Booth, 2003; Uddin, 2015). The assumption made by many nature-based tourism operators, and often researchers, is that visiting an in situ site provides visitors with the optimum experience and best possible learning opportunities and will encourage pro-environmental behaviour change

(Ballantyne, Packer & Falk, 2011; Beaumont, 2001; Miller, Rathouse, Scarles, Holmes, & Tribe, 2010; Powell & Ham, 2008; Powell et al., 2012; Skibins et al., 2013; Tribe & Booth, 2003; Weiler & Ham, 2010). However, research shows that even the most elaborate nature-based tourism experiences, such as visiting Antarctica with naturalist-trained guides, does not necessarily result in visitors becoming ambassadors for the places they visit, nor advocates for the environmental issues or causes about which they have learned (Powell & Ham, 2008). Zoos go to great lengths to link their ex situ exhibits to in situ conservation projects, and make claims that their animals act as ambassadors for their species, in an effort to educate the public about the conservation related issues they face in situ (Adelman, Falk & James, 2000; Ballantyne, Packer, Hughes & Dierking, 2007; Clayton, Luebke, Saunders, Mataisek & Grajal, 2014; Mallinson, 2003; Roe & McConney, 2015; Skibbins et al., 2012). Both in situ and ex situ experiences claim lofty learning and behavioural outcomes for their guests, often without much evidence to support these claims (Beaumont, 2001; Mallinson, 2003; Mason, 2000; Powell et al., 2012; Roe & McConney, 2015; Ryan & Saward, 2004). While research shows that visitors can learn, and even engage in some behaviour change as a result of their nature-based tourism experiences (Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011, 2013; Schultz & Joordens, 2014; Skibins et al., 2013), this is not always the case (Stern et al., 2014). Within visitor research there is scant work that even refers to in situ and ex situ experiences (Skibins et al., 2012; Uddin, 2015). This is a significant gap in the literature that requires research to explore the role that place may play in influencing visitor experiences, learning and potentially transformative learning that results in behaviour change.

This research answers a call from prior studies (Dawson & Jensen, 2011; Falk, 2009; Falk et al., 2008; Schultz & Joordens, 2014), to investigate the appropriateness of categorizing visitors by their motivational identities in other leisure settings, and to further explore how the CML informs nature-based tourism learning. This is the first study to explore how visitor motivations might vary between in situ and ex situ visitor experiences and evaluate their effect on learning in relation to the contexts of the CML and in relation to Transformative Learning Theory. It is also the first in situ and ex situ nature-based tourism research that examines how facilitated tour experiences may vary from non-facilitated experiences. Further, this research is novel in its approach, in that it utilizes a qualitative approach to determine visitors' identity-related visit motivations. Previous research critiques the efficacy of the questionnaire-based approach to identifying visitors' motivational identities. Heimlich et al.'s (2004) research which paired the 20-item questionnaire with on-site and post-interviews, found the interviews to be most effective in determining visitor's motivational identities. This research sought to explore how effective qualitative methods of determining visitors' motivational identities might be.

Coding

As the coding was discussed in more detail Chapter 2, this section will briefly remind the reader of the coding methods used, as they relate specifically to the data and findings presented in this chapter. The open-ended interview guide included questions relating to prior interests, expectations, companions on the visit, and the purpose of their visit, as well as questions exploring their learning and behaviour change outcomes. The questions on visitor motivations were adapted from prior research and were based on

recommendations for the most effective way to determine visitor motivations (Falk & Storksdieck, 2005; 2010; Falk et al., 2004; Falk et al., 2008). NVivo software was used to conduct a deductive, axial coding method (Patton, 2002) for the interview responses for examples of learning that occurred within the personal, socio-cultural or physical context of the Contextual Model of Learning. Deductive coding, which consists of coding using a pre-existing framework, such as the personal, socio-cultural and physical contexts of the CML, was used to analyze the interviews (Patton, 2002).

Free-choice learning is often measured quantitatively by measuring the extent, breadth, depth, and overall mastery of a personal meaning map or through survey measures (Falk & Dierking, 2000). However, since this research was exploratory in nature and sought to address the how and why questions concerning free-choice learning, the responses were coded in relation to learning as described within the three contexts of the CML, in order to explore potential overarching learning patterns that may exist for visitors with different motivations both in situ and ex situ.

Findings

Participants.

In situ: Churchill visitors.

Of the 30 Churchill visitors who participated in this study, 14 took part in tours that were specifically marketed to include some educational aspects: learning tours included the Churchill Northern Studies Centre Tour, Great Bear Foundation Tour, and the Frontiers North Conservation Journey. Given that it is relatively difficult to see polar bears without an organized tour, the majority of the remaining participants (N = 11) went on an organized tour – either with Natural Habitat, Frontiers North (a non-learning specific tour), Churchill Wild, or North Star Tours. Only three participants did not go on

any kind of tour and instead either drove themselves around Churchill or had a friend or taxi take them around. There were also two voluntourists included. These individuals were volunteering for a minimum of 6 weeks at the Churchill Northern Studies Centre in exchange for accommodations, food, and were guaranteed two trips out on the Tundra Buggies to see polar bears.

For the follow-up portion of this study, all participants were contacted twice by phone and once by email to inquire if they were still willing to participate in the research (see Table 1). If no response was received within two weeks of the last attempted contact, no further action was taken to contact the participant and it was assumed they were no longer interested. Only 3 in situ visitors in total did not participate in the follow-up aspect of this research (one from a learning tour and two from other tours).

Table 1

In situ participants

Visitor Categories	Participated in on-site data collection	Participated in post-visit data collection
Learning Tour	14	13
Voluntourists	2	2
Other Tour	10	8
No Tour	4	4
Total:	30	27

The approximate age of participants was estimated by the researcher immediately after the on-site data was collected for each participant. The exact age of the participants was not required as the purpose was to better understand how their life stage (e.g. parent with

young children or grandparent) may influence their experience. Of the in situ learning tour participants, a third were in their 20s-30s, a third in their 50s-60s, and another third were approximately 65 years of age or older. Only one was male; the learning tours consisted of mostly females. Four of these participants were from Canada - with one person from Winnipeg - and the rest were from either the United Kingdom, Germany, or the United States. Two had been to Churchill previously and had stayed at the CNSC (one for the exact same tour, and the other for an aurora borealis tour). Of the learning tour participants three were travelling with just their partners, three were travelling with siblings, one with her partner and siblings, one was travelling with her mother, and two were travelling with their adult children.

The in situ participants who went on tours that did not emphasize learning, also ranged in age with approximately a third being in their 20s and 30s, another third in their 40s and 50s, and then a final third aged approximately 65 or older. In this group, half of the participants were male, with two participants having been on more than 2 prior trips to Churchill. One non-learning tour participant was from Manitoba, Canada, with the remainder from either the United States, the UK, Australia and one from Belgium. Half of these participants were travelling with their partners, a few with friends or colleagues (or old colleagues), and two were travelling alone.

There were only 4 in situ participants who visited Churchill and did not go on any kind of tour. Two of these participants were approximately aged 35 or older, and the other two were in their 50s and 60s. Two of these participants were from Manitoba, and one was from Minnesota, USA. The other was from France. Half of these participants were men and half were women. One had been to Churchill more than 5 times, as he was

a professional photographer. All of these participants were visiting with friends or their partners.

Ex situ: Assiniboine Park Zoo visitors.

There were 27 ex situ visitors who participated in this research. Of these, 12 went on an organized learning-centered tour of the Journey to Churchill exhibit, and the remaining 15 did not. On-site data was collected for all participants, and post-visit data was collected for 10 of the tour group participants and 14 of the participants who did not go on a tour. The same protocol for follow-up data collection was followed as with the Churchill visitors, where all participants were contacted twice by phone and once by email to inquire if they were still willing to participate in the research (see Table 2). If no response was received by two weeks after the last attempted contact, no further action was taken to contact the participant and it was assumed they were no longer interested.

Table 2

Ex situ participants

Visitor Categories	Participated in on-site data collection	Participated in post-visit data collection
Tour	9	8
Volunteer Tour	3	2
No Tour	15	14
Total	27	24

Ex situ learning tour participants tended to be older, with approximately of age 40 - 70 or older, and there were slightly more women than men. Half were retired, on vacation, visiting the zoo for the first time, and not from Winnipeg. Of the tour participants, 6 were

from the UK or Scotland, 2 from other parts of Canada, and four were from Winnipeg. The Winnipeg visitors had all previously been to the Assiniboine Park Zoo; 2 visited annually, 1 once per month, and the other had not visited in the past 20 years.

Of the participants who were not on a tour, ten were females, aged 30-40, who were either parents or aunts visiting with family and young children. Five non-tour participants, aged approximately 50-65, were comprised of 3 women and two men, of whom one was visiting with a young child and one with their partner. The others were either visiting alone or with their adult child. All of the non-tour participants visited the zoo quite regularly and most had zoo memberships. Four visited at least weekly or more, five monthly or more, and five either bi-annually or annually.

Segmentation by visitor motivation.

Identity-related segmentation.

Visitors were asked the following questions to help determine their identity-related motivations, as per Falk et al. (2008): "What stands out in memory from your trip to the zoo/aquarium?" and "What do you think you took away from your experience?" (p. 69-70). The following are examples of how the visitors' motivations were categorized based on their responses to interview questions. See Table 3 for a summary of all visitor identity-related motivations.

Explorers.

Visitors with Explorer identity-related motivations emphasized that they were interested in polar bears and articulated a specific interest in learning more about the Arctic, climate change or polar bears specifically.

Scott (Churchill Visitor):

Researcher: So, why- what was your major decision to come? Wanted to see the polar bears [based on earlier response]?

Scott: Mainly to see polar bears and learn more about the Arctic and the effects that climate change were having on the Arctic.

Sara (Churchill Visitor):

Researcher: I know we talked about this a bit, but do you have previous interest in the content and the topics that, um, polar bears? Or *Great Bear*?

Sara: Yes, yes. I'm specifically interested in the polar bear, so Great Bear Foundation's mission is to, uh, share information and protect and educate, around all eight major bear species. Um, my personal interest is in polar and pandas.

Researcher: Yeah.

Sara: So, the polar bear is certainly the one that I'm most interested in, in regard to the organization being here. Um, and have done a decent amount of biological research, so I kind of understand the species and understand some of the challenges.

Facilitators.

Participants identified as having a Facilitator focused visitor motivation identity, demonstrated that the people or children they were visiting with were their main priority. Their responses tended to emphasize making memories and the importance of the shared experience. These visitors' responses reflected that they were primarily concerned with their loved one's experience, or that they were visiting because of their friends or family members.

Cindy (Zoo Visitor):

Researcher: What's been the most significant part of your experience, if not today, at some point during your visits?

Cindy: Um, I feel like any time that we come to the zoo, it's just about what my kids go up, like they have - like more memories of their childhood and then they bring their kids here. It's more, for me, a family thing than an educational thing.

Kaitlyn (Churchill Visitor):

Kaitlyn: Yeah, and again, going back to the shared experience side of it, if she [her mother] came by herself, she would've been fine, and I think when I expressed interest in it - she was like "I would love it if you come, just so that we- cause she... doesn't necessarily love the entire transportation component of coming up by herself.

Researcher: Right.

Kaitlyn: And um, whereas I have a lot of experience doing it, travelling alone. She has none. So...

Researcher: So that's a stressor then.

Kaitlyn: Yeah, yeah. So, it was nice to know that, like I could offer some of that support also.

Researcher: Yeah and help her that way.

Kaitlyn: Um hum.

Researcher: Yeah, and just having that shared experience with-in any context, with your Mom, is kind of special.

Kaitlyn: It is. Yeah. My Dad and I went on a road trip this summer. I've taken her on a different road trip before, and it's nice - it's a good way to connect. Especially not living out there anymore. Just spending time together.

Professionals/Hobbyists.

Professionals/Hobbyists were identified as those individuals who were primarily interested in photographing polar bears either as a hobby or occupation.

Melissa (Zoo Visitor):

Researcher: Um, so then, what was the purpose of today's visit specifically?

Melissa: Just to come take pictures and to come check things out.

Researcher: Yeah. Did you see the bears?

Melissa: Yeah to take pictures, sometimes we can't [depending on where they are in the exhibit].

Anh (Churchill Visitor):

Researcher: So, your interest in polar bears, did that come from a prior trip or what made you want to come see them?

Anh: Um. I guess I sort of, because I, sort of interested in the photographer - photography. And I thought - maybe the interest is, yeah, like when I went to Galapagos, like I told you-

Researcher: Yeah.

Anh: It was a photography trip.

Researcher: Oh okay.

Anh: And I thought, you know, taking photographs of animals was really lots of fun, and so, you know, kind of challenging, but it would be kind of good. Plus, as I told you, I have a website and I have to put something on it! [laughs]

Researcher: So, you need some pictures on there? [laughs]

Anh: So, there was really, I know it's not because I'm interested in environment and things like that, even though I'm concerned about that. And I didn't really associate that, even though I hear about it.

Researcher: Right.

Anh: And I've been coming because of the [inaudible] - I'm just totally personal, non-related, non-scientific and not - just for the heck of it.

Researcher: Just wanted to see them.

Anh: Yeah, and because they make good pictures.

Experience Seekers.

Visitors identified as demonstrating Experience Seeker motivations, were more interested in the whole experience, or saw it as something to check off their travel bucket list. These visitors were the most difficult to identify, as they may also have been interested in polar bears or learning more about the Arctic. What distinguished these individuals from Explorers was a less keenly identified interest in specific topics, and a greater emphasis on either having 'been there, and done that' or on the general gestalt of the trip as a whole.

Gloria (Churchill Visitor):

Researcher: Yeah, so anyway, to better understand you as a visitor and sort of your travel interests and motivations can you tell me a little bit about yourself and what made you interested in doing a trip like the one you did to Churchill?

Gloria: Okay, um, because we, we've travelled a lot around the world.

Researcher: Yeah.

Gloria: We've backpacked a lot around the world, and um, what is on your own doorstep you leave to later.

Researcher: Right [chuckles]

Gloria: [laughs] Because it will always be there. And, also because in the case of Churchill, it is quite expensive. I mean it costs as much to go to Churchill, as it would to go to South East Asia for example.

Researcher: Right.

Gloria: And we would there, for a couple of months. We go to Churchill for a couple of weeks, including the journey.

Researcher: [laughs] Yes.

Gloria: Um, yup, so, um, it is so - we had lasted, but it became more and more urgent, because we have grandchildren who go to [Name of High School] and they go up as a school trip.

Researcher: Yes. Yeah.

Gloria: And my son is in movies and he went up to film.

Researcher: Ohhhkay.

Gloria: So, this was, I had - "dammit I haven't been! We haven't been!"

Researcher: [laughs]

Gloria: And I really wanted to do it. And time passes. And you realize, we better do it now, because we may be putting it off too long.

Researcher: Yeah.

Gloria: So that's - that's the motivation. I mean a real interest in the north, and a real interest in the bears to begin with, but we had put off doing it and then we decided, nope - raid the bank and do it.

Keith (Churchill Visitor):

Researcher: Okay. And who's idea was it to come?

Keith: Sort of both of our ideas. We always wanted to go to Churchill, so.

Researcher: Yeah.

Keith: Yeah. Ever since I started in the north, so.

Researcher: Um, sorry, what do you mean "started in the north"?

Keith: Uh, I started working in the North [location], you sort of hear about it working in the North, so.

Researcher: Oh, I see. Yeah.

Keith: And it's always on the TV about polar bears and stuff.

Researcher: And so, I guess that was how you heard about it and decided to come up then?

Keith: Pretty much, yeah.

Rechargers.

Visitors who identified as Rechargers were some of the easiest to identify, but also seemed the most reluctant to be approached for the research. These visitors stood off

to the sides of the exhibit or sat out of the way in the zoo's restaurant, and they tended to avoid eye contact until approached. Visitors who demonstrated Recharger motivations explained that they were either out for a nice walk or out for some "zoo therapy" as one visitor phrased it.

Joan (Zoo Visitor):

Researcher: And why did you decide to come?

Joan: Well I was Christmas shopping this morning and it was a very frustrating, unsuccessful endeavor.

Researcher: Oh shoot!

Joan: So, I thought I needed a bit of zoo therapy.

[laugher]

Researcher: Come and relax.

Joan: Yeah. But um, quite often I'll come during the week and it's just - the paths are cleared, there's places to sit down, there are washrooms available, and it's like - it's just a safe place to go for a walk.

Researcher: Yeah. And relaxing and beautiful.

Joan: Absolutely! I mean, look at this [we are sitting near the tunnel watching polar bears swimming] - and I come from Osborne Village, and I mean I can't walk three blocks without having to pass panhandlers.

Researcher: Right.

Joan: And then there's polar bears. Like, the other situation, it's tiresome.

Researcher: Yeah. Yeah. And it's just so peaceful.

Joan: Yeah.

It should be noted that these responses, whenever possible, were considered in combination with the participant observations and were situated and triangulated with relevant responses found within the PMMs and within the rest of the interviews. For example, if a visitor had already discussed, during their PMM probing, that they were visiting the zoo in order to take pictures of animals, this response would help to triangulate a specific interview question response. Additional probing questions were included within the interviews if the initial responses were too ambiguous to determine visitor motivations. For example, Kristen, a Churchill visitor, stated that she and her son were visiting to explore their heritage, and upon further probing it became clear that this was primarily to help her adopted son explore his heritage, rather than to explore her own heritage. While I had initially thought she would be classified as an affinity seeker, with this detail it became clear that her primary motivation was to act as a Facilitator for her son.

Table 3

Visitor motivations at the in situ and ex situ polar bear tourism experience

Motivations	In situ	Ex situ	Total
Explorers	16	7	23
Facilitators	2	11	13
Professionals/Hobbyists	2	2	4
Experience Seekers	10	5	15
Rechargers	0	2	2
Affinity Seekers	0	0	0
Spiritual Pilgrims	0	0	0

The majority of participants were categorized as either Explorers or Experience Seekers, with Facilitators comprising the next largest category of visitor identity related motivations. There were very few Professionals/Hobbyist and Rechargers. There were several distinct differences between visitors' identity related motivations in situ and ex situ. Explorers and Experience Seekers were more prevalent at the in situ site. Facilitators were distinctly more common, and Rechargers were found only at the ex situ site. Refer to Table 3 for a full accounting of visitor motivations at the in situ and ex situ polar bear tourism experience.

Prior interest and experiences.

On-site, all visitors were asked: "Did you have any previous interest in the topics/content in the exhibit / Churchill (or on the tour)?". This question was framed in relation to the PMM content or previous responses when appropriate. This question was intentionally left open-ended to allow the participants to determine what was meant by prior interest in the topics or content. Visitors elaborated, usually unprompted, on what specifically their prior interests were. Their responses tended to be related to their visitor identity-related motivations. For example, Anh, a Hobbyist interested in photography on a learning tour in Churchill, responded that she did have a prior interest, but in photography – not polar bears. The majority of visitors, both in situ and ex situ, claimed to have at least a general interest in nature or wildlife and many had some specific interest in polar bears. There were slightly more zoo visitors who did not claim to have a prior interest (see Table 4). The ex situ visitors who did not have a prior interest were primarily Facilitators. The in situ visitors who had no prior interest included a few Experience Seekers. Visitors who had no prior interest tended to be visitors who were not

the primary decision maker of their group (as in, it was not their decision to visit and they were coming along).

Table 4

Visitor's prior interest in situ and ex situ

Motivations	In situ Prior Interest		Ex situ Prior Interest	
	No	Yes	No	Yes
Explorers	0	16	1	6
Facilitators	0	2	4	7
Professionals/Hobbyists	0	2	0	2
Experience Seekers	3	7	2	3
Rechargers	0	0	0	2

In the follow-up interviews, visitors were asked: "Have your interests changed since your visit to the exhibit/ to Churchill?" Slightly less than half of the in situ Explorers reported that their interests had increased (see Table 5). In contrast, more of the ex situ Explorers demonstrated increased interests on follow-up. The two in situ Facilitators both claimed to have had an increase in their interests, whereas the majority of ex situ Facilitators felt their interests had stayed the same. Overall, approximately half of visitors felt their interests had increased, while half felt they had stayed the same. Several people who noted that their interests had stayed the same specified that they now had a heightened awareness of certain topics, or that their experience reinforced their interests. None of the participants thought their interests had decreased.

Table 5

Visitor's post-visit interest increase in situ and ex situ.

Motivations	In situ Post-Visit Interest			Ex situ Post-Visit Interest		
Motivations	Increase	Same	Decrease	Increase	Same	Decrease
Explorers	5	7	0	5	2	0
Facilitators	2	0	0	2	7	0
Experience Seekers	2	7	0	3	1	0
Professionals/Hobbyists	2	0	0	0	1	0
Rechargers	0	0	0	1	1	0

Note. Explorers 4 N/A for post-visit interest; Facilitators 2 N/A for post-visit interest; Experience Seekers 2 N/A for post-visit interests; Professionals/Hobbyists 1 NA for post-visit interests. N/A responses indicate participants who did not complete the follow-up aspect of the research or did not provide a clear response.

In relation to prior experience, visitors identified similar experiences when asked "*Have you been to any other similar places*?". Remarkably, visitors conveyed their expectations in relation to their motivations for their visit. For example, the in situ Hobbyist interested in photography provided an example of a prior trip to the Galapagos to photograph wildlife. An Explorer, specifically interested in polar bears, gave an example of seeing Grizzly bears in Alaska. An Experience Seeker generally interested in seeing wildlife, gave an example of going on a Safari in Kenya, and compared his experience in Churchill to be "like a cold Kenya". Experience Seekers and Facilitators exhibited the most examples of visitors who did not have prior similar experiences – which would align with their visitor motivations. See Table 6 for a complete description of the responses related to prior experiences.

Table 6

Prior experiences as identified by participants

	In situ Prior Experience		Ex situ Prior Experience	
Motivations	No	Yes	No	Yes
Explorers	1	15	1	6
Facilitators	1	1	2	9
Professionals/Hobbyists	0	2	0	2
Experience Seekers	3	6	1	4
Rechargers	0	0	1	1

Note. Experience Seekers: 1 n/a (did not complete follow-up).

Influence of expectations.

Expectations for the in situ experience varied and reflected visitor's motivations and prior interest. For example, the Professional photographer had expectations around the lighting and conditions for taking photographs while Experience Seekers' expectations, in general, tended to be relatively limited - just to see some polar bears: Gloria (Churchill Visitor)

> Researcher: Um, what were your expectations for your trip when you came up here?
>
> Gloria: I expected to see bears
>
> Researcher: Yeah.
>
> Gloria: And if I were lucky, on the way, because we came by train, I thought if we were lucky, we'd see caribou or something like that. But, we were travelling that area in the dark, so we weren't going to see them. I thought, if we were lucky, we might see northern lights and we were lucky. Might do tonight.

Researcher: Yeah, okay.

Gloria: And those were my expectations. I supposed I didn't have very specific expectations apart from the bears. I didn't expect to have such an interesting time. I thought I would have more time that I would - I brought three books with me. I haven't touched one.

One repeat Explorer, who did not go on a learning tour, had specific expectations regarding not just the number, but the also the proximity of the bears she would see: Caroline (Churchill Visitor)

Researcher: Right, but were your expectations in general for your trip achieved, or- or not?

Caroline: [inhales] Not, not, 100%.

Researcher: Okay. Can you explain that a little bit?

Caroline: Um, I think the - my Tundra Buggy day was a little disappointing because normally- this was my 5th Tundra Buggy ride, and every time the bears have come right up to the bus, and they're- we didn't have that this time.

Researcher: Oh, okay.

Caroline: And I was surprised at that, and a little disappointed. We saw, we saw probably 9 bears.

Researcher: Yeah.

Caroline: Including a mother and one cub, and another mother with two cubs, and we saw bears sparring, and you know, I saw all the things that I wanted to see, but not close.

Researcher: Right. They were a little farther away.

Caroline: Right. So that was a little disappointing.

Researcher: Yeah.

Caroline: Based on past experiences.

For some repeat visitors, having had prior experience seeing polar bears provided a sense of ease, in that they knew what to expect and anticipated some variation, but for others this increased their expectations, as in the example above. The difference here, may be related to whether repeat visitors had additional motivations for their visit. For example, one repeat visitor who was visiting with a friend wanted her friend to be able to see the bears and also spend time with her. While she was extremely interested in polar bears and in the Arctic in general, this was not her singular reason for visiting, as it was for the solo traveller in the example above.

For the Explorers on the learning tours, expectations centered around learning: Scott (Churchill Visitor)

Researcher: Um, we talked a bit about your expectations, but more explicitly, um, what were they? And do you feel like they were achieved?

Scott: Yes, so my expectations were to, to obviously learn a lot about the Arctic and Sub-Arctic, and with that see a polar bear, and I think my expectations were most definitely met and also exceeded. In that I had no real concept of the numbers of polar bears that we would see. I think coming in here, I was, was trying to picture what the actual buggy tours- I had a concept of what the buggy tours were, but could not visualize the landscape that we're actually travelling

across, and in my mind, I think before coming here, I had pictured almost, a more- more frozen landscape where you'd be driving around for a day and may see 1 or 2 bears.

Researcher: Right.

Scott: And so to have a less frozen landscape was interesting because that made me learn more about what the bears are actually doing and why are they are, uh, accumulating this area at this time of the year, and the volume of bears exceeded that I thought we would see. So, going out and seeing 15, 16, individual polar bears was, was huge, so I had no, no idea that there would be that many, a high concentration of bears.

Researcher: Yeah-

Scott: Um, and then, so that exceeded my expectations and then also, with that I guess the learning side of things in terms of the information we were being provided with, about the research that's going on within Churchill, about um, polar bears themselves and about uh, yes I guess, climate change, and preserving the Arctic, exceeded my expectations also.

Researcher: Yeah.

Scott: So, I think the, I think I will leave Churchill having learned a lot about this area and the wider Arctic and about polar bears. Which are all things that, I expected to learn, but they, I've come out with more than I had anticipated.

The elaboration on the question about expectations, with the exception of Experience Seekers, tended to be more substantial for the in situ participants than the ex situ

participants. Participants on tours also tended to elaborate more in relation to their expectations, especially if they had been the decision maker for the visit.

For the ex situ visitors, all participants' expectations were met or exceeded. For the majority of ex situ visitors, expectations were relatively low. Families had set little to no expectations, with the exception of having a fun day out, and visitors on the organized learning tours were not sure what to expect and were pleasantly surprised. Participants' responses again reflected their visitor identity related motivations. For example, Cindy, a zoo visitor and a Recharger, identified her expectations for the day in relation to getting some exercise:

Researcher: What were your expectations for today?

Cindy: Um, to get some of my steps in [points to her Fitbit].

Researcher: [laughs] Hoping to get-

Cindy: And to get exercise.

Researcher: And were those expectations achieved?

Cindy: Yes.

Whereas, a Facilitator at the zoo, Eliza, centered her expectations around a fun day out for her family:

Researcher: What were your expectations for coming here today?

Eliza: Just like having fun, just like family fun day.

Researcher: Yeah.

Eliza: And a good activity before nap time.

Researcher: Right.

Eliza: So really, really just that. Do something fun for our family not just sitting at home and having the TV on or something. So, yeah. Saturday out at the zoo, is way more fun.

Researcher: Right. Absolutely. And so, were those expectations met then?

Eliza: Yeah. Yeah. Most definitely.

These examples demonstrate the importance of recognizing visitors' identity-related motivations for better understanding their expectations. Similarly, visitors who are the decision makers or the planners, will likely have put more time and effort into planning their visits and hence will have more specific expectations.

Influence of choice.

All visitors, whether in situ or ex situ, are inherently there of their own free will and in this way exercise choice and control, on some level, over their experiences (at least for adults). However, in terms of better understanding visitor motivations, research by Falk and Storksdieck (2010) demonstrated that it is informative to ask visitors if the visit was their idea, and if not, what caused them to join the decision maker. To determine aspects of choice and control in relation to the visit, all participants were asked the following, which was adapted from Falk and Storksdieck (2010):

Whose idea was it to come here (either to the Journey to Churchill Exhibit or Churchill)?

a) Why did you (or the decision maker above) decide to come here today?
b) If the participant is not the decision maker: What was your reason for joining them? (p. 204)

This research found that Explorers were nearly always the decision maker or co-decision maker in choosing the trip or visit (see Table 7). Facilitators were more likely to

be either the decision maker or the co-decision maker, but a few were not; these Facilitators were either adults supervising children but who were not in charge of the visit (e.g. a visiting aunt), or people supporting the visit of either adult Explorers or children. Experience seekers were divided nearly equally, between decision makers (or co-decision makers) and non-decision makers. Of the four Professionals/Hobbyists there was only person who was not the decision maker for the visit. The Rechargers both identified as being co-decision makers in their visit.

Table 7

Visitors motivations in relation to identified decision makers for the experience

Motivations	Decision Maker		Not Decision Maker	
	In situ	Ex situ	In situ	Ex situ
Explorers	16	6	0	1
Facilitators	1	8	1	3
Professionals/Hobbyists	1	2	1	0
Experience Seekers	5	3	5	2
Rechargers	0	2	0	0

These findings support the research conducted by Falk and Storksdieck (2010) and demonstrate that there is a relationship between visitor-identity related motivations and choice and control. Similar to expectations, understanding visitors' identity-related motivations can help to foresee which visitors are likely to be planning visits and how that might shape the ways in which visitor experiences are facilitated.

In relation to frequency of visits, ex situ Explorers were comprised primarily of first-time visitors, with a few visiting the zoo weekly (see Table 8 and 9). Ex situ

Facilitators tended to visit more frequently – monthly or annually. Experience Seekers were more commonly first-time visitors at both sites, with a few visiting the zoo annually. Professionals and Hobbyists were likely to be repeat visitors to both sites. Ex situ Rechargers also visited more frequently: either weekly or monthly.

Table 8

In situ frequency of visitation

Motivations	First Visit	1 Prior Visit	2+ Prior Visits
Explorers	13	0	3
Facilitators	2	0	0
Professionals/Hobbyists	0	1	1
Experience Seekers	10	0	0
Rechargers	0	0	0

Table 9

Ex situ frequency of visitation

Motivations	First Visit	Weekly+	Monthly+	Annually+
Explorers	5	2	0	0
Facilitators	1	1	5	4
Professionals/Hobbyists	0	0	2	0
Experience Seekers	3	0	0	2
Rechargers	0	1	1	0

Free-choice learning.

All participants were asked to complete an on-site and follow-up PMM that related to the in situ or ex situ site that they visited (see Appendix B for an example). The PMMs were coded for learning broadly within each of the contexts of the Contextual Model of Learning and the domains of Transformative Learning Theory. As PMMs are intentionally open-ended it would be possible for a participant to complete one and not discuss specifics aspects of their learning. For this reason, participants were asked several interview questions on-site and in the follow-up interview that were intended to help better understand what the visitors thought about their own experiences, and the important aspects that they took away from their experiences (either learning or otherwise). Participants were asked whether they felt they would think differently about anything as a result of their visit, whether or not they changed or intended to change any of their behaviours as a result of their on-site experiences, and whether they believed the place itself had played a role in any changes in their learning, understanding, or behaviour. These interview questions were adapted from previous free-choice learning and transformative learning research (Falk et al., 2008; Falk et al., 2004; Falk & Storskdieck, 2010; Moyer, 2012). See the interview guide attached to the appendix for full details (Appendix C).

Personal context.

Learning within the personal context was coded, as defined by the free-choice learning literature, as that learning which is related to the visitors' motivations, expectations, prior knowledge, interests, beliefs, and elements of choice and control (Falk & Dierking, 2000). For example, Darlene, a Facilitator at the zoo, who was travelling with her husband and children from the United States, explained her learning in relation

to empathy and the ability to connect her experience with an issue on a personal level. She described how the exhibit had prompted her to learn more about Churchill and that, while she could not visit the town, she was able to connect with and invest time and emotional energy in understanding the challenges that the residents of Churchill face. At the time of her visit train service to Churchill was interrupted due to flooding, and the fact that Churchill residents were having a difficult time buying food - especially fresh vegetables - was regularly in the local news. She and her family were in Winnipeg for about a month, so she had heard a lot about this and wanted to come see the polar bears at the zoo – and in the process made a more personal connection to Churchill and the issues that the residents in Churchill faced.

Darlene (Zoo Visitor)

> Researcher: And then thinking back to your visits, what role do you think an exhibit like the Journey to Churchill can play in helping you understand the content and the topics that are there?
>
> Darlene: Um, I think whenever you experience something on a personal level, whether it's learning about a new animal or a new culture or meeting somebody from a different background it always just helps you- um, empathize with it and you don't have that "it's not my problem" point of view anymore.
>
> Researcher: Right.
>
> Darlene: So, I think bringing the Journey to Churchill to Winnipeg, you know, a lot of people don't maybe realize the struggle people go through just to get groceries to their house, or, you know?
>
> Researcher: Right.

Darlene: How taking charge of the wildlife and how they deal with that. So. And when you hear about the issues, I guess care about them a little bit more.

Another example of coding for learning in the personal context is a Facilitator who had just undergone a major career change and was visiting Churchill with her adult parent. She had found the experience to be meaningful in that it had helped her to think about her own personal connection to polar bears, defining what her own interests now were, and challenging her own internal beliefs broadly in relation to the interactions between people, animals and places. While Kaitlyn's response is not specific, it does demonstrate a deep level of personal self-reflection and learning.

Kaitlyn (Churchill Visitor)

Researcher: What do you think you've taken away from that experience?

…

Kaitlyn: Um... I... will take away absolutely the parts about like my own relationship with bears and how I will talk about bears and think about bears and um I think that's huge. I think that's probably the best, most amazing thing that came out of it for me.

Researcher: Right.

Kaitlyn: But the other stuff was really just the personal... um... I think I will never forget my experience with Churchill. It-it... what it wasn't was, meh take it or leave it. And I think in it being challenging... I have learned things about myself, about what I'm interested in seeing, what I, what some of most of my questions are about, you know, people, animals, places, geography, but it is definitely

expanded my sense of... um my own doings and my own experience. Like to put that down on my own personal map.

Researcher: Right.

Kaitlyn: I think it has changed me in ways that I will never fully appreciate. Um... yeah.

This research found that the majority of learning responses that occurred in the personal context of the CML were demonstrated by in situ participants. There were only a few examples of learning in the personal context for an ex situ Facilitator and Explorer. Notably, the ex situ Facilitator had spent a more extended period of time in Winnipeg, and this likely related to her deeper and more personal reflection on her learning in relation to her visit to the Journey to Churchill Exhibit. Explorers were better able to demonstrate complex examples of learning within the personal context than any other category of visitors. Experience Seekers were the next most prevalent category, and Facilitators and Professionals/Hobbyists also demonstrated a few examples.

Socio-cultural context.

