

MAKING CLIMATE CHANGE MEANINGFUL:  
NARRATIVE DISSONANCE AND THE GAP BETWEEN KNOWLEDGE AND ACTION

A Thesis Submitted to the  
College of Graduate and Postdoctoral Studies  
In Partial Fulfillment of the Requirements  
For the Degree of Master of Science  
In the Department of Community Health and Epidemiology  
University of Saskatchewan

By

RACHEL A. MALENA-CHAN

© Copyright Rachel A. Malena-Chan, December, 2018. All rights reserved.

### **Permission to use**

In presenting this thesis in partial fulfillment of the requirements for a Postgraduate degree from the University of Saskatchewan, I agree that the Libraries of this University may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purposes may be granted by the professor or professors who supervised my thesis work or, in their absence, by the Head of the Department or the Dean of the College in which my thesis work was done. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of Saskatchewan in any scholarly use which may be made of any material in my thesis.

Dr. Anne Leis, Department of Community Health & Epidemiology  
Box 7, Health Science Building, 107 Wiggins Road, University of Saskatchewan  
Saskatoon, Saskatchewan, S7N 5E5  
Canada

Dean, College of Graduate and Postdoctoral Studies  
University of Saskatchewan  
116 Thorvaldson Building, 110 Science Place  
Saskatoon, Saskatchewan S7N 5C9  
Canada

## **Abstract**

Decades of widespread knowledge about climate change have not translated into adequate action to address population health and health equity impacts in Canada. Researchers find that perceptions and interpretations mediate engagement. Exploring climate change engagement thus involves inquiry into contextual experience. This qualitative study employs narrative methodology to interpret the meaning of climate change among community leaders in Saskatoon, Saskatchewan, age 20-40 (n=10). Climate change narratives are explored both structurally and thematically.

A model was developed to organize results and to describe concepts of fidelity and dissonance within participant narratives. Findings suggest that knowledge of climate change and personal motivation to act do not preclude narrative dissonance, which serves as a barrier to a meaningful personal response. Dissonance can result where internal and external barriers mediate mobilization at moments in the plot: (1) moving from knowledge of the challenge to a sense of agency about it; (2) from agency to a sense of responsibility to choose to address it; (3) from responsibility to a sense of capacity to produce desirable outcomes despite contextual challenges; and (4) from capacity to a moral sense of activation in context. Without narrative fidelity, meaningful mobilization can be hindered. A narrative model is useful for exploring climate change engagement and highlights opportunities for population health to reframe climate change in a mobilizing way. By framing climate change narratives with emotional and moral logic, population health could help young leaders overcome internal and external barriers to engagement.

## **Acknowledgements**

I would like to acknowledge the College of Medicine at the University of Saskatchewan for their financial support throughout this study.

I would like to acknowledge my supervisor, Dr. Rachel Engler-Stringer, and my committee members, Dr. Lori Hanson, Dr. Marcia McKenzie, and Dr. Sylvia Abonyi, for their support and guidance throughout this journey. Their insights along the way gave me confidence to explore and play with complex ideas and I am grateful for their time and expertise.

I would also like to acknowledge my “informal committee” of friends and colleagues who took the time to listen to me and help me refine the ideas represented here. In particular, I would like to thank my good friend Lise Kossick-Kouri for her support. I also want to acknowledge Hayley, Justin, and the whole team at Climate Justice Saskatoon, who have provided me with community support and grounded me in the practical tensions of climate communications work.

## **Dedication**

I dedicate these efforts to:

1. My participants, and to all those who share sufficient knowledge and a motivation to act to address climate change. I hope that what I have learned throughout the course of this project resonates with these leaders in some way.
2. Wing Go, my husband and partner, the person who makes my story meaningful.

## TABLE OF CONTENTS

PERMISSION TO USE.....	i
ABSTRACT.....	E
<b>rror! Bookmark not defined.</b>	
ACKNOWLEDGEMENTS.....	iii
DEDICATION.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	vi
LIST OF FIGURES.....	vii
LIST OF ABBREVIATIONS.....	viii
<b>CHAPTER 1:</b>	
INTRODUCTION.....	<b>Error!</b>
<b>Bookmark not defined.</b>	
Statement of the problem: Climate change, population health, and health equity .....	3
Purpose: A narrative exploration of mobilization barriers .....	7
Research questions.....	9
Theory.....	10
Key terms.....	15
<b>CHAPTER 2: LITERATURE REVIEW.....</b>	<b>23</b>
Moving beyond the information-deficit model: Mediators of engagement .....	24
Engaging the knowledgeable: When the meaning of climate change is immobilizing....	28
<b>CHAPTER 3: METHODOLOGY.....</b>	<b>33</b>
Narrative and human experience.....	33 <b>Error! Bookmark not defined.</b>
Ontological assumptions: Narrative and the language of meaning .....	35
Epistemological orientation: Narrative-based knowing.....	37
Methodological approach: Interpreting narratives of self, us, and now.....	40
Methods.....	45
Sample recruitment.....	48
Quality.....	53
<b>CHAPTER 4: RESULTS AND INTERPRETATION.....</b>	<b>58</b>
Results and interpretation outline.....	60
Barriers to sufficient knowledge.....	63
Barriers between knowledge and agency.....	65
Barriers between agency and a sense of responsibility.....	69
Barriers between responsibility and a sense of capacity.....	74
Barriers between capacity and a sense of activation.....	78
Barriers to meaningful mobilization among young leaders.....	84

<b>CHAPTER 5: FURTHER DISCUSSION.....</b>	<b>90</b>
Narrative dissonance and meaningful mobilization.....	91
Overcoming barriers to agency.....	92
Overcoming barriers to responsibility.....	94
Overcoming barriers to capacity.....	97
Overcoming barriers to activation.....	100
Learnings about mobilization.....	102
<b>CHAPTER 6: SIGNIFICANCE.....</b>	<b>106</b>
Theoretical significance.....	107
Practical significance.....	108
Heuristic significance.....	110
Methodological significance.....	110
<b>REFERENCES.....</b>	<b>113</b>
<b>APPENDIX A.....</b>	<b>128</b>
<b>APPENDIX B.....</b>	<b>133</b>
<b>APPENDIX C.....</b>	<b>136</b>
<b>APPENDIX D.....</b>	<b>137</b>

## **List of Tables**

Table 3.1	Study framework, adapted from Ganz framework for public narrative (Ganz, 2011)
Table 3.2	Interpretive schema
Table 4.1	Results schema
Table 4.2	Exploring participant narratives about climate change
Table 6.1	Reflection questions for population health professionals
Table B.1	Participant example 1
Table B.2	Participant example 2
Table B.3	Participant example 3



## **List of Figures**

Figure 1.1	A narrative model for engagement
Figure 4.1	A narrative model for engagement
Figure 4.2	Sufficient knowledge
Figure 4.3	Mobilizing agency
Figure 4.4	Mobilizing responsibility
Figure 4.5	Mobilizing capacity
Figure 4.6	Mobilizing activation
Figure 4.7	Meaningful mobilization

## **Abbreviations**

CSDH	Committee on Social Determinants of Health
IPCC	International Panel on Climate Change
NCCDH	National Centre for Collaboration on Determinants of Health
NASA	National Aeronautics and Space Administration
RCAP	Royal Commission on Aboriginal Peoples
TRC	Truth and Reconciliation Commission
UNFCCC	United Nations Framework for Climate Change Conference
WHO	World Health Organization

## **Chapter 1: Introduction**

Climate change is a serious threat to health and health equity, and addressing global warming represents both a challenge and an opportunity for population health practitioners and researchers (Costello et al., 2009). Despite decades of scientific understanding about global warming and technological feasibility to mitigate greenhouse gas emissions (Costello et al., 2011), policymakers are not on track to fulfill national climate commitments (Government of Canada, 2018; Howard, Rose, & Hancock, 2017; Howard, Rose, & Rivers, 2018). If existing global policies and practices do not change, the Earth's temperature could rise to 4.8° Celsius above pre-industrial levels within the lifecourse of people alive today, a level of warming that would destabilize the planet's systems and severely impact the ecological and social determinants of population health (Watts et al., 2018). Population health professionals have important roles to play in supporting and leading climate action at multiple levels, but gaps in knowledge remain about how to navigate the complex contexts in which knowledge is mobilized. As professionals with competencies in the areas of advocacy, engagement, and community empowerment, those in population health have vital roles to play in addressing the cultural and conceptual dimensions of climate change engagement (Patrick, Capetola, Townsend, & Nuttman, 2012). Narrative methods help reveal the complex ways in which barriers to engagement interact in context (Fløttum & Gjerstad, 2017; Paschen & Ison, 2014). In this study, I apply narrative methods to interpret the barriers to climate change engagement as they are experienced among knowledgeable, motivated young leaders in my home community of Saskatoon, Saskatchewan.

Multiple calls have been issued throughout the last several decades to inspire public health to confront environmental problems like climate change (Brown, Ritchie & Rotem, 1992; Hancock, 1993; Hancock, Spady & Soskolne, 2015; Krieger, 1994; 2001, 2012; Labonte, 1994; McMichael, 1999, 2008; 2013; McMichael, Montgomery & Costello, 2012), and in the last five years, major health organizations like *The Lancet* and the Canadian Public Health Association (CPHA) have renewed a mandate for population health engagement regarding climate change

mitigation and adaptation efforts (Howard et al., 2017; Watts et al., 2017). However, gaps remain in knowledge about the widespread lack of mobilization to address climate change, particularly as it manifests among people who know about the problem and who value equitable health and wellbeing.

Exploring the bridge between knowledge and action involves inquiry into the contextual experience of climate change (Stoknes, 2014). This study examines the narrative structure of meaning-making about climate change (Ganz, 2011), and it explores how barriers to mobilization impact even knowledgeable, motivated individuals. Individuals exist within contexts that are material as well as symbolic (Polkinghorne, 1988), and individual engagement with climate change occurs within contexts shaped by social and political dynamics (Lertzman, 2013; Lertzman, 2014; Moser, 2014; Norgaard, 2011). I argue that a narrative approach could deepen understanding among population health professionals about the barriers between knowledge and action to address climate change, and I demonstrate how the concept of narrative dissonance can help explain pathways to immobilization, particularly within the lives of individuals who appear primed for climate action leadership (Doherty & Webler, 2016; Roser-Renouf, Maibach, Leiserowitz, & Zhao, 2014).

The assumption might be made that knowledge of climate change directly triggers a meaningful response from young community leaders who value social and environmental justice because they hold values, identities, and beliefs that align with engagement (Leiserowitz, 2008). However, research suggests that even knowledgeable, motivated people experience barriers to mobilization, and theorists have contributed explanations as to how social environments and emotional norms can create internal dilemmas that hinder action (Lertzman, 2014; Norgaard, 2011). Narrative methods allow for a focus on the cultural and contextual dimensions of mobilization and are thus relevant to people working within population and public health as we build capacity for climate action leadership. Using a narrative framework articulated by sociologist Marshall Ganz (2011), this study explores the climate change narrative of young social change leaders. Ganz discusses the role of public narrative and collective action, arguing that because narratives translate values into action, storytelling is an important leadership practice for those aiming to build capacity for change (2011, p. 274).

Using Ganz's theories as a framework, this study has helped me to gain a deeper understanding about why knowledgeable, motivated people might experience narrative

dissonance about climate change. I have developed a narrative model (figure 1.1) for exploring fidelity and dissonance, and I use the model in this thesis to explore the everyday experience of climate change as perceived by my study participants. “Mobilizing moments” in the narrative are identified where themes could contribute to narrative dissonance, shaping the transition points between (1) sufficient knowledge of the challenge of climate change and a sense of **agency** about it; (2) between a sense of agency and a sense of **responsibility** to act; (3) between a sense of responsibility and a sense of **capacity** to achieve a desired future; and (4) between a sense of capacity and a sense of **activation** in the context of everyday life. I argue that narrative models can contribute to understanding about why people who know about the dangers of climate change and who desire equitable future outcomes may feel unable to take action to address climate change, and my findings highlight potential strategies for overcoming narrative dissonance from a population health perspective.



Figure 1.1: A narrative model for engagement

### Statement of the problem: Climate change, population health, and health equity

“Climate change” references the changes in global temperature due to human activity (IPCC, 2014, IPCC, 2018). Trends in climate change over the past 50 years indicate that the accumulation of greenhouse gases in the atmosphere is reaching dangerous levels with severe impacts to human health expected (IPCC, 2014; IPCC, 2018). Climate change is especially relevant to population health because impacts are not experienced uniformly, and existing health inequities will be further exacerbated without urgent action to mitigate emissions and to build up

community resilience (Watts et al., 2018; Howard et al., 2018). Population health has a vital role to play in promoting systems-level action to address the risks of climate change in a meaningful way, but professionals in this field lack frameworks and models for navigating the challenges to engagement (Patrick et al., 2012). Multi-scalar, multi-dimensional ecosocial health problems are experienced by populations in context, and individuals at the community level may struggle to locate a sense of efficacy or empowerment in the face of health challenges that are far outside of their personal control or influence (Golden, McLeroy, Green, Earp, & Leiberman, 2015). To bridge the gap between knowledge of climate change and action to address it, population health professionals are in need of novel models for engagement that account for contextual barriers to action.

The phenomenon of climate change is important to population health professionals because global warming threatens the ecological and social systems on which human populations depend for sustenance and wellbeing (Costello et al., 2011; Thomas, Sabel, Morton, Hiscock, & Depledge, 2014). There are numerous pathways along which climate change impacts health (Watts et al., 2017;). To date, global temperatures have risen 1° Celsius since 1880, and CO<sup>2</sup> levels are at their highest levels in 650,000 years ([NASA, 2018](#)). Human actions are the main drivers of climate change (IPCC, 2014), and the Paris Agreement reflects a (near) global commitment to reduce greenhouse gas emissions (UNFCCC, 2015). If global populations act quickly to mitigate greenhouse gas emissions<sup>1</sup>, global temperatures will still reach 1.5° Celsius, and are likely to exceed 2° Celsius above pre-industrial levels (IPCC, 2014).

Without action to mitigate greenhouse gas emissions<sup>2</sup>, global temperatures are projected to exceed a relative increase of at least 4° Celsius (IPCC, 2014). To meet the commitments made in Paris Agreement (UNFCCC, 2015), global emissions will have to be reduced dramatically, reaching net-zero by 2050, the equivalent of cutting the amount of carbon emitted in half every decade from now until 2050 (Howard et al., 2017). As *The Lancet* Countdown points out, even if the pledges made in the Paris Agreement are fulfilled, average warming would still reach 2.7° Celsius by 2100 (Watts et al., 2017), and because emissions accumulate over time, the longer mitigation action is delayed, the sharper the decline of greenhouse emissions must be to limit

---

<sup>1</sup> In reference to RCP4.5. For more information, see the [Intergovernmental Panel for Climate Change](#) (IPCC) and for visualizations of impacts to the Prairie region under different scenarios, visit the [Prairie Climate Centre website](#).

<sup>2</sup> In reference to RCP8.5. For a useful guide to understanding the four different IPCC scenarios, or Representative Concentration Pathways (RCPs), see [“Now available: a guide to the IPCC's new RCP emissions pathways”](#).

peak warming. Therefore, because of delayed action to mitigate climate change, the road to avoiding planetary destabilization in this century is steep and getting steeper every day (Steffen, 2017a).

Some individuals and subpopulations are disproportionately at risk of negative impacts, and climate change is exacerbating inequities that already exist between populations (Costello et al., 2009; Howard et al., 2018; Watts et al., 2018). Emerging health risks such as floods, sea-level rise, heat waves, extreme weather events, infectious disease spread, drought, and food shortages, have a greater impact on those who face social, cultural, economic, and political oppression (IPCC, 2014; IPCC, 2018). Because of the interdependence of social systems and ecological systems, climate change is also connected to mass migration, increased violence and conflict, loss of homelands, and other social crises that impact poor and marginalized communities most acutely (Watts et al., 2017). At a global level, nations have been negotiating an equitable path to reducing emissions, given that wealthier nations have benefited unfairly from historic greenhouse gas emissions (UNFCCC, 2015). At the local level, inequities in climate risk manifest at multiple levels within subpopulations along socio-political lines (Levy & Patz, 2015). For example, women, children, workers, and Indigenous people are identified by Levy and Patz (2015) as groups at greater risk of climate change impacts due to their lives already being characterized by human rights violations.