Learning was coded within the socio-cultural context, as learning that occurred within the social group that the participant was travelling with, or learning as facilitated by others, such as guides or docents (Falk & Dierking, 2000). Learning in the socio-cultural context, at face value, would be more likely for visitors who participated in tours, which are social in nature. A breakdown of the categories of visitor's motivational identities as organized by learning tours, general tours and no on-site tour is provided in Table 10.

Table 10

In situ and ex situ visitor motivations organized by visitors who participated in learning tours, general tours, or no on-site tour

Motivations	Learning Tour	Non-Learning Tour	No Tour
Explorers	15	6	2
Facilitators	3	0	10
Professionals/Hobbyists	2	0	2
Experience Seekers	8	4	3
Rechargers	0	0	2

Explorers, within this study, were the most likely to go on organized tours, particularly learning tours. Experience seekers also tended to go on organized tours. Facilitators and Rechargers were less likely to go on an organized tour. Professionals/Hobbyists were equally divided between organized learning tours and no tours, for both in situ and ex situ sites.

An example of learning coded for the socio-cultural context of the CML, is an ex situ visitor, Ronald, who demonstrated the importance of indirect socio-cultural learning. Ronald and his wife go to the zoo about once per week, both for a walk and to see the polar bears and other animals. They have a keen interest in wildlife and therefore choose the zoo as a place to go for walks. He described how he has learned about the zoo from overhearing volunteers talk to other visitors:

> Researcher: And then thinking along the lines of-of the exhibit, the Journey to Churchill exhibit, what role do you think it plays in helping people understand the content and the topics that are there?

> Ronald: Um... well I, you know, when we go there a lot of the times we'll hear the volunteers explaining things to people uh in regards to, you know, that it's not a breeding facility and uh, you know, especially right now they've got three young cubs there, that I think two of them are orphans and uh so I-I-I think that that's, you know, uh something that they're doing well and sort of educating people.
>
> Researcher: Yeah.
>
> Ronald: To why they're there and-and uh what they're trying to accomplish and uh, you know, the goals that they have and I-I think that people are becoming, I, you know, the polar bear obviously is sort of the, uh, point animal for climate change in-in this country, for sure, and uh I think people are becoming more and more aware of, you know, the- the plight that these bears are going to, are having and are going to continue to have unless there's some drastic measures taken. So, I-I think it's a good educational facility for people to sort of connect with those bears and-and understand that, you know, the troubles that they're having.

Ronald demonstrates that even the act of overhearing conversations at the zoo can have an impact on learning. Notably, this type of learning is well suited to visitors like Ronald who are there to go for a walk and recharge at the zoo.

Mitchell, who had been on a non-learning tour in Churchill, felt that he learned a lot from the guides, but also from his interactions with local staff and residents. As a result, he felt that, in addition to learning from the information provided as part of the tour, he gained an understanding of what it is like to live in a remote northern community.

Researcher: Looking back, do you think that there is anything that you learned from your visit?

Mitchell: [pause] I learned more about - I learned more about, Arctic wildlife and sub-arctic wildlife from the guides. I learned a hell of a lot more about how people live in remote places.

Researcher: Yeah.

Mitchell: Um, I learned - it made me appreciate what we've got at the top of our road, and yeah. It's a quick drive to shops and things like that.

Researcher: Right.

Mitchell: I would say that would be the two main, main things.

Researcher: The main takeaways. And that was from the information the guides told you and just the - the part of being there? Or was there anything in particular that triggered it?

Mitchell: Yeah! The guides, or just talking to receptionists, or waitresses, or you know, any - talking to people.

Researcher: Right.

Mitchell: We had a drive around with some - I can't recall, she was – she was north of 70, and had been there her whole life. And so, she told us all about it had changed and how she would, um, how she grew up and stuff like that. So, we had a good local's perspective on it as well.

Researcher: Right. And that you did on your own then in town?

Mitchell: Yes. Yes.

Mitchell was identified as an Experience Seeker, and this type of social learning again aligns with his visitor identity-related motivation in that he is interested in learning about a broad range of topics during his visit and hearing from a wide array of people.

In contrast, Sara, a visitor to Churchill, and an Explorer in her mid-fifties, had very specific learning expectations. She had planned her trip to Churchill with her husband for a long time, conducted extensive research and chose to visit with the Great Bear Foundation on their learning tour. She describes how impactful she found not just the lectures in the evening, but the interactions with community members, an elder and with scientists.

> Researcher: And then thinking back again, what role would you say that the trip that you had plays in understanding sort of those topics and content that it provided you with?
>
> Sara: Um, I thought the trip that I went on was actually- I think, I think that the Great Bear Foundation did an excellent job immersing us, um, not just in 'see the pretty polar bear'.
>
> Researcher: Um hum.
>
> Sara: Uh, but giving us opportunities to interact with community members, opportunities to talk to other scientists, you know, opportunities to reflect in all of those spaces.
>
> Researcher: Yeah.
>
> Sara: Yeah, the, the chance to meet with a Dene elder, the chance to go to the museum, the chance to um, have people knock on your doors and tell you to race out and watch the Northern Lights, you know, it kind of hits on any of that.

Researcher: Um hum.

Sara: And I think that um, I can't speak to other trip organizers, naturally, but I think they did a phenomenal job of making sure that, you, kind of touched, touched on each piece of that pie. And had an experience that allows you to develop your own thoughts later.

Researcher: Right.

Sara: Or explore whatever you want to explore. I mean.

In situ visitors had proportionately more examples of learning within the socio-cultural context than did ex situ visitors for all motivational categories, except for ex situ Facilitators. Of the in situ visitors, Explorers and Experience Seekers stood out in their ability to demonstrate learning in the socio-cultural context. For ex situ visitors, Experience Seekers conveyed proportionately more instances of learning in the socio-cultural context than Explorers, which is unique to this context of learning. Professionals/Hobbyists and Rechargers all demonstrated a few examples of learning in the socio-cultural context for both in situ and ex situ visitors.

Physical context.

Learning was coded within the physical context, as learning that occurred through advance organizers, orientations, design, the physical space and environment, as well as reinforcing events and experiences beyond the on-site visit (Falk & Dierking, 2000). An example of the learning coded for this category is described by Darlene, a Facilitator at the zoo. She described how the physical and interactive parts of the Journey to Churchill Exhibit helped her children learn about what it was like to live in Churchill, and also how they learned about their carbon footprints from the interactive games:

Researcher: Um, and then along with that vein, do you feel like you've learned anything from your visits? Whether its specific or – or a general thing like you've just described?

Darlene: Yeah, I would say just generally how they cope with the struggles of being remote, and cold, and next to nature.

Researcher: Right. [pause] Um, and is there anything that you feel has helped you learn that? Like any triggers or anything - any parts in particular that you felt was really useful in facilitating that?

Darlene: Um as far as the way of the life of the people there, certainly the um little town of Churchill surrounding the Tundra Grill.

Researcher: Yeah.

Darlene: The kids like to sit on the, like the quads and the snowmobiles and they're like why are these here. And we talk about why they're there. Cause you can't just drive a car to the grocery store when you live in Churchill sometimes, you know.

Researcher: Right. Right.

Darlene: So certainly, that little area right around the restaurant.

Researcher: And how about for other parts of learning? Is there anything else that you think is useful?

Darlene: Um yeah. I think the Leatherdale Centre, it's – this year's been the first time we've really ventured in there too much. It's a lot of information for little kids.

Researcher: Right.

Darlene: We started to pick it a part piece by piece. They play on one of the little screens there and 5 minutes later we go. And picking it apart piece by piece.

Researcher: Yeah. Yeah.

Darlene: You know they've learned about carbon footprint and what it does and the effects that your decisions have on the environment, and the animals that live in the environment. Something we really didn't talk about before. We talked about recycling, but.

Researcher: Yeah. Yeah.

Darlene: They didn't really know about that before.

Another example of learning influenced by the physical context, occurred with a visitor to Churchill who experienced first-hand how late the sea ice was forming. There were some exceptionally warm days during the period of data collection, and little to no snow cover until mid-November, which is very unusual for Churchill, Manitoba. Caroline, who had visited Churchill five previous times, discussed how she had personally experienced the difference in weather at this time of year.

Researcher: Um, and looking back now, has your -perhaps not necessarily this trip, but has - have your trips to Churchill, have they changed anything about your thinking, or will you think differently about anything, or not?

Caroline: Um... well I guess, um, one thing I've noticed from, you know from the very first year to - to this past year, is the change in climate.

Researcher: Right.

Caroline: Um, and - and so they're, you know, so you do wonder - what - what is going to happen with the bears, if - if um, you know, climate change... you know,

continues on the path that it is, you know, and they - they lose their- more and more their ice. What's gonna happen to them?

Researcher: Right.

Caroline: Um... so, yeah. I mean, what - the day that I got into Churchill, there - there was snow, you know, the ground was covered with snow, and um, there was ice everywhere and the last day that I was there the snow was pretty much gone.

Researcher: Yeah. Yeah.

Caroline: And that was amazing to me.

Researcher: I remember that.

Caroline: You know, I was walking around town with no hat or gloves on. And I thought, this is - this is crazy.

Researcher: Yeah.

Caroline: You know, unreal. [laughs]

Researcher: And it's never been that way in other years that you've been there, is that right?

Caroline: Right, right.

Researcher: Yeah. So that's why it hit home for you how - how much that has changed?

Caroline: Yeah, yeah.

In addition, in situ visitors discussed post-visit reading on topics related to Churchill in their PMMs. These topics ranged from news stories about polar bear cubs that had been found abandoned that season and transferred to the Assiniboine Park Zoo, to books that visitors had read, on the Dene and Cree people from the area. One visitor

took a Webcam course about the Aurora at the CNSC, and many mentioned they had a heightened awareness of weather, climate, and climate change issues that were reported in the news.

The examples of learning within the physical context were more clearly demonstrated by Explorers, Experience Seekers, and Professionals/Hobbyists in situ and for Facilitators ex situ. There was very little indication of learning within the physical context of the CML for ex situ Experience Seekers or for Hobbyists.

Discussion

Visitor identity-related motivation categories.

This research supports Falk et al.'s (2008) research which found that interview methods were the most informative in determining visitor-identity related motivations. Here, the open-ended interviews allowed for a more complete understanding of the visitors and what their primary motivations for visiting were. When combined with questions relating to their expectations and significant aspects of the visit, these motivations were readily identifiable. This research demonstrates that nature-based tourists can be classified within Falk's identity-related motivation categories using interview techniques and qualitative analyses (Falk, 2011a; Falk et al., 2007; Shultz & Joordens, 2014). It also demonstrates that while little "i" identities do not singularly inform visitors' learning, this form of categorization can be helpful to understanding and planning for experiences that facilitate learning for visitors with different motivations in different contexts (Falk et al., 2008; Dawson & Jensen, 2011). From this research it is also evident that in situ and ex situ nature-based tourism experiences attract visitors from different motivational categories, which aligns with previous zoo-based motivational

research (Falk et al., 2008; Schultz & Joordens, 2014) and nature-based tourism research (Beaumont, 2001).

Facilitators were found to be prevalent at the ex situ site, which is unsurprising, given that zoos are both more accessible and affordable for parents or grandparents acting as Facilitators for young children. Explorers were prevalent at the in situ site of this study. Substantial investment of time and resources are necessary in order to visit Churchill, Manitoba so it is likely that this site will attract more visitors with a keen and prior interest, such as is common for Explorers. This simple segmentation alone suggests that zoos need to plan experiences for Facilitators that provide post-visit engagement, as much of Facilitators learning will take place off-site. Nature-based tourism companies in Churchill ought to be planning for many of their visitors to have Explorer or Experience Seeker motivations. Explorers were also more likely to take part in a tour. This has face validity, in that these visitors are already more intensely interested in the content of their visit and are looking for more opportunities to learn. Explorers often included volunteers as well, and how to provide opportunities for visitors to transition or act as volunteers would be an area for future research and program planning to explore.

These findings also demonstrate that while other demographic factors, which Dawson and Jensen (2011) argue are important for understanding a visitors 'personal lens for interpreting meaning from an experience, are certainly important, the identity related motivation is most informative for understanding visitors' free-choice learning experience. This research demonstrates that, regardless of whether or not a visitor had been the decision maker for the visit, their expectations and their degree of interest were all closely related to their visitor identity-related motivation (Falk and Storksdieck,

2010). For decision makers, their interests will likely have preceded their visit, but for visitors who are not the primary decision maker, their motivation identity can be a meaningful framework with which to better understand the type of learning that they may or may not experience (Falk and Storksdieck, 2010). When examining patterns in free-choice learning, the visitors' identity-related motivations were consistently prominent. All other variables, such as demographics, interest, expectations and choice and control, seemed to be mediated by their motivation. For example, one could argue that ex situ females generally did not demonstrate examples of free-choice learning in the personal context of the CML. However, the majority of women participants were also Facilitators, whose primary motivation was to facilitate the learning of their children. I argue, that while visitors' big "I" identities and their personal history and context (Dawson & Jensen, 2011) certainly matter in shaping their interests and in forming the particular context for their visits and learning (Falk et al., 2008), that their on-site visitor identity-related motivations are the most effective way to understand and categorize their free-choice learning within the CML (Falk, 2009). This has important implications for the planning and management of visitor free-choice learning experiences. It supports the findings of predominantly quantitative studies which have suggested that segmenting visitors by their motivations is an effective approach in the planning of free-choice learning experiences (Dawson & Jensen, 2011, Falk, 2009; Falk et al., 2008; Schultz & Joordens, 2014).

Visitor identity-related motivations and the CML.

By coding learning data broadly in each of the contexts of the CML, the goal of this part of the analysis was to determine if there were any visitor characteristics that influenced learning. As part of the emergent aspect of this research, this data

demonstrates that visitor identity related motivations tended to encourage learning in particular visitor contexts. It is important to note that this study is exploratory in nature, and that these findings are not intended to be predictive, but rather to better inform an understanding of visitor learning and experience. As discussed, I found motivation to be the most informative for understanding potentially predictable patterns of visitor learning. By better understanding what contexts particular types of visitors are more likely to experience learning in, researchers and practitioners will be helped in planning visitor experiences that are designed to facilitate learning within the most appropriate and effective contexts.

Explorers.

Within this research, Experience Seekers and Explorers provide a particularly interesting line of inquiry because, in previous research Experience Seekers were found to be the motivational identity group that consistently demonstrated the most learning (Falk et al., 2008; Shultz & Joordens, 2014). However, in this research, it was Explorers who were better able to demonstrate learning in every context of free-choice learning. Explorers were able to provide excellent examples of learning within each context of the CML. This is not surprising, given that their visitor identity related motivations relate to high prior interest in the content of their visitor experience. Within this study, Explorers tended to demonstrate the most complex examples of learning within the personal context, but they were also able to demonstrate nuanced examples of learning in the physical context and socio-cultural context. These visitors were the ones who most clearly articulated that they were specifically interested in on-site learning and sought out additional learning after the on-site visit, whether through books, additional courses or other means of learning. Learning tours, or any location with a specific learning agenda,

will want to plan experiences that have layered learning opportunities for Explorers that engage them in as many contexts as possible, depending on who the Explorers are visiting with. For example, Explorers visiting alone may prefer more learning opportunities in the personal context, whereas Explorers visiting with friends and family may be more receptive to learning in socio-cultural contexts.

Experience Seekers.

Experience Seekers tended to demonstrate learning that occurred within the physical context of the CML – especially for in situ visitors. Notably, examples of learning in the physical context tended to relate to the on-site experience, rather than post-visit learning, as was more common for Facilitators. Experience Seekers also demonstrated some examples of learning within the personal context. These findings suggest that visitors with Experience Seeker visitor identity-related motivations will benefit from learning planned in all contexts of the CML, but the majority of their learning will take place on-site and often within a socio-cultural context. If they are not interested in guided tours, informal interactions with site staff or other visitors will likely help facilitate their learning.

Another notable finding for Experience Seekers is the difference in learning within the physical context between in situ and ex situ visitors. Based on the interview data, this may be attributed to the intensity and engagement that an in situ experience affords. An ex situ experience may not engage visitors in the long term (post-visit) in the same way. This is another finding that merits further research and has important implications for how ex situ experiences are designed, especially post-visit engagement.

Further, based on NVivo queries used to compare learning between visitors with different primary motivations, I surmise that Experience Seekers may exhibit more

learning, when measured using traditional survey-based forms (as per Shultz & Joordens, 2014), since they tend to enter an experience with less prior knowledge, interest, and experience, compared to Explorers. Experience Seekers view seeing the polar bears as either something to check off their bucket list, or as a "been there, done that" experience (Falk et al., 2008). Explorers, on the other hand, begin with high pre-visit levels of knowledge and, therefore, may learn less in terms of new content. Within this study nearly all Explorers demonstrated prior interest relating to polar bears and nature-based tourism, but did not demonstrate increases in interest post-visit. This finding suggests that since Explorers begin an experience with relatively high levels of knowledge and interest, these variables may not change as notably as for visitors who exhibit less prior interest and knowledge, such as Experience Seekers and Facilitators. This would explain why the research conducted by Shultz and Joordens (2014) and Falk, Heimlich and Bronnekant (2008) found that Experience Seekers demonstrated "significant changes in their understanding of conservation over the course of their visit" (p. 71) in comparison to Explorers. In light of this research, I argue that there is an important difference between demonstrating "significant changes" in understanding and demonstrating learning (Falk et al., 2008). Survey-based data, then, may not necessarily reflect how advanced someone's knowledge or skills are, but rather reflect the total change in knowledge. This is a methodological critique, for if survey-based data favours measuring changes in learning rather than the depth and overall mastery of learning, it is indeed important for researchers to be cautious interpreting the results. Here researchers need to think critically about how learning is measured, and seek not just differences between pre and post measures of learning but take into account how deep and rich the visitor's

knowledge and interest is at the outset of their encounters (Bueddefeld & Van Winkle, 2018; Stern et al., 2014). Additionally, practitioners who design learning experiences will want to consider they type of learning they wish to facilitate. In a study exploring interpretation outcomes, Beaumont (2001) found that on-site interpretation focused on knowledge acquisition rather than "sensory, message-based or participatory techniques conducive to generating strong feelings for the environment" (p. 334). If nature-based tourism experiences truly wish to develop encounters that produce a wide range of outcomes that reinforce or encourage critical and reflective thought, researchers and practitioners must also plan and measure learning more effectively; not just changes in the quantity of factual knowledge, but also the changes in the depth and quality of knowledge resulting from these encounters. It should also be noted that, while this explanation might account for the variation in learning between Explorers and Experience Seekers it does not necessarily account for differences in learning between Experience Seekers and visitors with other motivations. Further research is needed to investigate this more completely.

Facilitators.

Facilitators were able to demonstrate examples of free-choice learning in the socio-cultural and physical context. These findings are surprising, given previous research which demonstrates that Facilitators have been found to demonstrate significantly less learning than Experience Seekers and Spiritual Pilgrims when measured using surveys (Schultz & Joordens, 2014). However, there were very few Facilitators who were able to provide examples of learning found within the personal context of the CML. Depending on how learning is conceptualized and survey questions are phrased, this may account for some of the variation between these findings and those of Shultz and

Joordens (2014). For example, if Facilitators are focused on providing learning opportunities for their children, they may have learned more about how to effectively communicate issues like climate change to their children, rather than learning about the concept themselves. This has important implications when planning learning experiences for sites that host and want to plan programs for Facilitators. This research suggests that the most effective learning experiences for Facilitators occur within a socio-cultural context both on-site and that these on-site experiences need to be extended for post-visit learning. In other words, visitor sites that desire Facilitators to demonstrate learning outcomes need to plan almost exclusively for learning within a Facilitators social group.

This research suggests that for Facilitators, learning may be more likely to take place post-visit (the physical context of learning includes post-site engagement and reinforcing experiences). If a Facilitator's purpose is to have an enjoyable day out for their children or to help facilitate the learning of children, their own learning, at the time of the on-site visit, is of secondary importance to them. Anecdotally, from previous research on post-visit action resources, visitors who could be identified as Facilitators, demonstrated sustainable behaviour changes and meaningful learning post-visit with the aid of the post-visit resources (Bueddefeld & Van Winkle, 2018). While the purpose of that study was not to identify visitors by motivation, there are several interviews with parents who reported that reviewing the weekly post-visit action resource email became a part of their family routine and that they would challenge themselves to find more ways to be sustainable (Bueddefeld & Van Winkle, 2017, 2018). Additional research is needed to further investigate this finding and determine the role that post-visit engagement may play in developing experiences for Facilitators.

One Facilitator on a learning-based tour in Churchill demonstrated a deep understanding on-site and post-visit, as well as engagement in transformative activities, however, what is notable is that these activities were not necessarily related to polar bears and climate change. While polar bears and environmental issues were of interest to her, she was more interested in artistic expression and cultural connection in that she was keen to further develop the social connections between her son and his First Nations heritage. Her learning was more directly related to her motivation as a Facilitator than to her knowledge and understanding about polar bears and climate change. This is an excellent example of the need to provide multiple avenues for learning, that relate to visitor motivations and that respect differences in interest, motivation, and current capacity for change.

Professionals/Hobbyists.

This research demonstrated that Professionals / Hobbyists demonstrated relatively few examples of learning in all contexts of the CML. The examples of learning that were provided tended to be in the physical context or socio-cultural context. For learning coded within the personal context of the CML, ex situ Professionals / Hobbyists provided no examples. This is not surprising, given that the purpose of a visit to the zoo for a Professional / Hobbyist is to take photographs. This research suggests that even on tours in Churchill, Professional / Hobbyist visitors tend to learn very little in general and are not necessarily the best suited target audience for experiences intended to facilitate visitor learning.

When designing visitor experiences, practitioners and tour operators will want to consider what are desirable outcomes for different types of visitors. For Professionals and Hobbyists, the type of learning will likely depend on their primary motivation for the

visit. For example, one of the participants included in the zoo sample was a volunteer whose primary volunteer role was as a photographer. She was interested in polar bears and climate change issues, but this was clearly secondary to her interest in photography and her ability to contribute as a volunteer in this way. She was not able to provide more complex examples of learning even after the on-site tour, despite the fact that she had very much enjoyed it and found the experience valuable. Conversely, a professional photographer who was interviewed in Churchill, intended to return home and use his images to speak about polar bears, climate change and some of the issues facing this species and ecosystem. While his primary motivation was tied to his photography, he was more interested in telling a story with these images and hence he enjoyed learning about polar bears and reflecting on those encounters. Again, this would not be conveyed in a traditional survey style research instrument which seeks only to explore changes about a particular topic.

Rechargers.

The Rechargers in this study demonstrated very little learning, in general. The examples of learning provided by them tended to focus on things they had learned from the volunteers or when they overheard zookeepers giving talks. As Rechargers, they were not always interested in learning, and this was clearly evident from their responses. A few examples were also provided by Rechargers who had learned some things about polar bears just from watching their behaviour or over hearing conversations volunteers or zookeepers had with other visitors. This finding has important implications for interpretive staff in visitor contexts who may receive some visitors who are there to recharge. Since Rechargers are not necessarily interested in learning when they are visiting with the intent to recharge, staff may want to seek to engage these visitors in

other ways, such as encouraging them to bring a friend or family member to a future visit where they may act as a Facilitator or Experience Seeker. In other words, it may not always be appropriate to assume that all visitors want to learn or should learn from their experiences.

Reflection.

In Churchill, reflection was brought up frequently by the learning group visitors spending a week at the Churchill Northern Studies Centre. A few visitors intentionally skipped some activities citing that they required additional down time, and others stated that they felt that they had not had time for reflection. Some were looking forward to the train journey back, as the two full days it takes to travel by train from Churchill to Winnipeg would offer time for reflection. In relation to nature-based tourism experiences, additional research on the role of reflection (Van Winkle & Lagay, 2012), both on site and after the visit, would be interesting, both with regard to Spiritual Pilgrims and other visitor motivation categories.

With regard to Spiritual Pilgrims, while this study did not have any visitors in this category, I surmise that the reflective quality of Spiritual Pilgrims encourages deeper and more potentially transformative learning, as this research found evidence of visitors who exhibited introspective learning. Indeed, this idea aligns with TLT and the need for reflection or introspection as part of the transformative learning process (Moyer & Sinclair, 2016; Van Winkle & Lagay, 2012; Wilner et al., 2012). In other words, space and time for introspective reflection, which are important to visitors with this motivation (Spiritual Pilgrims often visit free-choice learning sites alone) also provide the facilitating conditions for transformative learning. This is a potentially interesting avenue of research, because current learning theories expound on the benefits of virtually all forms

of learning. This empirical research suggests, that time for solitary reflection may be a particularly critical part of the process (Van Winkle & Lagay, 2012). Some of this reflective capacity was observed and identified in visitors at the zoo who were acting as Rechargers, but arguably the majority of reflection on a visit like a day trip to the zoo will happen after the visit. This is perhaps in part a design flaw of many zoos and aquariums as spaces are often designed to encourage the flow of traffic rather than with the intention of having visitors stop and sit quietly for a while. Some aquariums (e.g. Ripley's Aquarium in Toronto, Ontario) have a large gallery style seating area facing one of the large glass walls that provide an underwater perspective. The room is dimly lit and there is soft music playing making the atmosphere reverential and quiet. However, spaces like this are uncommon, or if they do exist, they often do not have sufficient seating (e.g. the underwater tunnel and gallery area at the Assiniboine Park Zoo). If there is sufficient seating it is usually in a dining space, which is typically a louder and less contemplative space.

Learning by context.

Methodologically, while the data presented includes the PMM coding in aggregate form and uses the interview responses to provide examples, it should be noted how useful the PMMs were in gaining a holistic perspective on what visitors had learned from their on-site visit. Each item on the PMM would be discussed prior to the interview questions, and this open-ended format allowed visitors to lead the discussions and tell me what they believed was important in relation to their understanding of their experience. These responses ranged from fact-based lists of things they learned, to discussions about climate change and socio-political challenges, to personal and social connections and experiences. These items also provided a wide array of topics to be discussed and

included within this research. As well, PMMs proved to be an incredibly effective tool for further probing within the interviews, as participants could refer back to them in their responses (Bueddefeld & Van Winkle, 2017, 2018; Van Winkle & Falk, 2015). Participants also commented on how effective the PMM was in triggering their memories and bringing them back to our on-site interview, when they were called to conduct the follow-up PMM and interview (Bueddefeld & Van Winkle, 2017, 2018).

Personal context.

Similar to findings in previous research the majority of visitors, both in situ and ex situ, had their expectations met or surpassed. In the few instances where participants' expectations were unmet, the visitors tended to be Explorers, or Facilitators who were with an Explorer that had unfulfilled expectations. These were either repeat in situ visitors who had very specific wildlife viewing criteria, or those for whom seeing polar bears in Churchill had been a part of a lifelong dream. The expectations for these individuals were extremely specific. For one visitor who did not go on a learning tour, expectations were simply unmet in that she did not see polar bears at the proximity she had expected to. For some visitors on a learning tour at the CNSC, disappointment stemmed from not participating in research in the way they had anticipated or not feeling that the organizational and communication aspects of the trip had been fulfilled appropriately. I also observed several other visitors, who were not a part of the data collection, that shared this view. I expect that part of the disappointment may stem from having to pay a significant amount of money and expecting a professionally organized tour; whereas the CNSC is primarily a research centre and tours and accommodations are organized by scientists, not hospitality staff. In addition, some visitors felt that certain

basic items that most travellers would expect – such as locks on the doors or having a personal locker – were not provided (or the lack of same was not conveyed ahead of time) and that this greatly diminished the experience. This has important implications for the CNSC and its ability to continue to attract visitors. Hiring additional seasonal staff with a background in visitor experience, management, or hospitality would likely help to alleviate some of these concerns.

Examples of learning within the personal context did not often appear in interviews with ex situ participants. From this data collection, there were also very few examples of learning in the personal context, found in the PMM data. I believe this is because learning that builds on the personal context is difficult to identify and discuss. In fact, it may not be recognized as learning, in the same way that learning facts are (Bueddefeld & Van Winkle, 2018; Stern et al., 2014; Wilner et al., 2012). Given that this context of learning relates to prior interests, beliefs, and motivation, participants able to convey this type of learning need to self-reflect in some capacity. It should be noted that the majority of coded responses for learning within the personal context were found in the follow-up aspect of the data collection, which supports the idea that the personal context of learning requires reflection (Van Winkle & Lagay, 2012; Wilner et al., 2012).

Socio-cultural context.

Prior tourism learning literature expounds on the importance of social groups for learning within tourism (Falk, 2011b; Minnaert, 2012; Molz, 2016), and this research supports this view. This exploratory research suggests that Facilitators ex situ may be particularly receptive to learning within the socio-cultural context. Within this particular case study, socio-cultural learning may have been more easily facilitated by the necessity of going on an organized tour to see polar bears. Visitors on a guided tour, even if not a

learning tour, would be more likely to be exposed to social conditions which may result in learning. Additional research is needed that will explore this finding in relation to in situ experiences that compares guided and un-guided experiences in order to better understand the effects that a tour may or may not have for in situ and ex situ socio-cultural learning across visitor identity related motivations.

Prior research demonstrates that interpretation, generally, in wildlife tourism can "increase proconservation behaviour in the public and emotive interpretation material has the greatest effect" (Scarpaci & Parsons, 2015, p. 83). In the example with the ex situ visitor, Richard, who visits the zoo regularly with his wife, we see how important even indirect socio-cultural experience is for learning. As someone who may see himself as a "regular", and not a visitor – he may not regularly engage with volunteers or docents; for him, simply overhearing information is clearly an effective form of learning about the specific polar bear cubs at the zoo and about the issues polar bears face in Northern Manitoba.

As for the majority of visitors in Churchill that described their learning within a socio-cultural context, their learning was enhanced not just by guided tours (though that was certainly an important part) but also by their interactions with locals, and hotel or restaurant staff. These informal conversations lend themselves to visitors understanding not just expert opinions but the issues that the communities face and the perspectives of the people who live there – the trusted messengers (Moser, 2006; Wirth, Prutsch, & Grothmann, 2014). This is arguably an invaluable aspect of learning that can facilitated in more ways during an in situ experience.

Physical context.

Within the physical context of the CML, all categories of visitor motivations, with the exception of Facilitators, demonstrated more examples of learning in situ than ex situ. In other words, the physical experiences offered through the in situ exposure facilitated a powerful learning opportunity. This experiential learning was one of the most impactful aspects of the trip for in situ visitors. Seeing the vastness of the landscape, watching a polar bear cub search for its mother, feeling how abnormally warm it was and not seeing or experiencing snow or ice, were considered to be some of the most significant physical experiences for many in situ visitors (Lemelin & Smale, 2006; Powell et al., 2012; Walker & Moscardo, 2014). There are also many examples of post-visit reflection and engagement: some visitors continued to follow the weather in Churchill after returning home, and some followed the news in Winnipeg about a cub that had been found abandoned and was eventually transferred to the Assiniboine Park Zoo. Also, some reported reading additional books, giving formal talks or having deep discussions with friends afterward. For the ex situ visitors, the majority of learning in this context related to Facilitators and their post-visit actions. The ability to connect issues revealed during the Zoo visit about polar bears, environment or climate change, to activities and conversations sometime after the visit proved to be something that Facilitators exhibited. Facilitators also used the physical space at the zoo, including interactive physical objects in the Journey to Churchill exhibit (e.g. snowmobiles) in conversations with their children, to encourage a connection with polar bears or with Churchill. In this sense, the physical place and the post-visit engagement of the experience mattered, especially in the case of visitors such as Facilitators with small children. This is a particularly significant finding: it has long been known that experiential learning is impactful, but adding to this

experience by connecting the on-site experiences to post-visit activities and reflection is rarely done in practice and there remains scant literature on the topic (Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011, 2013; Hughes, Packer, & Ballantyne, 2011; Wilner et al., 2012). The exploratory findings from this study require additional research in order to test these ideas and compare learning of visitors by motivation for in situ and ex situ experiences.

Conclusion

These findings explored how the in situ and ex situ polar bear tourism experiences influenced visitors learning, and how that learning changes over time. This research found that visitors in situ demonstrated complex and nuanced examples of learning that occurred in all contexts of the CML. In particular, the in situ experience was better able to facilitate learning in the personal and physical context for visitors than the ex situ experience. The in situ experience also facilitated more opportunities for socio-cultural learning, where visitors demonstrated learning from a variety of trusted messengers such as waitresses, drivers, local residents and staff members (Moser, 2006; Wirth et al., 2014).

In this particular case study, the length of the visit to Churchill will also have played a factor – a more prolonged stay allows for additional experiences, time for reflection and learning opportunities (Beaumont, 2001). However, ex situ visitors were also able to demonstrate learning especially in relation to the socio-cultural and physical contexts. The majority of ex situ visitors tend to be Facilitators and previous research demonstrated that Facilitators have not demonstrated significant learning changes (Falk et al., 2008; Shultz & Joordens, 2014). This research found that Facilitators in particular

demonstrated complex examples of socio-cultural learning, primarily in the follow-up aspect of the data collection. This suggests that an element of time is needed for Facilitators to either put this learning into practice, or that they are better able to articulate their learning off-site. Research has demonstrated the importance of follow-up research for assessing visitor's experiential outcomes, as some learning can require time and reflection in order for participants to be able to articulate it or embed it within their lives (Ballantyne, Packer, & Falk, 2011; Bueddefeld & Van Winkle, 2018; Hughes, 2013; Rattan, Eagles, & Mair, 2012; Stern, Powell, & Ardoin, 2010; Van Winkle & Lagay, 2012). This is important, as this research demonstrates the significance of providing learning opportunities that are situated in social contexts for Facilitators that extend beyond the on-site visit. Developing engaging post-visit materials or structuring experiences that are intended to engage repeat visitors will be important for ex situ visitors, especially Facilitators (Ballantyne & Packer, 2011; Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011, 2013).

Similarly, ex situ visitors were able to describe their learning post-visit as a cumulative and ongoing experience rather than as an on-site snapshot. Again, this is an important finding as it recognizes the significance of visitor free-choice learning experiences that may not be as poignant and immediately noticeable as a visit to Churchill. Rather the ex situ experience offers an opportunity for learning that accumulates over time, especially for repeat visitors (Falk & Dierking, 2000). As demonstrated, for these case studies, in situ and ex situ polar bear tourism experiences attract largely different visitor audiences and are in this way, more appropriately

complimentary than competitive in relation to attracting visitors. This has important implications for understanding the polar bear tourism discourse in Manitoba.

This research demonstrates that not all visitors will learn, even in optimum nature-based tourism experiences such as polar bear viewing in Churchill, Manitoba. For example, visitors with Professional or Hobbyist motivations in Churchill demonstrated very little learning. These findings suggest that visitors' motivations are more informative for understanding their learning, than the place they visit. I argue that visitors who go to Churchill will likely demonstrate complex forms of learning, not just because they visited polar bears in situ, but because of their keen interest and Explorer motivation. Visitors who go to ex situ sites like the zoo, are more likely to be Experience Seekers and Facilitators, which predisposes them to having a different set of interests and motivations. In other words, while the places do matter in the ability to provide a more complex and engaging experience. In situ visits also facilitate many different social interactions with people whom visitors may consider trusted messengers. Climate change communication research recognizes that trusted messengers play an important role in effective communications. People are more receptive when information comes from people whom they perceive to be their peers and who share their interest or attitudes, rather than experts (Moser, 2006; Wirth et al., 2014). This research demonstrates that these trusted messengers were particularly effective for facilitating learning, especially for visitors who did not have an Explorer oriented motivation. In other words, trusted messengers who were not considered experts were effective in facilitating the learning for visitors who may not have been as predisposed or interested in learning as part of their primary visit motivation (Moser, 2006; Wirth et al., 2014). Practitioners will want to consider this

when planning learning-based encounters for their visitors. Using visitor motivation-based segmentation will help practitioners to provide learning experiences that are less formal and speak to different types of visitors using trusted messengers (Moser, 2006; Wirth et al., 2014).

Further, this research demonstrates that using Falk's identity-related visitor motivations as a tool for segmenting visitors is appropriate, and particularly effective when paired with qualitative interviews (Falk et al., 2008). We know that "Learners' goals are rarely the same as those of the institution" (Heimlich & Horr, 2010, p. 59), yet researchers and practitioners often fail to measure and assess the multiplicity of visitors' free-choice learning outcomes, partly due to the cost and time needed for such evaluation. Visitor segmentation may prove to be helpful in this regard. While some visitors will not fit perfectly into one of the seven identity-related motivation categories (Dawson & Jensen, 2011), this research supports that visitor identity-related motivational segmentation can be an effective way to better understand the reason for their visit and add insight into the context in which learning may be more likely to occur (Falk, 2011a, 2011b; Falk et al., 2008; Shultz & Joordens, 2014). With this in mind practitioners will be challenged to provide constructive alignment for visitors both in terms of the experiences offered and the ways in which experiential outcomes are measured and assessed.

This exploratory research provides both confirmatory and conflicting findings in relation to prior research on visitor motivations and on measuring free-choice learning (Falk, 2011a, 2011b; Falk et al., 2008; Schultz & Joordens, 2014). I question the appropriateness of measuring free-choice learning by defaulting to survey-based

techniques that focus exclusively on changes in learning and therefore may fail, both in capturing the depth and mastery of learning and in understanding the context in which the learning has occurred (Bueddefeld & Van Winkle, 2018; Stern et al., 2014). While survey-based research has an important role to play in visitor studies and learning research, I argue that more sensitive research tools are needed in order to both measure and understand these complex and individualistic outcomes (Bueddefeld & Van Winkle, 2018).

A potential limitation of this study is that I did not employ the full 20-item visitor motivation identity scale developed by Falk (Falk 2007, 2009; Falk et al., 2008; Schultz & Joordens, 2014). As this research was exploratory, my purpose was to evaluate Falk et al.'s (2008) suggestion that the interviews, particularly the follow-up interviews, were most effective in determining visitors' motivations. I found qualitative methods to be effective and insightful in determining primary motivations. The primary limitation is that PMMs, qualitative interviews and coding methods are time consuming and labour intensive to analyze (Van Winkle & Falk, 2015). Further research is needed to determine if these findings are more broadly generalizable. As exploratory data, however, these results are not intended to be generalizable, but are potentially transferable depending on the specific context (Baxter, 2000; Creswell & Poth, 2018).

Through this data and these examples, I have explored several explanations for differences in visitor learning in relation to the contexts in which the learning occurred as per the CML, and as segmented by visitor motivation related identities. This research explores how these might be used to address the design and evaluation of visitor learning and experience. While visitor segmentation by motivation may, to some degree,

oversimplify visitors' nuanced experiences, I believe it serves a purpose in recognizing that not all visitors *ought* to be expected to have the same learning outcomes (Dawson & Jensen, 2011). This recognition can then help us to support visitors in the co-creation of their experiences and associated learning, by developing experiences that do not end at the gate but that connect visitors in a meaningful way to a cause or topic that they care about (Ballantyne & Packer, 2005; Ballantyne, Packer, Hughes, & Dierking, 2007; Stern, Powell, & Ardoin, 2010; Walker & Moscardo, 2014; Wheaton et al., 2016).

Further, by exploring free-choice learning by context, this research provides insight into better understanding that in situ and ex situ experiences offer different but complementary experiences for their respective visitors. Not all polar bear tourists are going to learn, even if you bring them to Churchill. Recognizing this and planning visitor experiences which align with their motivations will be important for tourism operators in Manitoba, both to recognize the in situ and ex situ experience as attracting primarily different audiences, but also in the development and assessment of their learning agendas.

Chapter 5: Visitor Learning (Within Site Analyses)

Introduction

This chapter will further explore visitor learning within each site and will examine changes in visitors' potential learning and behaviour change (transformative learning) over time. Specifically, this chapter addressed research question 1(b) and (c):

1. b) Explored possible visitor learning (and how learning may change over time) for free-choice learning and transformative learning at both in situ and ex situ sites (within-site analysis).

c) Explored and explained possible connections between the Contextual Model of Learning and Transformative Learning Theory.

The learning discussed in this chapter emphasizes the descriptive and thematic emergent outcomes of visitors learning at each site, as described within the contexts of the Contextual Model of Learning (CML) and the domains of Transformative Learning Theory (TLT). Understanding how visitors' learning changes over time is important in relation to both free-choice learning and transformative learning. Within free-choice learning, post-visit learning has demonstrated the potential to enhance behaviour change. Similarly, transformative learning requires reflection and thoughtful contemplation in order to occur. With this in mind, recognizing thematic differences in on-site and post-visit learning may help researchers to understand what types of learning, as well as what sort of thematic categories may lend themselves to encouraging different learning processes and outcomes. In this chapter I contribute to the empirical evidence of transformative learning in tourism research. Additionally, I propose a theoretical model which seeks to combine the contexts of the CML with TLT in an effort to better inform visitor learning for behaviour change.

Vignette: Polar Bear Cubs and Climate Change Messages

It is the second day on the tundra buggies for a group of Frontiers North Adventure Company visitors. We have been stopped for lunch near the Tundra Buggy Lodge and there are several bears in view and sleeping nearby. For this type of tour, each visitor is guaranteed their own window seat on the Tundra Buggy, and one full day with a polar bear expert from the non-governmental organization Polar Bears International. The polar bear expert assigned to our Buggy is JoAnne, a senior polar bear conservation staff from the San Diego Zoo, who volunteers her time during polar bear season with Polar Bears International – referred to as PBI. Our Buggy has been stopped near the Tundra Buggy lodge for lunch and everyone is sitting quietly watching sleeping polar bears and having quiet conversations, seemingly lethargic after lunch. We hear the crackling of JoAnne's PBI walkie talkie, and she suddenly is talking animatedly. She has been in communication all day with Buggy One, a Tundra Buggy solely for the use of the non-governmental organization, Polar Bears International. Buggy One monitors polar bears, hosts scientists, and helps create broadcasts and media to communicate conservation issues facing polar bears during peak polar bear season. The staff on Buggy One have been in communication about the position of bears they are monitoring. They are now speaking rapidly, and everyone takes notice of the commotion. JoAnne asks our buggy driver to pull up to Buggy One, so that she can speak to the Buggy One staff directly. JoAnne comes back and tells the group that Buggy One has been monitoring a polar bear cub for the past day that they believe has been separated from its mother. The cub is currently approaching the Tundra Buggy Lodge, which is a temporary Lodge created by linking several Tundra Buggies together (the structure is left in the Churchill Wildlife Management Area during peak polar bear season). She explains that their staff regularly

monitor cubs that are separated from their mothers and that they do not interfere until after a certain amount of time has passed, for two reasons. Firstly, the mother bear often finds the cubs and reunites with them, and human involvement may prevent that reunion. Secondly, they can legally only monitor the cubs, but then must contact Manitoba Sustainable Development (previously Manitoba Conservation) and report to them when they believe a cub has been abandoned. The cub they are currently monitoring is believed to have been abandoned, since it has been more than 24 hours since they began monitoring it and they have not yet seen its mother. A long enough time period has not yet elapsed for Manitoba Sustainable Development to capture the polar bear cub and assess it for the potential to transfer to the Assiniboine Park Zoo.

As JoAnne is explaining this monitoring and assessment process, we see the lost polar bear cub coming around the Tundra Buggy Lodge. A hush falls over everyone and it is so quiet you can hear a pin drop. After a beat, a few cameras click to take a couple of photos, but it is not the usual barrage of constant camera shutters. The mood is distinctly somber and watching the lost cub searching around, it is impossible not to feel worried and sad for this polar bear cub. Just when we all think it cannot be a more tragic scene, JoAnne explains that what is most perilous for the cub is that in the process of looking for its mother it has to avoid all of the “big, hungry males” that are effectively starving right now and are known to cannibalize cubs. There are no less than eight large males all within our vantage point, which means that there are likely more polar bears that are not currently visible. You can hear the sharp intake of breath as we wait and watch the cub wander, narrowly missing sleeping bears at every turn, as it navigates its way around the shrubs, searching for its mother. We stay to watch the cub as long as possible, until the

driver announces that we have to start driving back before dark. Everyone continues to glance back worriedly, as we lose sight of the polar bear cub. JoAnne describes what would happen next. If PBI continues monitoring the cub, and the mother and bear are not reunited, then Manitoba Sustainable Development will need to assess the cub, capture it and then wait for the Assiniboine Park Zoo's veterinarian to determine if the cub is physically capable of sustaining the flight to Winnipeg. This would only happen if the cub is a suitable candidate for the zoo.

JoAnne is a skilled interpreter, and carefully shifts the discussion toward the work that PBI does, and she describes that as climate change continues to worsen, so do the effects on polar bears. She describes how polar bears need to eat seals in order to consume enough calories to survive, and that they are only capable of catching seals on ice, through the seals' blow holes, since polar bears cannot swim fast enough to catch them. She describes how polar bears will only eat the fattiest part of the seal, their blubber, and leave the rest – which is an important food source for scavengers like foxes. All other forms of food simply do not provide enough calories for polar bears to survive over the long winter months. They are opportunistic animals and will eat other things, but they will not get the calories required to survive in the harsh polar environment if they cannot catch seals on sea-ice. She continues to describe how the effects of climate change will be felt the worst, and first in the Arctic and the poles of the world, which means polar bears are one of the species that will be the most affected. She states that it will be increasingly difficult for polar bears to feed themselves and their cubs, and that scientists predict we will see an increase in cub abandonment and lower birth rates as a direct result of this. She then steers her narrative towards what can be done about climate change. She

provides facts and evidence of the impact that individuals can have and gives examples of actions that everyone can do to reduce their impact on climate change. Notably missing from the list, is reducing air travel, which is known to be a significant part of most tourists' carbon footprints, especially for those visiting remote destinations like Churchill, Manitoba. Many of the visitors ask questions, some challenge how effective their personal actions are without larger societal changes, and a discussion with several visitors who are more deeply interested continues at the front of the tundra buggy as we continue the slow drive back to the loading dock.

I arrive back at the Churchill Northern Studies Centre (CNSC) that evening (the Frontiers North group is staying at a hotel in the town of Churchill), and am comparing notes with the CNSC guide, and share the day's events that featured the abandoned polar cub. The CNSC guide follows up with some contacts he knows in Churchill to determine if he can learn anything more about the fate of the polar bear cub. He then brings this up in the evening lecture for the CNSC learning tour. He describes that one of the buggies has seen and reported a lost polar bear cub, and PBI and the Government of Manitoba are monitoring it, and if it survives the night it will likely be transferred to the Assiniboine Park Zoo. The mood in the room is somber, and a few people remark that they are happy to hear that the polar bear cub might be saved. The CNSC guide then replies that, there is also another side to this story. He reminds the visitors that male bears do eat cubs when they are hungry, and that this form of cannibalism is not uncommon. In fact, he remarks, it may be just enough calories to help one of those males survive until the ice has formed and they can catch seals again. He questions what is better, that the cub should be saved, or that it might be a useful meal to help another adult bear survive. A guest, who

identifies herself as a mother, remarks at how easy it is to empathize with the lost cub, in thinking about it as you would your own child, and to forget that death is not uncommon and part of the circle of life in the wild.

Within this example, we see how nature-based tourism experiences have the capacity to help people see the visible effects of climate change, and how, with well-planned interpretation they can also understand the impact that they personally have on climate change within a context of positive messaging and hope. Outstanding interpretation adds complexity to this narrative, as both the PBI and CNSC guides so skillfully did. Arguably, this form of communicative learning, forces one to confront one's own values about animals and think through other ways of seeing animals than just from a human perspective, and adds a much-needed layer of complexity and insight into the ways in which humans interact with polar bears. Adding this form of communicative learning that facilitates debate and adds complexity is challenging in tourism contexts where visitors may be more interested in entertainment than in challenging and rethinking their values and norms. This vignette demonstrates that polar bear tourism is particularly well suited to provide a context where transformative learning is possible, but transformative learning does not just inherently materialize. Understanding visitor learning, whereby learning can be understood within the domains of TLT will help to facilitate the planning of visitor experiences that optimize the potential for transformative learning.

Literature Review

Learning theories.

As previously described, free-choice learning and the Contextual Model of Learning (CML), provide a framework for understanding visitors learning experiences.

For the purposes of this chapter, visitor learning outcomes were first coded inductively, using emergent coding methods to understand thematic differences in both in situ and ex situ visitors on-site and post-visit learning. For clarity, the three contexts of free-choice learning within the CML include:

Personal context: motivation, expectations, prior knowledge, interests, beliefs, and elements of choice and control (Falk & Dierking, 2000).

Socio-cultural context: Within-group socio-cultural mediation and facilitated mediation by others (Falk & Dierking, 2000).

Physical context: Advance organizers and orientations, design, and reinforcing events and experiences outside the free-choice learning site (Falk & Dierking, 2000).

This chapter focuses more closely on transformative learning domains and juxtaposes these domains with the three contexts of the CML in order to analyze any overlap or insight into better understanding visitor learning.

Transformative Learning Theory.

Within the literature, TLT was quickly adopted in the field of Education and Natural Resource Management (NRM) as the objective of transformative learning (learning that changes in relation to critical reflection and results in an altered behaviour) neatly aligns with the goals of sustainable NRM (Diduck, Sinclair, Hostetler, & Fitzpatrick, 2012; Merriam & Bierema, 2014; Moyer & Sinclair, 2016; Moyer, Sinclair & Quinn, 2016; Quinn & Sinclair, 2016; Taylor & Snyder, 2012). In an overview of transformative learning literature, to determine trends in research, theoretical concepts, and exemplar studies (Taylor & Synder, 2012) found that the majority of transformative learning research tends to focus on ways to foster transformative learning (as opposed to

measuring transformative learning), which includes: "creating a safe and inclusive learning environment, focusing on the individual learner's needs, and building on life experiences" (p. 45). More recent NRM empirical research addresses this issue by providing evidence that TLT can be an effective framework for facilitating learning (both instrumental and communicative) to encourage behaviour change (Diduck, Sinclair, Hostetler, & Fitzpatrick, 2012; Marschke & Sinclair, 2009). However, it is recognized that despite the outcomes revealed in these studies, few are able to identify the "specific problematic experiences that sparked the learning" or the self-reflection process (Diduck et al., 2012, p. 1319).

Another criticism of transformative learning theory is that it does not include a sufficient focus on the spiritual aspect of learning and that this is essential for adult learning and experiencing critical self-reflection (Kovan & Dirkx, 2003; Moyer & Sinclair, 2016). Transformative learning is also critiqued for being grounded in a masculine Western perspective where rational thinking and autonomy are celebrated and the collective and non-rational (spiritual) are overlooked (Merriam & Ntseane, 2008). Merriam and Ntseane (2008) found that individual empowerment and "control over one's life" were not important outcomes in their study but rather people felt that "contributing to and bonding with one's community" were meaningful outcomes and argued that different cultural contexts change our frames of reference. Mezirow (2008) addresses the criticism that this theory decontextualizes learning and here he acknowledges that factors such as "power, ideology, race, class and gender" (p. 30) are important but that ultimately critical thinking and reasoned action are always the goals (even though the mechanisms that define the reasoning may change). To address the criticism that TLT de-emphasizes

social action Mezirow (2008) "contends that adult education must be dedicated to effecting social change…Transformative learning focuses on creating the essential foundation in insight and understanding essential for learning how to take effective social action in a democracy" (p. 30).

Perhaps the most substantial criticism of transformative learning is that there is no such thing as transformative learning, but rather this should simply be called *good* learning (Newman 2012). Newman (2012) argues that the only consistent definition in learning is change. Further, Newman (2012) argues that Mezirow considers learning to be a finite experience (triggered by an event that results in a specific change) and he considers learning to be incremental rather than epochal. Newman quotes Nelson Mandela in relation to his decision to work towards the liberation of South Africa: "I had no epiphany, no singular revelation, no moment of truth, but a steady accumulation of a thousand slights, a thousand indignities, a thousand unremembered moments" (p. 44). He argues: "disorienting dilemmas will be many, will often go unremembered, and will have a cumulative effect over time. Our lives are not so much marked by occasional major events, as by the continual encounter with a multitude of minichallenges" (Newman, 2012, p. 44). While Newman's criticisms are important, he fails to realize that Mezirow (2012) is in agreement with this statement, as he acknowledges that learning is not always epochal and can be incremental. Mezirow (2012) is explaining one path to transformative learning, rather than arguing that this is the only path. Newman (2012) also argues against the seven ideal conditions and states that some of those may even encourage change – he also argues that empathy and agreement with others is sometimes not warranted and that learning experiences are both "individual and collective" (p. 50).

Again, Newman (2012) has taken Mezirow's work out of context and constructed a division in understanding through taking a literal and absolute lens to Mezirow's work – when Mezirow specifically stated that the listed ideal conditions were not intended to apply to every context. Mezirow (2012) is careful to state that he understands learning to be both individual and collective: "Transformative learning has both individual and social dimensions and implications" (p. 77).

While the theory of transformative learning is not an all-encompassing solution for learning for behaviour change, it has been found that many issues/criticisms of transformative learning originate with researchers not knowing or reading the original work closely (Taylor and Snyder, 2012). I argue that TLT is well-suited to understanding visitors free-choice learning, particularly when action-based outcomes are desired or when nature-based tourism experiences seek to facilitate behaviour change or encourage ambassadorship in their visitors (Coghlan & Gooch, 2011; Knollenberg, McGehee, Boley & Clemmons, 2014; Stone & Duffy, 2015). The domains of TLT help to provide an understanding of the different types of learning that can be facilitated through experiences. Tourism also provides a unique context which can help to create a shift in an individual's thinking to create new frames of reference or revised interpretations (Knollenberg et al., 2014; Mezirow, 2012; Stone & Duffy, 2015). Finally, TLT recognizes that learning experiences are ongoing and potentially epochal or incremental, which is a fundamental part of understanding learning for behaviour change (Mezirow, 2012; Newman, 2012). This approach recognizes that there are many ways in which behaviour change may be facilitated, and that there is no singular epochal method that will work for everyone. Rather, understanding the learning process and being able to

identify learning in TLT domains as related to behaviour change provides an additional step in learning about this complex process.

Application of TLT in sustainable tourism literature.

Within the past decade, TLT has been integrated into the field tourism (Brondo, 2015; Coghlan & Gooch, 2011; Collins, 2008; Country, Wright, Lloyd, Suchet-Pearson, Burarrwanga, Ganambarr … Tofa, 2017; Knollenberg et al., 2014; Stone & Duffy, 2015; Walter, 2016). In particular, tourism research has applied TLT in ecotourism contexts (Collins, 2008; Walter, 2016) and voluntourism (Brondo, 2015; Coghlan & Gooch, 2011; Knollenberg et al., 2014), which are well suited as these types of tourism tend to focus on action-based outcomes and potentially the behaviour change of visitors. In their systematic review of transformative learning in travel and tourism research, Stone and Duffy (2015) found that there were only 53 articles (73% of which were related to study abroad programs / field placements or service learning) published that related to TLT and tourism, of which only 14 had been published in travel and tourism focused journals. They concluded that TLT is still in its infancy in tourism literature and that this gap in the literature "underscores the opportunity for travel and tourism educators to assume a more prominent role in disseminating educational travel research, publishing this research in tourism journals" (p. 211). Exploring TLT within the realm of visitor studies and nature-based tourism is particularly relevant, as these encounters are often centered on educating visitors to become more informed citizens of the Earth or ambassadors for particular species or places (Eijgelaar et al., 2010; Powell & Ham, 2008; Pritchard et al., 2011; Stone & Duffy, 2015; Walter, 2016).

As Stone and Duffy (2015) argue, TLT is well-suited to expand the research on learning in tourism. One of the ways in which TLT can be readily applied to sustainable

tourism is in the ways TLT attempts to facilitate equitable change via the learning process, on both individual and collective scales. Taylor and Synder (2012) describe this process:

> Transformative learning is found at the intersection between the personal and the social, where a transformation is a reciprocal process – a product both of others (social recognition, relationships) and of personal change – which potentially leads to a greater sense of individual responsibility for and about others (social accountability). (p. 49)

Sustainable tourism research is currently seeking ways that tourism experiences can inspire individuals (Falk et al. 2012) and facilitate meaningful learning (Ardoin et al., 2015; Falk et al., 2012) to encourage sustainable behaviour change (Ballantyne & Packer, 2011; Hughes et al., 2011). Stone and Duffy (2015) argue that with the critical turn in tourism studies there is an increased need to address the "larger problems within the industry" and as a result "transformational education is becoming an important area of study in the travel and tourism academy and industry" (p. 205). Tourism experiences that help visitors to see issues from a new perspective and reinterpret their ways of thinking can be conceptualized as "disorienting dilemmas" and have already been described as "transformative" by Falk et al. (2012, p. 920) and Stone and Duffy (2015). While free-choice learning and the CML and TLT tend to have divergent backgrounds, they share the same constructivist epistemology, and while the focus on learning varies, the desired outcomes are the same - learning that facilitates change (Cundill & Rodela, 2012; Falk et al., 2012; Mezirow, 1991; Taylor & Synder, 2012).

By understanding and integrating TLT and the CML these different conceptualizations of learning can help researchers to better understand the learning experience in tourism. Measuring learning often becomes focused on the learning products, as it is difficult to measure the process (Bueddefeld & Van Winkle, 2018; Stern, Powell & Hill, 2014; Van Winkle & Backman, 2011). Instrumental and communicative learning describe the learning in terms of specific outcomes that are process driven, but lack an element of understanding the context in which the learning occurs, which may be related to why the field of NRM has had a difficult time providing specific empirical evidence, particularly of communicative learning (Marschke, & Sinclair, 2009). By adding transformative learning theory to the learning theory mix that is currently used in understanding sustainable tourism we may find additional insights into how meaningful or transformative learning is produced as a process of instrumental and communicative learning (Knollenberg et al., 2014). Often learning is measured by surveys, which largely captures instrumental learning (Bueddefeld & Van Winkle, 2018; Stern et al., 2014; Taylor & Snyder, 2012), and researchers need to find creative solutions for measuring other forms of learning that may lead to transformative tourism experiences. Stone and Duffy (2015) argue that "Fundamental to the problem is that travel experiences are not inherently transformative, though this is often anecdotally implied" (Stone & Duffy, 2015, p. 211) and that further research is needed that conceptually integrates TLT in the tourism and learning literature. This research seeks to integrate these fields of learning research in tourism and provide empirical evidence of the types of learning that occur in in situ and ex situ nature-based tourism experiences.

Coding

The coding and data analysis was described in more detail in Chapter 2, but is presented here briefly as a reminder to the reader. Coding for the data was open-ended and utilized both a conventional and directed content analysis to examine on-site and post-visit PMMs and interview responses for both in situ and ex situ visitors (Bowker & Jasper, 2007; Falk & Storksdieck, 2005; 2010; Hsieh & Shannon, 2005; Kvale, 2007; Richards, 2015). The conventional content analysis used an inductive, grounded approach by coding items first descriptively from the data, then thematically as patterns emerged (Creswell & Poth, 2018; Patton, 2002; Yin, 2014). Themes, in this research, are considered "…broad units for information that consist of several codes aggregated to form a common idea" (Creswell, 2012, loc. 3556). With this form of inductive (emergent) coding, the researcher can gain an understanding of the range of outcomes that are important to the participants from their perspective (Creswell & Poth, 2018; Patton, 2002; Richards, 2015).

The directed content analysis consisted of coding data according to codes based on pre-existing research and theory (Hsieh & Shannon, 2005). This form of qualitative content analysis is important to distinguish from more common forms quantitative content analysis which counts concepts or items in the data (Hsieh & Shannon, 2005). The data analysis used first a holistic approach to examine all grounded outcomes of the PMMs and interviews for each case study site, and then used an embedded analysis to examine learning across each case (change in learning from on-site to post-visit) (Creswell & Poth, 2018; Yin, 2014). This form of directed and deductive coding analysis allowed me to compare free-choice learning and transformative learning outcomes on-site and post-visit for both in situ and ex situ visitors (Patton, 2002). Additionally, this coding

allowed me to explore areas of overlap between free-choice learning and TLT and to determine if either of these forms of understanding visitor learning may inform one another. Details of the classification of free-choice learning and TLT domains will be described in more detail below.

Findings

These outcomes represent findings coded from both the PMMs and the interview responses in regard to what visitors believed they learned or took away from their experiences. Specifically, the interview questions coded for these analyses included all items listed under the "learning" sections of the on-site and follow-up interview transcripts (see Appendix C). Other responses that emerged voluntarily throughout the interview that referred to what visitors took away from their experiences were also coded. For this reason, I refer to these broadly as "outcomes" since not all directly related to learning, but rather emphasized topics or experiences that provided insight or understanding. The list has been alphabetized and subcategories that were emphasized by participants are delineated in bold font. Note that the subcategories were not necessarily mutually exclusive.

The thematic categories for visitors are described as follows:

- **Complex understandings:** These coded responses represented a more complex understanding of issues relating to polar bear tourism, historical context, the town of Churchill, the interactions between people and polar bears.
- **Emotions:** Included all outcomes related to emotions or feelings.

- **Environment or conservation:** This broad category encompassed all outcomes related to environmental awareness, appreciation, knowledge; including animal behaviour and climate change.
- **Learning specific:** Coded responses here referred more directly to details of what visitors identified that they learned and / or how they learned this new information or skill.
- **Personal reflection:** This category included all responses related to personal self-reflection, or a shift in perspective (not directly associated with learning); defined as more than emotions - analytical feelings.
- **Place specific / related to site:** Coded responses in this category relate to any aspects or site-specific details, such as features of the tour or place (Churchill or the Zoo).
- **Social elements:** This category refers to outcomes that are social in nature such as family bonding, social interactions, and understanding other cultures (e.g. Indigenous peoples). A slight variation occurs for this thematic code, where zoo visitors related memory making as a social experience, rather than one that contributed to personal reflection and insight. Coded responses varied accordingly (see Table 11 and 12).

In situ emergent outcomes.

In general, the in situ visitors' responses were more detailed, more examples were provided, and generally more complex learning outcomes were described than ex situ visitors. A complex and detailed understanding of the challenges that the town of

Churchill faces were emphasized, along with the difficulty of managing human and polar bear interactions and tourism.

Emotions for in situ visitors focused on amazement, sadness and fear or concern. Amazement related to understanding the scale and harshness of the ecosystem in which polar bears live, as well as their physical size and abilities as a top predator. Fear or concern related to both understanding the fear of meeting a polar bear, as one visitor described on a walking tour, and others on one CNSC tour group described when a polar bear was blocking the door to the building upon returning from a walk. Fear and sadness also related to the concern that visitors felt for the future of polar bears and their ability to survive with the impending effects of climate change. This was a common theme for learning-tour visitors who felt that their future was uncertain and precarious.

Another important theme for in situ visitors was environment and conservation. Detailed accounts of polar bears, their anatomy and ecosystem abounded, along with the challenges they face regarding climate change. Nature and wildlife of all kinds, not just polar bears, were heavily emphasized by in situ visitors. In terms of learning, in situ visitors focused on complex narratives and bigger picture ideas such as the challenge of addressing climate change personally, socially, and politically.

In situ visitors also emphasized how their personal perspectives on climate change had either changed or were enhanced dramatically from seeing and experiencing climate change and the lack of snow and ice while in Churchill. Social components of learning were also highlighted, as visitors related specific accounts from their guides, tundra buggy drivers, or residents of Churchill that they had learned from. This sub-category of social aspects of learning is distinct from the social elements theme in that, the latter does

not directly refer to learning but rather the social outcomes of their experience. For example, learning about the community of Churchill and the difficulties of living in a remote and northern community as well as understanding more about Inuit or the Dene people that live in the area. Social interactions were also a highlight for visitors in terms of making friends on their trip, strengthening relationships and family bonds, as well as making memories on what many considered to be a "trip of a lifetime". The ability to interact with staff and guides informally was also emphasized by in situ visitors.

For in situ visitors the follow-up data collected revealed some notable differences. There was a more distinct emphasis on environmental issues, personal revelations, and reflecting on the remoteness and northern-ness of the experience.

Table 11

In situ inductive coding outcomes

Categories	Subcategories
Complex understandings	• Animal ethics • Canada and history • **Challenges for Churchill and polar bears** • Conflicting thoughts • **Human-animal interactions (primarily polar bears)** • Regulations • **Polar bear tourism**
Emotions	• **Amazement** • Constraints • Feel connected • **Fear or concern** (of polar bears or for them) • Motherly • Recharging • **Sadness** • Sobering • Spiritual • Wonder

Environment or conservation related	• Actions to be more environmentally friendly • **Animal observation** • **Climate change related** • Environmental issues • **Nature and wildlife** • Research • Wildness
Learning specific	• Animal behaviour • **Big picture learning (connecting ideas to overarching concepts)** • Community related • Facts • Human and nature connections • Human-bear interactions • Learning that encouraged behaviour change • Openness to new experiences / **perspectives** • Photography • Reinforcement of what was already known • **Social learning** • Triggers for learning • Uncertainty
Personal reflection	• Affect home life • Life changing • Memories • Motivations • Personal revelations • Perspectives • See for oneself
Place specific / related to site	• Accessibility / remoteness • **Aspect of tour** • Aspect of trip • Authenticity • Exploration / Frontiers • **Northern-ness** • **Physical elements** (e.g. the cold, light, open-ness, scale, aurora, lack of snow, etc.) • Physical proximity to animals

	• Return visit • **Unique experiences**
Social elements	• **Community** • **Indigenous people** • **Social interactions**

Ex situ emergent outcomes.

Ex situ visitors focused primarily on the importance of family or social bonding at the zoo, making family memories, the physical features of the exhibit, the animals, and facts about both the exhibit or the animals (see Table 12 for details). Some visitors emphasized the important role that the Assiniboine Park Zoo plays in rescuing polar bear cubs and highlighted the complex connections between polar bears and climate change, with the reduction of sea ice and seals available to catch as their primary food source. Animal ethics were also highlighted by some visitors, in discussing the role of zoos in conservation and the ethics of keeping animals in captivity. Enjoyment was the primary emotion emphasized by ex situ participants and this typically coincided with discussions of a fun family day.

Ex situ visitors highlighted observing polar bears underwater and interacting with the seals (both the visitors and the polar bears). For more frequent visitors, this information was more detailed, and some were able to identify individual polar bears and provide specific details about their history, behaviour, or diet. Visitors emphasized that they felt like they were experiencing the northern part of Manitoba and that the Journey to Churchill exhibit provided a sample of what it would be like to visit Churchill, Manitoba. Ex situ visitors who participated in learning tours emphasized aspects of the

tour, facts they learned and the passion of the staff for conservation and caring for the animals at the zoo. Informal social interactions were also emphasized by visitors. Whether it was talking to volunteers or zookeepers, participants valued these encounters, along with watching the awe of other visitors seeing polar bears in the underwater tunnels for the first time.

For most ex situ participants, there were no discernible changes from the on-site to the post-visit PMM or interviews. In the follow-up data (both PMMs and interviews) there continued to be an emphasis on animal observation, features of the exhibit and climate change issues as the most prevalent topics.

Table 12

Ex situ inductive coding outcomes

Categories	Subcategories
Complex understandings	• **Animal ethics** • Issues affecting Churchill • **Complex connections (e.g. polar bears and climate change)** • Economics • Human-bear interactions • Issues affecting Indigenous peoples • Polar bear tourism
Emotions	• Amazement • **Enjoyment** • Escapism • Happiness • Rejuvenated • Sense of pride • Spiritual • Wonder
Environment or conservation related	• Actions to be more environmentally friendly • **Animal observation** • Appreciation

	• Awareness • **Climate change related** • Individual animals • **Interest in animals and conservation issues** • Environment (ecosystem or exhibit) • Value of rescue and research program at the zoo • Wildness
Learning Specific	• **Animal behaviour** • Big picture learning (connecting ideas to overarching concepts) • Children's learning • **Facts about individual animals** • **Facts about animals in general (especially polar bears)** • Learning for all ages • Personal perspectives • **Physical space / exhibits** • Reinforcement of what was already known • Social learning • Triggers for learning • Top of mind • Learning that encouraged behaviour change
Place specific / related to site	• **Aspect of tour** • Desire to return • **Experience the north / Churchill** • **Features of exhibits** • Physical proximity to animals • Unique experiences
Social elements	• **Family bonding** • **Memories** • **Social interactions**

Learning domains with grounded learning outcomes.

Here, data were coded using deductive methods, to the domains of TLT, as identified in the literature. Using the research conducted by Moyer and Sinclair (2016) and Quinn and Sinclair (2016) sub-categories for each domain were identified and data were coded accordingly. This section will focus on the domains of TLT as further sub-categories have proven important in understanding learning and potentially transformative outcomes. As Chapter 4 has already addressed coding learning within the personal, socio-cultural, and physical context of the CML, those contexts will not be reiterated here. Rather, after the details of the TLT domains have been discussed, overlap and theory development that incorporates both free-choice learning and Transformative Learning Theory will be examined.

Instrumental domain.

Instrumental learning was coded as fact or skill-based learning and, in this research, was coded according to the following definition: "task-oriented problem solving to improve performance" (Mezirow, 2012, p. 77). At the Assiniboine Park Zoo, there were less task related items to learn and more facts about animals. Rachel, a zoo visitor on a tour, was able to convey an example of this when reflecting on the information that an interpretive guide had shared about lemmings, in a story connected to a powerful and dramatic narrative about climate change. In an on-site interview the participant specifically recalled learning about the number of lemmings that an owl needed to eat:
Rachel (Zoo Visitor):

> Researcher: Do you think you took away anything from that experience?
>
> Rachel: Oh yeah. I mean I took a lot-a lot of knowledge, you know, a lot of information.