Population health professionals have a moral mandate to close the gaps in health (WHO, 2008), making climate change mitigation and adaptation professional responsibilities. Most governments recognize the need for climate action but debates now centre upon the urgency with which climate change is addressed and the policy pathways chosen to address it, both of which impact climate risks and their distribution (Watts et al., 2017). However, in language and in practice, vulnerability to climate change and the acceptability of risk are socially defined (Leiserowitz, 2006), and thus these concepts should be critiqued according to values of health equity and of social and environmental justice (Krieger, 2001, p. 672). In other words, population health can and should challenge assumptions about who is vulnerable and why, particularly with regards to action urgency. Given that climate change is not a new or unpredictable problem and given that population-level health risks have yet to be mitigated or addressed seriously at a policy-level, professionals in this field should be loudly and urgently

seeking ambitious climate action and should critique a lack of strategy implementation to protect those most at risk.

The climate change perceptions of young leaders are of relevance to population health professionals because the barriers that these individuals face when engaging climate change could be hindering collective action to address the health risks of global warming in communities across Canada. Many of these individuals understand climate change from a scientific perspective, and they already recognize the value of working for social and environmental justice by targeting root causes at a systems-level. However, these individuals are likely to face social and political conditions that may hinder mobilization, given that the provincial context of Saskatchewan is one economically dependent upon fossil fuel extraction (Eaton, 2017) where only half of all adults in the province believe that human activity is causing global warming (Mildenberger et al., 2016). Individuals who navigate social and environmental justice work within this context may have particular insights for population health professionals about the barriers to making sense of climate change in context. Given that local leadership plays a significant role in a community's capacity to organize (Berstein, Wallerstein, Gutierrez, Labonte, & Zimmerman, 1994; Wallerstein, 2002), this study is designed to bring light to the stories of young community leaders working at the local level.

This brief background on climate change and population health illuminates the significance of this moment in time for health professionals as we theorize and build capacity to address converging ecosocial crises. The pathways before us that do not lead to climate chaos are becoming increasingly narrow, and as governments delay meaningful action, the policy options to meet the commitments made in the Paris Agreement (UNFCCC, 2015) are becoming increasingly disruptive to existing economic and social norms. *The Lancet* concludes that the years leading up to 2030 represent a “crucial window” for determining the future of both climate change and humankind for the 21st century (Watts et al., 2017, p.1152). A lack of meaningful mobilization to address climate change results in serious risk to the health of populations, however, as Golden et al. (2015) discuss, it is not immediately clear how an individual might make sense of their personal agency with regards to these multi-scalar health problems without models to help navigate that which is outside of individual control. Given that many barriers to engagement are conceptual, relational, and interpretive in nature, new context-driven models could deepen understanding about the barriers to engaging with climate change.



## **Purpose: A narrative exploration of mobilization barriers**

This study uses narrative methods to interpret perceptions of climate change amongst knowledgeable, motivated young people, and it aims to address the lack of models within population health for analyzing the gap between knowledge and action as population health professionals address increasingly complex challenges (Hancock et al., 2015). By understanding the way climate change is “storied” by individuals and groups, researchers can gain a deeper understanding of the pathways and barriers to action (Fløttum & Gjerstad, 2017; Paschen & Ison, 2014; Stoknes, 2014). The purpose of the study is to gain a deeper understanding of the experience of responding to climate change in context, particularly among those motivated by values of social and environmental justice. It is premised on narrative theories, which are used extensively in the humanities and social sciences to explain the meaning of human experience (Connelly & Clandinin, 1990; Riessman, 2008). Using a narrative framework that focuses on storytelling for social change leadership (Ganz, 2011) I aim to explore the meaning of climate change in everyday life, as perceived by 20-40-year-old community leaders in Saskatoon, Saskatchewan who know about the science of climate change and who care about values of social and environmental justice. Several sub-goals are nested within this study.

Firstly, I aim to address the lack of models available to population health professionals for interpreting the meaning of complex ecosocial problems like climate change in the context of everyday life. The idea that people do not respond to climate change appropriately because they do not know enough about it has been thoroughly debunked in climate communications literature (Moser, 2014; Stoknes, 2014; Whitmarsh, O'Neill, & Lorenzoni, 2013; Wibeck, 2014). Similarly, population health theorists recognize that cultural and social dynamics mediate how climate change is interpreted and perceived. Leaders in this field draw attention to the need for strategies to overcome the contextual barriers to climate action, such as “shifting the goal of our society” (Hancock, 2015, p.e254), participating in “wider public discussion,” (McMichael, 2013, p.1341), adapting “the governance and culture of health services” (Bell, 2011, p. 806), calling on practitioners to “change social norms and values” (Hancock et al., 2015, p. 83) and researchers to “build a broader understanding of public perceptions and track the evolution of public

engagement and knowledge” (Watts et al., 2017, p.1161). A sub-goal of this study is to contribute knowledge about how to overcome these interpretive and communicative barriers.

The application of narrative theory to the topic of climate change engagement allows for a deeper understanding of the barriers to interpretation, and ultimately mobilization, in context (Paschen & Ison, 2014). The second objective of the study is to explore experiences of climate change through the lens of Ganz’s narrative framework. While quantitative studies focus on the relationships between variables mediating climate change engagement, qualitative inquiry focuses on the context of the problem as a whole (Morse, 2012). Diving into the contextual aspects of climate change inaction merits a qualitative approach and a constructivist epistemological lens, as the subjective perceptions that underlie cognitive, affective, and behavioural responses are “socially and experientially based, local and specific in nature, and dependent on the individuals or groups holding the constructions” (Carpiano & Daley, 2006, p. 567). Ganz theorizes that storytelling plays a vital role in shaping public perceptions (2011), and as such, a second sub-goal of the project is to explore meaning-making about climate change as a social phenomenon as well as a personal one (Moser, 2014; Norgaard, 2011; Roser-Renouf et al., 2014; Wibeck, 2014). Applying narrative theory to climate change engagement highlights questions of context, experience, and subjective meaning, and it can be employed to explore processes for constructing and interpreting meaning in both personal and public spheres (Ganz, 2011).

Lastly, this study involves objectives related to my personal and professional life. My inquiry into the meaning of climate change in context is of great personal significance to my own story as a young person witnessing a lack of action to mitigate the existential threat posed by climate change. In my chosen methodology, my interpretation of the barriers to climate change is informed by my *foreunderstandings* (Gimbel, 2016), that is, my pre-existing interpretation about what it means to respond to climate change in Saskatoon, Saskatchewan. I identify as a community organizer collaborating for social and environmental justice through research, advocacy, and direct action. Until recently, I have lived my entire life in Saskatoon, Saskatchewan, and I have first-hand experience of the region’s cultural, social, and political conditions. I am also a population health promotion practitioner with a provincial health organization and a graduate student in my university’s Department of Community Health and Epidemiology, and I have witnessed a lack of engagement with climate change in these

professional and academic spaces. This is the position of my situated knowledge (Haraway, 1988), the starting place from which my understanding has deepened over the course of this study. Thus, as a final sub-goal of this study, I aim to gain a better understanding of the phenomenon I perceive in my community and in my own life: that despite the knowledge that climate change threatens things that matter deeply from a social and environmental justice perspective, meaningful action to address climate change does not always manifest.

## **Research questions**

### **RQ1: Climate change narratives amongst young leaders.**

How do young community leaders who are knowledgeable about climate change make meaning of climate change in their everyday lives?

The first research question focuses on the cultural and contextual mediators of climate change interpretations among community leaders aged 20-40-years-old who organize action at the local level on the basis of social and environmental justice values. Given that these individuals share the values and approaches of population health professionals, what strategies are employed to make sense of climate change and to navigate the limits of individual action in the face of climate change? Particularly in a Saskatchewan context, where young leaders may perceive public inattention, how do motivated, knowledgeable individuals make meaning of climate change in everyday life?

### **RQ2: Population health and mobilizing climate change narratives.**

What population health alignments are highlighted by a narrative approach to climate change engagement?

The second research question focuses on communications best practices that are contextually-relevant for population health professionals. Because values and worldviews have an impact on interpretation, it is worth exploring the competing frames used to make sense of

climate change among population health stakeholders. What stories stem from an equity-based, systems-based way of interpreting climate change, and how can population health contribute to mobilizing public narratives about complex ecosocial problems? Particularly in a Canadian context, where inadequate policies are in place for mitigating and adapting to climate change, how might population health professionals intervene upon the gap between knowledge and action?

## **Theory**

Three foundational theories ground the choices I make in conceptualizing this study. Firstly, climate change is conceptualized as an ecological and social threat to population health (Krieger, 2001) too great in scale and scope for an individual to mitigate or adapt to at a personal level. Climate change is fueled by the same structural political and economic systems that underpin many contemporary health problems in Canada, such as colonialism (Health Council of Canada, 2012) and capitalism (Goodman, 2014). This study explores how communities might make sense of, and ultimately change, the conditions of health given the overarching context that these structural forces represent in everyday life (Whitehead & Popay, 2010). I employ community empowerment theory (Bernstein et al., 1994; Wiggins, 2012) to organize my thinking about the merits of community-level interventions upon these political and economic conditions. Community empowerment theory posits that the development of a critical collective consciousness is vital to mobilizing effectively at the community level (Bernstein et al., 1994, p.283). For this reason, I employ narrative theory (Ganz, 2011) to explore how individual leaders develop public narratives that foster collective action within their communities. In this way, by focusing on the climate change stories of individual community leaders, I seek a deeper understanding about mobilizing against the political and economic conditions that threaten population health.

### **Climate change risk from an ecosocial perspective.**

At a theoretical level, the linkages between climate change and population health are premised upon theory about the interdependence of human and ecological systems at multiple scales (Krieger, 2001; Golden et al., 2015). Through an ecosocial health perspective, biological pathways of illness and wellbeing are considered alongside the social conditions that determine health outcomes, such as global forces driving inequalities of power (Whitehead & Popay, 2010). This approach brings attention to how social and political structures shape human experiences, and it highlights how those experiences are embodied in physical, quantifiable ways. As Krieger (2001) explains, ecosocial theory is about accounting for how micro and macro determinants of health interact and overlap, and it requires population health professionals to fix the focus of their inquiry and praxis on multiple levels simultaneously. Golden et al., (2015) point out that not only do social, environmental, and political conditions impact individual and community health, but an inverse relationship also exists: individual agency and community action create contexts in which healthy environmental and policy choices can take place. From this perspective, it is worth considering the impact of contextual conditions upon the wellbeing of individuals and communities *as well as* the impact of individuals and communities upon contextual conditions for wellbeing.

Unfortunately, despite the explanatory power of ecosocial health theory, the value of the ecological perspective has not always been reflected in population health practice, leading to, as Hancock (2015) describes, a kind of “ecological blindness” in the mainstream public health community (p. 252). As Krieger (2014) contends, “ecology” in the ecosocial model she described in 1994 was not in reference to “ecological levels of analysis,” that is, it is not just about looking at health trends from a population perspective, but rather it references the literal ecosystems on which all social systems depend. She argues that “to understand population patterns of health, disease and well-being, including health inequities, we must grapple with how we embody, literally, our societal and ecological context, within and across historical generations” (2014, p. 1). Thus, the spaces, places, and relationships that characterize human interaction and agency—the contexts in which life is experienced—are essential to understanding the patterns, trends, and inequities that characterize human health.

Critiques of individualism within Western epidemiological theory focus on the “ecological fallacy,” which is the tendency for individual-level analysis to overlook

intergenerational, interconnected, multi-level dynamics of population health (Krieger, 2014). By contrast, the contextual and relational aspects of wellbeing are central to Indigenous ways of thinking about health (Tagalik, 2010). Within Indigenous models of wellbeing, the individual is usually conceptualized holistically throughout the lifecourse, with physical health tied to spiritual, mental, and emotional health, within a family, a community, a nation, and in relationship with other forms of life and with the land (Tagalik, 2010). However, despite their relevance to analysis of ecosocial problems like climate change (Cochran et al., 2014; Tuner & Clifton, 2009), the epistemologies and bodies of knowledge that have underpinned the governance of Indigenous nations for millenia continue to be undervalued by Canadian institutions and Canadian society at large (RCAP, 1996; TRC, 2015).

In employing an ecosocial lens on climate change in this study, I am grounding my inquiry in the reality that Canadian context is a colonial context, and health outcomes are determined by social and ecological systems that have privileged people of European descent (like myself)<sup>3</sup> and their cultural values over the lives, cultures, and perspectives of Indigenous peoples (Reading & Wien, 2009). The dispossession and exploitation of Indigenous peoples through colonization was justified through myths and stereotypes that still impact Indigenous lives today (Allan & Smylie, 2015; St Denis, 2007). These myths, at their root, are about the relationship between nations and lands, and about controlling access to resources (St. Denis, 2007). As St. Denis (2007) explains, “The implicit and explicit designations of Aboriginal people and their use of land as inferior to that of the colonizer/settler, the racialization of Aboriginal people justified and continues to justify the colonization of Aboriginal people and their lands” (p. 1071-1072). As such, the inequitable impacts of climate change are theorized here to be nested within broader relationships of injustice between populations, and within a historically-rooted narrative about the relationship between peoples and planet.

---

<sup>3</sup> As a descendent of settlers to Treaty Six territory and the unceded lands of First Nations and Métis peoples in Saskatchewan, I aim to position myself ethically with regards to these ways of knowing (Ermine, 2007) and I acknowledge with respect the depth of wisdom held by Elders, Knowledge Keepers, and members of Indigenous communities when it comes to modeling the linkages between ecological and social determinants of population health (Reading & Wien, 2009; Tagalik, 2010). I approach this topic with the knowledge that neglect of relationality is endemic to settler-colonial culture, which itself is a broader systemic phenomenon manifesting across every aspect of the social-ecological spectrum in Canada (Allen & Smylie, 2015).

### **Climate change capacity from a community empowerment perspective.**

Secondly, this thesis explores capacity to address climate change through a community empowerment perspective. This approach suggests that population health has important roles to play in addressing the unfair risks and impacts of climate change and fulfilling these roles involves partnership with social movements already shaping the transition a sustainable future. Hancock et al. (2015) explain that social movements already working toward justice at the local level are natural allies of population health and “in many cases these partners have many decades of experience to share with us” (p. 11). The authors argue that in order to be effective in climate leadership, population health professionals need to support leaders in these communities (Hancock et al., 2015, p. 11). Social and environmental justice movements rely on leaders to “turn opportunity into purpose” despite conditions of uncertainty and risk (Ganz, 2011, p. 273), and the contextual sense-making strategies used by these leaders could help population health professionals in framing climate change for others. This theory is consistent with existing health promotion theory, which designates “leadership,” “articulating values” and “critical reflection” as key dimensions of community capacity (Wallerstein, 2002). By exploring climate narratives amongst those who shape community-level stories, the barriers to engagement can be explored and opportunities for shaping mobilizing narratives can be identified.

Community-level contexts are shaped by structural and systemic forces, and those forces can hinder community capacity and elicit powerlessness (Bernstein et al., 1994). Community empowerment theory is a useful supplement to ecosocial theory because it brings attention to the role of (and limits to) individual and collective agency within the multi-level contexts that characterize health determinants (Wiggins, 2012). Population health professionals engaging with this theory highlight the problem of powerlessness and its impact on individual and community health outcomes (Wiggins, 2012). For example, Guterrez argues that through the development of a critical consciousness, communities can gain awareness about the power dynamics that shape perceptions and experiences and can begin to identify roles in social change (Bernstein et al., 1994, p.283). Labonte theorizes that the process of community empowerment is about relationality, and about shifting the relative distribution of power between social groups (Bernstein et al., 1994, p. 284). Lerner (1986) offers insight into the psychological dimensions of powerlessness and describes how the view that unfairness is unchangeable can produce emotions

that further hinder social action. Thus, a lack of mobilizing narratives among community leaders is theorized to be a barrier to collective action in context.

### **Climate change engagement from a narrative perspective.**

Thirdly, I rely upon narrative theory to justify data collection and analysis procedures for this study. Narrative theories focus on the linguistic and structural aspects of meaning, and their application to climate change engagement is becoming more evident within literature (Gjerstad & Fløttum, 2017; Paschen & Ison, 2014). Narrative inquiry can be employed to explore the underlying structure of conceptual interpretation (Riessman, 2008), and this type of analysis is useful for understanding engagement with ecosocial health topics like climate change (Paschen & Ison, 2014). Throughout the literature about climate change communication, interpretive processes are consistently found to impact engagement, actively mediating cognitive, affective, and behavioural responses to knowledge about climate change (Wibeck, 2014). When narrative theories are applied to inquiry about climate change engagement, context-specific variables of engagement come to the surface (Paschen & Ison, 2014). Through such an approach, it is assumed that, depending on the interpreter, existing perceptions of time and place ground the story's plot and scene, and that the recognizable, and thus valid, characters have already been cast. Regardless of the audience with whom we are seeking engagement, population health professionals must be able to navigate these existing stories if we are to communicate effectively.

I employ narrative theory to capture the interplay between personal and public spheres of experience. Even when they are “hiding in plain sight” (Zerubavel, 2015) or expressed through “themes of silence” (Freire, 1970), climate change narratives already exist in contexts across Canada (Mildenberger et al., 2016). Survey results demonstrate that while a majority of Canadians believe that climate change is happening and that it is caused by human actions, there are regions in the country where the opposite is true (Mildenberger et al., 2016). In particular, regions where local economies are dependent on fossil fuel-related activity are less likely to agree that humans are causing climate change (Mildenberger et al., 2016, pg. 7). However, individuals do not exist in silos; they live in communities. People who believe the climate change is a human-caused problem share space and time with those who deny that action is needed.



Individuals who desire systems-level solutions and the promotion of health equity live in relationship with individuals whose livelihoods depend on carbon-intensive industries. How do these stories overlap and interact within an individual's lived experience? My own methodological foundations are discussed in detail in Chapter 3, and narrative theory is a strong theme throughout, as it allows for inquiry into the personal stories under the surface of public silence and inaction.

## **Key terms**

This thesis critically explores the meanings of multiple concepts, and definitions are provided throughout the following chapters. However, a number of key terms ground the inquiry theoretically and working definitions are provided below.

### **Climate change.**

Throughout this thesis, I refer to both “climate change” and “global warming” to describe the planetary changes occurring presently and historically because of human activity. The IPCC defines climate change as “a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer” (2014, p. 5). While these changes can result from natural processes, the United Nations Framework for Climate Change (UNFCCC) defines climate change as: “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods” (IPCC, 2014 p. 5). The latter, more specific, definition of climate change due to anthropogenic forces is employed throughout this thesis.

### **Climate change adaptation.**

Adaptation to climate change refers to a process of change in anticipation of climate impact. As the IPCC states, “[i]n human systems, adaptation seeks to moderate or avoid harm or

exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects” (2014, p. 5). From an ecosocial systems perspective, risks of climate change can occur along multiple pathways, and thus adaptation to climate change ideally includes change at multiple levels (e.g. individual lifestyle, household-level choices, community capacity and built environments, broader social and political structures, economic and technological designs).

### **Climate change mitigation.**

Mitigation of climate change refers to actions that address the drivers of greenhouse gas emissions, that is, the “the processes, mechanisms, and characteristics of society that influence emissions through the factors, such as fossil fuels endowment and availability, consumption patterns, structural and technological changes, and behavioural choices” (2014, p. 356). The IPCC describes that “[u]nderlying drivers are subject to policies and measures that can be applied to, and act upon them. Changes in these underlying drivers, in turn, induce changes in the immediate drivers and, eventually, in the GHG-emissions trends” (2014, p. 356). Mitigation levels in line with the Paris Agreement (UNFCCC, 2015) are beyond the scope of individual lifestyle and household-level choices, and thus Canada’s official framework for climate change focuses on industry-level and policy-level actions (Government of Canada, 2016).

### **Climate change engagement.**

Following Lorenzoni, Nicholson-Cole, and Whitmarsh (2007), the term “climate change engagement” is defined here as having interconnected cognitive, affective, and behavioural elements, because “[i]t is not enough for people to know about climate change in order to be engaged; they also need to care about it, be motivated and able to take action” (p. 446). The authors argue for a definition of engagement that encompasses “a personal state of connection” experienced by an individual in relationship to the issue of climate change, in contrast to definitions that conceptualize engagement “solely as a process of public participation in policy making” (Lorenzoni et al., 2007, p. 446). In this thesis, I refer to climate change engagement as a process of developing a state of connection, but I leave room conceptually for the possibility that

the “state” of engagement can be facilitated or disrupted, the process of engagement rendered complete or incomplete.

### **Climate action mobilization.**

Mobilization refers to a process of moving to action, of embodying tactics in a real-world context. For the purposes of this thesis, climate action mobilization is the outcome of effective, meaningful climate change engagement, as it demonstrates movement from knowledge of the risk to motivation to act, to actual embodied action. In the abstract, mobilization can refer to the process underlying either an individual-level or collective-level of action, but for the purposes of this study, meaningful climate action mobilization is defined as a social process, given that the scale and scope of change necessary is beyond an individual’s capacity. However, individual-level mobilization is still part of the overall definition of climate action mobilization within this thesis, and the relationship between individual-level action and collective-level action is explored in detail using Ganz’s narrative framework (2011). In the context of social movements, Ganz (2011) argues that “[m]obilizing others to achieve purpose under conditions of uncertainty—what leaders do—challenges the hands, the head, and the heart” (p. 273). In this thesis I employ Ganz’s theory that leaders can use public narrative to mobilize others by shaping stories that generate “those feelings that facilitate action to trump feelings that inhibit action” (2011, p. 276).

Bringing Ganz (2011) and Lorenzoni et al. (2007) lenses together, mobilization, defined as the process of moving to action or moving others to action (hands), necessarily involves engagement, which includes both cognitive (head) and affective (heart) domains, because motivations are linked to values and emotions (Nussbaum, 2001). As Ganz describes, “our readiness to consider action, our capacity to consider it well, and our ability to act on our consideration rest on how we feel” (2011, p. 276), and thus leaders (as individuals) mobilize others (collectively) through an “emotional dialogue, drawing on one set of emotions (or values) that are grounded in one set of experiences to counter another set of emotions (or values) that are grounded in different experiences—a dialogue of the heart” (Ganz, 2011, p. 277). Thus, within this thesis, individual-level mobilization is conceptualized as a process of embodying leadership. Actions are taken in context, motivated by a personal “dialogue of the heart,” such as in Ganz’s “story of self” (2011, p. 282). Collective-level mobilization, on the other hand, is

conceptualized as action motivated by a public “dialogue of hearts,” including a process of naming the broader context and the changes needed with respect to a particular audience, such as in Ganz’s “story of us and now” (2011, p. 283). As this thesis demonstrates, the two levels of dialogue—personal and public—are linked narratively, but they represent distinct conceptualizations of climate action mobilization.

### **Population health (ecosocial theory).**

As a concept under the broad umbrella of “health,” population health can be defined as “the health outcomes of a group of individuals, including the distribution of such outcomes within the group” (Kindig & Stoddard, 2003, p. 381). Population health, as a field of health research and practice, is concerned “with both the definition and measurement of health outcomes and the roles of determinants that impact health” (Kindig & Stoddard, 2003, p. 381). Importantly, Kindig and Stoddard chose the term “outcomes” instead of “status,” as health is not just a singular state of being but a dynamic state that requires varied conceptualizations in different contexts over time (Kindig & Stoddard, 2003, p. 381). Determinants, according to the authors, “include medical care, public health interventions, aspects of the social environment (income, education, employment, social support, culture) and of the physical environment (urban design, clean air and water), genetics, and individual behavior” (Kindig & Stoddard, 2003, p. 381).

As previously discussed in this chapter, this thesis employs a broader perspective of the determinants of health that includes ecological pathways in addition to social pathways. As Krieger (2001) argues, the ecosocial approach “fully embraces a social production of disease perspective while aiming to bring in a comparably rich biological and ecological analysis” by focusing population health analysis upon embodiment, pathways to embodiment, cumulative impacts at multiple scales, and the roles of agency and accountability at multiple levels (p. 672).

### **Health equity (social and environmental justice lens).**

The concept of health equity is central to population health theories, and much of the work in the field of population health is focused on closing gaps in health outcomes between or

within populations (CSDH, 2008, WHO, 1986). Kindig and Stoddard (2003) point out that being concerned with the determinants of health “allows one to consider health inequality and inequity and the distribution of health across subpopulations, as well as the ethical and value considerations underpinning these issues” (p. 381). It is appropriate for population health professionals to concern themselves with equity and inequity because efforts to improve population health can privilege some subpopulations over others. As Krieger (2001) explains, “absent concerns about social equity, economic growth and public health interventions may end up aggravating, not ameliorating, social inequalities in health if the economic growth exacerbates economic inequality” (p. 671).

The World Health Organization (WHO) maintains that inequities in global health, including “[t]he poor health of the poor, the social gradient in health within countries, and the marked health inequities between countries” are directly linked to the imbalanced distribution of “power, income, goods, and services, globally and nationally” which mediate the “circumstances of people’s lives – their access to health care, schools, and education, their conditions of work and leisure, their homes, communities, towns, or cities – and their chances of leading a flourishing life” (CSDH, 2008, p. 1). Underpinning health equity-based work is the belief that disparities “are not only unnecessary and avoidable but, in addition, are considered unfair and unjust” (Whitehead, 1990, p. 219). In using the term inequity instead of, or in addition to, health disparities, I aim to entrench my analysis of fairness in terms of human rights and ethics, based on social values of justice (Braveman, 2006).

### **Social justice.**

Social justice refers here to a theoretical concept encompassing a set of assumptions and values that uphold human rights, including the domains of distributive justice, or fairness regarding who gets what, and procedural justice, or fairness regarding who is in charge of what (Fondacaro & Weinberg, 2002). In the Ottawa Charter, social justice is considered to be a prerequisite of health (WHO, 1986). Social justice relates to health equity, and its principles can be applied to when analyzing the impact of power imbalances on the lives and experiences of individuals and groups. Within population health and other social ecological disciplines, social justice concepts emerge “across multiple levels of analysis, including micro-, meso-, exo-, and

macro-levels” (Fondacaro & Weinberg, 2002, p. 490). Social justice perspectives inform research and practice at each of these levels, but the relationship between the levels of analysis is also of concern to those employing an ecosocial approach. As Fondacaro and Weinberg (2002) explain,

[i]n examining the relationship between levels of analysis we should remain cognizant of the fact that macro systemic forces deeply rooted in our political, economic, and legal systems often influence how conflicts are resolved and resources are allocated in micro-systemic contexts like those comprised of family members, friends, work associates, and neighbors. (p. 490)

My working definition of social justice for this thesis encompasses multiple social and ecological levels of analysis and underpins my efforts to improve equity and fairness. Because injustice that is rooted in macro levels of social organization ripples across the other levels, actions grounded in the values of social justice are justifiably targeted toward systemic forces and social structures. Macro conditions of justice produce equitable health outcomes across other levels of the ecosocial paradigm, and thus actions to improve justice at a structural level are linked to co-benefits for population health (WHO, 2008). Freire (1970), from the perspective of a public educator, theorizes that existing social structures are constantly becoming, and in their construction and interpretation, they can be transformed. Consistent with the values of social justice, Freire (1970) promotes public dialogue aiming at “surmounting the antagonistic contradictions of the social structure, thereby achieving the liberation of human beings” (p. 179). These themes re-emerge throughout this thesis, as the process of defining and delineating social justice values serves as a mediator of climate change engagement among my participants.

### **Environmental justice.**

Through an ecosocial perspective, the principles of social justice are interconnected with the values of environmental justice. Environmental justice is a theoretical concept that refers to a “double burden” experienced by marginalized populations, whereby “inequality resulting from stratified *social* environments lead to non-random variability in the quality of *physical environments*, and vice-versa” (Masuda et al., 2010, p. 454). As this definition reflects, environmental and social justice are interdependent, and those with inequitable access to social,

economic, and political power are more likely to experience environmental injustice. As such, according to Masuda et al. (2010), environmental justice involves global action to “to redress ongoing legacies of environmental discrimination and to promote in environmental governance more equitable participation and recognition of those groups who have been relegated to society’s margins” (p. 455).

In drawing upon theories of environmental justice in addition to social justice, I aim to bring explicit attention to the relationships between peoples and lands. As aforementioned, the interdependence of social and environmental systems is inherent to Indigenous ways of knowing, being, and doing (Reading, 2013). As Tuck, McKenzie, and McCoy (2014) argue, “[e]nvironmental justice can only take place with Indigenous peoples and epistemologies at the center” (p. 17), and thus a pursuit of environmental justice disrupts settler-colonial agendas. Concepts of environmental justice bring a political lens to the dynamics of land access and land relationships. Tuck et al. argue that “understanding and fostering sustainable relationships to land and the environment cannot happen when those activities are accountable to a futurity in which settlers continue to dominate and occupy stolen Indigenous land” (p. 17). As such, environmental justice themes necessarily overlap with concepts related to decolonization and Indigenous sovereignty. In employing the term environmental justice throughout this thesis, I am referencing ways of knowing that are based on the interconnections between social and environmental spheres of life.

### **Narrative.**

Narrative theories are discussed in detail in Chapter 3. The term “narrative” is used in multiple ways across fields, and it is sometimes used synonymously with other related terms (Riessman, 2008, p. 3). Polkinghorne (1988) for example, uses “narrative” and “story” synonymously, a practice that I also adopt in this thesis. Riessman (2008) argues that a singular definition of narrative cannot satisfy every context in which the term can be used but begins her own definition by explaining that in storytelling, “a speaker connects events into a sequence that is consequential for later action and for the meanings that the speaker wants listeners to take away from the story” (p. 3). Unlike other forms of text or speak, “narratives are strategic, functional, and purposeful” (Riessman, 2008, p. 8), and as the methodology chapter discusses,

they conform to a structured plotline with an emotionally meaningful sequence and schema of organization (Riessman, 2008, p. 4). Emotional and moral meaning are contextually and culturally-bound processes, and as Wilson (2015) articulates, “[t]he structural elements of a narrative are examples of preunderstandings that reflect the cultural framework within which the narrative is authored” (p. 890). By studying stories, cultural frameworks are illuminated.



## **Chapter 2: Literature review**

This chapter reviews the literature about barriers to engagement with climate change, particularly among individuals and groups who generally understand the risks of inaction in addition to holding personal values of justice and of equitable wellbeing. This is a category of people that might embrace climate change engagement. However, such an assumption implies that those who are not already engaged in meaningful action are either ignorant of climate change, unmotivated to act, or both. Research suggests that more is going on beneath the surface of immobilization. In summarizing this literature for my study, I draw upon studies outside of the boundaries of Canadian community health literature, including those designed by communications researchers, psychologists, and sociologists, the majority of whom work with populations in American, European, or Australian contexts. These researchers share among them a post-positivist, if not explicitly constructivist or social constructivist, orientation to knowledge production about climate change engagement, and they provide a foundation for exploring climate change narratives.

Tying this body of work together is a common understanding that cognitive and affective reasoning are biased processes, and that for information about climate change to translate into desirable behaviours and choices, greater attention must be given to the cultural and structural contexts in which information is communicated and interpreted. Collectively, the studies included in this review explore the relationship between knowledge and action, also referred to in the literature as the “value-action gap” or the “attitude-behavior divide” (Wibeck, 2014, p. 397). However, existing literature provides a nuanced but incomplete picture of the barriers to climate change engagement, particularly when it comes to the contextual barriers to mobilizing collective action. Questions remain about the complex contexts in which climate change is interpreted, and qualitative methodologies could be utilized to gain a deeper understanding about the meaning of engaging with climate change in the context of everyday life (Morse, 2012).

In reviewing the literature about climate change engagement, qualitative studies are outnumbered by quantitative approaches, with most authors analyzing surveys to determine relationships between interpretive variables, such as identities, values, and emotional norms.

Overwhelmingly, the research reviewed demonstrates that the overlap and interaction of these dimensions of interpretation mediate perceptions of climate change and ultimately impact responses at the individual and collective levels. A deeper understanding is thus needed with regards to the way engagement variables interact with lived experience, particularly in contexts characterized by perceived silence, apathy, or public inattention to climate change (Lertzman, 2013; Norgaard, 2011). Narrative approaches, which explore engagement variables in context, have emerged more prominently within literature about climate change in recent years (Fløttum & Gjerstad, 2017; Moezzi, Janda & Rotmann, 2017; Paschen & Ison, 2014), but remain under-represented in the literature about barriers to engagement. This design could provide insight into the phenomenon of immobilization among knowledgeable, motivated individuals.