> Researcher: Yeah, was there anything in particular that you, that comes to mind when you're thinking about what you might've learned on that tour?
>
> Rachel: Yeah, like the owls, like 1600 lemmings a year that they would eat, wow!
>
> Researcher: Yeah, isn't that crazy? [laughter]
>
> Rachel: So, I never, I never thought of that before. I never thought what their intake was.

Fact-based learning was also present for in situ visitors, who were able to convey myriad bits of new knowledge that they had obtained during their visit. Fact-based learning was most often listed and discussed in relation to the PMM. The PMM tool proved to be particularly effective in gaining a broad understanding of visitors' learning, which then also allowed them to drive the focus of the interview and relate their responses back to the PMM data.

An example of instrumental learning for an in situ visitor came from Lauren, who was an Explorer on vacation in Churchill, with her friend - a Hobbyist photographer. She had visited Churchill several times and when asked about what she had learned broadly, she conveyed what she called a specific "factoid":

> Researcher: Is there anything that you can think of that comes to mind in relation to this last trip, that you feel like you've learned? It could even be a broad takeaway; it doesn't have to be a specific thing.
>
> Lauren: Um... [pause] Well, okay, here's a little factoid. I hadn't realized that the whisker patterns were different from bear to bear.
>
> Researcher: Yeah.
>
> Lauren: That was interesting.

Researcher: Yeah. Yeah.

Lauren: Um, uh... but short of that, you know, I kind of got the full treatment the first time around.

Researcher: Yeah.

Lauren: So... uh, there wasn't that much other different content than I already got.

Researcher: Right. So more of a refresher then, is that right?

Lauren: Yeah.

After all of the data were coded for the domains broadly of TLT, sub-coding began for each domain as delineated by prior research. As per Quinn and Sinclair (2016), instrumental learning was grouped into three main sub-categories: physical and mental skills, knowledge, and cognitive understanding. Each coded item was further coded into general descriptive codes within each of these sub-categories. For example, for in situ visitors, physical skills involved learning how to dress in layers for cold weather and mental skills included learning how to adjust camera settings to capture the aurora borealis. Knowledge included all items that related to fact-based learning, such as the life cycle or maternal cycle of polar bears, or as one vet relayed: the specific types of sedatives were used on polar bears. Cognitive understandings included more complex or "big picture" learning, where visitors are able to demonstrate a degree of mastery over their learning in their ability to analyze complex topics, such as human and polar bear interactions or the effects of climate change on polar bears. As there were very few differences for in situ and ex situ visitors between on-site and post-visit response for instrumental learning, this section will instead focus on the differences between these groups of visitors (see Table 13 and 14 for details).

For the in situ visitors there were a few different physical and mental skills that were learned such as camera settings, how to dress for cold weather, polar bear identification, whisker-print photography (learning what is required to take photos to assist with the whisker print project) and plant identification for a few visitors. For the ex situ visitors, the only skill that was learned was how to identify some of the individual polar bears. It should be noted that only repeat visitors who had a keen interest in learning about the polar bears at the zoo were able to do this (it is also unknown how accurate their abilities were). In situ visitors have a clear advantage in the learning of physical and mental skills, however, none of these skills directly related to transformative learning outcomes.

Additionally, in terms of knowledge, visitors at both sites were able to name and identify an array of Arctic wildlife and animal behaviours. However, the complexity and depth of this knowledge was more extensive for the in situ visitors. For some ex situ visitors their knowledge extended to the diets and training of the polar bears if they had attended a zookeeper talk. Some knowledge about research was also present for zoo visitors, if they had attended other talks at the zoo. For in situ visitors, knowledge about climate change was extensive and included the complexity of human-bear interactions and the effects on different sub-populations of polar bears. Visitors knowledge also included information regarding the behaviour of other types of bears, which was found to directly relate to a change in behaviour at home for a few visitors (e.g. not cooking bacon while camping in bear country when bears have just come out of hibernation).

There was also a distinct difference in cognitive understandings for in situ and ex situ visitors. For the in situ visitors there was a clear emphasis on polar bears and climate

change, and human-bear interactions, as well as the impacts of climate change and the difficulties of living in a northern, remote community. These understandings extended to social and political norms regarding climate change, lifestyles and even tourism.

The ex situ visitors also demonstrated a complex understanding that polar bears need sea ice to catch seals, and that climate change is having an immediate and negative impact on this species. They also demonstrated an understanding of their personal role in climate change and were able to list a number of behaviour change items, or things that they could do to make a difference. Notably, the majority of the examples provided were items described at the zoo. For example, a sign at the zoo lists a number of items such as driving less, and properly filling air in vehicle tires. Examples like this were conveyed by zoo participants in their responses, and more heavily emphasized when a tour guide had highlighted these items. Interestingly, zoo visitors demonstrated a different type of understanding of animal ethics and emphasized it more prominently than did in situ visitors. Ex situ visitors, especially those who participated in a learning tour or were repeat visitors, discussed the ethics of rescuing polar bear cubs and the role that modern zoos can play in conservation.

Table 13

Instrumental learning outcomes in situ

Physical and mental skills	• Photography / camera settings for the aurora borealis • Plant identification • Polar bear identification (e.g. sex and approximate age) • Polar bear whisker-print photography / identification • How to dress for cold weather
Knowledge	• Polar bear behaviour • Anatomy of animals • Life cycle of polar bears • Terminology (e.g. COY means cub of the year, or a cub born that spring) • Animal interactions (e.g. polar bears and dogs) • Polar bears and tourism in different regions (e.g. Svalbard) • LEED buildings • Ecosystem of tundra / taiga • Inuit and Dene cultures • Sedatives used to tranquilize polar bears • Methods used to study polar bears • Population and sub-population of polar bears • Loss of glaciers

Cognitive understandings	• Complexity of abandoned / rescued polar bear cubs • Research at the Churchill Northern Studies Centre or Polar Bears International • Living in a northern remote community (e.g. inaccessibility, reduced access to fresh food) • Green building living (e.g. composting toilets, reduced showers) • Impact of climate change on polar bears and ability to catch seals • Human and polar bear interactions • Personal connection to climate change • Hudson's Bay freezing later and thawing sooner every year and the impact on polar bears • History of fur trading and Inuit and Dene people • Surviving in extreme cold environments • Impact on the community of the port closure • The politics of climate change and government involvement (or un-involvement) • Recognition of the severity of climate change and a few degrees of warming • Responsible polar bear tourism • Impact of southern Canadian residents on northern communities • Impact of climate change on all northern environments (e.g. glaciers)

Table 14

Instrumental learning outcomes ex situ

Physical and mental skills Knowledge	• Identification of individual polar bears • Polar bear behaviour • Animal stimulation in zoo (e.g. different scents) • Animal interactions (between polar bears and seals) • Anatomy of animals and diet • Polar bear diet • Inuksuk • Polar bear den research and stress measurements

Cognitive understandings	• Complexity of abandoned / rescued polar bear cubs • Research at the zoo • Reduced consumption of products to reduce climatic impact • Impact of climate change on polar bears and ability to catch seals • Human and polar bear interactions • Personal connection to climate change • Climate change impacts on other arctic animals (e.g. lemmings and owls)

Communicative domain.

Communicative learning was coded according to the definition: "what others mean when they communicate with you" and often includes "feelings, intentions, values, and moral issues" (Mezirow, 2012, p. 77). Communicative learning, then, is distinct from the socio-cultural context of the Contextual Model of Learning, in that this is about not just the medium of how learning is conveyed, but what is meant by the communication.

An example of in situ communicative learning is expressed by Sara, a passionate Explorer in Churchill, who afterward felt an urgent need to engage in communicative learning with those around her:

Researcher: Um, looking back Sara, what would you say you took away from your experience?

Sara: Um hum… I think I'm even more impassioned about how critical it is to, to… support or facilitate conversations around arctic environments.

Researcher: Yeah.

Sara: I don't think I, I don't have a sense of, I don't think it's appropriate to have a sense of ownership on the conversation. But I think it's going to be critical for people who do have ownership stakes in that conversation to be allowed to participate in it.

Researcher: Right. And-

Sara: Um…

Researcher: Who-

Sara: So that's why, I choose to facilitate or support, 'cause I don't, I would never want to speak for someone who had grown up there for example.

Researcher: I see, yeah. That's what you mean by ownership. Right, yeah.

Sara: But, but I, it. Yeah.

Researcher: Yeah.

Sara: That, that's kind of what I mean by ownership. I mean I don't think I have a right to tell people what to do.

Researcher: Yeah.

Sara: When I've visited it for four days.

Researcher: Yeah.

Sara: Uh, on the other hand, I think any rational human being can look at the state of the world and the state of geopolitics and the state of environmental change, and would be naive to not think that the arctic environment is going to be very important in the next ten years.

Researcher: Yeah.

Sara: So that is probably my single biggest takeaway is the like, I felt, I felt that a little bit before I went there.

Researcher: Yeah.

Sara: Um, to see the expanse of resources present to know that there are political groups that may have interests or a lack in interest in those spaces, to know that it's right for development if people figure out how to know the environmental concerns coming up, you know. All that makes a real, potentially very volatile area.

Researcher: Um hum.

Sara: And I'm really, my, my takeaway is how, how do I engage in a way that lets the people who need, lets those who need to be a part of the conversation in that conversation.

Researcher: Right.

Sara: Or, informs people who think people they need to be in that conversation that maybe we need to let some other people decide. [laughs]

Researcher: Yeah. [laughs]. That too.

Sara: Yeah, you know. That's the other side of it right.

Researcher: Yeah.

Sara: Is, is not to sound like you're not, not to sound like you're not interested in it but just to say, you know, I don't know that that's really our call. [laughing]. So.

Here, Sara is not only discussing communicative learning, but facilitating that process. She is recognizing that she does not necessarily want to force her own morals, values, or

opinions on people, but seeks to have people engaged in that conversation and think about who ought to be making decisions that will affect the Arctic.

An ex situ example of communicative learning comes from Shonda, an Experience Seeker who had participated on one of the learning tours at the zoo. When asked if she had shared her experience with anyone, she described having passionate discussions with her friends, about zoos, environmental issues, climate change and politics. In this way, while perhaps not articulated as clearly as possible, she is demonstrating discussions with her friends that navigate moral issues, values and her feelings about these topics.

> Researcher: I was asking if you had shared your experience afterward with anyone in any way.
>
> Shonda: Oh yeah, oh yeah.
>
> Researcher: Yeah?
>
> Shonda: Anybody who will listen!
>
> Researcher: [laughs]
>
> Shonda: Yeah.
>
> Researcher: And, and what would you-
>
> Shonda: Yeah, because a lot of people have very, um, very negative, um, viewpoint about zoos.
>
> Researcher: Yeah.
>
> Shonda: And uh, not that I got into arguments or anything but if it came up- and then also too, we're talking about environmental threats. And uh… you know, so I've had some pretty wonderful conversations with my friends about this climate

change business that we've got to take seriously you know. It's nothing we can ignore anymore.

Researcher: Right. Right. And so, then-

Shonda: Yeah, and also, I think during that period of time that Trump pulled out of the climate accord, and you know, so that's kind of like "oh my god!", yeah that had a- because of that visit, and that increased awareness, I think that – that had a- that I felt was a real tragedy.

Researcher: Right. Right. Yeah. Understanding those implications, now right?

Shonda: Yeah, so it's affected my politics as well.

Next, within the communicative domain of learning, responses were coded as per Quinn and Sinclair (2016) and grouped into three main categories: insight into one's own values and interests, insight into the values and interests of others, and insight into shared values and goals (see Table 15 and 16). For both in situ and ex situ visitors there was a notable increase in the number of examples that visitors were able to provide in the follow-up responses. This suggests that insight into values and interests improves for visitors after they have had some time to reflect on their experiences. There were no discernible thematic differences between on-site and post-visit responses for either group, but more examples, as well as more detailed examples of insight into values and interests were present post-visit for both in situ and ex situ visitors.

There were also some distinct differences between the responses of in situ and ex situ visitors. For the in situ visitors, insight into their own values and interests ranged from a deeper interest and understanding of climate change and Arctic ecosystems and

communities, but also included complex questions. For example, some visitors questioned their role in contributing to climate change by visiting Churchill, and a recognition that while they sought to encourage people to become more environmentally friendly, they did not wish to project their view points on others, but rather challenge them to think critically for themselves. While some zoo visitors questioned their previous views of zoos and considered that the role that the Assiniboine Park Zoo plays in polar bear research and conservation may be a more ethical way for zoos to function in the future. In terms of similarities, both in situ and ex situ visitors experienced a deepening or reinforcing of personal values and interests was present for both in situ and ex situ visitors. Also, for both groups of visitors, it was also demonstrated that experience observing and emotionally connecting with polar bears helped facilitate a personal connection to climate change.

For insight into the values and interests of others, the in situ visitors demonstrated complex and wide-ranging examples. As the majority of polar bear tours in Churchill span at least a few days to a week, the additional time allowed visitors to interact with a more diverse range of people. These different interactions help visitors understand the perspectives of many different people. For example, by speaking to waitresses, visitors may learn about how difficult it is to get fresh produce and the challenges of having to create a menu that is dependent on when the train arrives. By speaking to Metis people, Dene people, dog-sledders, or fur traders, visitors gain additional perspectives and understandings. This depth of experience and understanding is reflected by the in situ visitors' responses.

In relation to understanding the values and ethics of others, for the in situ visitors at the CNSC, there was also a considerable emphasis on the ethics of different types of polar bear tourism. Visitors expressed a great deal of frustration at the lack of public recognition that climate change is real or the urgency to do something, which was discussed in the context of the election of Donald Trump (which occurred during the on-site data collection).

Ex situ visitors emphasized their understanding of the importance of climate change and sustainability by the passion and conviction expressed by zoo staff and volunteers. Ex situ visitors also expressed frustration, but more specifically with friends and family who failed to adopt practices they believed were important (such as recycling). Some visitors also emphasized that they experienced a sense of awe and wonder by watching children and first-time visitors interacting with polar bears.

Insight into shared values and interests was similar for in situ and ex situ visitors but expressed in different ways. For example, both groups of visitors discussed social norms and values systems of society regarding approaches to climate change, including political and at times, economic discussions. Both groups also discussed the ethical implications of polar bear tourism. The ex situ visitors expounded on this by adding an additional element of the role of the Assiniboine Park Zoo in rescuing abandoned polar bear cubs. Some visitors also elaborated on the ways that zoos are changing and questioned what kinds of animals in different ecosystems and climates, with different needs for space and interaction should be kept in zoos. In general, very similar topics were discussed by both in situ and ex situ visitors. However, it should be noted that in

situ visitors discussed at least some social norms or values around polar bears, tourism, and / or climate change, while zoo visitors did not emphasize this line of thinking.

Table 15

Communicative learning outcomes in situ

Insight into one's own values and interests	• Recognition that the effects of climate change are real • Realization that projecting personal values or interests on Arctic environments, animals, or people may not be appropriate • More concerned about climate change issues; more at forefront of their mind • Desire to share revelations with others; not be apathetic • Personal value of nature • More focus into personal role of being environmentally friendly • Effort to be open to new ways of thinking and experience • Deepening values and interests, by sharing an experience with like-minded individuals • Questioning the ethical and carbon footprint of visiting polar bears in Churchill • Better understanding human-bear conflict at home
Insight into values and interests of others	• Recognition of the importance of having or facilitating conversations about climate change and arctic issues • Understanding of those living in remote and northern communities and the complexity of the challenges they face • Realizing the values and interests of others based on their choice to live and / or work in Churchill • Irritation at the lack of understanding of others around animal behaviour • Understanding of how others live a sustainable lifestyle (e.g. LEED buildings, compostable toilets, shorter showers, etc.) • Political values of others and what that means for pro-environmental policy (e.g. the election of Donald Trump)

	• Understanding the perspective of furs, from a fur trader / trapper • Recognition that the ethics of polar bear tourism are complex, and not all tours share the same values • Understanding perspective of Dene people in relation to polar bear tourism and history of region • Understanding the economic impact of the port closure and rail line to a remote northern community
Insight into shared values and goals	• Realization of how small humanity is, but the impact we are currently having (ethics and historical scale) • Recognition that humanity is responsible for climate change and the impact on all living beings (especially polar bears) • Understanding the challenge of overcoming social norms and values regarding climate change and environmental issues • Recognition of ethics systems of people (e.g. valuing wildlife or not, or valuing economics above all else) • Value of responsible polar bear tourism in changing social norms around climate change and environmentally sustainably lifestyles • Understanding ethics systems of different cultures • Recognizing the importance of addressing the cause of the problem, rather than providing solutions (re: climate change and human-polar bear conflicts)

Table 16

Communicative learning outcomes ex situ

Insight into one's own values and interests	• Importance of recycling in one's own life • Recognizing personal connection to climate change and issues affecting polar bears • Questioning personal values regarding animals in zoos and the role of zoos in conservation • Recognition or reinforcement of importance of small actions (e.g. driving less, biking more, filling air in car tires, etc.) • Recognition of personal awareness and political awareness climate and environmental issues • Emotional connection to climate change via polar bears
Insight into values and interests of others	• Understanding importance and perspective of volunteers and zookeepers of rescued polar bear cubs and conservation efforts • Understanding of impact and severity of climate change from volunteers and zookeepers or interpretive staff • Experiencing awe and wonder from observing other visitors or children • Other's values regarding environmentally friendly living / practices • Recognizing animal behaviour and importance of treating house pets with kindness • Conflict with the lack of importance on recycling of others
Insight into shared values and goals	• Value of zoo in changing social norms around climate change and environmentally sustainably lifestyles • Discussions about politics and social values regarding the environment • Ethics of polar bear tourism in Churchill and the zoo • Recognition of ethics systems of people (e.g. valuing wildlife or not)

	• Norms of zoo exhibits, in how and which animals are kept and why • Norms about the severity of the impact of climate change • Recognition that climate change action involves everyone

Introspective domain.

Coding for introspective learning was the most challenging, as the definition is the most fluid and potentially difficult to communicate, due to the internalized and personal nature of this type of learning. The definition of introspective learning used for coding was: "learning that is personal and internal, and that discovers, develops, and defines one's self-understanding in several areas: worldviews and beliefs (Vidal, 2008), values and attitudes (Dietz, Fitzgerald, & Shwom, 2005), personal identity and self-image, and faith, in terms of one's deepest commitment or "ultimate concern" (Fowler, 1981, p. 14). In other words, introspective learning required visitors to self-reflect internally, about themselves and their corresponding worldviews, beliefs, values, or ethics.

There were very few in situ visitors who demonstrated introspective learning, and no examples were found for ex situ visitors. The visitors that did demonstrate introspective learning were all in situ visitors, the majority of whom had participated in a learning-based tour. Since there were so few examples, there were no sub-categories of coding. Rather, the introspective responses emphasized a deep sense of self-reflection and consideration of complex perspectives and questioning their future actions.

An example of introspective learning is described by Annette, a visitor to Churchill, who describes her “quiet, introspective thoughts” as emerging while watching the aurora and that this was a reminder to be open and curious about life.

Researcher: Do you think you took something away from your experience?

Annette: Oh! Having just a renewed curiosity on learning more.

Researcher: Yeah. Um, from the tour and the guides, or can you-

Annette: Yeah, from the tour and the guides, from my own sort of quiet, introspective thoughts on watching the aurora the other night, to- uh, just you know, thinking, again, with sort of when I feel like maybe- um… just as I've learned something just reminding that there's so much more to learn in any aspect of life.

Researcher: Yeah.

Annette: You know with people, with - with work, with nature, with challenging - challenges for myself. Physical challenges, mental challenges, sort of - anything like that.

Researcher: Yeah.

Annette: Sort of. And also, the ability to just kind of step back and be open - be open to it all.

Another example of introspective learning was the learning about oneself expressed by Kaitlyn, who learned a lot about her own interests as well as what she needs in terms of personal space and how to interact in a space where it was difficult to find time alone. For context, the CNSC has shared bunk-bed rooms, a communal bathroom,

and communal dining tables, and without the ability to go for a walk some visitors found it difficult to constantly be in social settings for a week.

Kaitlyn: Um... I... will take away absolutely the parts about like my own relationship with bears and how I will talk about bears and think about bears and um I think that's huge. I think that's probably the best, most amazing thing that came out of it for me.

Researcher: Right.

Kaitlyn: But the other stuff was really just the personal... um... I think I will never forget my experience with Churchill. It-it... what it wasn't was, meh take it or leave it. And I think in it being challenging... I have learned things about myself, about what I'm interested in seeing, what I, what some of most of my questions are about, you know, people, animals, places, geography, but it is definitely expanded my sense of... um my own doings and my own experience. Like to put that down on my own personal map.

Researcher: Right.

Kaitlyn: I think it has changed me in ways that I will never fully appreciate. Um... yeah.

Researcher: That's interesting thinking about like personal growth in that setting too. Um... why do you think that is, or what, what do you think facilitated that for you?

Kaitlyn: Um... hopefully probably like an awareness of knowing that... this was challenging for me, both 'cause the plane ride and with the whole set up of how it

works and um... that I know and I remember, I mean I kept a... actual like seminar log, but I also kept a personal log.

Researcher: Yeah.

Kaitlyn: It just going through some of the ache of it.

Researcher: Right.

Kaitlyn: Usually has the experience of like when you come around the other side, you've learned some things.

Researcher: Right.

Kaitlyn: And for me because I really was like in an acute way distressing, like I just want to find a place to be alone for twenty minutes.

Researcher: [laughs because we had bonded over this earlier]

Kaitlyn: In the middle of the day. And that how challenging that was to my system.

Researcher: Yeah.

Kaitlyn: And how I know that that impacted like having my attitude and my outlook.

Researcher: Yeah.

Kaitlyn: And knowing that is really helpful.

Researcher: Yeah.

K: Like having tangible experience with this is not something that works for you. So, when you're in these moments in the future, like how are you going to not allow it to take over.

Researcher: Right.

Kaitlyn: Um.

Researcher: Yeah.

Kaitlyn: And in my relationship of with my mom and the communication there I would've been myself. Like my emotional state impacted, directly impacted another human there.

Researcher: Right.

Kaitlyn: And vice versa.

Researcher: Yeah.

Kaitlyn: And our communication and how-how can we talk to each other about things? How can we share I'm disappointed with this, but not with you? Or I need you to get out of this space because it's actually not what I intended and I think it will have irrevocably... ever so subtly too, change how I interact with my mom. And not in a negative way, like in a hugely positive way. Like we learned some things that week.

Researcher: Right.

Kaitlyn: And probably the best thing that happened was we spent twenty-four hours in Winnipeg at the end. And we both had, to be able to go to a bathroom and close the door and be in there for fifteen minutes.

Researcher: [laughs]

Kaitlyn: Take a shower, to brush your teeth.

Researcher: Yeah.

Kaitlyn: Um, to have a bed that wasn't a bunk bed too. You know, even though we all were, it was our choice just to sit with each other. Um... those sorts of

> things and get to walk around. Yeah, I really realized how much nothing there is just a... fundamental exercise of you can walk. [laughs]
>
> Researcher: Right.
>
> Kaitlyn: Um and just being able to digest the trip before we both went our separate ways. Having time to talk about... when you're not in the moment and when you're not in the... area of distress or excitement, or of the emotion as it's taking place. Like to be in that place of reflection and that actually really, since then I thought about, like, how can you build that day in any vacation you take or in any challenging time. Um or non-challenging, like any really exciting time like wonderful moments. How can you build in the reflection piece with the people you experience it with? Because had we both just like, had I gone back to [city] and she went back to [her city], which the next day happened, um I think we would be talking about the trip differently and I think our relationship would be, it wouldn't have had that time to remember like we're on the same page, we're on the same team.
>
> Researcher: Right.
>
> Kaitlyn: Um and we can talk about this and we're very respectful with how the other person felt.

Here, Kaitlyn is describing at first her reflection on the experience of learning about bears and bear behaviour. Later in her interview she elaborates on how she learned a lot about all different kinds of bears, and realized that she needs to alter some of her camping habits to better understand what might increase the chances of a negative encounter for a bear, and how that is not just a negative for her – but also for the bears (as increased

human-bear interaction often leads to bears being euthanized). Kaitlyn then describes how through the process of self-reflection she also learned a lot about herself, and the ways that she interacts with others during stressful or in situations where you do not have a lot of control over the situation. She further describes how she has learned a lot about herself and how to manage and process her own emotions without letting them negatively affect her time with her mother. She also describes the need for building in time for this in vacations, which is likely an important element for learning-based tours to consider.

Whether it was wondering how to best volunteer their time (Cassandra), planning artistic outlets to engage people in polar bear and climate change information (Sara), changing careers (Hilde) or altering the way she interacts with bears at home or friends / family members in stressful situations (Kaitlyn) the examples of introspective learning were directly related to considerable action outcomes or transformations.

Transformative domain.

Transformative Learning was coded using the following definition: Learning that results in an altered behaviour, in part, due to a critical reflection or "disorienting dilemma" (Mezirow, 1991; 2012). In other words, transformative learning involves intentional and thoughtful behaviour change attributed to reflection, often in relation to a "disorienting dilemma" or a triggering experience that prompts the change.

Within this research, "disorienting dilemmas" can be understood to be immediate and dramatic, but also can be part of a slower process of increased awareness and understanding (Mezirow, 2012; Newman, 2012). Examples of transformative learning were present for all types of visitor motivation related identities, both in situ and ex situ. However, for visitors in situ these experiences tended to be immediate, and more

dramatic, whereas, for the ex situ visitors this learning tended to be part of a slower and ongoing process of developing a connection with, and understanding of, polar bears at the zoo, and the issues and challenges they face. For example, Collette, a Facilitator who visits the zoo about once per year with her kids described how her children understood more after their visit about how winter "should be cold", and that they could personally "do [their] part to make it – to help keep it that way". When prompted about what this means for her family, Collette described that she connected it to telling her children not to choose to purchase cheaply made goods from the dollar store because it would increase pollution and emissions. She told her children instead to choose a candy or, presumably, a consumable. While this is a relatively simple action, instilling the concept of not purchasing cheaply made goods because of the emissions created during production and the effects on climate change is a rather complex example of transformative learning. Instilling this kind of norm in children at a young age will certainly be part of a societal shift in thinking about patterns of consumption and the impacts on climate change.

Collette (Zoo Visitor):

> Researcher: And then now looking back, do you feel like you took away anything from your experience, or not?
>
> Collette: Um... certainly the children understood more afterwards about - or were more concerned about that winter be cold. [laughs]
>
> Researcher: Right.
>
> Collette: Um, yeah.
>
> Researcher: Yeah.
>
> Collette: Yeah. That it should be cold.

Researcher: That it should be cold.

Collette: And that we – that we do what we can to - to do our part to make it - to help keep it that way.

Researcher: And did that include anything for you guys, or did you just talk about it as a family with your kids?

Collette: Pardon me?

Researcher: Um, if your kids were concerned about doing their part to keep it that way, what did that entail for you as a family? Was that a discussion at home or did you do anything together, about it?

Collette: Mostly and um along the lines of when Omi and Papa want to take you and buy you a dollar store thing, tell them no. [laughs] Or get a candy or something instead. Um, just the... [pause and exhales] just that buying things that are cheaply made from far away, the emissions and stuff that that causes, uh and the amount of pollution that creates and we don't want to be a part of that.

For the in situ visitors transformative changes varied, but for some this experience was life-changing. Two participants quit their current jobs and credited their experience in Churchill with instigating this change. One participant quit her job, because she did not agree with the environmental practices that her large multi-national company was a part of, and decided that she could do her job in marketing in another field where she could feel good about her work, even if that meant a pay cut. Another visitor to Churchill, Hilde, was so inspired after learning about the impacts of climate change on glaciers, that she felt moved to quit her current job (which she had done by the time of the follow-up interview) and to seek ways of becoming involved in the conservation of glaciers and the

Arctic. Hilde is an Explorer in her 30s, interested in the Arctic and train travel and was on a solo train trip around the world. She participated in a learning-based tour in Churchill, Manitoba. Due to her travels, she was not available for a phone interview, but responded by email to the follow-up interview guide questions:

> Researcher: Again, looking back, do you think you will think differently about anything? If so, in what ways? Why or why not?
>
> Hilde: No different thinking, but a different sense for the urgency of saving the world´s climate. In specific the video "Chasing Ice" in one of our evening lessons was the reason for me to look for a job with a more climate protecting focus, instead of former cost cutting and process optimization programmes. As I already signed my "finish line" no longer working for the same company after my trip around the world (sabbatical) I now got the chance to look for something completely new - combining my professional project/programme management knowledge and my interest in protecting glaciers and the arctic.
>
> Researcher: Since your visit have you done anything differently as a result of your experience (or a change in your thinking)? (a) If so, in what ways? (b) Why or why not? (c) Did anything trigger this action?
>
> Hilde: yes (but in combination with the other experiences caused by my 360-trip around the world) (a) no new car, more local food, huge donation package of clothes/books/etc. to reduce the stuff in my apartment, more often bike and train instead of taxi/bus and rental car, ... (b/c) please see [above] and the "effect" of the video. It was quite an emotional moment and kind of overwhelming for me, but then the video was finished and [the guide] switched on the light all the others

> seemed to be paralyzed and shocked by the video. My first intention was "Yes. Let´s start right now.". Not starring at the huge bunch of things, that should be changed, but start with the small one I can do right now and on my own. In addition to countrywide and international actions.

In this example, Hilde attributes the emotional effect of the video with prompting her to action – this was her disorienting dilemma. These reactions were not uncommon for visitors in Churchill. There were many potentially emotional moments; viewing of polar bears, discussions around the dinner table, or evening lectures are all examples of potential disorienting dilemmas for visitors.

There were some differences between on-site and post-visit responses regarding visitors' behaviour change for both in situ and ex situ visitors (see Table 17 and 18). For in situ visitors there were very few changes post-visit. Transformative learning outcomes discussed by visitors tended to elaborate on the actions that had already been mentioned on site, but were now either finalized or acted upon. For example, one visitor described how he was planning to install solar panels on his roof, when they did their renovations, but was quick to point out that he was planning to do this prior to his visit to Churchill and that his experiences there solidified this decision, rather than prompted his decision. Other visitors were still contemplating the best route of their future actions, whether volunteering or future lifestyle changes.

Table 17

Transformative learning outcomes in situ

Career altering	• Change careers; influence new career decisions (e.g. to work in a more environmentally friendly company; conserve glaciers)
Conserve energy / water	• Reduce usage of electricity (e.g. turn off the lights more) • Planning installation of solar panels on house • Not turning up the heat as high; air conditioning as low • Reduce water waste / usage
Consumption of products	• Reduce consumption of goods; donate used items • Purchase green or eco-friendly products • Reduce use of plastics • Eating less meat • Eat more locally produced food
Donate money	• Donate money to support conservation efforts • Purchase goods to support conservation efforts
Recycling	• Recycling more
Reduce driving	• Reduce the amount of driving • Take other forms of transit when possible • Purchase smaller car; next car hybrid
Reinforcing	• Reinforced current behaviours; strengthened current behaviours
Responsible lifestyle	• Effort to live more sustainably in general • Reducing carbon footprint in general
Teach others	• Recognition of the impact of individual actions and informing others • Teaching children the importance of being environmentally friendly • Share environmental messages through art

Visit related	• Plan more learning-based vacations • Plan camping trips to consider impacts on local bears • Took astrophysics course
Volunteer	• Volunteer time to share conservation messages • Volunteer to support conservation and education efforts at local zoo

Table 18

Transformative learning outcomes ex situ

Animal care or home garden	• Mental stimulation for pets at home • Different approach to home garden and native species
Conserve energy / water	• Reduce usage of water • Reduce usage of electricity (e.g. turn off the lights more)
Consumption of products	• Reduce consumption of goods • Purchase green or eco-friendly products
Donate money	• Donate money to support conservation efforts or sponsor an animal
Recycling	• Recycling more; recycling more items (e.g. electronics)
Reduce driving	• Reduce the amount of driving • Ride their bicycle more • Try to make fewer trips; run multiple errands at one time
Reinforcing	• Reinforced current behaviours; strengthened current behaviours
Responsible lifestyle	• Effort to live more sustainably in general
Teach others	• Recognition of the impact of individual actions and informing others • Teaching children the importance of being environmentally friendly
Visit related	• Visit the zoo more • Desire to visit Churchill

A broad array of outcomes were discussed that spanned from two in situ visitors demonstrating a change in careers prompted by their visits to Churchill, to improving recycling habits (see Table 17 and 18). Other behaviours included conserving energy and water, reducing consumption of products in general, reinforcing actions that they were already doing, donating money to conservation organizations, reducing driving, making a deliberate effort to educate others, living a more sustainable lifestyle in general, planning more learning-based tours or responsible tours, and volunteering with conservation-based organizations.

A similarity between the in situ and ex situ actions described, is that both groups of visitors discussed changes in how they would interact with animals in their lives. For the in situ visitors some people felt they better understood bear behaviour in general and planned to alter their camping practices. With the ex situ visitors, they had learned about mental stimulation of captive animals by altering feeding times or hiding different foods / scents in their enclosures. One visitor described how she planned to replicate this with her caged pets at home. See Table 17 and 18 for differences in learning outcomes for in situ and ex situ visitors.

A more critical difference between the in situ responses and the ex situ responses, is that the most dramatic changes described as a result of a disorienting event from their visit, occurred with in situ visitors and, more specifically, predominantly visitors who had been on learning-based tours. Ex situ visitors were also able to identify behaviours that they had changed as a result of their visit, but these behaviours tended to be incremental and less dramatic or difficult (e.g. specific plans to recycle more or drive less). However, the ex situ visitors in general (whether they had been on a tour or not) were better able to

identify tangible behaviour changes than the in situ visitors. For some in situ visitors, they described a disorienting dilemma or a new awareness of climate change as an issue but expressed that they were uncertain about what to do next or felt their individual actions did not matter. Caroline, who was a repeat visitor to Churchill, and had not been on a learning tour this visit, described how she had an increased awareness in climate change, but that she did not know what she would do differently since she did not identify as someone who is an "activist".

> Researcher: In thinking about that and that recognition. Is there anything you've done differently in your everyday life as a result of that understanding or of your experiences in Churchill?
>
> Caroline: Uh....
>
> Researcher: Or not.
>
> Caroline: I don't think so, um... yeah, I don't think so other than just an awareness that – that there - that things are definitely changing. Um.
>
> Researcher: Right.
>
> Caroline: But, I don't - you know, I don't think it's really changed what I, what I do, it's just an awareness.
>
> Researcher: Right. Right….So, it's a change in awareness for you, um, but it's not like you've changed behaviour or done anything differently because of that recognition in climate change and-
>
> Caroline: Correct.
>
> Researcher: Can you maybe articulate, why not? Like do you feel like you're already doing those things, or, um, is there something else?