This chapter begins with a review of existing literature about the mediators of climate change engagement, providing evidence for the need for models that go beyond an information-deficit approach. Secondly, I explore research about the barriers to action among those who already have a basic understanding of climate change and who are otherwise assumed to be “low-hanging fruit” when it comes to activating values of social and environmental justice. Thirdly, I identify gaps in the literature about modeling cultural and contextual barriers to action for this type of audience and explain why more researchers are adopting a narrative approach to climate change engagement research.

### **Moving beyond the information-deficit model: Mediators of engagement**

*The Lancet* Countdown states that “insufficient understanding of climate change is one of the largest perceived barriers to individual engagement” (Watts et al., 2017, p. 1161) but the climate change engagement literature suggests that knowing the truth about climate change can also result in barriers to engagement (Lertzman, 2013; Moser, 2014; Norgaard, 2006; Randall, 2009). Despite scientific consensus about the reality and health risks of climate change (IPCC, 2014; Watts et al., 2017), there continues to be disagreement about climate change across and within populations (Hulme, 2009; Leiserowitz, 2006; Mildenberger et al., 2016). Systematic reviews of literature about climate change engagement have been performed (Moser, 2014; Whitmarsh, O’Neill, Lorenzoni, 2013; Wibeck, 2014) and find that cultural and contextual factors mediate interpretations and perceptions of climate change, resulting in a varied landscape

of climate attitudes and opinions despite a strong factual basis for climate action. On the surface, disagreement might be assumed to result from a lack of public *understanding* about the science of climate change, but as Wibeck (2014) explains, over the last decade, increasing emphasis has been directed to public *engagement* approaches, conceptualized as an active process that involves mental processes (cognition) as well as emotional processes (affect) and processes of embodiment (behaviour). Applied to climate change communications, the goal of a public engagement approach goes beyond ensuring that scientific facts are adequately understood; it involves attention to the barriers characterizing the “environmental, technological, political, social-cultural contexts and their multi-scale interactions” in which knowledge is interpreted and acted upon (Paschen & Ison, 2014, p. 1083).

### **Knowledge is culturally and contextually interpreted.**

When considering the gaps between knowledge and action, the interpretive aspects of climate change and mediators thereof must not be overlooked. Researchers and theorists who study climate change engagement point out that, while scientists agree about the causes of climate change, it remains an issue shrouded in uncertainty, and even knowledgeable publics rely on personal experience and cultural cues to make sense of the unknown aspects of climate change. Hulme (2009), for example, maintains that cultural mediators impact interpretation of climate uncertainties, and he identifies cultural processes at the root of disagreement about climate change and inaction to address it in a meaningful way. Work by Patt and Weber (2014) supports Hulme’s argument, as the authors find that globally, there is still public uncertainty about several aspects of climate change: the impacts of emissions; the stocks and flows of greenhouse gases; the possibilities and costs related to technological solutions, with adaptation measures, and with climate policies. Additionally, the authors find publics uncertain about the degree to which cultural choices and preferences factor into potential future scenarios. In other words, how will human agency change (or limit) the context for all other uncertainties? This study aligns with a body of literature concluding that individuals tend to draw on their personal and cultural experiences to inform engagement choices rather than drawing upon scientific knowledge to explain or justify their behavioural choices (Callison, 2014; Lertzman, 2013; Norgaard, 2011; Whitmarsh et al., 2013; Wibeck, 2014). Cultural norms and personal

experiences mediate the processes underlying climate change interpretation, resulting in varied cognitive, affective, and behavioural responses across individuals, groups, and contexts (Kahan, Jenkins-Smith, & Braman, 2010; Callison, 2014).

Instead of assuming that publics lack knowledge about the technical or scientific aspects of climate change, engagement researchers aim to describe and model the mediators of cognitive, affective, and behavioural outcomes. Generally, researchers explore the interactions between various interpretive elements, such as frames, values, emotions, and identities (Whitmarsh et al., 2013; Wibeck, 2014). Studies use various research designs, such as surveys, media analyses, experimentation, interviews, and observation to explore complex associations related to outcomes of all three facets of engagement, including variables related to cognitive processes such as comprehension or belief (e.g. Myers, Nisbet, Maibach, & Leiserowitz, 2012); affective processes, such as the degree to which specific emotions or evaluations are elicited (e.g. O'Neill & Nicholson-Cole, 2009); and the manifestation of behaviours such as policy support, lifestyle choices, or social activism (e.g. Rees et al. 2015). As a body of work, these studies counter the information-deficit model by identifying multiple overlapping dimensions of variability when it comes to interpretations of climate change. However, my review of the literature also unveils contradictory and overly-simplified analyses of climate change engagement, leaving questions about how to model, and ultimately overcome, contextual barriers to mobilization as they manifest within the complexity of lived experience.

### **Competing frames result in diverse interpretations.**

One of the reasons that climate change facts produce disagreement is because they are interpreted in culturally-biased ways, and researchers have aimed to help overcome disagreement about climate change by improving understanding about why interpretive variables function differently with different audiences (Myers et al., 2012; Nisbet, 2009; Spence & Pidgeon, 2010). Those who explore engagement from this perspective argue that if a group's cultural bias can be understood, messaging can be adapted to align with the language, values, and experiences shared by the members of that group, ultimately leading to deeper and more authentic engagement with the contents of the message. For example, in his work about framing climate change, Nisbet (2009) argues that there exists "two Americas" divided along political lines when it comes to

interpretations of climate change. Nisbet (2009) argues that because the cultural basis of interpretation is so polarized between Democrats and Republicans, different frames must be employed to communicate the same message to each group (p. 18). “Frames” Nisbet (2009) explains, “are interpretive storylines that set a specific train of thought in motion, communicating why an issue might be a problem, who or what might be responsible for it, and what should be done about it” (p. 15). In other words, regardless of the contents of a message, the subjective processes underlying interpretation is dependent on pre-existing values, experiences, biases, and social relationships of the listener, and the meaning of the frame is determined by its relative position within the *existing* landscape of cultural and contextual meaning.

Exploring the features and functions of effective frames, or “interpretive storylines” (Nisbet, 2009, p. 15), about climate change opens the door to questions about why some frames resonate more with some people than others, and about how those associations might be harnessed to mobilize different, even opposing, publics. These varied publics are referred to in the literature by some as “interpretive communities” (Leiserowitz, 2006), conceptualized in the plural because literature demonstrates that there are no one-size-fits-all storylines for engaging “the public” as a whole. For example, Myers et al. (2012) finds that framing climate change in terms of national security is more effective with interpretive communities already concerned about climate change, versus a public health frame, which arouses hopeful emotions amongst those previously dismissive of climate change. The pre-existing cultural values and identities held by an individual appear to shape the meaning of climate change interpretations, and this phenomenon is also reflected at the group level (Callison, 2014). Callison’s work explores how climate change becomes absorbed into the vernacular of a particular group, arguing that to understand how climate change comes to matter to a person, one must consider what is valued by the groups to which the individual belongs. Callison (2014) contends that understanding how people interpret climate change requires understanding the complexity and information-dense contexts in which individuals negotiate social constructs and ultimately act out their lives (p. 3). Climate change engagement frames resonate differently with different publics because communication does not occur in a vacuum, but rather in the context of lived experience, with varying implications for mobilization.

## **Engaging the knowledgeable: When the meaning of climate change is immobilizing**

Within cognitive, affective, and behavioural processes, the “threat to self” can take precedence over other interpretive functions, which helps to explain why despite the risks of inaction, climate change knowledge can immobilize. As Norgaard (2011) finds, “people want to protect themselves a little bit” when it comes to interpreting the risks related to climate change, provoking coping mechanisms that hinder action. Lertzman (2013) argues that personal climate change stories are complex and maintains that an individual can both accept that what matters is being threatened while also distancing that threat in order to cope with it. Lertzman challenges the notion of a “gap” between values and actions, opting instead for the concept of “gridlock” between awareness and action (2013, p. 129). She discusses the “environmental melancholia” that results from an awareness of loss, and considers how withdrawal and disengagement are used as coping mechanisms by those experiencing environmental change (Lertzman, 2013). For example, Norgaard (2011) argues that to protect themselves, individuals who are knowledgeable of climate change use humor as a way of maintaining the appearance of control despite the ontological uncertainty imposed by it (p. 125) or defer to national myths about the relative innocence of one’s region compared to others in causing climate change (p. 171). These findings suggest that the *meaning* of risk is a stronger determinant of engagement than knowledge or understanding of risk, and that even when risks are communicated in a culturally-appropriate way, the contextual implications of risk could fail to evoke mobilization.

There is a strong consensus in contemporary the climate change engagement literature that emotions and values are key variables in how diverse groups interpret the meaning of climate change and the risks associated with it (Roeser, 2012; Whitmarsh et al., 2013; Wibeck, 2014). However, like cognitive and behavioural processes, emotional and affective processes are complex. A review of studies that focuses specifically on emotional variables indicates contradictory results. For example, in a multi-method study, O’Neill and Nicholson-Cole (2009) find that while fear is an effective way of drawing attention to climate change, it is ineffective for eliciting authentic engagement at the individual level. The timeline of risk, the authors argue, is important when individuals are ranking their fear of climate change against risks related to other concerns (2009, p. 370). Furthermore, if climate change is perceived to be a far-off problem, or a problem that cannot be meaningfully addressed through personal actions, fear may produce disengagement (O’Neill & Nicholson-Cole, 2009, p. 370). As another example, based on a

review of climate change communications from a public health perspective, Maibach, Roser-Renouf, and Leiserowitz (2008) recommend that messages evoking fear should be paired with messages that evoke a strong sense of efficacy, or a sense of capacity to address the threat at hand (p. 494), because the context in which messages about climate change are received colours the interpretation and the emotional response that follows, with varied impacts on mobilization.

Testing for the mobilizing potential of other emotions presents a similar paradox. In terms of hope, psychological theory suggests that when a person can take action to solve a problem, they are more likely to feel a sense of empowerment instead of hopelessness (Fritze et al. 2008). In contrast, Ojala (2015) argues that there are different kinds of hope, and some individuals feel hopeful about climate change because they do *not* understand the risk or are in denial of the scale or scope of risk that climate change poses. The author used a questionnaire design and found that the relationship between feelings of hope and pro-environmental behaviour depends “on the characteristics of the more specific sources of hope, or pathways to hope” (Ojala, 2015, p. 143). Guilt is another example of an emotion with varying impacts on engagement depending on the particular pathway, or storyline, from which it derives, and Rees et al. (2015) predicted that pro-environmental behavior could be associated with feelings of guilt about one’s negative impact on the natural environment (p.441). However, the authors note that negative feelings, such as shame, have also been found to correlate with withdrawal or denial (p. 442). They conducted an experiment examining attitudes and behaviours related to different feelings of guilt and found that shame drives pro-environmental behaviours. They conclude that moralizing climate change may backfire when, for example, “perceived efficacy to solve the problem is low” (Rees et al., 2015, p. 449). This literature suggests that cognitive, affective, and behavioural mediators of climate change engagement overlap in context and make it difficult to pinpoint the preconditions for translating knowledge into action, even among those who profess to hold pro-environmental values.

### **Mobilization and moral stories.**

Emotions play important roles within climate change engagement literature because they relate to morals and values. As Roeser (2012) explains, too often, emotions are not included in political or technical discussions about climate change, and this hinders access to moral

evaluations about the impacts of delayed action. The author argues that “we need ethical intuitions and emotions in order to have well-grounded insights into whether a technological risk is morally acceptable or not, and how to balance various moral considerations about risks” (2012, p. 1035). Ganz (2011) argues that emotions are a doorway to values, as “they provide us with vital information about the way we ought to live our lives as well as the motivation to live them in that way” (p. 275). Ganz (2011) draws on moral philosopher Martha Nussbaum (2001) to argue that it is futile to try to motivate moral choices without emotions. He makes connections between emotional capacity and personal agency, maintaining that emotions serve as a bridge between “our readiness to deliberate, our capacity to deliberate successfully” and “the values that orient us to our world” (Ganz, 2011, p. 275).

Cognitive interpretation can orient listeners to the “what,” the quantifiable aspects of climate change and tangible strategies to address them, but as Ganz (2011) argues, affective processes are essential for understand the “why” questions, “why does it matter, why do we care, why must we risk action” (p. 275). This is in line with findings from systematic reviews of climate change engagement literature that suggest communicators should aim to frame climate change in terms of human experiences, values, and agency rather than focusing on the technical aspects of climate change (Moser, 2014; van der Linden, Maibach, & Leiserowitz, 2015; Wibeck, 2014). In the face of uncertainty about paths forward, emotions and the values they are linked to provide key information about the moral implications of risk, and even knowledgeable individuals may struggle to access the emotions that motivate action.

Ganz (2011) argues that when it comes to mobilizing moral action in the face of uncertain conditions, narrative is a key tool for leaders. “Storytelling” he maintains, “is the discursive form through which we translate our values into the motivation to act,” (2011, p.280). Through this lens, storytelling is how meaning is made from disparate experiences, and how purpose is carved out of uncertainty. Just as Roeser (2012) argues that moral risk is not directly apparent within technological information, Ganz (2011) theorizes that “[h]ope is not to be found in lying about the facts, but in the meaning we give to the facts” (p.287). This theory helps to explain why different groups might feel differently about the risks associated with climate change despite being presented with identical information. If a climate change frame evokes feelings that hinder decision-making or action, feelings, according to Ganz (2011) such as inertia, apathy, isolation, fear, and self-doubt, the response may not look the same as if feelings



such as urgency, outrage, solidarity, hope, and empowerment are evoked (p. 277). Importantly, these emotions are theorized by Ganz (2011) to stem from the values and experiences of the listener or interpreter in question. Through this perspective, the contextually-bound meaning of climate change relates directly to the emotional and moral rationalizations made to explain both action and inaction.

### **A narrative approach to modelling contextual barriers to engagement.**

Narrative approaches are emerging more prominently in the literature in recent years because of their ability to capture concurrent and conflicting variables in context (Fløttum & Gjerstad, 2017; Paschen & Ison, 2014). As Paschen and Ison (2014) argue, context-specific perspectives are gaining momentum in the literature about climate change adaptation, and narrative could play a critical role in closing knowledge gaps about building local capacity (p. 1084). The authors argue that a deeper understanding is needed about the role of social norms and values on policy processes when it comes to climate change adaptation. Paschen and Ison (2014) put forward narrative methods because narratives reflect a social process of meaning-making, exposing how human experiences, thoughts, and actions are shaped by socially constructed language and discourse. Narrative inquiry, they contend, is about understanding how power operates within communication and how meaning is formulated in context, allowing for a deeper consideration about the “embodied entanglements of humans and their environments” (Paschen & Ison, 2014, p. 1087). In other words, narrative methods allow for critical exploration into the irreducible complexity of engaging with climate change in the context of everyday life. A narrative approach to climate change engagement is thus useful for exploring barriers to action because it takes cultural and contextual variables for granted: narrators (communicators) and audiences (listeners) and their respective cultures are implied, and subjects are contextually grounded in time and place.

Theorists and researchers who study climate change through a narrative lens using a variety of research designs (Bushell, Colley, & Workman, 2015; Carlson, 2017; Fløttum & Gjerstad, 2016; Jones, 2014; Randall, 2009; Wright, Nyberg & Grant, 2012). For example, Fløttum & Gjerstad (2017) use a five-point storyline to examine narratives contained within climate change policy documents on the basis that stories about climate change play an important role in influencing attitudes and preferences (Fløttum & Gjerstad, 2017). Similarly, Carlson

(2017) explores climate change narratives in Saskatchewan, Canada, from a policy perspective, analyzing perceptions of climate change “heroes,” “villains,” and “victims” according to different interpretive communities. Carlson (2007) finds that worldview, self-identity, and personal values mediate how causes and characters are perceived. Wright, Nyberg, and Grant (2012) also study personal identity and climate change and focus their analysis on individuals who promote sustainability in their professional lives. The authors used semi-structured interviews to collect data and explore the coherence of narrative identities held by these individuals. They analyze the stories used to link personal and professional “selves” and identify three archetypal narratives employed by this interpretive community to make sense of sustainability-focused work. These studies demonstrate the emergence of narrative as flexible tool for exploring climate change engagement across disciplinary boundaries.

Similarly, communications and engagement tools that centre story and that promote values of justice are also emerging within community health research and practice. For example, Kouri, Guertin and Shingoos (2016) put narrative theory into practice, using Ganz’s framework to build animations around the “stories of self” of two young mothers navigating health determinants in the context of the core neighbourhoods of Saskatoon, Saskatchewan. Ganz’s framework was employed to draw out the relationship between individuals, their personal efficacy, and the complex contexts in which efficacy is navigated. Thus, narrative frameworks have proven useful for those within climate engagement practice, and Ganz’s framework in particular has been successfully used in a population health context to amplify community voices and engage a systems-level response.

In addition to these peer-reviewed authors, several writers and community leaders have influenced my understanding of climate change engagement, including those who write about cultural and political barriers to action (e.g. Deranger, 2015; Klein, 2014; Steffen, 2016; Steffen, 2018). Some writers specifically draw upon storytelling to explore barriers to action (Marshall, 2014). Marshall (2014), for example, focuses on climate change stories and it summarizes many key themes within the literature, and contributes practical communications tools that embody the theories underpinning this thesis, in that they focus on systems-level action, on community contexts, and on storytelling as tool for engaging. This thesis is thus nested in a rich, diverse body of knowledge and contributes knowledge that could be useful for researchers and community members across multiple fields.

### **Chapter 3: Methodology**

This chapter provides background about the theories and assumptions that underpin my philosophical orientation as a qualitative researcher and provides an overview of my research methods. It includes an overview of narrative theories and their application to my ontological, epistemological, and methodological orientation. First, I explain basic theoretical concepts within narrative theory as they inform my constructivist ontological alignment. Secondly, I describe the structural form of narrative meaning and how it informs my interpretive epistemology. Throughout this discussion, I present perspectives on the role that storytelling plays in our lives as human beings, both individually and collectively, and focus in on Ganz's theory about how public narratives impact conditions for social change (2011). Thirdly, I discuss the qualitative methodology I am employing in this study, and I move from an abstract discussion of narrative theory to a specific look at the narrative framework I am applying to my exploration of climate change engagement. This chapter closes with an outline of my study design, activities, and analysis procedures, including justifications for my sampling decisions and data collection methods.

#### **Narrative and human experience**

Narrative is the discursive structure used to make meaning of human experiences. Humans, as conscious beings, occupy a physical universe and engage with it through symbolic means. As Polkinghorne (1988) explains, in their use of language, humans have introduced a layer of reality that exists in the mental realm, "the order of meaning" (p.2). Meanings forged in this mental environment inform thoughts and actions, and they underpin all human interaction. As individuals, we are each limited to accessing our own mental realm, our individual perceptions, but through language, humans exchange *shared* symbolic references in a way that conveys culturally relevant meaning (Polkinghorne, 1988). This is possible because the mental realm transcends individual experience. In other words, my perceptions of the world are not yours, but we share meaning when we share language to explain our common experience of the

world. The mental realm exists at multiple levels of shared experience, and collective meaning can be used interpersonally to exchange thoughts and ideas, to make plans, to describe feelings and perceptions, and to subscribe meaning to events and actions (Polkinghorne, 1988, p. 18).

Because they are used to share meaning, narratives serve as cultural and contextual artifacts. Humans draw on cultural values when narrating their personal and shared experiences and the act of constructing self-narratives, group narratives, and plans for action reveals both a process and a product of interpretation. Narration is thus an inescapable aspect of practical experience that involves telling and performing stories about ourselves and our solidarities. For example, in psychology, self-narratives are used to elucidate an individual's personal experience in time and place in a meaningful way. A narrative identity "reconstructs the autobiographical past and imagines the future in such a way as to provide a person's life with some degree of unity, purpose, and meaning" (McAdams & McLean, 2013, p. 233). Self-narratives reveal an individual's perceived position within a cultural context, and their construction involves a process of evaluating one's role and one's characteristics in relation to others (Wilson, 2015). This phenomenon also occurs at the collective level when groups narrate their shared experiences and make sense of experiences according to their shared values, their "story of us" (Ganz, 2011, p. 286). Ganz (2011) argues that for a population or group to gain a collective identity, a storyteller must be present to interpret a shared experience (p. 284).

While psychologists might use narrative to focus on an individual's cognitive and affective processes of meaning-making, sociologists explore stories of both "self" and "us" to understand how systemic forces influence identity-construction amongst individuals and groups (Pitre, Kushner, Raine, & Hegadoren, 2013). Narrative theories suggest that exploring that which is included in the story and how the story is told reveals the social and structural limits imposed upon the storytelling process, including the social structures that influence the formation of personal and group identities (Pitre et al., 2013; Wilson, 2015). For example, narrative philosopher Ricoeur theorizes that in constructing a narrative identity, an individual both *references* sociocultural values and *responds* to them, revealing a relationship between *pre-understanding* about plot structure and *agency* to configure the narrative self within those boundaries (Wilson, 2015). From this perspective, identity-formation is a push-and-pull between cultural context and individual agency, and the ways in which the past and present agency are

defined matter because they also mediate the perception of future possibilities (Wilson, 2015, p. 895).

As a knower with a constructivist alignment (Guba & Lincoln, 1994), I am interested in conceptual phenomenon related to the human experience. Narrative theories feature prominently in my epistemic orientations, interwoven throughout my methodological assumptions. Narrative inquiry and analysis are key tools in my toolkit as a qualitative researcher, and I rely upon them like a photographer relies on a camera to produce pictures. However, extending this metaphor, depending on the type of photo the photographer wishes to produce, she chooses the subjects, the scope of what is viewed, and the depth of the focus of her lens. Similarly, I draw upon specific theories of interpretation to justify my study focus, as well as the level and type of analysis I decide to apply to the data collected. Narrative methodology (Riessman, 2008) allows for a systematic exploration of the structures and themes that shape climate change engagement among my participants (Paschen & Ison, 2014), and writing about systematic interpretation (Austgard, 2012; Crist & Tanner, 2003, Gimbel, 2016) provides clarity with regards to my study choices.

### **Ontological assumptions: Narrative and the language of meaning**

My philosophical orientation to knowledge aligns with constructivist paradigms articulated by theorists like Guba and Lincoln (1994). Broadly, these paradigms counterbalance pure positivist approaches to scientific research. Their implications are ontological, epistemological, and methodological (Guba & Lincoln, 1994, p. 108-9). The ontological question, Guba and Lincoln (1994) described, is “what is the form and nature of reality, and therefore, what is there that can be known about?” (p. 108). Rather than remain fixed on a singular, measurable, physical reality, constructivist paradigms recognize multiple truths, and employ qualitative methods and inductive reasoning to understand, describe, or predict human experiences. I subscribe to a constructivist ontological orientation that includes human experiences, concepts, and perspectives among that which can be known and explored.

Within the tradition of qualitative health research as described Morse (2012), researchers employ methods “to elicit emotions and perspectives, beliefs and values, and action and behaviours, and to understand the participants’ responses to health and illness and the meanings

they construct about the experience” (p. 21). My ontological orientation assumes that “experience as perceived by human consciousness has value” and research questions pertaining to emotions, perceptions and experiences merit systematic study (Lopez & Willis, 2004, p. 727). Without adopting a purely relativistic position, I employ a perspective that assumes human constructs and human meaning overlap with and inform physical and historical reality.

### **Narrative and the structure of meaning.**

Narrative structure is intrinsic to its meaning-making function. By connecting events or ideas in sequence, they gain a meaning that is greater than the parts on their own. For example, the beginning of a story has a particular relationship to the middle of a story, as does the middle of a story to the end of a story (Mishler, 1995). Meaning resides in the connection points in the story. As Polkinghorne (1988) puts it, “[t]he question ‘What does that mean?’ asks how something is connected to something else...It is the connections and relationships among the events that is their meaning” (p. 6). The internal process of making connections and forming relationships is employed when humans reflect upon and narrate experience. However, this process can also be described as a social endeavour, as cultural contexts provide the basis for all meaning-making (Hammack, 2008). In the same way that frames are meaningful because of shared symbolic association, narratives convey meaning through their adherence to shared discursive structure, that is, to a shared sense of what constitutes a *plot* (Polkinghorne, 1988). To explore narrative structure is to explore what counts culturally as a beginning, a middle, and an ending, and what counts as meaningful relationships between the parts to create an interpretable whole.

Narratives are inherently contextual. As Connelly and Clandinin (1990) describe, narratives are structured by cultural conceptualization of time and place, as these elements provide the story with its plot and scene, respectively (p. 8). Narrative plots are events sequenced according to culturally relevant “openings” and “closings” (Mishler, 1995). As narrative analysis has evolved through its multidisciplinary application, theorists have argued that it is not the temporal ordering of the story that make it meaningful, but rather the coherence or “fidelity” of the narrative form, the “this, then that” that, as Kellner argues, that props up the “profoundly meaningless debris we find around us” (as cited in in Mishler, 1995, p. 103). So, a given text or collection of texts may include reference to a seemingly disparate range of events and actors, but

in reconfiguring the parts chronologically, a narrative whole emerges and the story underlying the text can be explored (Misher, 1990, p. 104).

In addition to time and plot, the characters in the story are essential to its meaning, as they provide movement from one part of the story to the next and ultimately shape the final point, or moral, of the story. According to Ganz (2011), is it through our emotional connection to the characters in the story that listener experiences the emotional content of a narrative. Narrative structure centres the agency of the characters involved, and are thus useful for explaining their motivations, actions, and inactions (Polkinghorne, 1988). The structure of the story imbues the characters' actions with meaning as they move towards or away from their particular goal. The end of a story reveals the moral as it is interpreted in context, the "story of now" (Ganz, 2011).

Importantly, Polkinghorne maintains that narratives "*exhibit* an explanation rather than demonstrate it" (1988, p. 21). Unlike scientific explanations, which might describe sequence of events and deduce a cause, the point of employing a narrative structure is to interpret the meaning of the context. The resulting explanation may not necessarily describe how one event *caused* the next, but rather, it would expose *why* the events are *significant* to the character's agency. While it may not represent cause and effect, a story structure can be used to describe perceived connections between events and actions, which ultimately conclude to a meaningful "point" interpreted "on the basis of deeper logical relationships between abstract parts" (Mishler, 1995, p. 105). Thus, ontologically-speaking, narratives serve as a reflection of individual and group interpretations of moral meaning.

### **Epistemological orientation: Narrative-based knowing**

The epistemological question brings into focus the relationship between knowledge and knower. According to my research paradigm, the knower is an interpreter, drawing on her own worldview to make meaning out of the intersubjective realities of others. My worldview is informed by social constructionism (Reichert & Zielke, 2008), an orientation to reality that retains post-positivistic aspects of historical realism and highlights the interactions between social, cultural, economic, and political influences on an individual's perception and understanding of reality. As Guba and Lincoln describe, "[c]onstructions are not more or less 'true' in any absolute sense, but simply more or less informed and/or sophisticated.

Constructions are alterable, as are their associated ‘realities’” (1994, p. 111). Not only is interpretation needed to elicit sophisticated meanings from constructions, it is an iterative process employed throughout the process of “coming to know,” as realities are shaped by the interpretive methods designed to explore them.

Researchers who employ narrative methods are generally interested in both structural and thematic analysis (Riessman, 2008). In other words, narrative inquiry is about interpreting the content that makes up the whole as well as the relationships between the parts themselves. This is a subjective practice, because while narrative structures generally require emotionally logical meaning and sequential parts, the process of narrative construction and interpretation is not “a rule-driven activity” (Polkinghorne, 1988, p. 20). Narratives are defined by subjectively interpreted boundaries rather than by objectively predetermined procedures, and as a model for contextual variables, stories are capable of “unique and novel configurations” (Polkinghorne, 1988, p. 20). Free from the constraints of empiricism, narrative models allow for a degree of play, in that variables, such as people, actions, outcomes, settings, can be selected and arranged according to the specific context and purpose of the narrator (Stenmark, 2015).

### **Narrative construction, interpretation, and a plurality of perspectives.**

If multiple, varied realities are perceived across populations and if those realities are co-constructable and alterable through social practice, the knower may ask critically “What social dynamics have resulted in these particular realities perceived (or not perceived) by individuals in this context?” Stenmark argues that storytelling makes room for multiple perspectives simultaneously despite conflict, ambiguity, or uncertainty (Stenmark, 2015, p. 926). The author clarifies that advocating for storytelling approaches is not an argument for throwing out scientific data and scientific discourse, but rather, where the *meaning* of scientific data is in question, the ambiguity can be explored actively through a “plurality of perspectives,” an “unsettling of givens” within and between stories (Stenmark, 2015, p. 931). A critical approach to “unsettling givens” within a social constructionist paradigm assumes that history shapes the process of social construction, and thus shapes the subjective boundaries of meaning (Pitre et al., 2013). As such, across the plurality of interpretations about “givens” in context, dynamics of power can be analyzed critically.



The social constructions used to make narratives meaningful are culturally-bound, and thus by exploring meaning-making, a deeper understanding of contextual cultural reference points can be developed. For example, some narrative researchers consider the assumptions and values contained within storytelling, both in *what* is told and *how* it is told to examine the dynamics serving to connect the narrative together (Pitre et al., 2013, p. 119). As Ricoeur theorizes, the act of narrating, that is, the selection of events and details to include in the story, reveals the sociocultural and historical context from which the meaning is derived (Wilson, 2015). That which *counts* as a meaningful story is socially and culturally defined, and as such, through narrative inquiry, the processes by which the “whole” comes to be organized and legitimized between narrator and interpreter can be explored (Polkinghorne, 1988; Clandin & Connelley, 1990). By the same logic, those themes, events, or concepts that go *unstoried* at a personal or public level might be explored for their apparent lack of cultural relevance (Norgaard, 2011; Zerubavel, 2015). As Polkinghorne (1988) argues, when a human event is said to “not make sense,” it is not necessarily because the symbols themselves (words and concepts) are not without associated frames, but because the interpreter cannot organize the frames according to a plot that would give it meaning in context (p. 21).

Narratives reveal the goals, motivations, pathways and plans deemed rational in context (Polkinghorne, 1988, p. 21), and thus, public narratives are useful for exploring the perceived capacity of human agency, or lack thereof. When a group or individual is unable to narrate their context, they are, in effect, unable to model both the limits of their situation and the significance of human agency therein. Zerubavel (2015) discusses this in theorizing that *attention* plays a key organizational function in human consciousness at both the individual and social levels. Attention is “conscious perception” (Zerubavel, 2015, p. 1), it is the process of noticing what it right before us. A lack of conscious perception at the public level has been linked by theorists to an inability to form, and therefore exercise, a sense of agency (Freire, 1970; Norgaard, 2011). It is not what is visible that matters, but what is seen and attended to (Zerubavel, 2015, p. 2). For Freire (1970) the “*theme of silence*” suggests an overwhelming sense of limitation due the contextual situation (Freire, 1970, p. 106). This phenomenon privileges those whom the status quo serves at the disadvantage of those oppressed (Freire, 1970, p. 106). Silence implies that master narratives are hiding in plain sight (Zerubavel, 2015), and the limits they impose on

public discourse reproduce real-world power imbalances by effectively cutting off communities from the process of re-modeling, or re-storying, their situation.

### **Methodological approach: Interpreting narratives of self, us, and now**

Guba and Lincoln outline a third epistemological question related to methodology. “How can the would-be-knower go about finding out whatever he or she believes can be known?” (1994, p. 109). My qualitative approach began under the umbrella of interpretive phenomenology, and as I formulated questions about the everyday experience of climate change, I drew upon philosophers from the phenomenological tradition (Austgard, 2012; Gimbel, 2016). However, upon framing the inquiry and designing the study, my methodological orientation shifted to narrative inquiry (Riessman, 2008), and it is this methodology that ultimately structured my data collection and analysis choices. Narrative methods were employed to explore individual-level experiences of a global-level social, cultural, and ecological phenomenon. Heidegger, a contributor to phenomenological philosophy, believed that the focus of phenomenological inquiry should be the relationship between individuals and their “lifeworld” or the context of their lived experience. Analysis within this tradition looks further than human subjectivity to “what the individual’s narratives imply about what he or she experiences every day” (Lopez & Willis, 2004, p. 729). Heidegger posits that these experiences exposed the agency perceived by the individual, but also to their “situated freedom,” the circumstances of their lives that serve as a context for decisions made and unmade. In this way, the lines between personal and public experiences are blurred.