> Caroline: Um... hum. [pause] I guess I, you know, I, um, I don't know that there's anything that I would do differently. You know, I am aware that – that, um, climate change is happening.
>
> Researcher: Right.
>
> Caroline: But I'm not, you know, I'm not, uh, uh, you know, I don't get involved in any - you know, that - things like that, I.
>
> Researcher: Oh, right. Right.
>
> Caroline: So, I'm aware of it, but I'm not an activist of any type, so.

The visitors who had not been exposed to action-based interpretation, where the direct connection between individual actions and climate change was made, did not tend to demonstrate transformative learning. Here, ex situ visitors who were either repeat visitors or had been on a learning tour at the zoo where behaviour change and individual effects on climate change were discussed demonstrated an empowered attitude and were better able to describe actions they planned to take than in situ visitors who had not been exposed to similar interpretation. This finding suggests that transformative learning is facilitated, in part, by providing clear interpretation for visitors about why individual actions matter and directly linking actions to the impacts of climate change on polar bears. When this is absent from experiences, even in situ experiences, visitors have more difficulty in demonstrating transformative learning.

The Contextual Model of Learning and Transformative Learning Theory.

This research also explored both free-choice learning and TLT for in situ and ex situ visitors at polar bear tourism sites. Using NVivo, I deductively coded learning for both the contexts of the CML and for each domain of TLT and compared this coding.

Despite the fact that TLT conceptualizes learning as being both a process and product, it is most often coded as a product (Diduck et al., 2012; Moyer & Sinclair, 2016). Learning within the three contexts of the CML relates to the context in which the learning takes place. In this way, the CML can help to inform the ways in which learning is facilitated and may help to better understand some TLT outcomes related to specific domains. For example, socio-cultural learning in free-choice learning centers around *how* visitors learn information – either within their social groups or outside their social groups (from interpreters, volunteers, other visitors, etcetera). In contrast, with TLT the communicative learning domain is further categorized as insight into one's own values, values of others and understanding shared values or insights. In this way, the majority of the coded items often reflected learning *outcomes* (examined through transformative learning) rather than the process by which the information was learned (CML).

This finding is supported by Moyer and Sinclair (2016), who also found that in their coding process, while some responses demonstrated both learning processes and outcomes, the definitions used to code the participants' responses most often resembled outcomes. Moyer and Sinclair (2016) go so far as to argue that the term domain may not be as appropriate as the term "dimension" or "aspect" (p. 50). Specific coding definitions of TLT domains is often debated and a common issue is in determining overlap between the domains, definitional drift, and determining learning processes and / or outcomes (Moyer & Sinclair, 2016). This research does not seek to further define TLT processes and outcomes, or domains versus dimensions, but rather suggests a way to combine contextual components of the CML with TLT.

This data demonstrates that the context in which learning occurs is often distinct conceptually from the TLT learning domains, but that recognizing context may serve to better understand how to facilitate visitor experiences which target specific TLT domain related learning outcomes. As demonstrated by the overlap of between coding of the CML and TLT (see Table 19), there are some connections between these two approaches to understanding visitor learning. Learning coded as occurring within the personal context of the CML overlapped to some extent with communicative and instrumental learning and overlapped entirely with introspective learning. This is not surprising, given that critical self-reflection is inherently personal. Despite the important role that self-reflection has been found to have in transformative learning (Moyer & Sinclair, 2016;Wilner et al., 2012), there was only one example of a response coded for transformative learning that was also coded in the personal context. In other words, introspective learning occurs within the personal context, and research demonstrates that introspective learning is important in transformative learning, but transformative learning outcomes did not overlap with the learning coded in the personal context.

For the physical context of learning, communicative and instrumental learning were both present. There were no instances where introspective learning overlapped with the physical context and only a few examples where transformative learning did intersect with the physical context of learning. When examining visitors' examples of transformative learning, most of these occurred in relation to the post-visit engagement aspect of the physical context, where post-visit contact or follow-up has helped to prompt an action. This supports environmental education research which posits that post-visit engagement and contact is important in facilitating environmentally friendly behaviour

changes (Ardoin et al., 2015; Ballantyne et al., 2018; Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011, 2013; Hughes et al., 2011).

In analyzing this data, I also examined the overlap between the CML and TLT for all data, both on-site and post-visit. In comparing the overlap at these two different time intervals there were very few differences. Responses for each category overlapped nearly equally, except in a few instances. The vast majority of introspective responses were coded post-visit, which again supports that this particular type of learning requires additional time to elapse in order for it to either occur, or for people to be able to articulate their self-reflection.

There was also a noticeable increase in responses in the communicative learning domain post-visit. It seems that visitors were better able to identify and reflect on their own, shared, and others' values and interests post-visit. This suggests that communicative learning is also improved with time and space for reflection.

This has important implications for understanding the element of time in measuring and recognizing how learning develops over time. Research that investigates transformative learning will want to assess learning both on-site and after some time has passed. While additional research is needed, these findings suggest that the follow-up aspect of assessing TLT learning domains is important for introspective, communicative and to a lesser extent transformative learning.

Table 19

CML context coding organized by TLT domains

	Communicative Learning	Instrumental Learning	Introspective Learning	Transformative Learning
Personal Context	15	10	10	1
Physical Context	25	24	0	4
Socio-Cultural Context	38	33	1	9

Discussion

In general, both the PMMs and the interview responses for in situ visitors demonstrated a deeper and more complex understanding of polar bears, climate change related issues, and the impacts on both humans and wildlife. In nearly all instances, visitors who participated in a learning-based tour, at both in situ and ex situ sites, demonstrated a deeper level of understanding than their non-learning tour counterparts. The exception to this would be the visitors on a Frontiers North non-learning based polar bear tour. On this tour, the visitors witnessed a polar bear cub who had been separated from its mother. With the Polar Bears International staff member on the tundra buggy at the time this circumstance facilitated a deep and complex discussion about animal ethics, zoos and conservation, as well as climate change and the importance of individual action. However, this particular tour was a more expensive one, and the majority of tundra buggy tours do not include a trained guide, nor a Polar Bears International Staff member.

For both in situ and ex situ visitors, there tended to be little change to the visitors' post-visit PMMs. This is not surprising since visitors may not have experienced a change

in their understanding since the on-site visit (Bueddefeld & Van Winkle, 2018). While it was not logistically possible, ideally PMMs would be administered before the on-site experience and then again after the visit. In this way, this tool would be more effective in assessing how visitors learning had changed by comparing their pre-visit, on-site, and post-visit data (Falk et al., 1998; Van Winkle & Falk, 2015).

However, the PMMs did provide an important platform for first understanding the visitors' perspective, and then as a memory prompting tool in the follow-up data (Bueddefeld & Van Winkle, 2018; Van Winkle & Falk, 2015). Participants remarked that the PMM helped bring them to recall their on-site discussions with me and helped trigger their memories about their on-site experiences (Van Winkle & Falk, 2015). In this way, the PMM was a useful tool in establishing a baseline understanding of each visitor's knowledge and experience, as well as acting as a facilitating tool in the follow-up interview (Falk et al., 1998; Van Winkle & Falk, 2015). Since there were few changes between on-site and post-visit PMM and interview responses, a holistic representation of findings will be presented and changes between on-site and post-visit will be highlighted.

Emergent (inductive coding) outcomes.

In terms of changes between on-site and post-visit data there were very few notable differences for both groups of visitors. For the in situ visitors there was a distinct post-visit emphasis on environmental issues, personal revelations and reflections, as well as the remoteness and northern-ness of the experience. In other words, what stood out several months after the visit were the overarching environmental and weather-related climate change issues that visitors saw and experienced first-hand. This highlight was often tied to experiencing abnormally warm weather and a lack of snow during their visit.

Several participants commented on how they had continued to watch the forecast and news in Churchill after their visit to determine when it finally did snow and when the Hudson Bay froze. This provided an invaluable learning experience, to see the impact that climate change is having on polar bears, but also served to keep the topic at the forefront of their minds as they were regularly checking the forecast and weather conditions in Churchill after their visit.

For the ex situ visitors there were also not many differences between on-site and post-visit outcomes. For these visitors the unique elements of the exhibit, such as the underwater tunnels stood out in their responses along with general responses of animal observation. For example, if visitors had observed the polar bears sparring or swimming this was typically discussed again. Climate change issues and the role of the Assiniboine Park Zoo in rescuing abandoned polar bear cubs were also prevalent. This was found both for visitors that went on a tour and those that did not. I believe this was of particular interest for those that learned about polar bear rescue efforts on the tour, and for those who were not on the tour it was likely at the forefront of their mind because the Assiniboine Park Zoo had received several polar bear cubs within the past year and this topic (and controversy) was often in the local news. The visitors at the zoo believed that the APZ played an important role in research and conservation, despite some of the negative press they had read, and this likely speaks to the effectiveness of the zoo's interpretive and volunteer team in conveying their passion for the care and conservation of their polar bear cubs.

Complex understanding.

There were some prominent differences between the in situ and ex situ visitors' responses in general. While the overarching thematic coding categories fit well for both

in situ and ex situ visitors, the sub-categories underscored a few important differences. First, in terms of complex understandings both groups of visitors focused on polar bears and the impacts of climate change. However, the ex situ visitors also emphasized the ethics of animal conservation and caring for animals in captivity. This sub-theme was notably absent for the majority of Churchill visitors. For the in situ visitors, there was a distinct emphasis on the challenges that the community of Churchill faced, including human-polar bear interactions. The issues or ethics around polar bear tourism were emphasized, instead of the ethics of keeping animals in captivity. These findings are important, because it demonstrates that visitors at both sites are exposed to and are understanding complex ethical issues facing polar bear tourism, but are learning about these topics in unique and potentially complimentary ways.

Emotions.

In relation to the emotions theme, the suite of emotions experienced by in situ visitors was vastly more descriptive and complex. The majority of zoo visitors described their time as enjoyable or with other positive emotions such as awe or a sense of pride in the exhibit and Assiniboine Park Zoo. In situ visitors experienced motherly feelings or empathy for mothers and their cubs, and while amazement was one primary emotion the other common emotions centered around sadness, fear or concern for the future of polar bears (and for some individuals fear of the bears themselves). This range of emotional complexity provides an added layer of intensity for framing the way in which visitors feel that climate change is both urgent and potentially unstoppable. The interpretive messaging at the zoo, particularly the tours, was positive and uplifting, highlighting actions that people can take and that change is still possible. I should note here, that this method of framing climate change positively aligns with behaviour change literature,

which the Assiniboine Park Zoo is aware of, and is likely intentional (Falk et al., 2009). Here, I believe that interpretive staff at the zoo are aware that with an hour-long tour, key messages must be conveyed quickly and efficiently. In general, an ex situ visit is typically a few hours at most, and therefore, more complex discussions are limited.

Environment or conservation.

The outcomes for the environment and conservation theme were quite similar for in situ and ex situ visitors, where the majority emphasized animal observation (especially of polar bears) and the importance of conservation and the impacts of climate change. This is also an important finding as it demonstrates the effectiveness of both sites in conveying information about polar bears as a species, but also in relation to conveying important environmental messages about climate change.

Learning specific.

For learning specific outcomes, there were also some important differences between the in situ and ex situ groups of visitors. For the in situ visitors big-picture ideas were the most prominent. The emphasis was less on fact-based information, and more on the complexity of what they had learned regarding human-polar bear interactions, the challenges that the community of Churchill faces, and the challenges polar bears face due to climate change. The additional time after the visit appears to serve an important role in self- reflection and critical thinking about their thoughts on human and polar bear interactions in Churchill, as well as their own role in climate change and altering their lifestyles to become more sustainable. With this, there was also an emphasis on a shift in personal perspectives and the desire to - or questioning how to - alter one's lifestyle to be more environmentally friendly. Visitors' demonstration of personal reflection and a shift in perspective directly aligns with the concept of a disorienting dilemma found in TLT

(Coghlan & Gooch, 2011; Stone & Duffy, 2015). In situ visitors certainly demonstrated this element of critical self-reflection more often and more deeply than did the ex situ visitors.

The social nature of visitors' learning was also evidenced in their encounters and interactions with their guides, tundra buggy drivers, or local residents. Indeed, these informal encounters seemed to be nearly as important as the formal lectures or information provided by the guides and interpretive staff. The experiences that exposed visitors to a wider array of people (e.g. trappers or Dene people) were considered the most valuable, and visitors especially appreciated and learned a lot from the casual conversations they were able to have. One visitor described how they had participated in curling, and some local residents had been hired to teach them. She expressed how much she had enjoyed learning how to curl, but also the opportunity to casually socialize and have a drink with some local residents. Building in activities like this, that are semi-structured and allow for un-facilitated socializing are arguably important in visitors learning, and often under-utilized.

Another example of unstructured learning would be the bead work learned by a volunteer at the CNSC. This volunteer met a Dene elder in the community and asked her to teach her how to bead moccasins, and it was during the beading lesson that she had some of the most memorable learning experiences and conversations of her entire trip. While this opportunity was not available for other visitors, many enjoyed the opportunity to ask their local buggy driver questions about the community and their perspectives on polar bear tourism and climate change. Based on my observations, while this certainly contributed to understanding myriad perspectives, some of the information provided by

drivers (especially regarding climate change) was false (e.g. data demonstrates that the Hudson Bay freezes later on average than it did 30 years ago and one driver stated how he didn't think this was true). Here, finding a balance of encouraging personal perspectives, but also educating all staff (like drivers) on important scientific facts about climate change may be effective in improving climate change messaging for in situ polar bear tourism.

For the ex situ visitors, the learning theme emphasized what participants had learned about animal behaviour or other facts. Facts were important both for individual animals (e.g. characteristics of individual bears) and animals in general. Bigger picture ideas and concepts were not as clearly identified for the majority of visitors, but some participants who had been on a learning tour were able to convey some more complex concepts when asked what they had learned. There was an emphasis again on the physical space, and often in how this related to what they had learned about animal care. For example, a common topic at the zoo is how the keepers will hide various foods or scents (even perfumes) for animals in order to provide them with what is referred to as enrichment (mental and sensory stimulation). In other words, the zoo provides an excellent setting in which to learn facts and knowledge-based information, and more complex knowledge is also possible especially with facilitated interpretation.

Place or visit specific.

Elements that are specific to each site heavily emphasized aspects of tours (if visitors participated in a tour) or physical elements (such as how cold it was) or the nature in which they observed polar bears – under water at the zoo or from a tundra buggy in Churchill. The idea of experiencing "the North" was prominent at both sites, where zoo

visitors described how they imagined that the Journey to Churchill provides a glimpse at what it would be like to visit Churchill.

The remoteness and the feeling of experiencing the north was also a prominent theme in the follow-up data for in situ visitors. As someone who grew up in a rural community, I did not experience the same feelings of isolation and remoteness that many visitors did. As I recorded in my journal after the first few days at the Churchill Northern Studies Centre (CNSC), many visitors seemed struck by how remote and isolated Churchill and the CNSC are. Since many visitors were international, Churchill would seem especially remote if they had taken several airplanes to first get to Winnipeg, and then either another airplane or the train to Churchill. Visitors were often surprised there were no roads to Churchill, and those that took the train remarked on how they saw very little in terms of people along their journey. Since the train is very slow, I believe this added to the feeling of being particularly remote and northern. Since visitors at the CNSC could not go for a walk outside, due to the dangers of polar bears at that time of year, I believe this feeling of being isolated was compounded. Experiencing the night sky, aurora borealis, and long sunsets and sunrises was another part of experiencing Churchill that stood out for these visitors. I believe that feelings of isolation and remoteness contributed to visitors better understanding the challenges that Churchill faces in relation to accessing supplies and living in a harsh and isolated environment. The contrast of this experience to all of their other life experiences also likely makes it more poignant in their memories (Knollenberg et al., 2014).

Social elements.

Finally, one of the main differences between in situ and ex situ visitors is their emphasis on social elements. Social elements were coded as outcomes that are social in

nature such as social aspects of the trip, understanding / interacting with the community. Data coded for this this theme at times overlapped with some examples of learning in a social context, but the emphasis for this theme was on the value of the social interaction rather than specific learning outcomes. Social elements were an important theme for each group, however, for in situ visitors this related to understanding and interacting with the community of Churchill as well as learning more about different types of people and cultures in the community. For some visitors the shared experience of visiting Churchill was also poignant, but for many this was not emphasized as notably as it was for ex situ visitors. Unsurprisingly, given that the majority of ex situ visitors were Facilitators, the most important social interactions were family bonding and creating shared family memories. Shared memories often extended beyond the visit. Ex situ visitors discussed how visiting the zoo as a family was something they did as a child and they looked forward to future family visits as a way of continued curation of family memories at the zoo (Hallman & Benbow, 2007). Again, this is an important finding as it further demonstrates how similar outcomes (social elements) are present and important for visitors at both sites, but meaningful in different ways.

Learning domains with grounded learning outcomes.

This section will discuss the grounded learning outcomes coded in relation to the learning domains of TLT. Here I will discuss possible changes in learning for visitors on-site and post-visit and examine how learning within specific domains of TLT changed over time.

Instrumental learning.

For the instrumental domain of learning, this data demonstrates that fairly similar learning outcomes are possible at each site but that instrumental learning was more commonly demonstrated by in situ visitors. In situ visitors were able to demonstrate knowledge in a wider array of topics and with a greater level of complexity for the topics they discussed. While ex situ visitors did not generally demonstrate this same depth of learning, some ex situ visitors, especially those who had been on a learning-based tour or were repeat visitors, identified and discussed complex topics such as the ethics of animals in zoos and their conservation efforts. Some repeat zoo visitors also demonstrated knowledge of individual polar bears, were able to identify individual bears and knew a great deal of detail about these individual bears. This supports the research that there are potential opportunities for zoos to provide information about animals as a species but also as individuals, in an effort to help their visitors connect on a personal level (Clayton et al., 2014; Marseille et al., 2012; Skibins et al., 2013).

The findings for instrumental learning provided insight into visitors' conceptions of their understanding of learning. First, in Rachel's example, she related knowledge and information to facts that she recalled from the story about the lemmings. Later, when asked if she thought differently about anything, she returned to the story about the lemmings, but expanded on this to include a short description of her understanding of climate change and how difficult it is for the lemmings and owls to adapt. Based on these interviews and previous research (Bueddefeld & Van Winkle, 2017, 2018) I believe that responses such as this are in part related to visitors' preconceptions of what learning is. Seemingly, visitors think of facts and specific details they can convey when asked about their learning (even when the wording of the question asks broadly about the "take

away"). For this reason, I believe, asking visitors additional questions such as what was most memorable, significant, or if they would think or do anything differently, becomes important in understanding potentially transformative learning (Falk & Storksdieck, 2010). As the above example with Rachel illustrates, her understanding clearly went deeper than knowing that owls need to eat 1600 lemmings per year, but that is the fact that she chose to share when asked about her take away.

Similarly, in situ visitors, such as Lauren, provide an excellent example of why visitors with detailed prior knowledge and experience, such as Explorers, may not always exhibit significant changes in their learning. Lauren had visited Churchill several times and had even been on a CNSC tour before, so the information and the experience itself was not new for her. That does not mean it was not meaningful or impactful, but it likely would not lend itself to a substantial increase in fact-based or instrumental learning. This finding supports that of Quinn and Sinclair (2016) who describe the instrumental learning process as including the accumulation, confirmation and critical analysis of knowledge. They posit that this process of accumulating, confirming and the critical analysis of knowledge within the instrumental learning domain is important and creates a foundation for transformative learning (Quinn & Sinclair, 2016). In this way, measured changes in learning become less meaningful, as the confirmation and critical analysis of information is recognized as an important part of learning that may lead to behaviour change (Quinn & Sinclair, 2016). This further illustrates the concept that survey-based research, and even interviews that ask explicitly about changes in learning may elicit responses that are restricted to the participant's subconscious definitions of what learning is, and is not (Bueddefeld & Van Winkle, 2018; Stern et al., 2014). If participants believe they

demonstrate learning by listing facts and information, we will fail, as researchers, to measure any other forms of learning – particularly those that are more complex and difficult for participants to articulate (Stern et al., 2014).

Communicative learning.

For communicative learning there were no discernible thematic differences between the on-site and post-visit responses for both in situ and ex situ visitors. However, the post-visit responses demonstrate notably more examples as well as more detailed and nuanced examples of all types of communicative learning. This finding supports that "providing a context for reflection" of values and interests is a key element of transformative learning in tourism (Coghlan & Gooch, 2011, p. 719). Creating time and space for visitors to reflect on their own values and interests and reflecting on those of others was important in visitors' communicative learning (Coghlan & Gooch, 2011; Moyer et al., 2016; Quinn & Sinclair, 2016; Taylor, 2007). This has important implications when planning to monitor and measure communicative learning, as a span of time is required to observe this form of learning, which is difficult as visitors are more challenging to contact off-site.

On-site experiences were found to deepen and reinforce visitors' personal values and interests. Of the in situ visitors who experienced a lack of snow and ice in Churchill, many described this as seeing climate change for themselves, and that even though they understood it before, they now felt the urgency of this issue since they had seen the effects first-hand. As Susan described, she now felt that this would become her "soap box", or her primary message to focus on. This is an important finding, as environmental education literature and practitioners often question the importance of "preaching to the converted" and suggest that environmental education is less valuable when informing

people who already understand and realize the effects of climate change (Beaumont, 2001; Stern et al., 2014). This research demonstrates that even though people know that climate change is real, these on-site experiences can help visitors understand the urgency and the direct impact of climate change on a species (Bueddefeld & Van Winkle, 2017, 2018). For both in situ and ex situ visitors, forming a personal connection to polar bears was important in recognizing an individual link to climate change. It transforms climate change from an abstract concept, to a tangible issue affecting people, places, and animals that they know and care about (Marsielle et al., 2012; Skibins et al., 2013; Slocum, 2004).

Another prominent shift in visitors' understanding of others' interests and values occurred when they observed other visitors. For example, at the zoo, visitors described how they also felt a sense of awe and wonder by watching children or first-time visitors demonstrating their excitement when interacting or observing polar bears. While this was not found for the Churchill visitors in the interviews or data, there was one visitor on a CNSC tour who, I noted in my observations was so excited and enthusiastic about seeing polar bears for the first time that other guests described how she had added to the excitement and the fun of the experience by her enthusiasm. Similarly, both in situ and ex situ visitors described how the passion of polar bear tourism staff or zoo staff for the well-being of the animals and for environmental concerns, as well as the lifestyle they modelled, impacted visitors' own values and their motivation to take action. For example, at the CNSC visitors observed how the staff took short showers and made an effort to live with a lesser carbon footprint. This form of modelling behaviour was important for visitors to see in order to realize all the different ways our daily actions affect the environment, and in many instances contribute to climate change (Moyer et al., 2016).

Introspective learning.

Introspective learning was only found for in situ visitors. There were only a few visitors who demonstrated learning within this domain, and nearly all of them had been on learning-based tours. Interestingly, when comparing this data, it was found that visitors who demonstrated introspective learning also were some of the visitors who had some of the most notable transformative behaviour changes (such as changing careers). Moyer and Sinclair (2016) refer to this phenomenon as well, and note that introspective learning seems to play an important role in deep transformations for some visitors. This is not surprising, as an element of transformative learning includes critical self-reflection, but this data rather supports the understanding that introspection may be a specific element needed to plan for transformative learning outcomes for some individuals (Moyer & Sinclair, 2016). Introspective learning was also found more often in the follow-up aspect of this research. This again demonstrates the importance of assessing TLT domains after some time has passed, in order for self-reflection to potentially take place (Moyer & Sinclair, 2016; Wilner et al., 2012). Given that introspective learning was not present for any ex situ visitors, this may be something for nature-based ex situ sites to consider in terms of creating space and time for reflection.

For introspective learning, the in situ experience was found to be more impactful and lent itself to more self-reflection. Again, this demonstrated that time and space are needed for visitors to engage in self-reflection. Hilde describes this phenomenon, and how her experience in Churchill prompted her to change careers. Her time of reflection during the train ride back to Winnipeg was clearly an important part of processing her experience and feelings. Facilitating opportunities for reflection as part of an experience

can prove valuable since, as was demonstrated with this visitor, it can lead to some significant and transformative changes.

Transformative learning.

Based on the length and immersion of a visit to Churchill, I had conjectured that in situ visitors would be more likely to demonstrate transformative learning. However, this was not entirely the case. Some in situ visitors demonstrated transformative learning, which they attributed to critical reflection on their in situ experiences. For the visitors who demonstrated transformative learning, the examples of the behaviours they changed represented either significant changes in their lives such as a career change, a significant investment of time and money (such as planning to install solar panels), or habitual changes such as eating less meat. Transformative learning examples were provided predominantly by visitors who had participated in a learning tour or who were identified as Explorers and had a clear prior interest in polar bears and environmental issues such as climate change. In support of this finding, research conducted by Country et al. (2017), reported that the participants in the tourism experience who volunteered for the study "represent a particular type of interested and keen tourist" (p. 452). Similarly, Knollenberg et al.'s (2014) research found that visitors volunteer motivations and expectations helped to determine their transformative learning outcomes. This supports the concept that Explorers and visitors who are particularly keen and interested are likely the most receptive to transformative learning visitor experiences. In situ visitors who did not participate in learning tours, or did not have clear prior interests and motivations, did not demonstrate transformative learning. Interestingly, proportionately more zoo visitors were better able to identify at least a few small-scale action items, such as recycling

more, driving less or ensuring their car tires had enough air in them (to reduce gas usage) than in situ visitors.

Ex situ visitors' responses were more challenging to assess in relation to transformative learning. In general, ex situ visitors were able to list and describe small changes they were making in relation to things they had learned on their on-site visit, but evidence of critical reflection or an epochal type of disorienting dilemma were less visible. Ex situ visitors who participated in a learning tour were better able to describe more specific examples of critical reflection or experiences on-site that may have contributed to something akin to a disorienting dilemma. However, these examples were not described as singular events that resulted in a particular disorienting dilemma or contributed specifically to a specific and intentional behaviour change. Rather, the zoo visitors described a slow, but cumulative effect for learning and how their on-site experiences had contributed to a series of "mini-challenges" (Newman, 2012) which resulted in their behaviour change. In some instances, visitors described this as a heightened awareness, or a reminder that their actions mattered which acted as an important reinforcement of both behaviours and their interests and values. Similarly, Moyer et al. (2016) found that while action was an important part of transformative learning, "transformation was not the only trigger for mobilizing action (Cranton & Kasl, 2012); other types of learning and other social or political forces can also do so" (p. 12). However, here I argue that transformation may also be part of an ongoing and less distinct change, which results in an accumulation of action-based changes that may progress over time.

While small scale actions that do not require significant life changes, and do not occur because of a particular life-altering disorienting dilemma, do not fit the definition of transformative learning as neatly, I argue that they are also important. Ex situ visitors who listed and described behaviours that they had changed as a result of their visit, also demonstrated an optimism and a sense of empowerment about their ability to affect change. This is arguably an important step in addressing issues such as climate change and in thinking about why transformative learning is a desirable goal (Bush-Gibson & Rinfret, 2010; Stone & Duffy, 2015).

These findings demonstrate that the zoo's interpretive messages are effective in conveying these action-based messages and in encouraging visitors to make these changes. I believe this directly relates to the interpretive messaging and signage which denotes individual impacts as they relate to climate change and poses suggestions for how one can reduce one's carbon footprint (Bueddefeld & Van Winkle, 2017, 2018; Corner & Randall, 2011). Information about individual carbon footprints and specific action items was discussed on all ex situ tours as well, and was typically conveyed in front of the related interpretive signage. This is an effective strategy as people are known to retain information better when it is presented through multiple mediums (Mason, 2018). In this way, conveying important information orally as well as visually will help visitors to remember it as they will have a visual cue to attach to the information they just learned.

From my observations, there was only one tour in Churchill where the importance of small-scale sustainable behaviours was formally discussed. On a non-learning-based Frontiers North tour, a polar bear scientist from Polar Bears International (a non-profit

polar bear conservation organization) discussed the importance of small-scale individual actions, after seeing an abandoned cub and facilitating a discussion about climate change. While I believe the visitors present on this tour were engaged in her discussion, even I found it difficult to recall the specific action items she had described when recording my notes later that evening. Handing out information or following up with the data that she presented on the importance of individual actions may have helped to improve retention and validation of the facts she conveyed (Hughes, 2011; Hughes et al., 2011; Mason, 2018). In other words, while in situ visitors are certainly exposed to a wide range of topics and issues in Churchill, if direct linkages to action items are not made it can be difficult for visitors to have a strong grasp on immediate next steps.

While it is important to reflect on personal, as well as shared norms or social values regarding human-animal interactions and the political and economic structures that support the detrimental effects of climate change, it is also important to provide visitors with an array of examples on which they might move forward (Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2011; Hughes et al., 2011). Providing creative outlets or connecting visitors with ways that they can continue to nurture their interests whether through art, science, or something like photography is another option. I believe this also reflects the tone of the interpretive information. At the Assiniboine Park Zoo, there is a marked effort by all staff to present challenges, but also to provide some solutions and to encourage visitors that collective actions do make a difference. In contrast, in Churchill complex issues were discussed, and many visitors left feeling sad or concerned about the future. While, perhaps this is more realistic, it also does not encourage people to feel empowered to do something. Every critical thinker will question the value of recycling

more. However, with this research I believe that the value of learning the impact of recycling more is not so much in the tangible reduction of plastics or reduction of water and other scarce resources, but rather in empowering individuals. The visitors who left Churchill feeling sad and unsure of what to do about climate change, did not necessarily feel empowered or have a direction in which to begin. Providing visitors with an array of action items of varying difficulty, along with information on why these suggestions will help to reduce climate change, provides visitors with a starting point (Bueddefeld, 2017, 2018; Hughes, 2011; Hughes et al., 2011). Having a list of things one can do, is an important first step in changing behaviours, but also in challenging social norms (Bueddefeld & Van Winkle, 2018; Hughes, 2011; Hughes et al., 2011). Small actions can be used as a catalyst to create greater change. Eventually, this may lead to more significant transformative behaviours that include political and economic decisions as well. As there is no single solution to addressing climate change, or most environmental issues, a multi-faceted approach is needed.

Free-choice learning and Transformative Learning Theories.

In analyzing the overlap between the CML contexts and TLT domains, I found some informative patterns. Introspective learning occurs primarily in the personal context, which is not surprising but rather suggests the need for interpretive information that is designed with the intent of personal reflection. Since introspective learning seems to be linked to transformative learning (Moyer & Sinclair, 2016), this requires additional research on how the interpretive messages might be intentionally designed in order to facilitate this.

There was an increase in introspective and communicative learning responses in the follow-up aspect of the data collection, especially in relation to the socio-cultural context. In other words, visitors need time in order to reflect on all of their interactions and the different things that they have learned through these formal and informal encounters. This has important implications for the measurement of these items, especially in visitor contexts where people will be exposed to new ideas or information on-site and will require some time to process and integrate this new information into their lives. Given the busyness of the majority of people's lives, this has important implications for how learning-based tours ought to be planned. Leaving time and physical space for reflection will be important and facilitating this time on-site will likely be meaningful for at least some visitors. Additional research is needed to determine when and how time and space for reflection may be added to valuable on-site tourism experiences. I have also noticed how little physical space is often available on site for reflection in many ex situ sites. This is particularly true of the Journey to Churchill exhibit. There are very few benches in front of exhibits and the seating space in front of the underwater tunnels is also quite small. The only major seating area is at a zookeeper talking space (which is outdoors, and hence unused during winter) and the Tundra Grill, which is quite loud on weekends and during all school breaks. Research is needed on the setting of the physical space and time to better understand how to facilitate introspective learning.

In general, the differences between the CML context coding and the TLT learning domains, was that the learning in the CML contexts all referenced how that learning had occurred, or through which context of the CML learning occurred. While there is not

always a clear delineation between learning as a process and / or product this research does suggest that it may be useful to think of understanding learning as being facilitated through the three contexts of the CML, and thinking of the transformative learning domains as relating to outcomes. This aligns with research by Moyer and Sinclair (2016) who also found that transformative learning domains might be better referred to as learning dimensions or aspects (Newman, 2012), as they relate to their outcome-based coding definitions.

Of course, as an applied theory TLT has evolved within the field of NRM and researchers must question when their application of the theory has created a fundamental shift that may be inappropriate to understanding the theory (Cranton & Taylor, 2012). In this case, I believe this distinction is both relevant and important in terms of these findings, but also in relation to how TLT and the CML may be utilized in planning and measuring visitor learning in nature-based tourism. As an example, understanding TLT domains as outcomes will help interpretive planners know what outcomes to aim for and which to measure their success against. By similarly understanding that the CML creates contexts in which visitors learn, they can plan experiences that include personal elements (designed to reflect individual motivations and interests), that incorporate and make use of physical space, sensory elements, and post-visit engagements (physical context), and incorporate socio-cultural elements when possible. Here, it will be important to understand visitors' motivations to help align their visitor-identity with appropriate socio-cultural interaction. For example, Facilitators will benefit from experiences that enhance the experience they are trying to facilitate for others. If Facilitators are attempting to engage their children, take-home packages or engagement will likely be both welcome

and useful in conveying environmental messages and behaviour change. For Explorers, audio-guides, guided tours or more in-depth 'behind-the-scenes' tours will likely be of interest. For Rechargers, formal socio-cultural engagement on-site will be less important, but informal interactions with volunteers and listening in on tours may be of interest to this group of visitors.

With this in mind I suggest the following figure to represent the personal, physical, and socio-cultural contexts of the CML in conjunction with the domains of TLT (see Figure 20). While this figure could be more complex by creating more detail regarding what specific contexts encourage different TLT learning domains, I believe this figure is more useful in its simplistic form. Learning is complex, and it is unlikely that there will ever be a singular model that accurately describes every element, context or domain of learning. Rather, I believe this figure to be particularly useful in the field of visitor learning; especially for those interested in planning, monitoring and measuring visitor learning experiences intended to have behaviour change outcomes.