According to Hans-Georg Gadamer, a contributing philosopher to the interpretive phenomenology movement, language is the basic unit of meaning-making in the mental realm (Gimbel, 2016), as words and ideas are used to reflect upon and explain lived experience. In this view, language is an essential component of knowledge and understanding, because all that which is *known* about the experience of being in the world is *interpreted* mentally and dialectically (Austgard, 2012). The dialectic aspect of knowing is implied, because in this paradigm, the interpreter is always an actual person with a context, and so the “knower” and the “known” are in *relationship* within that context. Gadamer calls this position the interpreter’s “situation” (Austgard, 2012, p. 830), a context that pre-grounds the interpretation of all language

and symbolic meaning. From their situation, Gadamer contends, the interpreter perceives reality (Austgard, 2012, p. 830). In simplifying the complexity of experience into language that is meaningful to others, human beings are able to communicate and navigate their world conceptually. As Austgard (2012) explains, “Gadamer’s thesis is that as human beings, we have some prejudices in common, which makes the miracle of understanding possible” (p. 830). Through this perspective, without dialogic interpretation, there is no knowledge production.

Gadamer’s philosophies do not outline methods for designing a set of research procedures, and thus in the course of operationalizing my interpretive lens, I turned to narrative inquiry (Connelly & Clandinin, 1990) and their use in social sciences (Riessman, 2008). As described in the introduction of this chapter, narrative frameworks can be thought of like a camera through which I capture data about the human experience. The decisions made about where to focus my lens, that is, where to focus my narrative analysis, are informed by Gadamer’s philosophies of interpretations (Austgard, 2012; Gimbel, 2016). Crist and Tanner (2003) provide an outline of research procedures to ensure that interpretive studies are pursued systematically, and Riessman (2008) provides guidelines for collecting, organizing, and analyzing narrative data in a social science context (2008). In the case of this study, Ganz’s narrative framework serves as the lens on climate change engagement, and Gadamer’s philosophies about deepening understanding through a fusion of horizons ground my purpose and my study design.

### **Co-constructing a new narrative.**

Within qualitative approaches, rather than isolating a phenomenon from its context, it is explored through the particular focus of the researcher’s interpretive lens. As Morse (2012) explains, qualitative health research “is not entirely holistic, nor is it scoped. Rather, it is holistic in that we do consider the phenomena in their entirety, in context, rather than by stripping variables” (p. 65). While some constructivist research traditions encourage the knower to bracket all prior knowledge about a topic so as to transcend subjectivity, such as in descriptive phenomenology, I subscribe to approaches that centralize and critique the role of power in the construction of intersubjective reality. By framing my study around “largely invisible social forces that shape what we actually do think and talk about and feel” (Norgaard, 2011, p. 132), I am adopting a critical and interpretive research paradigm, and my prejudgments, rather than

bracketed away, serve to ground my epistemology within social constructionist and interpretive qualitative traditions. My initial narrative and relationship to the topic serves as the baseline for the study.

In interviewing and building relationships with participants, climate change narratives can be co-constructed, and the researcher and study become part of the story. In Connelly and Clandinin's words, "[w]hen one engages in narrative inquiry the process becomes even more complex, for, as researchers, we become part of the process. The two narratives of participant and researcher become, in part, a shared narrative construction and reconstruction through the inquiry" (1990, p. 5). In fact, the narrative might not exist outside of the research context. As Morse argues, "[q]ualitative health research includes parts of people's lives that they have never told another person; they have not previously had the privilege of telling their whole story all at once" (2012, p. 19). The author notes that while the participant's story provides information and clarity for the researcher, it also serves as a "revelation to the participants themselves" (p. 19). The act of articulating one's story helps to reduce the complexity of lived experience and organize it into a narrative, or dialogic form. Just as participants' latent stories manifest through the process of the study, my own story emerges from the research process with greater clarity and precision.

A fusion of horizons produces a new story. By deepening my understanding of the topic of climate change engagement through the perspectives of my participants, I am able to reconstruct my own story to include the truths of others, and I can pass those learnings on to others in my spheres of influence. As Connelly and Clandinin describe, "teachers and learners are storytellers and characters in their own and other's stories" (1990, p. 2). To me, the epistemological process is about telling better stories, and about shaping public narratives that activate change and improve health equity. In gaining a deeper understanding of dominant narratives, researchers and communities alike can identify intervention points where new discursive modelling could break through existing symbolic boundaries; that is, where new public narratives might help to overcome perceived contextual limits to action.

## **Study framework.**

I have selected Marshall Ganz's work on public narrative to frame this study, as it specifically highlights the interconnections between personal and collective stories, and because it emphasizes the role of that emotions, values, and relationships play in mobilizing action (2011). Ganz's framework builds on existing psychosocial theories of narrative with attention to how they are applied by leaders in contexts of uncertainty (2011, p. 274). By employing this framework for public narrative, I aim to validate the expertise of community organizers and leaders of social and environmental justice who have worked for decades to achieve the social change agendas that improve population health outcomes.<sup>4</sup> Ganz's framework has also been applied directly to community health research and engagement to bridge personal and public narratives of oppression and resilience. For example, in applying "stories of self, us, and now" in a community health context, Kouri et al. (2016) demonstrate the power of storytelling to invert the ecosocial model, moving from the individual-level to the systems-level, connecting the intimacy of personal experience to collective power (p. 107). As population health professionals support social movements in their work for justice, Ganz offers us an accessible toolkit for exploring narrative interventions at the community-level.

Narrative operates at both individual and collective levels, and there are overlaps between personal and public functions of narrative. Through framing, strategic attention is given "to one or more dimensions within a message" (Jones, 2014, p. 447), and in the context of a story, frames bring attention to dimensions of a narrative that are of particular relevance for a particular audience, ultimately making up that which is evaluated by the individual interpreter. Leadership, Ganz (2011) argues, requires understanding the relationships between frames and emotions, because "while some emotions can inhibit mindful action, others can facilitate it" (p. 275). He argues that public narrative is an invaluable tool for overcoming apathy and alienation (p. 288). Using his social movement-based narrative tools to operationalize Gadamer's philosophy of interpretation, my inquiry is designed to gain a deeper understanding about how the young leaders perceive the challenge, choice, outcomes, and morals of climate change in context.

---

<sup>4</sup> Ganz's theories on narrative and strategic social change are already in use within social and environmental justice organizations in Canada (e.g. groups like Climate Justice Saskatoon and Next Up Leadership Program) and it has been used in advocacy and campaigning settings to mobilize leadership for collective action (e.g. organizations like 350.org, Camp Obama, and Organize BC).

Table 3.1 Study framework, adapted from Ganz framework for public narrative (Ganz, 2011).

<i>Structural components of narrative:</i>	
<p>Challenge: What matters here? What key values and frames ground the story?          Choice: What is at stake here? What choices are the key characters facing?          Outcome: What will happen here? What could result from (in)action?          Moral: What will it take? What actions are needed to move toward the goal desired by protagonists?</p>	
<i>Theoretical framework for public narrative:</i>	<i>Theoretical framework for mobilization:</i>
<p>Story of self: Personal call to action          Story of us: Shared motivation for social change          Story of now: Particular contextual situation</p> <p>Storytelling is a leadership practice where stories of self, us, and now are connected in a way that elicits mobilizing emotions.</p>	<p>Urgency overcomes inertia          Outrage overcomes apathy          Solidarity overcomes isolation          Hope overcomes fear          Efficacy overcomes doubt</p> <p>Leaders promote social change by framing stories through values that elicit mobilizing emotions.</p>

Ganz offers two major contributions to the methodology of this study, which are outlined in table 3.1: (1) a narrative framework for exploring concepts related to social change leadership, and (2) a theoretical framework for exploring the connections between personal and public narratives, and for analyzing the emotions that hinder action as they are overcome by emotions that promote action. In structuring concepts narratively, the values used to rationalize the selection of events and actors and to delineate relevant challenges, choices, and outcomes, underpin the moral message relayed (Ganz, 2011, p. 281). By casting oneself as a character in the story (“story of self”) and connecting that call to action with the values and goals of a group (“story of us”), a leader can elicit emotions that mobilize action in context (“story of now”). When contextualized in shared time and place, this simple narrative structure can convey cognitive and emotional meaning, including relevant actors and events, as well as evaluations, justifications, and rationalizations. Ganz theorizes that in the context of social change organizing, capacity for collective decision-making and action rests upon culturally identifiable narratives that hold public attention and that elicit mobilizing emotions (2011, p. 277). By understanding

how and where these emotions function in the climate change narratives of young leaders, I aim to uncover opportunities where population health professionals might intervene with mobilizing frames and action plans.

## **Methods**

My chosen methodology produces conceptual results that are based on my interpretation of the narrative data I co-construct with participants (Connelly & Clandinin, 1990). Qualitative inquiry does not aim for generalizable results, but “quality” qualitative research produces results that can be applied to other contexts (Tracy, 2010). The methods used in this study were chosen to help me to abstract learnings to the point of being applicable for others who might share contextual or cultural markers. As Morse (2012) articulates, while qualitative health research focuses in on contextually and culturally-bound phenomenon, it is useful to others because of its transferability. “In qualitative research,” she argues, “we attain generalizability by increasing the level of abstraction such that there is evidence of interesting and exciting concepts and that innovative and pragmatic theory is developed” (p. 104). To capture the transferable aspects of my analysis, I have developed a conceptual model for meaningful engagement that reflects a narrative arch. Models bring specific conceptual variables into focus based on theories about their relationships (Carpiano & Daley, 2006), which necessarily involves interpretation and delineation between the parts and their relationships.

For my interpretation to be useful, transparent, and trustworthy, it is important to (1) outline my pre-understandings about the topic, as I have provided in chapters 1 and 2, (2) provide background on the interpretive lens I am applying to the study and justifications for its methodological orientation, as I have discussed in this chapter, and (3) clarify the position from which a fusion of horizons will take place (Austgard, 2012), the context and perspective from which my knowledge as a researcher is constructed in the case of this study. In order to provide transparency about my pre-understandings, using Ganz’s terminology, I begin this overview of the study’s methods with a look at the narrative with which I began, the “story of self, us, and now” that motivated this inquiry and shaped my design choices.

### **Reflections: Grounding the interpreter's story, or "pre-understandings".**

Interpretive methodologies and the results they produce are inextricably linked to the interpreter and the lens being applied to the inquiry. For this reason, the researcher's assumptions and perspectives represent the starting point of the study. Interpretive approaches, sometimes called "hermeneutic" approaches, have been used previously in qualitative health research and in the example of Dhillon, Wilkins, Law, Stewart and Tremblay (2010), the lead researcher generated a record of her assumptions going into the study by asking a colleague to interview her using her own interview schedule. In this way, the author was able to "explicated her pre-understandings" and then used journaling to keep a record of changes in her understanding (Dhillon et al., 2010, p. 243).

I followed this example within my own study. The first step of my research methods was to ask my colleague, Lise Kossick-Kouri to guide me through my own interview questions, producing a recording of my own climate change story at the beginning of the study from which I kept an audit trail of changes. This early story provides context for the final co-constructed narrative that ultimately transformed my pre-understandings throughout the course of the study. The record of my perspectives going into this study provides me with a foundation from which to build my analysis, and instead of bracketing my pre-understandings, the analysis process involves challenging my assumptions and questioning my biases (Crist & Tanner, 2013). Excerpts from my interview are shared in the final chapter of this thesis to demonstrate the personal significance of this study upon my lens as a population health professional, as a community-based researcher, and as a young person facing the challenges of climate change.

In addition to my pre-understandings and prejudices, the timing of the study is also a significant influence on my interpretive lens. The core study activities occurred in the spring of 2017. The overall interpretation and analysis spanned the years 2016-2018. These years represent a tumultuous time in global political history, and the dynamics of climate change policy have shifted accordingly. Arguably, the United States pulling out of the Paris Agreement (UNFCCC, 2015) in 2017 evoked a deeper sense of urgency and commitment to global climate action among the remaining signatories. However, the destabilization of democratic processes in countries like the United States and the United Kingdom stoke fear and uncertainty about global capacity for collective climate action, and few governments are acting on their commitments (Climate Action Tracker, 2018). A dual picture emerges in such a time as this: many people believe in and are



concerned about climate change, but they exist within contexts that are ripe with opposition to meaningful climate change action.

My own story of self, as a young woman born in the same year that Dr. James Hansen testified to the United States Senate about the dangers of runaway climate change (Shabecoff, 1988), involves reflecting on my moment in time in the broader human story about climate change. These years I have spent interpreting these results, 2016-2018, represent a miniscule piece of human history, and yet this time represents crucial years where policy decisions are changing the course of human history for decades and centuries to come. How is it that we, as humans alive today, can occupy such a critical window of time on this planet and have little sense of how to meaningfully protect what matters to us most?

The story of my study is set in Saskatoon, Saskatchewan. This city is the location of my birth, where I went to school as a child, and where all of my education to date has occurred. A recent Yale study of climate change opinions<sup>5</sup> reveals that while 66% of Saskatchewan people believe that the Earth is warming, less than half of the provincial population believes that humans are partly or mostly causing climate change (Mildenberger et al., 2016). Only one in three residents are comfortable agreeing with the statement that humans are mostly causing global warming (Mildenberger et al., 2016). Saskatchewan is the second-largest producer of oil in Canada (Eaton, 2017) and coal remains a significant source of electricity in the province (Carlson, Fisher, & Malena-Chan, 2018). Fossil fuel industries also contribute significantly to provincial GDP (Eaton, 2017). Norgaard's experience in a Norwegian town similarly dependent on fossil fuel industries provides evidence for a "cultural toolkit" employed to regulate difficult emotions related to climate change knowledge (2011). From "tools of order" to "tools of innocence," Norgaard's participants demonstrated a range of capacities to distance themselves from culpability regarding climate change (2011, p. 171). As Mildenberger et al.'s (2016) findings suggest, the correlations between psychological distancing and direct contributions to carbon emissions in Saskatchewan may be a cultural phenomenon of "socially organized denial" (Norgaard, 2011). This is the cultural and contextual backdrop for my study activities.

---

<sup>5</sup> Mildenberger et al., (2016). For visualizations, visit <http://climatecommunication.yale.edu/visualizations-data/ycom-canada/>

## **Sample recruitment.**

Upon approval from the ethics office at the University of Saskatchewan in February 2017 (Beh #17-19), I recruited participants purposively, beginning with the Next Up Saskatchewan alumni network, a population of roughly 100 individuals, comprised of seven years of graduates of the program (2009/2010-2016/2017). These individuals are vetted by community representatives as local leaders of social and environmental justice work. The program runs for eight months and involves issue-based training about topics like housing, poverty, Indigenous rights, and includes a session on climate change and environmental justice. Other training sessions focus on skills like communication, conflict resolution, and campaigning. During several summers, an Indigenous-specific intensive program was offered to young leaders identifying with First Nations and Métis peoples. One of the sessions each year focuses on telling your story, and Ganz's framework (2011) has previously been used to facilitate these learnings. My own participation in the program in 2013/2014 was not my first exposure to climate change or Ganz's work, but Next Up was an influential experience as a community leader.

A recruitment letter was passed on to alumni via the program coordinator, and interested individuals followed up with me by email to receive more information about the study. Inclusion criteria were as follows: (1) Demonstrates an interest in, but not necessarily a primary focus on, climate change; (2) Relevant leadership experience with social justice or environmental justice movement in Saskatoon; (3) 18-40 years old, with flexibility to accommodate diverse stories; (4) Willingness to share their lived experience of climate change, including perceptions of public narrative and personal responses; (5) Inclusion of community leaders from diverse cultural and social backgrounds within the sample, in particular those who identify as Indigenous Peoples of Treaty Six territory.