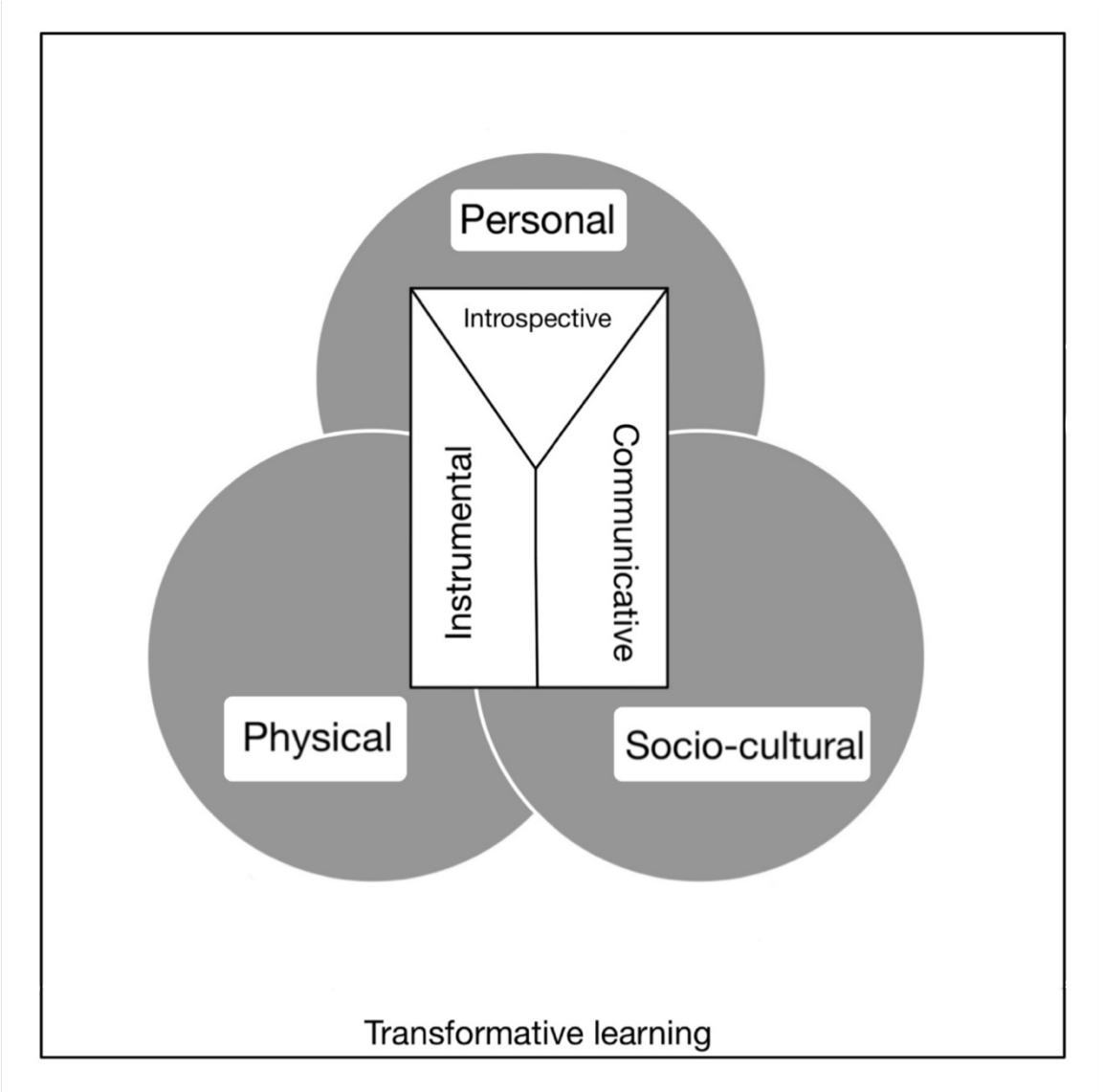

Figure 20. The personal, physical, and socio-cultural contexts of the CML underlying the reconceptualized model representing the domains of TLT. The models have been intentionally juxtaposed in order to reflect the contexts of the CML that best influence particular domains.

The model presented in Figure 20 demonstrates how the contexts of the CML inform learning domains within TLT. The personal context of learning was found to encourage learning outcomes within the introspective domain, and to a lesser extent for

the instrumental and communicative domains. The socio-cultural context of learning influences the communicative learning domain primarily, but also has some influence on learning within the instrumental and introspective domains. The physical context of learning was found to influence primarily learning within the instrumental learning context, and to a lesser extent learning within the communicative and introspective domain. This figure also demonstrates that transformative learning encompasses the model, as all of the contexts of the CML and domains of TLT help to inform how learning may translate into behaviour change and that this will vary for each visitor. This model is an important step in better understanding how visitors learn within the contexts of the CML, which can inform particular and predictable learning outcomes within TLT domains.

Within the experience economy, and as co-created experiences become more sought after (Birenboim, 2016; Pine & Glimore, 1998; Mehmetoglu & Engen, 2011) and as visitors seek more advanced learning and engagement opportunities (Curtain & Kragh, 2014; Stone & Duffy, 2015) this model will serve as an important baseline in providing direction for experience design. Future research might also examine this model for each visitor-identity related motivation, as this research demonstrates that some visitors, such as Facilitators and Rechargers, have very different on-site needs and may instead seek or benefit from additional engagement post-visit.

Conclusion

These findings demonstrate that in situ nature-based tourism experiences tend to provide a broader and more nuanced understanding of a variety of topics related to polar bears, northern communities, and climate change and seem to encourage more deeply

transformative learning outcomes, in general, than ex situ experiences. However, with interpretation (such as was provided with the ex situ learning-based tours or for visitors who regularly came to the zoo) some of these outcomes are also possible at the zoo. Though not to the same extent, ex situ visitors also demonstrated their ability to connect with polar bears and to understand their personal role in climate change, and indicated they had made some small changes. Ex situ visitors proportionately were able to list more behaviour changes than were in situ visitors. Indeed, research demonstrates that deeply transformative learning is challenging to facilitate (Diduck et al., 2012; Moyer et al., 2016; Moyer & Sinclair, 2016).

> Learning experiences that qualified as transformative were the minority in both studies, and the multiple action outcomes we reported largely resulted from instrumental and communicative learning of less profound degrees. (Moyer et al., 2016, p. 12).

In this research I argue that action items that are of a less profound degree, in some instances, may still be considered transformative but are more incremental and attest to addressing the mini-challenges outlined by Newman (2012). This also suggests, that while the polar bear tourism guides in Churchill may be experts in polar bears and even climate change, they may not be making the connections to personal behaviours clear enough for visitors. This may be a result of a lack of interpretive planning, or a lack of desire in terms of learning outputs from the tour companies or organizations. In the case of the CNSC, I believe this to be the former. From my observations, it was clear that their staff were abundantly knowledgeable about climate change science and polar bears. However, scientists do not necessarily make for good interpreters. While the tour guide

was certainly charismatic and had excellent organizational abilities, he did not necessarily have a clear plan for his interpretation.

Planning for interpretive outcomes will be much like lesson planning in a classroom setting. The outcomes that are desired need to be identified, and there must constructive alignment and a plan in place to encourage these learning outcomes, as well as some form of feedback to determine if the desired learning was achieved (Biggs, 1996; Dames, 2012). This does not need to be onerous, but it does need to be intentional. Connecting information to action items will seem obvious to interpreters or guides, but it may be new information to visitors. Providing this information through multiple messages and mediums, will help improve learning, retention, and action.

These findings also support the conclusion presented earlier in this dissertation, that introspective learning seems to have an important connection with deeply transformative learning (e.g. such as a career change). Time and even physical space to reflect seem to be important in this regard and additional research is needed to determine the best ways to encourage introspective learning outcomes. Further, as the experience economy develops, understanding how to more meaningfully connect on-site visits with post-visit engagement of some form will likely become the next step in both visitor experiences and learning literature and practice (Ardoin et al., 2015; Buedefeld & Van Winkle, 2017, 2018; Knollenberg et al., 2014; Stone & Duffy, 2015; Wheaton et al., 2016).

Additionally, this research makes a novel contribution to the tourism literature in providing empirical evidence of transformative learning in situ and ex situ. Previous research in tourism in TLT was extremely limited (Stone & Duffy, 2015) and failed to

provide a detailed analysis of the domains of TLT in tourism research (Brondo, 2015; Coghlan & Gooch, 2011; Knollenberg et al., 2014). This research provides a detailed analysis of both the emergent and inductive learning outcomes possible at in situ and ex situ nature-based tourism experiences. This study will help to guide future research and inquiry in these fields.

Finally, the theoretical model introduced here is an attempt to merge the free-choice learning and TLT literature to better inform tourism research. This Contextual Model of Transformative Learning provides a visual framework for future research and practitioners to better understand the contexts in which learning can be facilitated as it relates to particular domains of TLT. As demonstrated earlier, not all visitors are motivated to learn. Recognizing this and providing learning opportunities that may be of interest to different types of visitors is an important next step in the application and future research in nature-based tourism. This model also assists with understanding TLT as an ongoing process. For some visitors disorienting dilemmas will result in transformative learning, but as research demonstrates this is often not the case (Diduck et al., 2012; Moyer & Sinclair, 2016; Moyer et al., 2016; Quinn & Sinclair, 2016). This research demonstrates that for some visitors an incremental version of TLT may be more appropriate to inform their learning experiences, which recognizes the mini-challenges (Newman, 2012) and changes that they make.

Chapter 6: Authenticity in Polar Bear Tourism

Introduction

This chapter explored visitors' perceptions of authenticity and how that may affect visitors' experience and learning at in situ and ex situ nature-based tourism sites. Specifically, this research addressed research question 2(b): which explored and described how perceptions of authenticity and place attachment may influence visitors' experience and learning at both in situ and ex situ sites.

Vignette: Not the Polar Bear Capital

It is the end of the first day in Churchill for Churchill Northern Studies Centre (CNSC) learning tour visitors. After a series of long flights or a lengthy train journey, visitors have begun their time in Churchill with seeing several polar bears chased away from the building. This evening will end, as most on the learning tour do, with an approximately one hour-long lecture from the tour guide. The guide begins his lecture by explaining that Churchill, at 58 degrees North latitude, is not technically in the Arctic, which begins at 66.3 degrees. Following a brief introductory discussion on why everyone on the tour has decided to come to Churchill, the guide discusses what Churchill is and is not. He says: "the polar bear capital, is really somewhere far away, somewhere wild", suggesting, then, that Churchill is neither wild, nor is it the polar bear capital.

As this brief vignette demonstrates, perceptions of place are constantly challenged and reinforced in a variety of ways through tourism experiences. In this example, the guide first establishes for the visitors that they are not actually in the Arctic, and he attempts to establish that Churchill is not "wild" nor is it the primary place for polar bears. With this beginning to the tour, I was curious to see how visitors would think of

Churchill in terms of its authenticity as a polar bear place. Surprisingly, the visitors tended to think of authenticity in relation to the polar bears themselves rather than the places in which the polar bears lived. This chapter will discuss these perceptions of place as well as implications for understanding visitor experiences and learning.

Literature Review

Place attachment and sense of place.

Place is conceptualized as by Creswell (2004) as consisting of location, locale and sense of place: location being the physical place, locale being the social relations that shape place, and sense of place meaning the "subjective and emotional attachment people have to place" (p. 7). Relph (1976) argues that it is through "particular encounters and experiences [that] perceptual space is richly differentiated into places, or centres of special personal significance" (p. 11). It is the central study of geography: how "places are socially constructed, how place meanings develop, and how people become attached to places" (Kaltenborn, 1998, p. 172).

> Place attachment encompasses a wide range of related ideas and phenomena, including place dependence and functional aspects, identity formation, roots and embeddedness, satisfaction and experiences. Studies of place attachment fall within the broad area of environmental meaning and most of the approaches are rooted in human geography or environmental psychology (Groat, 1995). A common denominator is that it entails complex people– place bondings. It is an integrating concept including more or less inseparable parts, its antecedents are complex, and it can contribute to self-definition on the individual, group and cultural levels (Low and Altman, 1992). (Kaltenborn 1998, p. 172)

Place attachment literature broadly encompasses the many ways in which people form bonds to places (Creswell, 2004; Halpenny, 2010; Kaltenborn, 1998; Lee, 2011; Relph, 1976; Tuan, 1977). Physical spaces become places, when we endow them with meaning (Tuan, 1977), and people develop a sense of place when they endow a place with value and a personal connection (Tuan, 1977).

Kaltenborn (1998) states that: "Having a distinct sense of place, then, can be interpreted as an overall or global concept of how a person relates to and feels attached to a place." (p. 172). Kaltenborn (1998) utilizes a scale developed by Shamai (1991) to measure sense of place in Svalbard residents, where sense of place was conceptualized as occurring along a continuum within three phases: "belonging to a place, attachment to a place, and commitment to a place" (p. 176). Further, in conceptualizations of sense of place Tuan (1975) argues that developing a sense of place takes time and does not often occur "in passing" and that "to know a place well requires long residence and deep involvement" (p. 164). With this conceptualization of sense of place, one would consider it unlikely that tourists will develop a sense of place or place attachment, yet there is some evidence that visitors to parks develop place attachment and that this contributes to their pro-environmental behaviour intentions (Halpenny, 2010; Jepson & Sharpley, 2014; Lee, 2011; Lukas & Ardoin, 2014; Ramkissoon, Weiler, & Smith, 2012; Wolf, Stricker, & Hagenloh, 2015).

More specifically, wildlife have been found to play a role in helping visitors form an emotional attachment to place (Folmer, Haartsen, & Huigen, 2013). Nature-based tourism that features wildlife may then be particularly well-suited to facilitate visitors' attachment to places and encourage pro-environmental learning and behaviour change

(Folmer et al., 2013; Skibins et al., 2013). In Folmer et al.'s (2013) research, types of wildlife experiences are described as ranging from unguided encounters to nature-based tours, and it is acknowledged that "it is not clear whether experience type matters to place attachment." (p. 133). However, they speculate that as per Tuan (1977) that more "intense experiences create greater attachment to a place than ordinary experiences" (Folmer et al., 2013, p. 133). Additionally, in studies where place attachment has been demonstrated to encourage pro-environmental learning and behaviour change, the study sites are often places of recreation, where visitors may be more likely to consist of local residents or repeat visitors (Halpenny, 2010; Lee, 2011; Lukas & Ardoin, 2014). Lee (2011) argues that comparing visitors with non-visitors (both local and other) is also recommended to determine the extent of these findings. Folmer et al.'s (2013) research suggests that the more intense in situ experience may help those visitors develop a greater sense of place attachment than ex situ visitors (Folmer et al., 2013). However, since ex situ visitors are more likely to be residents and repeat visitors, this body of literature suggests these visitors may develop more meaningful attachments to place (Halpenny, 2010; Lee, 2011; Lukas & Ardoin, 2014). Research is needed which explores visitors' attachment to place for both in situ and ex situ contexts, to provide insight into what kinds of experiences contribute to visitor learning and behaviour change.

Authenticity in nature-based tourism.

During the five-decade history of authenticity discourse in tourism research (MacCannell, 1973), the concepts of authenticity have been clarified, reconceptualized, and expanded (Cohen, 1979, 1988; Lau, 2010; Lovell & Bull, 2017; MacCannell, 1973; Olsen, 2002; Reisinger & Steiner, 2006; Rickly-Boyd, 2013; Turner & Manning, 1988; Wang, 1999). Wang's (1999) seminal work, argued that there were three primary

approaches to thinking about authenticity: objectivist, constructivist, and post-modernist; and three distinct types of authenticity: objective, constructive (or subjective) and existential. It is important to distinguish the approach to thinking about authenticity from the type of authenticity as it relates to tourism objects or experiences (Lovell & Bull, 2017; Rickly-Boyd, 2013; Wang, 1999). This research will examine different *types* of object-based authenticity discourses as they relate to wildlife. Wang's (1999, p. 352) definition of object-related authenticity in tourism includes objective authenticity and constructive authenticity:

> Objective authenticity refers to the authenticity of originals. Correspondingly, authentic experiences in tourism are equated to an epistemological experience (e.g. cognition) of the authenticity of originals.
>
> Constructive authenticity refers to the authenticity projected onto toured objects by tourists or tourism producers in terms of their imagery, expectations, preferences, beliefs, powers, etc. There are various versions of authenticities regarding the same objects. Correspondingly, authentic experiences in tourism and the authenticity of toured objects are constitutive of one another. In this sense, the authenticity of toured objects is in fact symbolic authenticity.

To elaborate, Wang's (1999) definition of constructive or symbolic authenticity "…has little to do with reality out there. It is more often than not a projection of certain stereotyped images held and circulated within tourist-sending societies" (p. 356). In other words, this type of authenticity is less related to understanding objects as authentic, and rather about understanding the meaning of the objects as symbols for tourists.

Today, authenticity in tourism research has moved well beyond thinking of places within the context of objective or constructed authenticity (Kim & Jamal, 2007; Knudsen, Rickly, & Vidon, 2016; Olsen, 2002; Rickly-Boyd, 2012, 2013, Rickly-Boyd & Metro-Roland, 2010; Vidon, 2017; Wang, 1999). Indeed, Wang's (1999) work was important in recognizing the difference between authentic experiences and authentic objects and Wang credits a post-modernist approach in creating space for existential authenticity. Authentic experiences are considered to either help people feel that they are in the "real world" or their "real selves" (Wang, 1999, p. 351). In this way, authenticity research in tourism often focuses on existential authenticity via the visitor experience rather than experiencing authentic objects (Brown, 2013; Kim & Jamal, 2007; Knudsen et al., 2016, Rickly-Boyd, 2012, 2013; Rickly & Vidon, 2017; Vidon, 2017).

Recent research in nature-based tourism and authenticity has delved deeper into existential authenticity where Knudsen et al. (2016), Vidon (2017) and Rickly-Boyd (2012) explore Lacan's ideas of alienation and "split subjects" where visitors seek "the authentic, the "other" in an attempt to connect with the genuine, both inside and outside of [themselves]" – and a way of understanding their whole selves. Although existential authenticity contributes meaningfully in understanding visitors' perceptions of authenticity in relation to their experiences, objects in tourism still matter (Rickly-Boyd, 2013). "While existential authenticity offers a theoretical framework for going beyond the 'object-oriented' perspectives to get at the experiences of tourism, it also has resulted in what Belhassen, Caton, and Stewart (2008) describe as a preoccupation with the subjective at the expense of the socio-spatial dimensions of tourism experiences" (Rickly-Boyd, 2013, p. 680-681). Object-oriented approaches to understanding

authenticity need to remain an important part of the literature (Belhassen et al., 2008; Chhabra, 2012; Lau, 2010), and part of this is in understanding existential authenticity as activity-based rather than object-based (Lovell & Bull, 2017; Rickly-Boyd, 2013).

While, Wang's (1999) work has been instrumental in advancing authenticity research, it is not without critique. Cohen (2007), Cohen and Cohen (2012), and Lovell and Bull (2017) criticize Wang's (1999) typology, asserting that the constructive type of authenticity is inappropriately categorized. They reason that unlike objective and existential authenticity, which is based on personal experience, constructive authenticity is based on the process of socially constructing meaning of the experience (Cohen 2007; Cohen & Cohen, 2012; Lovell & Bull, 2007). Lovell and Bull (2017) additionally critique the separation of objects and experiences in thinking about authenticity. They argue: "…that there is a stronger, intersubjective dialogue between the two, blending experience and place, suggesting that the pursuit of authenticity involves intertextuality and mixed realities" (Lovell & Bull, 2017, p. 2). While, this is a useful argument when examining place as an object in authenticity and tourism research, it does not necessarily capture the authenticity discourse around wildlife as objects in tourism. Research has explored the way that the experience is considered more or less authentic in relation to nature-based tourism (Knudsen et al., 2016, Rickly-Boyd, 2012; Vidon, 2017), but not in relation to the authenticity of wildlife as the object in nature-based tourism. Research is needed that examines the ways in which wildlife are perceived as more or less authentic, as objects in nature-based tourism discourses.

Authenticity: Wildness and wildlife tourism.

This research follows the work of Cohen and Cohen (2017), Cohen (2007) and Lovell and Bull (2017) who contest that Wang's (1999) constructive type of authenticity

is more appropriately conceptualized as an approach where authenticity is the process of the social construction of objective and existential authenticity. Therefore, this research takes a constructivist approach to understanding object-based forms of authenticity in wildlife tourism. This approach is supported within the critical geography literature, which addresses the construction of nature and ideas of wildness.

The constructed-ness of nature is described by Peluso (2012) as "relationships mediated by their times, histories and localities" (p. 79). Peluso argues that we must recognize that society and natural concepts are "always co-created" (p. 81) and change with environments and ideology. It is within this framework that we must attempt to think about concepts of wildness and wildlife. The westernized view of nature is often attributed to the romanticized American conceptualization of nature as sacred and representative of rugged individualism (Cronon, 1996; Campbell, 2005; Grimwood, 2015; Rutherford, 2011). This romanticized view of nature is critiqued as originating with early explorers who were typically men from elite classes of society rather than those who experienced the daily hardships of working and living on the land themselves (Cronon, 1996; Rutherford, 2011). Further, this version of nature suggests that wilderness is the "ultimate landscape of authenticity" (p. 16), and perceives people being outside or separate from nature. This dualistic perspective is problematic, as explained by Cronon (1996), who argues that a tree in an "untouched" forest is just as much an authentic tree as the one in our backyards. Dualism in nature can be extended to how we perceive wild and captive or tame animals (Collard, 2014). Like wilderness, wildness has also become dichotomized and romanticized in our current cultural framework (Cronon, 1996; Collard, 2014; Slocum, 2004).

The distinction between wilderness, which is often equated to "an impossible pure Nature", and wildness, which *"*refers to the autonomy, otherness, and sentience of animals" (Collard et al., 2015, p. 328) becomes meaningful when thinking about animals. However, here we seek a more encompassing understanding of wildness and follow that of Cronon (1995) and Collard et al. (2014) who advocate for "honoring the wild" as "learning to remember and acknowledge the autonomy of the other" (Cronon, 1995, p. 25). The wildness of an animal is not dependent upon its "proximity to humans [but] has everything to do with the conditions of living, such as spatial (can the animal come and go), subjective (can the animal express itself), energetic (can the animal work for itself), and social (can the animal form social networks). These are the conditions of possibility, of potential, not forced states of being" (Collard et al., 2015, p. 328). Collard et al.'s (2015) work provides a framework within which to conceptualize animals as wild. This research seeks to engage Collard et al.'s (2015) conceptualization of wildness to understand visitor's perspectives of authenticity for in situ and ex situ polar bear tourism.

Authenticity: In situ and ex situ.

In relation to the post-modern approach, Wang (1999) demonstrates that "Post-modernist researchers do not consider inauthenticity a problem" (p. 355) and that postmodern tourists are less concerned with the authenticity of the original since they are playfully seeking enjoyment or an "aesthetic enjoyment of surfaces" (p. 355). Wang (1999) continues to describe how these post-modern tourists are more reflexive, in that they recognize that a staged community may help protect the fragile original (Wang, 1999). From the post-modern perspective "genuine fakes" are completely acceptable (Cohen, 1988; Wang, 1999, p. 357) and can be justified within the appropriate tourism context. This has important implications when thinking about in situ and ex situ nature-

based tourism experiences. From the post-modern perspective ex situ sites may even be considered beneficial if they help to preserve the in situ place and associated wildlife (Vidon, 2017).

The two case study sites in this research provide a unique opportunity to compare in situ and ex situ nature-based tourism experiences, since the sites are similar in terms of wildlife, landscape, and other contextual factors such as environmental issues and cultural influence. The Journey to Churchill exhibit is an exemplary ex situ site, because it is intended to represent the town of Churchill as well as the wildlife and ecosystems found near Churchill, Manitoba. Both sites also feature polar bears as the primary attraction for visitors. In this way, the in situ and ex situ sites selected provided the optimum field conditions to conduct a comparative case study of in situ and ex situ nature-based tourism experiences. By comparing these two sites, this case study provides insight into visitors' perceptions of authenticity of an ex situ site that represents a specific place (the townsite of Churchill, Manitoba). With increasing concern over ecologically sensitive and remote locations where nature-based tourism is prevalent (such as many places in the Arctic and Antarctic) there remain many questions about what role ex situ sites might serve in the representation of their respective ecosystems and species (Dawson et al., 2010; Gossling, 2013; Moscardo, 1996; Ryan & Saward, 2004; Skibins et al., 2013) and what the implications are in relation to visitors' perceptions of authenticity. Ryan and Saward (2004) state that the debate about zoos goes beyond whether or not they fulfill their conservation roles but argues that "…their role within tourism [is] not only as an attraction, but as a possible substitute product for an ecotourism that impinges on increasingly endangered natural areas, there remains the question as to what it is that

visitors seek" (p. 246). Yet, very little research exists that explore authenticity discourses for in situ and ex situ places (Skibins et al., 2013; Uddin, 2015), and there are no known case studies that compare in situ and ex situ nature-based tourism experiences where the ex situ site represents a specific place rather than an ecosystem in general or an abstract place (e.g. African plains). Therefore, this research is needed to seek a better understanding of how visitor experiences at in situ and replicated ex situ sites may vary, through discourses of authenticity.

Gazing as rendering and commodifying.

Discourses of authenticity and how we think about nature, wildness, and animals are, in part, framed within the ways we choose to render nature "legible" through order making processes. The commodification of animals begins with human-animal interactions and our understanding of the "designation 'wild' in the wake of the collapse of the nature-culture dualism" (Collard, 2014, p. 154). Collard (2014) suggests that the term "wild" becomes a "means of recognizing and supporting the autonomy and materiality of nonhumans" (p. 154) and that "the point is not to imply that wildlife can only exist "out there", away from humans, but rather that it might require a degree of freedom that controlled (or even forced) proximity with humans does not permit" (p. 154). Animals are both commodified and decommodified, within "productions of particular natures" (p. 152). Braun (2000) describes Canadian geological museums as places where people come not only to "gaze[d] at things" but to "observe" "objects arranged so as to provide the effect of an order that [lies] outside the spaces of the exhibition" (p. 31). Places that structure and order how people view objects, have power in the ways that order is created outside of these places (Braun, 2000; Braun & Castree, 1998; Urry & Larsen 2012). Polar bear tourism places, such as zoos and in situ tours,

create a way in which the polar bears are viewed as conservation objects, which then extends to the ways in which we think about polar bears outside of tourism places (Slocum, 2004).

The earliest forms of zoos were menageries, or collections of animals, that were organized for people to "gaze" at in order to make sense of the 'exotic other' (Benbow, 2004). This gaze, whether in the zoo or in the wild, directly influenced the way we historically conceptualized nature, wildness, and animals generally (Slocum, 2004). How we create tourism experiences and spaces can be conceived as a form of rendering nature as technical in order to make sense of it and establish control or dominance (Braun, 2000).

In the case of polar bears, they are rendered as symbols for climate change or as ambassadors for their wild counterparts (Slocum, 2004). Slocum (2004) argues that the North is part of Canadian iconography, and so polar bears are easy symbols to help us connect the dots – as we all are familiar with snow, ice and polar bears. Especially, as a large charismatic megafuana, polar bears make climate change more exotic, distinct and appealing (Slocum, 2004). Slocum's (2004) research contends that these ways of thinking and speaking about climate change are neither entirely positive or negative, but "facts should be recognized as embedded in the moral discourse of the science" (p. 430). Similarly, the ways in which polar bears are rendered as symbols of climate change and understood to be more or less wild, also need to be recognized within tourism discourses.

Despite being physiologically identical, the wild and captive polar bears are subject to our place-based perceptions in relation to their symbolic roles and how we understand and engage with them. This is particularly important in relation to the

narratives that are created by interpreters or anyone who interacts with tourists. What does it mean for a visitor's understanding of their experience, the places they are visiting, and their perception of wildlife if they are told "the polar bear capital, is really somewhere far away, somewhere wild"? How these narratives about wildness are constructed matters, as the wild polar bear remains an icon of wildness and the North, and a symbol for climate change that is meant to evoke a sense of awe and a deeper understanding of the natural world (Slocum, 2004). The captive zoo polar bear, while it continues to be seen as an ambassador for its wild counterpart represents a living sacrifice of climate change, to which we are meant to form a personal connection in the hope that we will understand our role in its demise. Within both zoos and tourist experiences we are we are "enframing" and "capitalizing" nature, whether wild or captive (Braun, 2000). We must recognize that "the stories we tell about animals depend on the times and places in which we tell them" (Mooallem, 2013, p. 61) and that these stories matter.

Findings

In situ and ex situ experiences and learning: Connection to place.

All on-site visitors were asked the following question about viewing polar bears either in situ or ex situ. This question was intended to illicit a comparative understanding of visitors' perspectives on polar bear viewing in both locations and potential emotional affect or connections. These questions were intentionally left open ended based on previous research (Bueddefeld, Winkle, & Benbow, 2018) which sought to understand emotional engagement without providing visitors with prompting words to express their emotions or connections.

1) Does watching the bears here remind you of polar bears in Churchill (or in

the Assiniboine Park Zoo)? (adapted from Marseille et al., 2012, p. 33)

a) Why or why not?

2) What does watching the bears here make you think / feel? (adapted from Marseille et al., 2012, p. 33).

Responses to these questions were coded to determine if visitors felt that viewing polar bears in situ and ex situ was similar, or not. Ex situ visitors provided more responses that indicated that they believed these experiences were similar, and in situ visitors overall felt that these experiences were not similar. Further segmentation of responses revealed that the visitors who believed that the in situ and ex situ polar bear tourism experiences were either similar or neither similar nor dissimilar were overwhelmingly ex situ visitors who did not go on a learning-based tour. This suggests that both the ex situ experience with interpretation and the in situ experience, made the contrast of places more apparent to visitors.

Monica (Zoo Visitor) describes how she imagines viewing polar bears in Churchill would be both similar and dissimilar. She describes these experiences as similar in that, at both sites she imagines one would be viewing polar bears from a safe place - but different in that, in Churchill the tourist is the one in “a cage” – the reverse of the zoo.

Researcher: And then, thinking back to your experience seeing the bears that day, when we spoke, how do you think that compares to say seeing bears in Churchill? I know you haven't been, but if you had to imagine.

Monica: Oh, I imagine, well, I guess in some ways I would imagine it similarly in that you would be viewing them from a safe space, but it would be reversed, I guess, in a way.

Researcher: Right.

Monica: ‘Cause we would be the one like, kind of - driving through a cage- in a cage through their wilderness and their wild home.

Researcher: Yeah.

Monica: Whereas at the zoo, they're the ones enclosed and we - we can, well view them from still from a safe place. So, there is a similar - like, I know I wouldn't walk around where they are in Churchill. [laughter]

Researcher: Yeah.

Monica: But, yeah. That would be more I'm coming to them. Well at the zoo, we come to them too, but do you know what I mean?

Researcher: Yeah, I do. Yeah.

There were three visitors who had been to the Assiniboine Park Zoo and to Churchill, Manitoba. Two of these visitors thought that seeing the bears at the zoo was in some ways similar to seeing them in Churchill:

Researcher: Uh, I know you've been to the zoo, you said you have a membership there?

Gloria: Yes.

Researcher: So, does watching the bears here, remind you of the bears there?

Gloria: Yes, it does. It does.

Researcher: Can you elaborate a little bit?

Gloria: Yes, because it's this time of year and there are a lot of them around. And at the zoo, now that there is space for them to move around, they move in and out of your sight.

Researcher: Right.

Gloria: And they're not that interested in you.

Researcher: Yeah.

Gloria: You know, and here, if you're not a meal, they're not that interested in you. So, um, yes, I think they do depict it pretty well in the zoo. It's pretty good. It's pretty good.

Another visitor explained how she felt these experiences offered very different viewing perspectives and opportunities, but were complementary rather than competing experiences:

Researcher: How would you say the bear watching experience compared between the two places?

Sara: Mmmm… [laughs] They're so very different. [laughing] Um.

Researcher: Yeah.

Sara: So very different. Uh, seeing the bears in the wild is you know, that, without, without being corny about it, I'd say seeing the bears in the wild is sort of a spiritual experience.

Researcher: Yeah.

Sara: You know, you're just, you're just able to see something that, able to see something safely that always have respected, always have wanted to see thriving, always have wanted to see alive, and independent.

Researcher: Yeah.

Sara: And so, that's- that's that sense of sort of spirituality. Um. On the other hand, the very cool part about the zoo was that, the day that we were there, we were able to spend almost an hour watching two bears at play in a pool of water. And so being able to see them from under- under the water.

Researcher: Um hum.

Sara: And being in, watching them swim and engage with one another and fight over a rope, and, and interact. Um, if I'd not had that experience, if it was just kind of walk around the Journey to Churchill and see them lying around on the ground, I don't think I'd, I'd be like, oh my god Churchill was like [laughs] Don't bother about the zoo, I don't think I'd say that, I often say go to the zoo too, but I, Churchill would definitely have gotten all 100% of my votes.

Researcher: Right.

Sara: But there's no other way that I know of that in the wild you can see them swimming. Right?

Researcher: Yeah.

Sara: So- so, to be able to see how nimble they are in a marine environment, and

watch them hold their breath for as long as they do, and watch them with their eyes open interacting with what's, on behind the gla-, you know, they're, they're, very active under the surface of the water.

Researcher: Yeah.

Sara: And I don't, yeah you can't see that in Churchill in any way.

Researcher: Right. Right

Sara: So. They **complement** one another.

Researcher: Yeah.

Sara: But don't **replace** one another, really.

Participants were asked the following questions, in the follow-up data collection, to minimize the amount of time needed for the on-site interview. These questions were intended to facilitate an understanding of visitors' experiences in relation to the in situ and ex situ place and whether visitors had developed some form of place attachment or sense of place in either location.

1) Thinking back, what do you think of the JTC exhibit (or Churchill)?
2) Looking back, how do you think this experience compares to Churchill (or the JTC)?
3) Again, reflecting back, does the JTC (or Churchill) mean anything to you? (Adapted from Wheeler Weins, 2011)
    a) If so, what does it mean to you and why?

4) Now, after some time has passed how would you describe your experience to family or friends? (based on Falk et al., 2004, p. 194).
5) How would you describe this place? (Adapted from Wheeler Weins, 2011)

These responses were also coded according to whether the specific place elicited feelings of a meaningful connection or not. Approximately half of all in situ and ex situ visitors felt that the place itself did hold special meaning or connection for them. Further segmentation revealed that the majority of in situ visitors who felt a meaningful connection to Churchill had been on a learning tour. The learning-based tours in Churchill tended to be at least a week long, as opposed to non-learning tours which could be one day to several days in length. Conversely, the majority of ex situ visitors who expressed a meaningful connection to place were non-tour participants, and tended to be parents or grandparents, acting as facilitators, who visited the zoo at least once per year or more. This suggests that ex situ visitors require repeat visits in order to feel a meaningful connection to the place, while for in situ visitors a more prolonged visit helps to connect them to the place. However, for these participants who responded affirmatively to this question, upon elaboration it was found that nearly all of their connections, both in situ and ex situ, related to the fact that the location was special as a placeholder for where their meaningful experiences occurred. In other words, their responses did not indicate an attachment to place, or a sense of place in terms of gaining a sense of belonging, attachment, or commitment to a place. Rather, the meaning described by in situ and ex situ visitors related to the places as simply the location where meaningful experiences or shared memories occurred. Meaningful experience and memory making are important concepts on their own within tourism literature (Van

Winkle, 2007, 2014; Van Winkle & Backman, 2009, 2011; Moscardo, 1996; Kim, 2014; Tung & Ritchie, 2011; Walker & Moscardo, 2014). Mindfulness has been found to help create a more satisfactory visitor experience (Moscardo, 1996) and improves visitors' ability to process information (Van Winkle & Backman, 2009). The process of memory making is further explored extensively in relation to understanding how to create memorable tourism experiences (Kim, 2010, 2014; Kim, Hallab, & Kim, 2012; Kim, Ritchie & McCormick, 2012; Tung & Ritchie, 2011). However, here the responses of participants highlighted the place as the nexus for memory making, as has been found to be important in previous zoo literature (Hallman & Benbow, 2007).