I chose this population because of my interest in understanding the perceptions of people who understand the basic science of climate change and who are motivated to create the social changes needed for a more just and sustainable world. I wanted to talk to young people who are concerned about climate change, but to explore barriers to engagement, I did not limit my study to leaders already actively working on climate related issues. Because of the small population size (each year of the program included approximately 15 individuals), purposive sampling was followed up with snowball sampling. Each participant was invited to share the recruitment letter with others who did not participate in the Next Up program but who met the inclusion criteria. In

the end, eight participants in the study were recruited from the Next Up program and two were recruited via snowball sampling.

My sample included 10 people whose demographic diversity generally reflects that of the Next Up alumni network: I recruited a mix of men and women (70% women), and in order to broaden the transferability of the findings, I made an effort to include both Indigenous and non-indigenous individuals (30% identifying as First Nations). Each participant is between the ages of 20-40 and they lead diverse lives: some are starting families or businesses, some are students, and some are young professionals in fields like health, arts, education, governance, and politics. Participants are all individuals who demonstrate a desire to be a part of systems-level solutions and are already embodying a commitment to social and environmental justice values. By looking at this particular “story of us,” it is possible to gain a deeper understanding of the perspectives of people knowledgeable and motivated to act to address climate change but who are living in contexts where many people have not accepted the severity or cause of the problem.

### **Interview process: Reflecting upon experiences and perceptions of climate change.**

Because this study involves storytelling about themes that may otherwise be silenced (Freire, 1970) or outside the scope of public attention (Norgaard, 2011), as well as themes that may elicit uncomfortable emotions (Randall, 2009) and internal dilemma (Lertzman, 2013), participants were provided with the study rationale and the interview questions beforehand so that they could begin to tune into their perceptions of climate change. Consent was also provided by all participants to record and transcribe individual interviews. Semi-structured individual interviews were chosen as a method to draw out participant narratives because, as Morse (2012) describes, “[s]emi-structured interviews are used when the researcher knows what questions he or she wants to ask, but does not know what answers to expect” (p. 88). This design allowed me to probe with additional questions to round out the narrative. The strength of this approach is that it produced a thorough narrative about climate change for each participant. However, this design also results in the researcher contributing to the narrative, and transcripts are considered co-constructed collaborations between participants and researcher (Connelly & Clandinin, 1990). Interviews were held in a location of the participant’s choosing and lasted between 40-90 minutes, with the majority lasting around 60 minutes. At the end of the interview, each

participant was given a journal with the five research questions written inside, and they were invited to write about their experience and their story as thoughts emerged in the weeks following the interview.

Participants were not asked to share the contents of their journal, but during follow-up contacts, they were invited to share any thoughts or reflections that they wanted to add to their story. This design allowed for an ongoing dialogue to be established with participants so that as my interpretation of the results developed, participants felt comfortable adding and changing things to better reflect their experience. Crist and Tanner (2003) recommend multiple points of contact with participants in an interpretive study to ensure that participants' experiences are presented fully, to allow them time to elaborate on specific issues that arose from narrating the experience, and to facilitate reflection about the interpretation of their experience. These opportunities for member-checking have been provided throughout the study, with participants offering insights about my interpreted results up until submitting the final manuscript. This process created the conditions for shared interpretive authority between myself and the participants, where I could bring forward concepts and ideas, and participants could challenge, change, or provide nuance to the interpretation and a strong fusion of horizons.

### **Interview questions: Getting beneath the surface of silence.**

Individual interviews occurred in the spring of 2017 and were semi-structured and employed open-ended questions. I developed an interview schedule based on Ganz's storyline (2011, p. 280) to ensure that I could analyze how the parts of the story connected to each other, as outlined in table 3.2. The semi-structured design allowed for participants to work through uncomfortable feelings related to the topic, moving them beyond "themes of silence" (Freire, 1970) to an articulation of their perceptions. Probes were designed to take the conversation deeper around themes relating to emotions and social relationships, allowing me to understand the cultural values and perceived context influencing participant narratives.

After asking participants preliminary questions about themselves and their experiences working for social and environmental justice in Saskatoon, I moved on to five questions about their climate change story. The first question focused on their knowledge of climate change. Moving to questions about how climate change makes them feel allowed participants to connect climate change knowledge to personal values, and asking about how climate change impacts

their lives offered participants a chance to transition from talking about the problem in the abstract to talking about it in context. The fourth question asked participants to describe their vision of the future. The final question asked about personal responses to climate change. As is typical in narrative-based inquiry, data were co-constructed between myself and my study participants (Connelly & Clandinin, 1990). I determined the order of the questions, but participants took the conversation in whatever direction they desired. Together, the structure of the questions and the thematic probes provided appropriate data to explore themes related to mobilization from Ganz's theoretical perspective. Many overlaps emerged between participant narratives and existing research about climate change engagement, and enough interviews were performed to develop meaningful results.

### **Interpretive process: Making a telling of the told.**

To abstract learnings from the data, I employed an iterative analysis process, outlined in table 3.2. This involved coding key themes with NVIVO, generating a way of thinking about those themes based on the framework in question, and then going back to the data to consider what the model is saying about it, and asking "does it make sense?" Structurally, the initial goal of the interpretation is to "make the telling from the told" (Mishler, 1995, p. 100), and transcripts were first coded according to Ganz's plotline, including the challenge, choice, outcome, and moral of the story. Secondly, codes were applied to the mobilizing moments that emerged around each element of the plot, moments that came to be defined as transitions between knowledge, agency, responsibility, capacity, activation, and meaningful mobilization. Thematically, once data were organized narratively, transcripts were again coded using NVIVO, focusing on key concepts underlying the relationships between parts of the whole. The third wave of coding focused on specific themes nested within each mobilizing moment, which illuminated concepts of narrative dissonance and fidelity.

Refining the weak aspects of the model occurred during member-checks with participants and colleagues, the "interpretive team" in Crist and Tanner's (2013) framework. of challenge, choice, outcome, and moral. The interview schedule was designed in a way that elicited multiple parts of participants' stories of climate change, ensuring that participants could share their

knowledge, but also integrate their knowledge into the broader story of life, including values, emotions, dimensions of identity and culture, and ultimately behaviour.

Table 3.2 Interpretive schema				
Interview questions:				
What do you <b>know</b> about climate change?	How does climate change make you <b>feel</b> ?	How does climate change <b>impact</b> your life?	When you picture the <b>future</b> , what do you imagine?	What are you doing to <b>respond</b> to climate change?
Data narrativization:				
Perceived problem: <b>challenge</b>	Perceived stakes: <b>choice</b>	Perceived vision: <b>outcome</b>	Perceived response: <b>moral</b>	
Structural interpretation:				
Knowledge becomes <b>agency</b>	Agency becomes <b>responsibility</b>	Responsibility becomes <b>capacity</b>	Capacity becomes <b>activation</b>	
Thematic interpretation:				
<b>Narrative dissonance</b> Themes that hinder movement from one part of the story to another.		<b>Mobilizing moments</b> Themes that determine experiences of narrative dissonance and fidelity.		<b>Narrative fidelity</b> Themes that promote movement from one part of the story to another.

Narrative patterns and relationships between core themes were the main focus on my thematic analysis, with a particular focus on those themes that seemed to hold the story together, signaling a type of cohesion that Walter Fisher calls “narrative fidelity” (as cited in Marshall, 2014, p. 106), with those themes that produced the opposite reflecting “narrative dissonance.” Participant narratives were considered together and individually until both the parts and the whole started to make sense. While participant narratives yielded many insights about mobilizing climate action, the model I developed from an interpretation of their stories could lend a deeper understanding about the gaps between knowledge and action more generally, and the challenges to mobilizing action in context. Throughout my analysis, I focused on results that would be most applicable to other population health professionals and that best answered my research questions

about the barriers to engagement experienced by those who are knowledgeable about climate change and who are motivated to work for social and environmental justice.

## Quality

This section outlines the steps I took throughout the study to ensure that it was a rigorous and ethical process. I explain the choices I made to generate quality results, and I rationalize the study design choices. In evaluating the rigor of qualitative research, it is important to distinguish the criteria from quantitative study designs. As Morse argues, qualitative inquiry is less concerned with producing concrete proof than developing results that are explanatory, logical, and exciting (2012, p. 134). Instead of being generalizable to all contexts, outcomes are “recognizable by others” through “shedding light on a previously confusing situation” (Morse, 2012, p. 134). Because my study shifted from a phenomenological approach to a narrative-based inquiry, I have chosen a framework for rigor that focuses on universal markers of quality for all qualitative methodologies (Tracy, 2010, p. 839). As Tracy (2010) argues, these are hallmarks of excellence within qualitative traditions, and for student researchers like myself, they serve as a “compass” for those still finding their methodological footing (p. 849).

The structure of this section follows Tracy’s (2010) eight-point framework, including a brief discussion of my study according to: “(a) worthy topic, (b) rich rigor, (c) sincerity, (d) credibility, (e) resonance, (f) significant contribution, (g) ethics, and (h) meaningful coherence” (p. 839). Myself and two classmates were tasked with teaching other Community Health and Epidemiology students about qualitative appraisal (Dixon, Malena-Chan, & Schaefer, 2016), and we presented Tracy’s framework by categorizing the eight markers of quality under three core questions: (1) “Is the study valuable?” captures concepts of worth, resonance, and significance; (2) “Is the study logical?” captures concepts of meaningful coherence and sincerity; and (3) “Is the study appropriate?” captures concepts related to credibility, ethics, and rigor of the inquiry. These three questions serve as the outline of this discussion of quality.

### Is it valuable?

This initial question frames the importance of worth, resonance, and significance of a qualitative study. These are subjective qualities that cannot be evaluated without context. Qualitative researchers position themselves relative a research tradition or community agenda in order to justify the “**worthiness**” of the study. To explain the timeliness of my inquiry, I position myself relative population health professionals who express a sense of agency and responsibility about addressing climate change (Costello et al., 2009, Costello et al., 2013; Hancock et al., 2015; Howard et al., 2017; Watt at al., 2017). Because the model I developed is abstract and based on a narrative framework, its applications are transferable to other contexts besides the parameters of my own study, such as those outside of the field of population health. While the characters, settings, and values driving the story may change from context to context, the concept of narrative dissonance and fidelity applies. If the purpose of the story is to inspire action, mobilizing moments in the story may be identifiable, and my model may be useful for exploring themes that “tip” the story toward dissonance and fidelity.

The theoretical, practical, moral, methodological, and heuristic **significance** of the study is explored in deeper detail in Chapter 6. Essentially, my research contributes a model of meaningful mobilization to offer nuance and structure to a growing body of knowledge about the storied nature of interpreting and about engaging with climate change. The **resonance** of the study findings is evident to me by its transferability and the positive impact of my preliminary knowledge translation efforts in both professional and community-based spheres<sup>6</sup>. The level of abstraction, the structure, and the accessibility of my findings may facilitate discussion about the barriers to climate change engagement among community members who share values and perspectives with my participants.

### Is it logical?

Qualitative researchers demonstrate excellence by producing results with meaningful coherence and sincerity (Tracy, 2010). As Tracy conceptualized, **meaningful coherence** is

---

<sup>6</sup> I have presented posters about my findings at multiple conferences, I have been invited to speak about my model at an upcoming gathering of Canadian population health professionals, and my manuscript has been accepted and is undergoing revisions for the *Health Promotion and Chronic Disease Prevention in Canada* journal. I have also presented my model to the 2017/2018 Next Up Saskatchewan cohort.



achieved when researchers employ methods and activities that align with the theories and paradigms that ground the study, and when doing so maintains integrity with the stated objectives made at the outset of the study (2010, p. 848). By consistently applying theories about ecosocial determinants of health, community empowerment, and narrative methods to the questions about the experience of climate change, my results capture complexity without sacrificing clarity. Exploring both structural and thematic findings through the theoretical lens of population health provides a meaningful coherence to the study.

Testing for the internal logic of an inquiry requires reflection about the values and biases woven into the study. As Tracy (2010) explains, a qualitative study with sincerity is characterized by openness about a researcher's goals and mistakes, and how they shape the inquiry (p. 841). By clarifying my theoretical assumptions at the beginning of the study and by designing the study around a clear set of values, it is my intent to be honest about my own inclinations. Social and environmental justice values are not espoused by every interpretive community, and thus by weaving my biased frames into the study design, I am limiting the resonance of the results to audiences that share these moral inclinations. My results and discussion chapters shed light on the thought-process behind each part of the model that reflects this conflicted story, and it captures the diversity of participant experiences in a meaningful way. To provide further transparency about the analysis process, I have included examples of my templates for interpretation and coding in the Appendices.

### **Is it appropriate?**

The third and final category of the framework for excellent qualitative research is captured by the question “Is it appropriate?” This question considers the degree to which the study activities reflect a rigorous, credible, and ethical standard of research practice. A study with **rich rigor** clarifies the theoretical constructs used to frame the study, and it makes clear how, when, where, and from whom data was collected (Tracy, 2010, p. 841). In my study, this information is provided in Chapter 3, and the specifics of the study timeline and analysis procedures is available in the Appendices. Thick description is used throughout Chapter 4 to lend **credibility** to findings, and exemplars from participant narratives are employed to demonstrate concrete details about the result. Multiple participant stories are drawn upon to underpin evidence with “multivocality” and to provide the study with plausibility (Tracy, 2010, p. 842).

Throughout the development of the model and the use of the model to explore participant narratives, I also kept journals about my thought-process and the shifts in my reasoning. These serve as an audit trail for my inductive approach to the analysis and provides an additional layer of credibility to the results.

Finally, an appropriate study is concerned with **ethics** (Tracy, 2010, p. 848). A process for procedural ethics was established and approved by the Behavioural Research Ethics Board at the University of Saskatchewan. This study received Tri-Council ethics approval (Beh #17-19), and because it focuses on a topic that can be uncomfortable to discuss, I pursued ongoing consent with participants. Firstly, participants reviewed their transcripts; secondly, participants reviewed the storylines I created based on their data, where key themes were beginning to be identified around each part of the narrative; and thirdly, participants provided feedback about the model I developed to explore their experiences of narrative dissonance and fidelity. In the end, because of the small participant pool and the friendships that develop between community leaders in a small city, I decided to anonymize all participant quotes and focus my discussion of the results on the structural themes that emerged from their diverse experiences.

Considerations about situational and cultural ethics refer to the balance between potential harms of the research and its moral objectives (Tracy, 2010, p. 848). Cultural ethics were considered and the limitations of my perspective as a settler in a settler-colonial context are approached through the principles of “ethical space” as described by (Ermine, 2007). Relational ethics focus on the importance of respect, care, and connectedness between researcher and participants (Tracy, 2010, p. 847). To ensure that participants felt a sense of ease and autonomy about the interview process, I asked each of them to select the location and time of our meeting, and I asked them to only answer question with which they felt comfortable. As I had a prior relationship to some participants, I clarified with each that despite knowing me as a friend or colleague, our relationship would not be adversely affect by non-participation or withdrawal from the project. Importantly, these prior relationships are not based on a power differential between myself and my participants.

### **Contextual interpretation.**

This study design is interpretive in nature and the knowledge it produces is contextual. Study results are not meant to be generalizable to all populations. Instead, I have aimed to

present the theoretical findings in a way that could be transferred to other contexts. The limitations of the sampling method include recruiting only those individuals with adequate time and interest in the study, and those individuals who are comfortable engaging with a specific model of social change that stems from European worldviews. While the snowball method of sampling allowed me to reach outside of this immediate group of individuals, the study was shaped by this starting point.

My own interpretive lens is situated from the perspective of a settler-researcher. The historical reality of colonialism shapes my core values of solidarity and equity, and it makes it necessary for me to identify myself as a settler with white skin in a country where race is associated with health outcomes (Health Council of Canada, 2012). It means that I have a systemic advantage and a vested interest in the status quo, including those ways of knowing that Eurocentric paradigms legitimize. I navigate this paradox through a reflexive practice and strive to reflect the principles of anti-racism and cultural safety (Health Council of Canada, 2012) through my inquiry. This manifests as purposive inclusion of Indigenous participants and their perspectives, self-reflection through journaling a peer-checking, and in seeking out ways to honor Indigenous pedagogies as I employ and advocate for storytelling methods in health research.