> Researcher: Um, and does the zoo or that exhibit have any meaning for you? Or does it - is it meaningful to you in any way, or not?
>
> Darlene: I mean it didn't start out that way, but now, just cause like I think that this pre-school, early years age, we've been there so much that it will probably always, uh, hold a spot in our heart because of good family memories.
>
> Researcher: Right.
>
> Darlene: Like you know, some people have a family cabin where they go all the time.
>
> Researcher: Yeah. Yeah.
>
> Darlene: Kind of like one of our family things.
>
> Researcher: Yeah. One of the places you go together.
>
> Darlene: Yeah, and I'm sure when they're, you know, 12 and 14 we won't be going there every 3 weeks, but it will still mean something to my husband and I. For sure.

In this way, as in the in situ destination, visitors did not describe any significant examples of place attachment or a deep sense of place, but rather felt that Churchill or the zoo had a "spot in their heart" because of their unique experiences or special memories that occurred there.

Learning.

Using NVivo, matrix coding queries were conducted to assess differences in learning of visitors with differing perceptions of place similarity and attachment. A matrix coding query allows the researcher to explore all overlapping data for visitors with different attributes, which in this case, allowed for the comparison of in situ and ex situ visitors who perceived their experiences to be similar, dissimilar or thought the experiences to be both similar and dissimilar in some ways. There were no discernible or meaningful differences found between visitors in situ and ex situ, nor between the groups of visitors with shared views on the similarity or dissimilarity of their experiences. The same analysis was then conducted for the place attachment data, which also found no discernible nor meaningful differences. In part, this likely relates to the fact that nearly all participants did not experience a form of place attachment, making these two groups difficult to compare. Similarly, the majority of in situ visitors did not consider the experiences comparable. This data suggests that for these measures of visitors' sense of place and place attachment did not affect learning or their behaviour change.

I also considered that these variables did not fully capture visitors' perceptions of authenticity. Therefore, the data for both PMMs and interview questions were coded for in-vivo examples of responses related to authenticity. This data proved to be particularly interesting, as it had been anticipated that the visitors would discuss the authenticity of

the in situ and ex situ places, but instead, comments centered on the authenticity of the polar bears themselves. This finding lends itself to further analysis and discussion as it provides insight about in situ and ex situ visitors' perspectives on authenticity in wildlife and nature-based tourism experiences.

Spatial conditions for living: Wild bears, real bears, and zoo bears.

Based on nature-based tourism research on authenticity (Knudsen et al., 2016; Vidon, 2017), it was anticipated that visitors would discuss the authenticity of the place of their encounter; was the zoo experience (ex situ) or the Churchill experience (in situ) believed to be more authentic? Another anticipated discussion involved the existential authenticity of visitors' experiences where the emphasis would be on finding their authentic selves though a nature-based tourism experience, as has been a current theme in recent nature-based tourism authenticity research (Knudsen et al., 2016; Vidon, 2017). Instead, through the inductive in-vivo coding process around authenticity, it was found that some visitors' authenticity discourses focused on the authenticity of the polar bears, rather than the authenticity of the place or the existential authenticity experienced by the visitors. For example, when zoo visitor Leanne was asked how her experience at the zoo compared to seeing polar bears in Churchill, she said:

> Um... really different. I think that seeing the bears... in Churchill where they're not locked up and, I don't know maybe there's like - there's just a different sense of awe of nature if you can actually see it in real, and maybe because there's - like you obviously wouldn't be seeing a polar bear where you're at a chance to be attacked. Unless, I guess you could. But if you were going up with people for like a field trip or something,

> you would be in a safe space, but maybe because there's actually a chance that they could come close to you - or like there's something just real about their power, if there's not, like a big cage? They're actually real bears that are there. I just think when you see animals in the wild, it's a really different thing.

Here, zoo bears are not considered to be "real bears"; only the wild bears are seen as real. The idea of a loss of wildness of the zoo bears was also associated with the loss of independence, their power and the ability to be a predator. This finding supports Collard et al.'s (2015) conceptualization of what makes an animal wild: that it's conditions for living must be: "spatial (can the animal come and go), subjective (can the animal express itself), energetic (can the animal work for itself), and social (can the animal form social networks)" (p. 328).

Spatially, Collard et al.'s (2015) conceptualization of the conditions for living state that the animals must be able to come and go. They must be able to exercise choice and control over their movements. This idea of control is continued in the discourse by zoo visitors in their thinking about in situ and ex situ polar bears. Patty, a regular visitor to the zoo, explained how she felt her experience at the zoo compared with going to see polar bears in Churchill: "Just, you know, that whole sense of wild and control… Whereas when you're out on the Tundra and yes, you may be in a Tundra Buggy, but those animals are wild right there. You're visiting their habitat." For Patty, the difference here between the bears is the ability of the wild bears to control their lives, their movement, and how visitors experience them. Visitor's perceptions of wildness support Collard et al.'s (2015) conceptualization, in that they must have spatial freedom and the

ability to make decisions, of sentience, of choice, and ultimately control. Whereas, in the zoo the bears may have choice and control – in what they do, where they go (within the extent of the 10-acre exhibit) – but the loss of control due to their captive boundaries, is what ultimately matters to some visitors in their perception of polar bears' wildness.

Energetic conditions of living: Danger.

The idea of what makes a bear wild was closely associated with their ability to be recognized as a dangerous predator. This was described by both in situ and ex situ visitors who felt that visiting Churchill to see polar bears would be very different because it is a potentially dangerous experience. Francine, a local zoo visitor explained how she believed it would be different to see polar bears in Churchill: "I think it would – well, obviously it would be very different because they're in their natural habitat, right? Um, and then once they found out that we're like a meal to them. I'd be keeping my distance [laughs]." There is a polar bear, named Storm, at the Assiniboine Park Zoo who was taken there at the request of the man it attacked in Churchill, Manitoba, who did not want to see the polar bear euthanized (CBC, 2013). Local Winnipeg residents will be familiar with these occasional news stories of polar bear attacks and know there is a potential danger of encountering polar bears in the town.

The sentiment that polar bears in the zoo are not real, or wild bears, was also elaborated upon by Vincent, a visitor on a tour at the zoo, who explained that his perception of the polar bears was related to their ability to act as predators:

> In the zoo, like, I mean you're close enough, so you can see them interacting, but there's the-the-the danger aspect is completely gone. So, there's no sense of them being wild animals that you have to uh respect

> the fact that they are wild and that they are, you know, um carnivores.
>
> So, it's-it's one of those things that, yeah, it's-it's-it's a-a very, um...
>
> yeah, I guess hygienic look, by the zoo.

Vincent and Francine are describing an energetic condition for living, the ability of the polar bear to work for itself, as a dangerous carnivore. Here, the polar bear's perceived wildness is bound up in its ability to do this work. Vincent also describes the zoo as being more hygienic. Early zoos, aquariums, and circuses have been described as places to entertain people and "transmut[e] fear [of the wild] to thrill"… along with the "safe (dead) form as fluffy toys for children… and dead butterflies, beetles, spiders, and the like into kaleidoscopic picture cases" (Anderson, 1997, p. 479). Captive forms of nature and wildness can be considered a way of rendering a space safe and "sanitized" or hygienic in order to "'bring in' and remake the wild" for tourists (Anderson, 1997, p. 479). In this way, by creating captive spaces, wild animals such as polar bears have lost their energetic conditions for living and their ability to capture prey and be seen as a dangerous predator.

Visitors constructed their perceptions of how dangerous polar bears were, in part, based on the ways in which they observed them. For ex situ zoo visitors, polar bears regained some of their wildness by going to see polar bears with children, who perceived the polar bears to be dangerous, and were afraid of the proximity of the polar bears as facilitated by the large plexi-glass windows. During the observation portion of this research, children were often seen walking along the floor-to-ceiling windows of the exhibit. In one area of the Journey to Churchill exhibit the enclosure is approximately five feet lower from the floor of the windows. This means that if polar bears are sleeping

or walking directly below the windows they cannot be seen until they stand up against the window or move into view (see Figure 21). Small children seem to be drawn to walk along the low windowsill and are often unaware that there might be polar bears directly below them. When the polar bears stand up small children are startled, and often cry because they are scared and cannot understand that they are not in any real danger. After some assurance from adults most children eventually go closer to the glass to see the polar bears, but some children cannot get over their fear of the bears and refuse to get a closer look. Patty, a zoo visitor, described this experience with her grand-niece Susie: "….Susie's reaction to the bears and how the glass felt like it wasn't there to her. She didn't want to step on that ledge and get next to the window." For Patty, this was a significant part of her visit, as seeing the polar bears through the eyes of her grand-niece made her see the animals from a different perspective, as potentially dangerous animals.

Figure 21: Children viewing polar bears at the Tundra Grill in the Journey to Churchill Exhibit, at the Assiniboine Park Zoo (Assiniboine Park Zoo, 2018b).

In this example, children make the wildness of zoo bears visible through their recognition that, even though the zoo bears are captive and have lost most of their spatial autonomy, they still retain their energetic conditions of living, in that they are seen as dangerous predators regardless of their lack of opportunity to catch prey in a captive setting.

Subjective and social conditions of living: Play.

Another instance in which the zoo polar bears regained their wildness was when visitors watched polar bears at play and observed the freedom associated with that behaviour. Play can be considered a subjective condition for living within Collard et al.'s (2015) criteria, where polar bears can express themselves. Shonda, a zoo visitor, felt that watching the polar bears playing the underwater enclosure is what made her feel that the polar bears were able to act like "themselves", like they were not captive or "at least appearing free".

> Shonda: You know jumping in the pool and coming out and shaking themselves like, you know, like dogs shake themselves and-and just like kind of like the fun little intimate things, you know? I-I wouldn't have been able to see that at Churchill. I mean they would be lovely to...but then again, I think I'd probably just be more, it would probably just be more painful to see them in their natural environment when you realize that-that they're struggling so much there, you know, to survive. So, I guess I just that kind of allowed me to just kind of enjoy, the enjoy the uh polar bears, 'cause I mean they were all safe and they certainly look happy and the young ones are-are a delight. They're the ones that were kind of play fighting as almost every species does, I guess.
>
> Researcher: Yeah.
>
> Shonda: You know? So, you just don't kind of like, they're having fun I'm having fun, you know? mmm so…And then just to be that close and to see them, to just see them- actually to see them swim, that was so

> important because like the old exhibit they had was really kind of like I say, it was sort of boring and half the time they weren't even there and, you know, um, but to see them [sighs] at least appearing free, you know? Like swimming around and frolicking and twisting and turning and-and it just enjoying their bodies and enjoying their moment-
>
> Research: Yeah.
>
> Shonda: You know?
>
> Researcher: Yeah.
>
> Shonda: That-that was a thrill for me. I felt like they were able, they were able to be themselves.
>
> Researcher: Yeah.
>
> Shonda: Like they weren't-they weren't uh, uh incarcerated.

For visitors like Shonda, play was understood as expression and ability to "be themselves" and was perceived as well-being or happiness. In this way, play was an important behaviour for visitors to perceive polar bears as more wild and less "incarcerated". In this example, play also demonstrated social conditions for living, where polar bears were seen "play fighting" together, which indicates some form of social networks (Collard et al., 2015).

In contrast, play was also questioned by some visitors, as to whether or not it was a wild behaviour. Dianne describes how seeing the polar bears at playing at the zoo caused her to wonder if play is a wild behaviour or not:

> Seeing the polar bears play was something that I hadn't really thought polar bears... look I don't know whether I thought they did it or not, you know, in the wild it's all about survival. And yes, they must play and have fun at some time, but I've-I've never, you know, um I don't think I ever thought much about how polar bears play 'cause we never get to see that in anything, even documentaries. They're never about polar bears having fun, they're usually run- eat, trying, you know, gonna eat something in the next nanosecond.

Dianne recognized that the behaviours she has seen of polar bears have either come from her experiences at the zoo or from documentaries, and she questioned if play is part of a wild behaviour or just something that the documentaries she has seen chose not to focus on.

In these two examples, play is a way to recognize a bear as real or behaving in a positive way – yet it is questioned whether it is wild behaviour. Dianne and Shonda's responses demonstrated the notion that the zoo bears may have more of an ability to play than the wild bears because they do not have to look for food or worry about survival. Shonda further elaborated, that the polar bears' playfulness and social interactions made them more "themselves", by which, she continues to explain, that she means not captive – in other words wild.

Constructing authentic polar bears and polar bear tourism experiences.

While visitors' discourses of authenticity tended to reflect the polar bears themselves as more or less authentic objects in the visitors' experience, there were some examples of how visitors constructed their beliefs of what made polar bears authentic or

wild, and subsequently, their experiences more authentic. Danger, unique vantage points, and remoteness were found to contribute to visitors' perceptions of authenticity and the wildness of the polar bears and their experiences.

For example, one participant went on a polar bear walking safari near Churchill. On a polar bear walking safari, visitors are taken on foot across the taiga and have armed guards are on the lookout for polar bears. This participant, Mitchell, described a situation where their group was charged by a polar bear and that this element of danger, or as he describes: "…the bit that [raps on his chest] a bit of heart pounding". For Mitchell, walking to see polar bears, and the element of danger was just as important as seeing them at eye level. In his follow up interview, Mitchell continued to describe how he believed seeing the polar bears from eye level was a more real, or more authentic experience than seeing polar bears from a Tundra Buggy.

> Mitchell: The realism of the experience we had with polar bears, because we were on foot. Just being, actually on foot with them, was amazing.
>
> Researcher: Right.
>
> Mitchell: Not, not being in a car. That just felt fantastic.
>
> Researcher: Yeah. Can you explain what about it felt so fantastic?
>
> Mitchell: Um, so it feels a bit - it felt a bit more real.
>
> Researcher: Yeah.
>
> Mitchell: And, selfishly I could take better photos.
>
> Researcher: Right.
>
> Mitchell: Um, and I love being at eye level with things.

Researcher: Right. Yeah, I remember you talking about that in Churchill as well.

Mitchell: Yeah, it's uh - its just - it feels very different than being 6-8-10 feet above them looking down.

Researcher: Right.

Mitchell: It always feels nicer at eye level.

Researcher: I don't remember - did you do that as well? Were you in any of the vehicles or the buggies?

Mitchell: No, no we didn't go on a buggy.

Researcher: Right, so all of your experiences were on foot then?

Mitchell: Yeah, I - we drove around Churchill in a car, and we saw a couple of - not terribly close, but we saw a couple from car windows, and not - but not tundra buggies, and not terribly close.

Since Mitchell never did go on a tundra vehicle, it is unclear how he determined that this method of seeing polar bears was preferable and more authentic. He did see some polar bears while driving to and from the airport, but a taxi is only a few feet off the ground, and he is clearly comparing to an experience in a much larger vehicle. It would seem that he believes one method to be superior to the other based on expectations alone.

Similar to the concept that seeing polar bears at eye level is more authentic than looking down on them from oversized tundra vehicles, seeing polar bears in more remote locations was also considered more authentic than seeing polar bears near the townsite of Churchill. Here, the farther the visitor had to travel, the more authentic the experience was perceived to be. The participant who travelled out to the remote fly-in lodge felt that the experience was more authentic than that of visitors who stayed in the townsite of

Churchill. Vern, who had just returned from a remote lodge several hours by airplane north of Churchill was interviewed at the Churchill airport. He felt that Churchill was inauthentic tourist town and that all the polar bear viewing experiences there were “fake” by comparison:

> Vern: Um, I would not go on one of these tours here in Churchill, to see the bears. I don't like - I think that’s kind of a fake way of seeing bears. But it’s good for the city of course. It keeps the economy going. But I - I kind of wanted to see them a little different, out in mother nature. And maybe they are still out in mother nature here, but it’s not the same to sit on one of those big, whatever they are called, Tundra buggies I think they're called. That’s not the way I - I like to see the polar bear.
>
> Researcher: Right. So, seeing them from the lodge with the fence around you, you felt was a better experience?
>
> Vern: Yeah. And we were also outside the fence. We would walk and there would be two guys with guns, not to kill the polar bears, but just to fire if one came too close.

For Vern, his perceptions of wildness were closely intertwined with the absence of large communities of people. Like with Mitchell, viewing the polar bears from outside the safety and comfort of the tundra vehicles was considered more authentic and superior experience. Both of their descriptions of their viewing experiences also discussed the potential for danger, as Vern points out his experience also included armed polar bear guards.

Sara, one of the few visitors who went to both Churchill, Manitoba and the Journey to Churchill exhibit, compared the two experiences and commented on how the unique vantage point offered by the underwater exhibit at the zoo allowed her to see the bears enacting wild behaviour. In her previous quotation, Sara describes the spatial conditions of living, where the wild bears are described as "alive and independent" and she uses examples of the bears playing together underwater, which demonstrates to her, subjective and social conditions for living – or perceptions of wildness. In Sara's example, the underwater viewing area helped to create the conditions for living, that made Sara appreciate the ex situ zoo experience as complimentary to the in situ experience.

Discussion

In situ and ex situ experiences and learning: Connection to place.

Based on previous research, and the importance of place attachment in tourism and visitor studies which have explored visitors pro-environmental learning and behaviour change (Cheng & Wu, 2015; Halpenney, 2010; Lee, 2011; Lukas & Ardoin, 2014; Ramkissoon et al., 2012; Wolf et al., 2015), I had anticipated that there would be some visitors who formed meaningful place-based attachments. However, overall, this was not the case. Even for the visitors who developed a deep connection to their experiences, place was more of a setting rather than a central part of their attachment narrative. This was found for both in situ and ex situ visitors. Since visitors to Churchill tended to spend several days to a week there, and some visitors described their experience as intense or life changing, it seemed more likely that a meaningful connection to place might occur in that location (Folmer et al., 2013). However, this was

not the case. Some ex situ visitors felt a similarly strong attachment to the zoo as space which hosted many family memories – even generations of memories. Again, this form of attachment is more about the physical space acting as a stage for the memories (Hallman & Benbow, 2007), than about attachment to the specific place. In other words, the physical sites themselves were important to both in situ and ex situ visitors, but as spaces for meaningful experiences or shared memories. The places themselves were not endowed with meaning, strong sense of connection or a place attachment.

Similarly, this research did not find meaningful differences in visitors learning or behaviour change when comparing learning outcomes for in situ and ex situ visitors with similar perceptions of the places they visited. There were also no differences found when further exploring differences between visitors who had been on a tour and those who had not. In part, this likely relates to the fact that nearly all participants did not experience a form of place attachment, making these two groups difficult to compare. This data demonstrates that these measures of visitors' sense of place and place attachment did not affect learning or their behaviour change. This suggests that for visitors to form a meaningful attachment to place, more than an intense or even a life changing experience is needed (Folmer et al., 2013). Additionally, whether visitors are local residents or not also seems to depend on the site, not just on their status as a local or a visitor (Lee, 2011). Since the zoo's Journey to Churchill exhibit acts as a representation of another place, this may have complicated local residents attachment to the place as it may subconsciously not be seen as a real place the same way a local park where residents might spend their leisure time or volunteer (Halpenny, 2010; Lee, 2011; Lukas & Ardoin, 2014; Ramkissoon et al., 2012). Future research is needed to explore this phenomenon, and

better understand how local visitors form place attachment to different nature-based tourism sites.

However, this is not to say that place does not matter to visitors. For ex situ Facilitators and Rechargers who visit more frequently, the zoo site becomes meaningful in its capacity to host ongoing memory making over a period of one's life (Hallman & Benbow, 2007). For in situ Explorers and Experience seekers, the meaning of place is related to the unique and special experience that many of the participants shared with loved ones. This has important implications for how in situ and ex situ sites are managed and marketed to visitors. Additional research is required to explore these findings in other contexts. However, this research suggests that in terms of facilitating learning and behaviour change, developing a visitors' sense of place or place attachment is not necessary. Rather, the zoo will want to emphasize and facilitate visitors' long-term memory making experiences. Providing landmarks or locations where photo opportunities are available over generations to capture and family memories has been found to be an important way to foster this aspect of the visitors' experience (Hallman & Benbow, 2007). Since a strong sense of place or place attachment was not found for either group of visitors, if developing a sense of place or place attachment is a goal of either in situ or ex situ sites, additional research is needed to determine what might help facilitate such a connection (Lee, 2011; Folmer et al., 2013).

Wild bears, real bears, and zoo bears.

It had been anticipated that visitor's discourses regarding authenticity would focus on the place of their experience; whether seeing polar bears in situ in Churchill, Manitoba or ex situ, at the Assiniboine Park Zoo would be considered a more, or less authentic experience. Instead, for the most part, visitors did not tend to focus on their own

experiences as being authentic or inauthentic, or even on their own existential authenticity. Their responses focused on polar bears as the object of authenticity, and their discourse related to their perspective of whether the polar bears they saw were wild, real, or zoo bears. While authenticity in nature-based tourism has gained attention in recent research, this discourse typically emphasizes the authenticity of the experience or of the place (Belhassen et al. 2008; Knudsen et al., 2016; Lovell and Bull, 2017; Rickly-Boyd, 2013; Vidon, 2017). While places, and even nature, might be contested as more or less authentic by visitors, it was not expected that the authenticity of the polar bears themselves would be in question.

What complicates this finding, is that the polar bears at the Assiniboine Park Zoo were all cubs that had been found abandoned in Churchill, Manitoba and were transferred to the zoo, as they had been deemed by provincial government staff and zoological veterinarians to be unable to survive on their own. In other words, all the bears in the study were 'real' bears from Churchill, Manitoba, so for some visitors the polar bears in the zoo lost their objective authenticity, by being captured and moved 1000 kilometers south. Through the interview process it was determined that zoo visitors, especially those who visit regularly (weekly or several times per month) were aware that the polar bears at the zoo had come as rescued cubs from Churchill. So, knowing that the polar bears came from Churchill originally, some zoo visitors still referred to them as zoo bears - distinct from real, or wild bears.

The inductive analysis of the interview data demonstrated that visitors' discourse about wild bears, real bears, and zoo bears and their subsequent wildness and authenticity (or lack thereof) could be understood through several main themes which aligned with

Collard et al.'s (2015) conceptualization of conditions for living for wild animals: spatial, energetic, subjective, and social. The spatial component of this analysis was the most prominent, and for some visitors, usurped all other conditions for living and thinking of polar bears as wild or authentic. For visitors like Leanne and Patty, the polar bears in the zoo are no longer wild, as they do not have the ability to come and go. Previous research would argue that this dichotomizing of wildlife exclusively in relation to where people are not, is problematic, as it romanticizes the wild polar bear and disregards other aspects of animal autonomy and freedom (Cronon, 1996; Collard, 2014; Rutherford, 2011; Slocum, 2014). Certainly, the spatial component of freedom and autonomy are important in understanding the construction of wildness, but other conditions of living were also found to influence visitors' perspectives. For some visitors, polar bears demonstrated their wildness via the energetic conditions of living, in the work they do for themselves in hunting, and acting as a potentially dangerous carnivore. This perspective reinforced polar bears viewed in situ as authentic, real, or wild bears, and simultaneously encouraged visitors at the zoo to perceive polar bears as having become more "hygienic" or "sanitized" with the loss of their ability to hunt for themselves and be a dangerous predator (Anderson 1997, p. 479). However, through the eyes of children perceptions of danger could be reintroduced in the ex situ zoo context.

How visitors perceived subjective and social conditions for living demonstrated a similarly complex interaction with polar bear authenticity. Subjective and social conditions for living were discussed in the context of play, where visitors like Shonda believed polar bears could be "more themselves" if they were engaged in behaviour to be perceived as play.

Conversely, play was not necessarily considered a wild attribute, since some had not seen images, videos, or polar bears in situ in order to determine if playful behaviour was an authentic polar bear behaviour or not. For the visitor, Sara, who had seen polar bears in Churchill and at the zoo, the playful behaviour and social interaction of the polar bears in the zoo made them more real, and more authentic – in that they behaved similarly to the bears she saw in Churchill. This is an important finding, because it demonstrates the power of popular images and media to subconsciously convey to the average zoo visitor what is, and what is not, authentic polar bear behaviour. Without experience seeing polar bears in situ, zoo visitors have to rely on what they already know about polar bears or the interpretive signs and narratives they hear from staff about the polar bears' behaviour. Prior research conducted by Budruk, White, Wodrich, and Van Riper (2008) found that the "the more educated the visitors were, the less authentic they perceived the site to be" (p. 200), in that the visitors believed they were able to determine what was and what was not authentic. Similarly, visitors in situ were more likely to consider the ex situ experience to be dissimilar. However, this study found that the visitor who had been to both sites, and was arguably the most well-educated in regard to polar bear behaviour, was better able to explore more complex concepts of wildness and autonomy for polar bears in situ and ex situ. This has important implications for thinking about the ways that authenticity narratives are shaped by and for visitors at both types of wildlife tourism experiences. Adding complexity to visitors' nature-based tourism discourses and incorporating discussions of both wild and captive polar bears, and how they came to be captive, may help to facilitate more reflective thinking about ideas of wildness and perceptions of authenticity. Similarly, interpretive messaging both in situ

and ex situ will want to incorporate discussions of polar bear behaviour, the ways in which polar bears interact with humans, and will want to consider how the narratives of wildness are intentionally (or unintentionally) constructed.

These findings reinforce Collard et al.'s (2015) conditions for living in that spatial, energetic, subjective, and social conditions are needed in order to an animal to be understood wild or autonomous. However, while visitors' discourses tended to focus on the authenticity of the polar bears, these findings present several conditions of the visitors' experience which contributed to the construction of their perceptions of the authenticity of the polar bears. Visitors who experienced polar bears in potentially dangerous conditions, in remote locations, and observed them from unique vantage points perceived their experiences and subsequently the polar bears they observed, to also be more wild and authentic. These in situ visitors did not demonstrate a post-modern perspective. Especially for Mitchell and Vern, who had chosen to see polar bears on walking tours in more remote locations, the authenticity of the place they visited, the ways in which they observed polar bears and the authenticity of the bears themselves mattered. This finding support Rickly-Boyd's (2012) and Lovell and Bull's (2017) argument that objective authenticity still matters in tourism studies, and place continues to play a particularly important role for some visitors.

For some ex situ visitors, the unique vantage point, which allowed them to observe polar bears from below the underwater tunnel was found to be a way to see the polar bears as maintaining their autonomy and through play, especially play with other bears. If behaviours are thought to be authentic, then the bears are too. Again, this has important implications for how interpretation at zoos is structured, since polar bears (both

in situ and ex situ) spend the majority of their time sleeping. How those behaviours are interpreted by visitors will be highly dependent on the interpretive messaging they receive, and hence how authentic the bears and their experiences are perceived to be. As Sara demonstrated, visitors with a more complex understanding of polar bears' behaviour may be more receptive to a postmodern perspective which considers in situ and ex situ experiences complimentary rather than in opposition (Wang, 1999; Vidon, 2017).

An interesting future line of inquiry would be to investigate what role recognizing animals as individuals plays in perceptions of autonomy and the authenticity of wild and captive animals (Collard, 2014). For example, zoo visitors could often accurately point out polar bears at the zoo by name and recognized their characteristics, mannerisms, and habits. Does recognizing bears as individuals make them less wild? If so, there would certainly be important interpretive implications in understanding how educators talk about animals, the signage posted and the potential impacts of making connections to wildlife at the individual level.

Conclusion

To conclude, this research demonstrated that visitors did not tend to form meaningful connections to either place, except in relation to the experiences and social relationships that occurred at either site. It was anticipated that the places themselves may have influenced visitors' experiences and pro-environmental learning and behaviour change in terms of an attachment to place, but this was not the case. Further, sense of place and perceptions of authenticity did not affect visitors learning or behaviour change. This data demonstrates that even intense in situ experiences do not necessitate place attachment, nor do local residents and repeat visitors necessarily develop a sense of place

or place attachment to these nature-based tourism sites (Folmer et al., 2013; Lee, 2011). This suggests that visitors may need to be more deeply engaged in places in order to form meaningful place attachments, especially those that encourage pro-environmental learning and behaviour change; here, wildlife viewing alone did not facilitate this.

Authenticity discourses in these case studies focused on object-based ideas of authenticity where some visitors felt that the zoo bears were not real bears, and that only wild bears were real. The polar bears became the objects of authenticity, rather than the places in which they were encountered. This has important implications for addressing the question of "what does authenticity do?" (Rickly-Boyd, 2012), in that it certainly matters for understanding how visitors perceive what is authentic in a wildlife tourism experience. While this research uses an objective approach to understand visitors' perspectives, it also recognizes that "Authenticity must not be regarded as a concept that describes an inherent feature of objects or relations, but as an important value in Western thought…" (Olsen, 2002, p. 161). This research raises further questions about how interpretation at both sites might influence the complex authenticity discourses in relation to polar bears and the implications of those discourses.

One of the primary limitations of this research is that the interview questions had been designed to address the authenticity of the in situ and ex situ sites, and it had not been anticipated that the authenticity of the wildlife would be in question. These findings emerged, since the interview questions were open-ended and this analysis of this research included inductive coding to address unanticipated themes as they emerged from the data. As a result, these findings are reflective of some visitors' experiences and emerged as a by-product of discussing their experiences, as opposed to the intentional line of inquiry.

Since qualitative case study research is not intended to be generalizable (Baxter, 2000), this is not problematic, but additional research is needed that intentionally investigates these phenomena and further examines the discourses around in situ and ex situ wildlife authenticity in different places and with different types of wildlife. These findings instead are analytically (theoretically) transferable (Baxter, 2000), and help to better understand the ways in which wildlife tourists construct their perceptions of wildlife authenticity within an objective perspective. The data also demonstrates that Collard et al.'s (2015) conceptualization of the four conditions for living were well-suited to providing a thematic framework for understanding the ways in which visitors thought about the autonomy and authenticity of the polar bears they observed.

The fact that all of the polar bears viewed by visitors in this research study originated in Churchill, complicates the authenticity narrative. Every wildlife viewing site will have complex contextual factors that both complicate research and make it interesting. For this reason, additional research is required, in other locations and with different types of wildlife, to determine if these findings can potentially better inform interpretive practices more generally. Additional research is also needed that contributes to the theoretical discourses on wildlife authenticity, as previous research has tended to focus on the human perspective, either in terms of the self or of visitors' perceptions of authenticity (Collard, 2014; Rutherford, 2011; Slocum, 2004). As this study demonstrates, authenticity discourses and research in nature-based tourism arguably need to be extended to non-human species (Collard, 2014; Collard et al., 2015; Cronon, 1996; Grimwood, 2015; Slocum, 2004).

This research also has implications for how wildness is constructed in wildlife tourism. Collard (2014) suggests that the term "wild" becomes a "means of recognizing and supporting the autonomy and materiality of nonhumans" (p. 154) and that "the point is not to imply that wildlife can only exist "out there", away from humans, but rather that it might require a degree of freedom that controlled (or even forced) proximity with humans does not permit" (p. 154). For polar bears, this has spatial implications related to their autonomy that extend beyond captive and non-captive boundaries (Slocum, 2004). Polar bears near the town of Churchill already experience a high degree of proximity to humans, which will continue to worsen with the effects of climate change. As their habitat continues to shrink with climate change, so too will their ability to be autonomous, to have the ability to choose where they come and go, as their food source and habitat become scarcer.

Finally, this research demonstrates the importance of recognizing the ways in which perceptions of authenticity render polar bears as more or less wild. The stories told about polar bears in tourism matter, particularly in the way in which narratives of climate change and wildness are rendered (Slocum, 2004; Mooalem, 2013).

> The polar bear is a boundary object that attempts to translate the immensity and distance of climate change into something more meaningful to a number of publics in Canada. It is a temporary bridge that allows communication and understanding among the constituencies of scientists, policymakers, and citizens. It is also an object derived from meaning and location in the feminist sense." (Slocum, 2004, p. 431).

Recognizing the ways in which polar bears are rendered as boundary objects in climate change discourse helps to lay visible how tourism experiences construct narratives of wildness and autonomy. Researchers and practitioners must think critically about the narratives they help visitors to construct. Quoting Haraway (2000), Slocum (2004) argues that "Climate politics, however, ought to "make visible all those things that have been lost in an object" and that we need to recognize that polar bear lives matter, not because we are more or less human with or without them – but because they are their own beings with or without us.

Chapter 7: Conclusion

The purpose of this doctoral research was to explore how nature-based tourism experiences at an in situ and ex situ site may impact visitor learning and behaviour change. Both sites facilitated visitor learning and some behaviour change. Not surprisingly, learning-based tours were more effective in facilitating visitor learning, and the tours intentionally designed to be transformative and encourage behaviour change were the most effective. Yet, as research demonstrates, many nature-based tourism experiences, whether in situ or ex situ, fail to plan for and intentionally provide learning experiences that are directly linked to behaviour change outcomes (Ardoin et al., 2015; Ballantyne et al., 2009; Ballantyne et al., 2018; Bueddefeld & Van Winkle, 2017, 2018; Hughes, 2013; Hughes et al., 2011). Segmenting visitors by their identity-related visit motivation, enabled me to explore and better understand visitor learning and potentially transformative experiences. Within this chapter, I discussed my conclusions broadly in relation to the relevant chapters, described overarching limitations, and provided a final vignette to emphasize the overarching purpose of this research.

Within this dissertation I have explored and described the overall visitor experience in Churchill, Manitoba and at the Assiniboine Park Zoo's Journey to Churchill exhibit (Chapter 3 and 4). This description provided context for these case studies and the on-site observations were essential to the understanding of visitors' experiences in situ and ex situ - both for visitors on learning-based tours and those not on tours. This also provided an understanding of visitors' learning, the complexity of the experiences and potential for transformative experiences.

In Chapter 4, I conducted a detailed analysis of visitors' experience and learning, exploring in which contexts of the CML learning occurred for both sites. This was an

important first step in understanding broadly how visitors' learning compares between in situ and ex situ sites and it provided a critical foundation for thinking about how free-choice learning within the CML informs TLT. Next, with an in-depth emergent analysis of visitors' learning, I explored how learning may change over time within each site and for visitors within each motivational type. Here, I found several differences in visitors' learning compared with previous quantitative studies (Falk, 2009; Falk et al., 2008; Shultz & Joordens, 2014). Whereas prior research found that Experience Seekers tended to demonstrate the most learning, I found that Explorers at all sites were apt learners and keen to apply their learning to action based outcomes (Falk et al., 2008; Schultz & Joordens, 2014). I also found that Facilitators, who in previous studies (Falk, 2009; Falk et al., 2008; Schultz & Joordens, 2014) demonstrated very little behaviour change, were able to describe action-based outcomes better in the follow-up phase of this research. These findings lead me to believe that on-site, survey-based research alone is not sufficient to capture free-choice learning and transformative learning for all types of visitors effectively (Bueddefeld, 2017, 2018; Stern et al., 2014). Since surveys measure learning by demonstrating change in learning, the results will favour visitors who have little pre-knowledge and those who are most immediately impacted. Hence, previous quantitative studies demonstrate the most learning for Experience Seekers, who tend to have less pre-knowledge and are seeking out novel experiences rather than specific learning about a topic (Falk, 2009; Falk et al., 2008; Schultz & Joordens, 2014).

I also compared different types of visitor experiences, to better understand the role that learning tours may have on learning and behaviour change. I was particularly interested in exploring learning-based tours, as I believed these experiences would

provide the best opportunities for visitors to have experiences that may lead to transformative learning (Folmer et al., 2013; Lee, 2011). As the vignettes throughout this dissertation demonstrated, the role that interpreters or guides play in shaping visitors understanding is extremely important. These are the type of experiences that have the greatest potential to be transformative and therefore need to be carefully considered and crafted. Additionally, the underlying message of what is important and what is not important is shaped by these learning experiences.

After the analysis of visitors' learning was complete, I looked at learning broadly for patterns to determine if there were any meaningful connections between the CML and TLT (Chapter 5). I found that understanding the context in which visitors' learning occurred (personal, socio-cultural, or physical) often aligned with particular TLT domains of learning. Here, the model that has been created (see Figure 20 in Chapter 5) demonstrates this concept. The model is intentionally simplistic in order to facilitate its use and potential application for practitioners who are designing visitors' learning experiences. I have also outlined visitors' identity related motivations as they align with the CML. Here, practitioners should be able to identify their target audiences, such as Facilitators or Explorers, and then design on-site and post-visit engagement in a targeted and more effective manner. For example, Facilitators will benefit from on-site experiences that are socio-cultural in context and engage the entire family. Post-visit engagement will also need to be engaging for the entire social group and ought to be provided in a way that is readily accessible to Facilitators who are often busy caring for young children. For Rechargers, on-site interaction is not likely to be meaningful or enjoyable. Practitioners will want to recognize this and avoid interaction with Rechargers

on-site. Providing Rechargers with the option to join a form of post-visit engagement, such as a newsletter or social media group, may encourage repeat visits where they may adopt a different visit related identity (i.e. they may come back as a Facilitator in a future visit). While, this is a rather simplistic finding, it is an important one. With an increasing emphasis on making nature-based experiences educational and potentially transformative, there must be recognition that this will not always be a shared goal of all visitors (Ballantyne et al., 2007; Brosnan et al., 2015; Falk, 2011b; Falk et al., 2012; Knollenberg et al., 2014; Powell & Ham, 2008; Stone & Duffy, 2015). As the experience economy grows and visitor experiences become more carefully crafted, practitioners will want to plan for visitors' experiential outcomes in such a way that aligns with their visit motivation (Dawson & Jensen, 2011; Falk, 2009; Falk, 2011a; Schultz & Joordens, 2014). This will help to increase visitors' satisfaction and provide the most effective learning experiences for different types of visitors.

At the heart of this study was a comparison of the in situ and ex situ experience, and the effect of the different sites on visitor's experiences and learning. While it was clear that in situ visitors demonstrated more detailed and nuanced examples of free-choice learning and transformative learning or behaviour change, this was highly variable, and I argue that it was influenced more by visitor motivation than by the specific places. For example, an Explorer at the zoo might learn more and transform more of that learning to action related outcomes than would a Hobbyist who is interested primarily in photographing polar bears in Churchill. Since visitors who choose to go on guided or learning specific tours are most often those who are already interested in the topics (in these cases, polar bears), these are the visitors most likely to learn and to be

interested in applying their learning. This is not surprising and not a particularly novel finding (Falk, 2009; Falk, 2011a; Falk et al., 2008; Schultz & Joordens, 2014). What is novel, is that this research also explored the learning of the companions of the keenly interested visitors who made the decision to go on the tour, thereby helping to better understand all types of visitors' learning in relation to their motivations, prior interests, and expectations. Specifically, this research plays an integral role in examining visitors by their identity-related motivations in order to improve planning for learning in particular contexts of the CML, and thus achieve particular learning outcomes in different domains of TLT.

This also highlights the fact that in situ and ex situ experiences can cater to very different audiences, and that these experiences are complimentary rather than in competition. These findings need to be reflected not just in education mandates but also in the budgets of environmental education centres for nature-based tours. It seems that interpretation is often left to charismatic scientists or zookeepers, who may not have the skills or training needed to craft carefully designed interpretive messages. Having skilled social-scientists able to develop and deliver interpretive messages in a joint effort with physical scientists or biologists will be an important step in the improvement of the planning, delivery, and measurement of these learning and action-based outcomes.

Finally, this research addresses the perception of authenticity and how it affects visitors' experiences and learning (Chapter 6). Considering the amount of literature on the importance of visitors forming a meaningful connection to places and creating memorable experiences (Van Winkle, 2007, 2014; Van Winkle & Backman, 2009, 2011; Moscardo, 1996; Kim, 2014; Tung & Ritchie, 2011; Walker & Moscardo, 2014), I had

anticipated there would be some visitors that had strong attachments to the case study sites, or a strong sense of place, but this was not the case (Lee, 2011; Lukas & Ardoin, 2014). Instead, visitors had a connection to the places they visited only in relation to the place as an anchor for holding important memories or experiences, rather than a specific connection to either study site.

Another interesting finding in relation to this line of inquiry was that, while I had expected visitors to discuss the authenticity of the places, some visitors instead discussed the authenticity of the polar bears. Last chance tourism, currently very prevalent, may well see more places limit visitor numbers in the relatively near future, especially as climate change exacerbates the precarity of some nature-based tourism destinations, (Lemelin et al., 2010). Research suggests that with limited access to in situ places, last chance tourism will become more controversial and ex situ experiences will likely become more common (Dawson, Stewart, Lemelin, & Scott, 2010; Lemelin et al., 2010; Powell & Ham, 2008; Skibins et al., 2013). If this scenario comes to fruition, a better understanding of how in situ and ex situ experiences compare, especially in terms of learning and potentially transformative learning, will be important.

In relation to visitors' behaviour change, transformative learning was illustrated at both sites, especially for visitors with learning centric motivations. Transformative learning that was epochal and facilitated by a disorienting dilemma was unique to a few in situ visitors. However, ex situ visitors were better able to identify actions that they had changed and that were attributed to their on-site experiences. In other words, transformative learning is possible at both sites, but it occurs only with carefully designed

interpretive experiences for motivated visitors and not simply via osmosis from having physically visited an in situ or ex situ nature-based tourism site.

Thinking about the ways in which nature-based tourism experiences need to be intentional about interpretive messages also extends to the ways in which authenticity narratives are constructed. While visitors' attachment to place and sense of place was not found to impact learning in a meaningful way, this research was informed by the ways in which visitors perceived polar bears to be more or less authentic. Using Collard et al.'s (2015) framework for understanding animal autonomy and wildness, visitors described polar bears in situ and ex situ as wild, real or zoo bears. The analysis of these authenticity discourses demonstrated that the interpretive narrative greatly affected what is considered an authentic polar bear but also, in these cases, the understanding of authentic polar bear behaviour. For example, some visitors in this study expected bears to be quite active and perceived playfulness as more wild or authentic, when in reality, polar bears spend most of their days sleeping and conserving their energy. Again, interpretation was instrumental in shaping visitors' perceptions of polar bear authenticity.

The physical space and sensory elements also contributed to the development of visitors' perceptions of authenticity. In these case studies, polar bears were considered more real when visitors felt a sense of danger and could see them from unique vantage points. This has important implications for how visitor experiences are designed, and for how nature-based tourism sites inform visitors as to why certain viewing experiences are either restricted or encouraged. For example, visitors in Churchill, who had been told that the best way to see polar bears was from far away, felt that it was more invasive and less authentic to see them from eye-level on a walking tour, whereas visitors who had booked

a walking tour were encouraged to see polar bears at eye level, were told that this was safe, and felt that this was the most authentic way to see them. This has very important implications for the safety of visitors and of wildlife, as many tourism operators believe that providing visitors with close encounters and walking tours to see megafauna is important for visitor satisfaction (Daly, 2019; Skibbins et al., 2013). This research shows that this is not the case, and instead, interpretation regarding what is best for the animals is the most important factor in influencing visitors' impressions regarding the ethicality and authenticity of their experiences.

Limitations

A significant limitation of this study was the size of the project for a single researcher. I had made estimates of attrition based on previous research, but attrition for this study was nominal, despite many participants being contacted internationally for the follow-up aspect of this research. Further, responses to the research questions, both in situ and ex situ, were far more elaborate and longer than anticipated. I believe this speaks to the interest in the topic and the recognition that better understanding of nature-based tourism learning and behaviour change is considered important by people at these sites. However, with this amount of data, the analysis process was onerous and difficult to manage. The qualitative methods were effective in achieving the goals of this research, but this approach would not be practical or cost effective in terms of time and resources for many practitioners or tourism operators. For this reason, the models that I have created and present in this dissertation are intentionally simplistic. I believe this research must be accessible and applicable for people designing nature-based tourism experiences, especially those that intentionally facilitate learning for behaviour change.

Additionally, as a qualitative study, the findings of this research are potentially transferable but not generalizable (Baxter, 2010; Yin, 2014). This study was purposely exploratory in nature, as research was needed to navigate and look for broad patterns in learning and behaviour change in order to direct future studies (Baxter, 2010; Yin, 2014). Within each chapter I have provided an outline of next steps for each area of research. As well, the models demonstrating how CML and TLT inform visitors' transformative learning provide a model for practitioners and a line of future research.

Methodologically, the PMMs were found to be a very important part of understanding visitors' learning experiences (Adleman et al., 2000; Bueddefeld, 2017, 2018; Falk et al., 1998; Falk et al., 2004; Van Winkle & Falk, 2015). This form of data collection was essential in facilitating a visitor-directed way of seeing the experience and in understanding what they had learned and felt was important. It was also an effective tool for guiding the subsequent open-ended questionnaire. However, using PMMs was resource intensive in terms of the time required for data collection and analysis (Van Winkle & Falk, 2015). Participants, especially those in situ, put a great deal of thought into their PMMs – often filling the entire page. This produced in-depth data and discussions but was also extremely time-consuming to analyze. Each PMM was uploaded to NVivo and every phrase / item was coded. The ex situ site PMMs tended to be more simplistic, and more manageable. For researchers intending to employ PMMs in future qualitative studies, I recommend the careful selection of the study site, topic, and sample size. PMMs are a powerful data collection tool and can provide the researcher with an overwhelming amount of data when participants are given the space and time to complete them at their leisure. I recommend PMM be used judiciously with interviews and

researchers should plan to use PMM as a tool for collecting in-depth and participant driven data. I would caution the use of PMM in larger sample sizes or without a well-trained research team to facilitate and analyze them.

Vignette: Seeing the rare Arctic Fox

It is after lunch, and our non-learning tour group has seen an abundance of polar bears all morning. Everyone is dozing, and even quiet chatter between groups of people has stopped. Suddenly our Tundra Buggy lurches to a stop. Everyone glances around, but we do not see a polar bear. The driver points out that an Arctic Fox is just a few meters away from the road and is crouched, nearly invisible in the lichen.

Over the course of the last week, I have only met a few visitors who have seen an Arctic Fox and all of the volunteers at the Churchill Northern Studies Centre, where I am staying as a researcher, ask about sightings of them daily. Arctic Foxes are relatively rare, and I have been informed that it is a rather big deal to see one. With this in mind I jump up at this report and glance around to see if I need to make room for paying guests to come take pictures out of my window. To my surprise, I am the only person seemingly interested in taking pictures of the Arctic Fox. One visitor even picks up her book again to continue reading, instead of simply standing up to get a glance at the fox. After I have taken a few photos, I put my camera down to watch the fox. Around this time the tour guide stands up and tells all of the guests how rare it is to see an Arctic Fox, and even more rare to see one this close up. With this proclamation that the Arctic Fox is rare, and in this way special, every visitor on the Tundra Buggy gets up and starts snapping pictures of the fox. I step back to watch this event unfold and observe as the group of polar bear tourists follow the fox's every move. They "ooh and ahh" as it begins to run

around the Tundra Buggy and eat what the guide identifies to be a lemming. They laugh and take videos as it eats its meal as fast as seems physiologically possible, and just as quickly defecates, all while "watching us" and then scurries off. I see later on publicly available social media that some guests have even posted about the Arctic Fox instead of polar bears that day. The little Arctic Fox has clearly been a highlight.

What was interesting to me, was that the Arctic Fox would have gone completely unnoticed but for a few simple words from the guide stating that this was a rare and special experience. With that classification, this short stop on our day trip, turned from something one person did not even bother to get up for, into something that made her social media highlights later that evening. What this brief vignette demonstrates is the power of even simple interpretation. Guides and interpreters have an incredibly powerful role to play in determining how an experience is or is not valued. Here, the guide placed value on seeing the Arctic Fox by conveying how seldom they are sighted, especially at a close distance while being active. Subconsciously, then, the moment was transformed for visitors from one of complete disinterest to a memorable and enjoyable part of their trip. As has been demonstrated throughout this research, visitor learning and the transfer of learning to action is often accomplished through these mini-challenges (Newman, 2012) or small events and interpretive experiences.

Not all visitors to Churchill will see abandoned polar bear cubs, nor will they necessarily see polar bears that look hungry. Rather, many impactful learning experiences will take place through visitors' interactions with a wide array of less monumental experiences, often facilitated by "trusted messengers" (Moser, 2006; Wirth et al., 2014). The phrase "trusted messengers" refers to the people that are believed to be trustworthy

in conveying information and to have personal experience (Moser, 2006; Wirth et al., 2014). Ironically, in the field of climate change education, trusted messengers are most often not scientists or experts (Moser, 2006; Wirth et al, 2014). In relation to these case studies, trusted messengers were often people whom visitors perceived to be more neutral or less of an expert: people such as the tundra buggy drivers, local residents, some guides, or zoo volunteers and some zookeepers and tour guides at the zoo. These trusted messengers had a notable impact on visitors' learning both in situ and ex situ. For example, some visitors described how talking to the tundra buggy driver and hearing his account of how much later the bear season was starting helped them realize the impacts of climate change on the community. These trusted messengers made the concept of climate change real as opposed to an abstract issue.

In a study conducted by Lemelin (2006) researchers found that visitors who saw more polar bears ranked their experience with higher satisfaction scores than those who saw fewer polar bears. Lemelin (2006) discusses in his paper that this may relate to how polar bear viewing is framed. In the tours that he observed, guides would assign one person the task of keeping a count of the total number of bears they saw, and the measure of success of the trip was juxtaposed to the number of polar bears seen (Lemelin, 2006). In my data collection, I observed learning-based tour guides explicitly telling their groups of visitors that it is not about how many bears we see, but rather about providing as many non-invasive and high-quality viewing experiences as possible. It was clearly conveyed, that visitors ought to be quiet and that any time a bear got up or seemed to be disturbed by their presence, the Tundra Buggy would drive on. The visitors' viewing experiences were not to take priority over the well-being of the polar bears. One organization, The

Great Bear Foundation, took this one step further. They did not believe that seeing polar bears on Tundra Buggies in the Churchill Wildlife Management Area was ethical – they believed these bears to be harassed by the Tundra Buggies and that this was directly on their primary migration route. Instead, these visitors would take an old school bus and drive around on any of the public roads in the Churchill area. They would intentionally stop their bus as far away from any spotted polar bears as possible, and their guests would watch polar bears with their binoculars. In interviews with these visitors, there was a sense of pride in having seen fewer bears at a farther distance because they believed this to be the most ethical way to observe polar bears. This study found that visitors will adjust what they believe to be the most ethical way to observe polar bears based on what their guides or interpreters tell them. Interpretation, then, becomes more complicated as these are ethical decisions being navigated by individuals, different organizations and with different cultural and social considerations. These nature-based tourism experiences are, then, teaching visitors also about ethical and social norms relating to polar bears both in what is said and not said (Slocum, 2014). Considering the potential impacts of these interactions, much more care and thought is often needed when planning nature-base tourism experiences, especially for those that purport to have a learning and behaviour change mandate.

Additionally, the effectiveness of trusted messengers requires further research within the free-choice learning and tourism literature (Moser, 2006; Wirth et al., 2014). This research suggests that these trusted messengers are often just as, if not more, impactful in conveying important environmental issues to visitors, as trained guides and interpreters are. Tourism operators and practitioners will want to consider this when

planning how visitors interact with all different kinds of staff, and what kinds of messages they wish to convey – or how to facilitate debate and discussion most effectively.

In the examples of the vignettes, I demonstrate how effective the tour guides and organizations are at framing what are and what are not ethical and meaningful animal observational experiences. These explanations might be brief, and relatively simple but they have a profound and often subconscious effect on the way that visitors view their own experiences. I am reminded of TV personalities like Steve Irwin, who made reptiles popular, primarily through his enthusiasm and love of these animals. In the way he referred to snakes as "beauties", it inspired a generation to have a completely different perspective on these animals. Both the words and ways in which words are conveyed to visitors in nature-based tourism experiences matter. With this in mind, I believe both practitioners and researchers must be more aware of social-science research and the importance of careful planning and framing of environmental messages in all forms of nature-based tourism sites. Further, practitioners in nature-based tourism research need to recognize that physical scientists may be experts on wildlife or physical science, but they are not necessarily effective interpreters or tourism guides. Staff need to be trained in understanding the social science of environmental education and recognize the importance of carefully designed experiences with interpretive messages that have been designed to align with visitors' motivations and desired learning and action outcomes. Additionally, if environmental learning and behaviour change is truly the mandate of environmental education centres, such as zoos or nature-based tourism companies, more thoughtfully created experiences must also be planned for.

Finally, it is not only important to think about *how* polar bear narratives are constructed for visitor learning and behaviour change, but also *why*. As I have argued in this dissertation, the value of learning about and adopting incremental and small-scale actions is less about, say, the reduction of single use plastics, and more about the empowerment of individuals (Bueddefeld & Van Winkle, 2017, 2018; Buckley, 2012; Hughes, 2011; Hughes et al., 2011; MacDonald et al., 2015). It is about addressing the feeling of hopelessness and environmental hyperopia that overwhelming global issues such as climate change can foster (Brosnan et al., 2015; MacDonald et al., 2015). It is about recognizing that transformation is not necessarily epochal but can be incremental, in that small actions can be used as catalysts to encourage greater change (Ardoin et al., 2015; Bueddefeld & Van Winkle, 2017, 2018; Falk et al., 2012; Hughes, 2011; Hughes et al., 2011; Newman, 2012). The Contextual Model of Transformative Learning which I propose in Figure 20 is an attempt to demonstrate how visitor learning can be informed by context to better plan for, facilitate, and assess a range of potentially transformative visitor learning experiences. This research demonstrates that polar bear tourism both in situ and ex situ can be an effective way for visitors to learn about an array of topics that relate to their visit motivations, and can facilitate some behaviour changes and transformative learning outcomes.

However, this research also critiques the ways in which polar bears are rendered touristic symbols for climate change. While polar bears are an effective "boundary object", helping to create a bridge between visitors and understanding of climate change, this process can also oversimplify the wicked problem that is addressing climate change (Slocum, 2004). Further, this process can render particular polar bears as objects in this

narrative, as was demonstrated by visitors' perceptions of wild bears, real bears, and zoo bears. Erickson (2011) argues that green liberalism and commodified consumer experiences are really selling a "way of being in the world" along with the ideology of this particular way of being. By creating a conservation narrative, in situ and ex situ tourism experiences are also selling a way of being in the world. Researchers and practitioners must think critically about the narratives they help visitors to construct. The stories that are told in tourism experiences matter, not just in relation to visitor learning and behaviour change, but in the power that they hold to shape narratives of climate change and ways of being in a world shared with polar bears.

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Appendices:

Appendix A: Personal Meaning Map Example

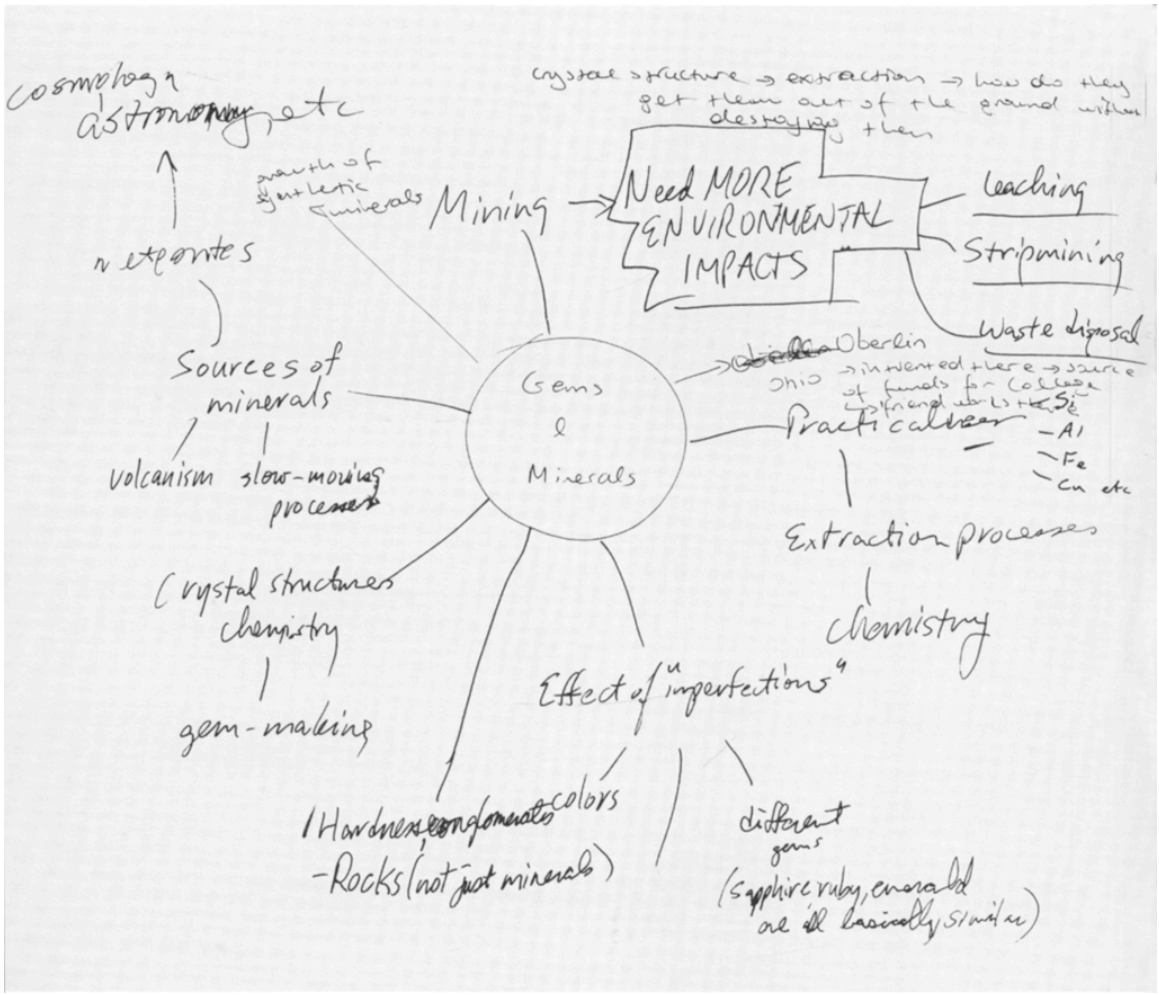

Figure 22. Example of a PMM taken from Falk, Moussouri, and Coulson (1998), p. 120.

Appendix B: Personal Meaning Map Example from the Research

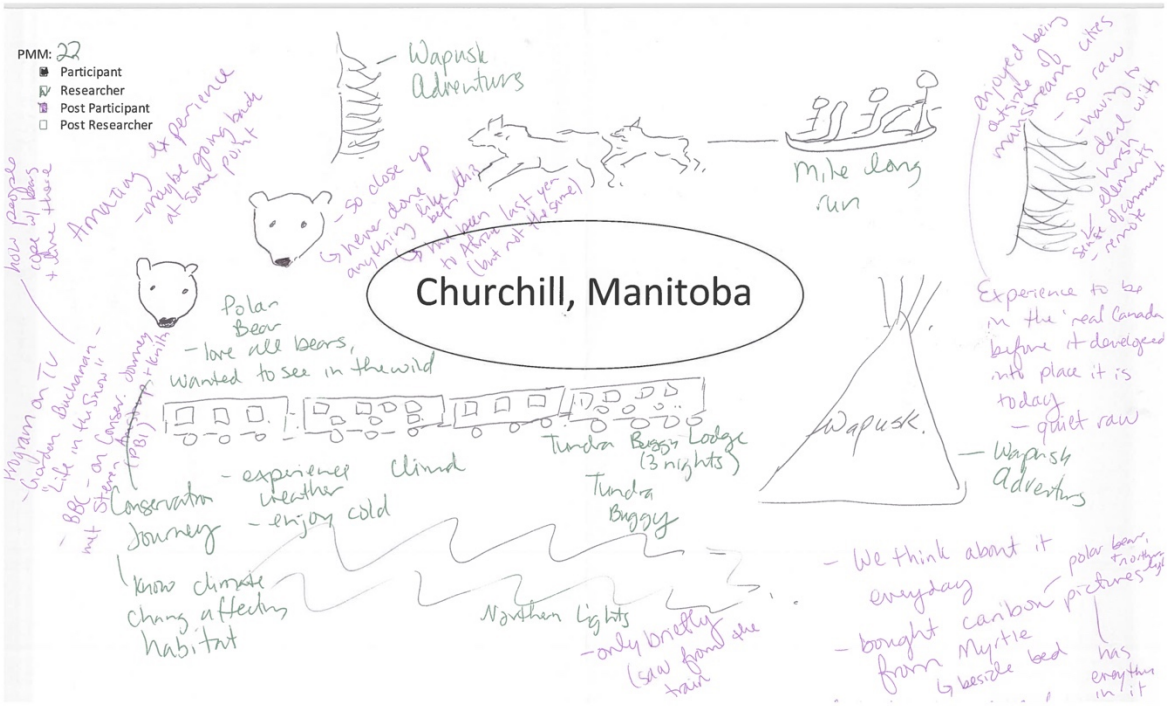

Figure 23. Example of a PMM completed by a Churchill visitor.

Appendix C: Interview Guide

On-Site Interview:

The on-site interview will immediately follow the PMM activity.

Thank you for completing the brainstorming activity (the PMM). I would now like to ask you a few questions about your experience as a visitor to the Journey to Churchill exhibit (or Churchill, Manitoba). Again, there is no pressure to answer any questions that you do not want to and we can end this interview at any time if need be. Feel free to ask for clarification if a question doesn't make sense to you.

Demographic / Motivation / Interests / Experiences:

1. Churchill Visitors Only: *Did you go on a tour to see the polar bears while you were in Churchill?*
    a. *If so, which one?*
2. *Who are yo*u *visiting with today (or on vacation with)?*
3. *Who's idea was it to come here (either JTC or Churchill)?* (Falk & Storksdieck, 2010, p. 204).
    a. *Why did you (or the decision maker above) decide they would like to come here today (or visit Churchill)?*
    b. If the participant is not the decision maker: *What was your reason for joining them?*

4. *Did you have any previous interest in the topics/content in the exhibit (or on the tour)?* (Relate to PMM content if appropriate or previous answers)
5. *Have you been here before?*
    a. If yes, *how often and when was your last visit?* (Falk & Storksdieck, 2010, p. 776).
    b. *Do you have a membership for the zoo?*
6. *Have you been to any other similar places?* (Falk & Storksdieck, 2010, p. 776).
    a. *Have you been to Churchill, Manitoba (or the Assiniboine Park Zoo's Journey to Churchill Exhibit)?*
        i. *If so, when was your last visit? Or How often do you go?*
7. *Does the watching the bears here remind you of polar bears in Churchill (or in the Assiniboine Park Zoo)?* (adapted from Marseille et al., 2012, p. 33)
    a. *Why or why not?*
    b. *What does watching the bears here make you think / feel? (*adapted from Marseille et al., 2012, p. 33),
8. *What were your expectations for your visit (or trip)?*
    a. *Were those expectations achieved?*
    b. *Why or why not?*
9. *What has been the most significant part of your experience so far?* (Falk et al., 2004, p. 194).
    a. *Can you explain why?*

Learning:

1. *In your own words, what is the Journey to Churchill Exhibit about (or what is a trip to Churchill, Manitoba about)?* (Falk and Storksdieck, 2010, p. 773).
2. *Do you think you took something away from your experience?* (Falk, Heimlich, and Bronnenkant, 2008, p. 69-70)
3. *As a result of this visit, do you think you will think differently about anything?*
    a. *If so, in what ways?*
    b. *If so, was there anything in particular that you feel triggered this change in thinking? (*Adapted from Moyer, 2012).
    c. *Why or why not?* (Falk et al., 2004, p. 194)
4. *As a result of this visit (or a change in their thinking) will do you anything differently not?*
    a. *If so, in what ways?*
    b. *Why or why not?*
5. *What role do you think this exhibit (or trip) plays in understanding the topics/content presented here?* (based on Falk et al., 2004)

General / Conclusion:

Do you have anything to add that would help me understand you as a visitor? (Falk & Storksdieck, 2005, p. 200)

Follow-Up Interview:

Hello,

My name is Jill and I am a student at the University of Manitoba. About 2 – 3 months ago you participated in some research with me at the Assiniboine Park Zoo (or in Churchill, Manitoba) where you agreed to a follow-up interview. Are you still interested in participating in a follow up interview?

If no:

Thank you for your time.

If yes:

Are you able to participate now? (it will take about 30 minutes)

If no:

When would be a good time to call again?

If yes:

Your participation is voluntary and you can stop participating at any time. Your personal information will not be stored with or connected to your responses to the interview.

First we will talk about the PMM that you completed several months ago (I sent you an email with a copy of this earlier this week). And then I'd like to ask you a few questions similar to the ones I asked you at the zoo (or in Churchill).

Demographic / Motivation / Post-Interests and Experiences:

1. *To better understand you as a visitor, can you tell me a little bit about yourself?* (Such as your job, background, or education?)
2. *Do you recall, why you visited the JTC (or why you decided to go on that vacation) when we last spoke?*
3. *Have your interests changed since your visit to the exhibit?* (Relate to PMM content if appropriate)
4. *Have you returned or been to any other similar places since your visit when we spoke last?*
5. *Looking back, what was most significant part of your experience?* (Falk et al., 2004, p. 194).
6. *What do you remember the most, or what was the most memorable from your visit?* (Falk & Storksdieck, 2005, p. 201)
    a. *Why?*
7. *Have you thought about or shared your experience afterwards?* (Falk & Storksdieck, 2005, p. 201)
    a. *In what ways or what about, in particular?*
    b. *Why or why not?*
8. *Do you remember what your expectations were for your visit (or trip)?*
    a. *Looking back now, were those expectations achieved?*
    b. *Why or why not?*
9. *What would you say was the single most satisfying aspect of your visit?* (Falk & Storksdieck, 2005, p. 205).

Learning:

1. *Looking back, what do you think you took away from your experience?* (from Falk, Heimlich, and Bronnenkant, 2008, p. 69-70)
2. *Since your visit, have you thought about your experience?*

   If so, in what ways? (Falk et al., 2004, p. 194)
3. *What role do you think this exhibit (or trip) plays in understanding the topics/content presented here?* (based on Falk et al., 2004)
4. *Looking back, do you think that you have or have not learned something from your visit?* (Direct learning question found in Falk & Storksdieck, 2005, p. 204)
   a. *If so, was there anything in particular that you feel triggered this learning? (*Adapted from Moyer, 2012).
5. *Again, looking back, do you think you will think differently about anything?*
   d. If so, in what ways?
   e. Why or why not? (Falk et al., 2004, p. 194)
6. *Since your visit have you done anything differently as a result of your experience (or a change in your thinking)?*
   a. If so, in what ways?
   b. Why or why not?
   *c. Did anything trigger this action? (*Adapted from Moyer, 2012).

Sense of Place / Authenticity:

1. *Thinking back, what do you think of the JTC exhibit (or Churchill)?*
2. *Looking back, how do you think this experience compares to Churchill (or the JTC)?*

3. *Again, reflecting back, does the JTC (or Churchill) mean anything to you?* (Adapted from Wheeler Weins, 2011))

   If so, what and why?

4. *Now, after some time has passed how would you describe your experience to family or friends?* (based on Falk et al., 2004, p. 194).

   a. *How would you describe this place?* (Adapted from Wheeler Weins, 2011)

General:

Do you have anything to add that would help me understand you as a visitor? (Falk & Storksdieck, 2005, p. 200)

Appendix D: Polar Bear Waiver

Polar Bear Acknowledgment Form

Welcome to the Churchill Northern Studies Centre (CNSC). The Centre is located in an area of high polar bear concentration along the Hudson Bay coast, where bears congregate in the fall, awaiting ice formation. You should expect and be prepared to encounter a polar bear at any time of the year. Polar bears are inquisitive and unpredictable animals, and not afraid of people, so it is unwise to put yourself in a situation where you might encounter a bear. In an effort to reduce human-bear contact, the Centre has bear safety protocols in place. Following are several precautionary measures to reduce your risk in polar bear country. You are asked to read the following information carefully and sign the waiver if you understand all statements.

- The CNSC will provide bear safety information for you to read. It is for your protection and benefit that you read it carefully.
- The CNSC will instruct you on bear safety precautions soon after your arrival. It is important that you notify a CNSC staff member prior to leaving the building for any reason.
- Smoking is not allowed inside the building. Individuals who choose to smoke can do so just outside the main entrance at their own risk.
- All outside doors must be kept closed at all times. Bear bars are on outside windows. These are for your protection, and we ask that you do not deface them.
- If polar bears are seen outside, do **not** leave the building and please notify a staff member immediately.
- There is to be no camping of any kind and hiking or walking will be dependent upon the season and previous polar bear sightings.
- Researchers are expected to participate in additional polar bear safety training and are required to coordinate their activities with CNSC science staff.
- Bear deterrents are available from the CNSC office. At the discretion of the staff, they may be available for personal use.
- It is unlawful to feed or harass polar bears. The placement of food with the purpose of attracting, feeding, or holding polar bears is strictly prohibited. It is not permitted to approach a polar bear or active polar bear den closer than 100 metres.

I have read the above statements, and agree that the CNSC has provided me with proper information about polar bear safety. I am aware of the risk in visiting an area of high polar bear concentration and I agree that the CNSC is not responsible for any human-bear conflict. I absolve the CNSC from any and all liability should I have a polar bear encounter. I understand that if I do not follow the aforementioned instructions, or those given to me by CNSC staff members, I may be asked to leave immediately.

Signature _____ Date _____

Print Name _____ CNSC Staff _____

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