I also acknowledge that the symbolic and material, while intimately related, are not substitutes for one another. Identifying and naming power is different than mobilizing to address it, and while narrative results may help *describe* action and its pre-conditions, the model outlined in this thesis is limited in its ability to *manifest or cause* those actions and conditions. The leaders who participated in my study are in relationship with their communities, and through those relationships, actions are undertaken, and power is negotiated in material rather than simply symbolic terms. In other words, tools for engaging and communicating about climate change cannot be reduced to a formula for social change. Rather than *prescribing* a singular process of interpretation, the usefulness of a narrative model for meaningful mobilization derives from its ability to capture the nuance of lived experience and reflect the contextual and cultural dimensions of barriers to engagement.

## Chapter 4: Results and interpretation

Rather than demonstrating a direct relationship between knowledge and mobilization, my study results are organized according to a plotline that models cultural and contextual barriers to activating understanding. Instead of assuming that participants were uninformed about climate change, I designed the study to gain a deeper understanding of how the conceptual parts of “what is known” are interpreted within a narrative-whole, including cognitive, affective, and behavioural dimensions of engagement. This approach could contribute knowledge about how the “parts” connect in the lived experience of young social change leaders, and *if* they connect as a meaningful story in context. What emerged from this approach is a focus on narrative dissonance, narrative fidelity, and the mobilizing moments in between.

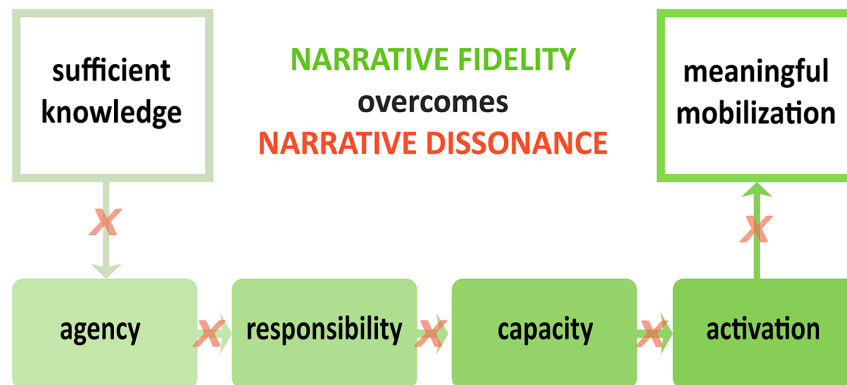


Figure 4.2 A narrative model for engagement

Figure 4.1 outlines the model I developed for this study and provides a visual representation of my framework for organizing and exploring results. I use the term **narrative dissonance** to refer to a phenomenon whereby the structural dimensions of a given narrative cannot be reconciled because of emotional, thematic, or conceptual contradictions within the story itself. Marshall (2014) argues that “everyone, experts and non-experts alike, converts climate change into stories that embody their own values, assumptions, and prejudices” (p. 3),

and these subjective filters on interpretations of climate change may silence or produce conflict within the narrative. Ganz (2011) theorizes that narratives are discursive means of translating values into action, and he argues that leadership is about engagement that elicits mobilizing emotions. The model integrates these principles and provides structure for exploration into both the emotional logic of the interpretation and its potential to mobilize in a meaningful way.




The model explores dissonance on the theoretical basis that it is associated with immobilizing emotions such as inertia, apathy, isolation, fear, and doubt (Ganz, 2011, p. 277), resulting in barriers to action. I employ the term **narrative fidelity** to refer to a phenomenon whereby the factors causing narrative dissonance are overcome or reframed, resulting in an emotionally-logical story that elicits urgency, outrage, solidarity, hope, and efficacy, emotions that contribute to mobilization (Ganz, 2011, p. 277). The term narrative fidelity is used by Fisher (1984) to argue that humans are essentially storytellers, and that rationality is evaluated through a narrative lens (p. 7-8). Narrative fidelity is experienced when a story “ring[s] true with the stories they know to be true in their lives” (Fisher, 1984, p. 8). In applying the concept of narrative fidelity to climate change narratives, Marshall (2014) argues that it is a key element in mobilizing action to address climate change, because only by offering a more compelling story will faulty interpretations of climate change be abandoned (p. 106-107).

**Mobilizing moments** are key themes that bridge or encompass aspects of both dissonance and fidelity, and they could represent opportunities for transforming knowledge of climate change into mobilizing emotions that promote action. Cultural and contextual dynamics shape how these moments are perceived, and by looking at young leaders in Saskatoon, Saskatchewan, many of the challenges theorized by Norgaard (2011) in her discussion of socially organized denial are apparent. When public narratives about ecosocial problems like climate change lack fidelity, or when they are not apparent at all, the problems themselves may be perceived as meaningless in context, even by those who accept the facts. Thus, these moments in the narrative represent important opportunities to reframe narratives so that barriers to courageous collective action are acknowledged and addressed.

## Results and interpretation outline

The results from this study are modeled to reflect my structural and thematic interpretations. In organizing participant data narratively, key themes emerged around each part of Ganz's story model. Mid-way through the interview process, these structural results started to take shape and subsequent interviews shaped and refined them. The conceptual model that resulted informs my interpretation of the overall thematic results, including my analysis about narrative fidelity and dissonance within ecosocial narratives. By organizing thematic results about mobilization along the trajectory of a storyline, a narrative pathway from knowledge to action is revealed, as are the stumbling blocks and strategies for overcoming them along the way. Essentially, my model maps the treacherous parts of the path, the potentially immobilizing moments within personal and public narratives about climate change, and it allows for discussion about how population health professionals might facilitate fidelity. The identification of these barriers is not novel within climate change communications literature, and community empowerment theory also touches on many of same themes that emerge within participant narratives. However, these themes take on new meaning when mapped according to a narrative framework, and when visualized linearly, conflicting thoughts and emotions can be understood structurally. This is not to say that narrative models reflect the *causes* of action, but rather, that narrative provides a useful framework for *explaining* and *exploring* action, or lack thereof.

The model's structure follows a story arch that bridges sufficient knowledge of climate change and meaningful mobilization in response to climate change: (1) **agency** about the challenge of climate change, (2) **responsibility** about the choices related to climate change, (3) a sense of **capacity** to achieve the outcomes desired, (4) and a sense of **activation** within the "moral" of the story. These core concepts make up the body of the model (figure 4.1) and they are the main headings of the results chapter, used to organize exemplar quotes. At each of these moments in the story, results are modeled according to how dissonance and fidelity operate, as outlined in table 4.1. Participant quotes are employed throughout the chapter to exemplify the themes clustered around these moments with the potential to elicit either immobilizing or mobilizing emotions. Themes that ring true for participants and that moved them through to mobilization are coded under "narrative fidelity," whereas themes that related to barriers to engagement are coded as "narrative dissonance." Themes that fall under "mobilizing moment" represent opportunities for either dissonance or fidelity to "win out" over the other.

Table 4.1 Results schema		
<i>Narrative dissonance</i>	<i>Mobilizing moment</i>	<i>Narrative fidelity</i>
Themes that may represent a barrier along the path to mobilization (symbolized in fig. 4.1 by a red “x”). 	Themes that cluster around the transition between parts of the story, where barriers and opportunities manifest (symbolized in fig. 4.1 by a green arrow crossed out with a red “x”). 	Themes that indicate conceptual movement from one part of the story to the next (symbolized in fig. 4.1 by a green arrow). 

Theoretically, moving through themes related to fidelity ought to promote meaningful mobilization for a given person or group in a given context, whereas themes related to dissonance would hinder action. Instead of outlining each individual story, I present in this chapter a “story of us and now” made up of the “stories of self” of all participants and of my own story, as the interpreter of the narrative data. Table 4.2 provides examples of participant experiences, and throughout the body of this chapter, additional quotations are used to illuminate key themes. To protect confidentiality among a relatively small sample population, individual markers have been removed from the quotations and I do not attribute quotes to participants by name. Instead, their stories come together and in this chapter, I examine the broader narrative shared among participants for its emotional logic and mobilizing potential.

These results are organized *systematically* but not *formulaically*. Stories are not predictive of behaviour, rather, they provide a meaningful structure for exploring the strategies used to convey emotional and moral logic (Polkinghorne, 1988). Rather than experiencing climate change as a singular storyline, participants navigate multiple competing personal and public narratives, and might experience all three types of themes under each heading simultaneously. Individuals involved with this study often described conflicting or evolving perceptions. The goal of presenting results in this way is not to homogenize or oversimplify narratives, nor is it to determine a formula for action. Instead, I offer a model for exploring the complex overlap of cognitive, affective, and behavioural barriers to engagement with climate change, particularly as they play out in context among knowledgeable, motivated young leaders in Saskatoon, Saskatchewan.

Table 4.2 Exploring participant narratives about climate change

	NARRATIVE DISSONANCE	MOBILIZING MOMENT	NARRATIVE FIDELITY
AGENCY	<p>... it definitely got really draining, and sometimes that led me to feel like “Ugh, I just need to not really think about this right now.” I was just trying to not care.</p> <p>I’ve noticed that sometimes if I see a headline or a snippet of some depressing news about the climate and I’m having a bad day, I will consciously tell myself ‘I can’t afford to look at this right now’ and I will skip past the news. ... I think my avoidance is part self-care but also part unhealthy willful ignorance...</p>	<p>But it’s distant in some ways...It’s definitely very apparent, but it doesn’t, yeah, it’s not like something close to home, I guess.</p> <p>Like we’ll talk about something and be like, ‘Oh yeah, plus, like, climate change on top of that.’ ...like ‘And meanwhile we’re all burning.’ So that’s sort of how I would characterize my climate change lens, I guess; it’s constantly in the background of everything else that meanwhile everything is burning.</p>	<p>I know that humans are in a lot of trouble if it goes unchecked and if we continue on the path we’re on... It’s probably the most pressing problem in the world right now. And I don’t like it.</p> <p>I feel like I need to challenge those emotions and like try to be more constructive about it instead of being so just about feelings, I don’t know. I guess, be more rational – like what do I need to do? How do I get people’s attention, how do I engage people back home?</p>
RESPONSIBILITY	<p>I think one of the reasons that it can feel so paralyzing is that there’s going to need to be so many people working together to work on it and people...we’re not really good at coming together unless there’s like a crisis where you have to, but by the time we get to that point, maybe, probably, it will be too late.</p> <p>It’d be one thing if people were complaining that they couldn’t have an oil job when they had six other jobs...but no one does.</p>	<p>...when I internalize those feelings about climate change, in some ways it motivates me to keep not owning a car, and to keep being mindful of how I travel. I definitely feel guilty...</p> <p>I know in my head- that people, individuals, can do whatever we want to try to make a difference, but if corporations and governments aren’t similarly motivated, it can only go so far, and that feels very frustrating.</p>	<p>[F]or Indigenous people, we always have this way of thinking...we’re constantly thinking towards those generations more than our current one. And a lot of the things we make choices and decisions on usually reflect not only our connection to our ancestors, but also to the future.</p> <p>[I]t’s bigger than me, it’s about a community...I see us as networks, not really as individuals, so again, it’s not about me.</p>
CAPACITY	<p>I don’t know. I feel like it could go so many different ways, I didn’t really – I don’t know that I could predict.</p> <p>It’s very hard for me to think about...like “I will have a kid, and he will, he or she will have kids,” like to think about generations down the line? I’m just like I just don’t – it’s going to be so different, who knows? Like maybe, I think maybe it has to be a coping mechanism, like I can’t imagine – like you can’t imagine apocalypse, really.</p>	<p>But I do think that in my lifetime, and certainly in my children’s lifetime, there – it will look radically different.</p> <p>[I]t’s almost like a looming doom, because even though I can experience certain aspects of climate change myself, it’s not something that’s affected me in a very intense way or acute way, where the issue is that I know it has for a lot of communities and in the future, will affect way, way more.</p>	<p>[W]e’re going to have to face things we’re not prepared to face, for sure, but I guess when I’m feeling more hopeful, I’m like – but maybe we can do it, together, you know, we can make these changes. But I’m not sure. We’ll see.</p> <p>What if there is a wakeup call and we actually give power to the people who are the land and water protectors? That could be a really beautiful future. So yeah, there is progress being made in that direction, but it seems so distant from where we are, here.</p>
ACTIVATION	<p>Ok yeah, I’ve saved whatever greenhouse gas emissions myself but, like, it’s still this tiny little miniscule drop in the global bucket and when I think about things like Trump, it’s just like, ugh nothing I do matters...So there’s also this immense feeling of being small, and insignificant, and it’s sort of this hopeless cause, but you can’t live in that space day to day, or you just totally fall apart right? You can’t stay motivated.</p> <p>[D]efinitely there are little steps, and it’s like the small steps that eventually climb mountains, but there’s no way that one person can emotionally deal with the backlash that follows with trying to change an unsustainable way of living.</p>	<p>...sometimes I feel like I’m not doing things that are very effective just because I’m not in the position to be. Like I’m not just the one, like, signing a paper or making a decision about something, but to an extent, I kind of feel like that’s a poor excuse...So I don’t know, I could be more effective I’m sure.</p> <p>I know that having a more significant impact means I need to be working with other people doing work, and also, that we need to be doing that work together, because, yeah, I don’t think there’s going to be any movement on climate change without tremendous public pressure, by our elected officials, like that type of movement, so yeah, unless we work together, it’s not going to happen.</p>	<p>I try to do as much as I can in my daily life...but just sort of, you know, choosing a career path where everything I do in my 8-5 life pushes this climate change agenda, and like I’m really interested in - Ok, so let’s say the politicians decide to do something, how do you actually get anything done from that?</p> <p>[H]ow do we actually deal with this problem in a way that also doesn’t fall into a “lifestylism” but actually tries to change the conditions... essentially, the fundamental point is – how do we engage in these struggles so that we actually can control the production, so that the conditions themselves are controlled?</p>



## Barriers to sufficient knowledge

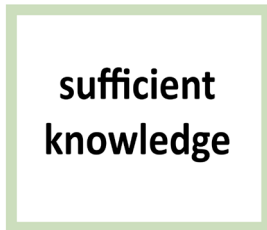


Figure 4.2  
Sufficient knowledge

This study is not an inquiry into knowledge of climate change, and my methodological design is not appropriate for testing knowledge and understanding with precision. Instead, I began individual interviews with an open-ended question about knowledge: “What do you know about climate change?” Many of the participants responded to this initial question with discomfort, such as the participant who responded with “I honestly don’t know how to define it.” Others responded with contradiction: “I feel like I know

a lot and a little, all at the same time.” Despite participants’ insecurities at their lack of knowledge, all of them went on to explain basic facts about climate change. As I expected, no participants deny the reality of climate change, nor are they expressing doubt in the scientific evidence about the anthropogenic causes of climate change. With this type of homogenous sample, it is possible to focus on *how* participants relate to their knowledge about climate change. Despite their common acceptance of climate science, participants are coming from different life experiences and various cultural perspectives, and I started with a question about knowledge to explore the concept of “sufficient knowledge” (figure 4.2).

Together, responses about sufficient knowledge support the study’s theoretical framework. However, while I expected a degree of confidence from participants about their understanding, I found that they frame this phenomenon of “knowing about climate change” more in terms of their social and emotional relationships to the information than in technical terms. Participants strongly associate with “believers” in climate change, but in doing so, they also feel the need to distance themselves from “experts” on the subject. Instead of looking for a threshold of understanding, exploring knowledge in narrative terms considers how climate change is interpreted, not just objectively as *real* but also subjectively as a problem or threat to wellbeing. Scientific understanding is interpreted by participants affectively (via values and emotions), labeled “scary,” “tough,” “a concern,” and often these perceptions are moral in nature, and tied to the inequitable impact of climate change on families, lands, communities.

### **Knowledge as relationship.**

Participant simultaneously express insecurity about how much they can recall about climate change and confidence in their belief that it is really happening, which can potentially lead to dissonance in the story. For example, as one participant describes, “So, I mean I’m definitely not a scientist, so I’m not the one to talk about atmospheric – the science behind it, but I definitely understand how it’s affecting, just kind of, the planetary side of things.” Participants identify as believers, but not as experts on climate change. They have reached a threshold of knowledge to distance themselves from those who deny climate change but describe a social space between denier and scientific expert. For some, the identity of “believer” is intertwined with other personal values and feelings that lead to a more meaningful engagement with climate change, but participant responses suggest that narrative dissonance could hinder movement from knowledge to agency if belief in climate change is not connected to deeply-held values or cultural identities. Simply “believing” in climate change does not lead directly to a meaningful cognitive, affective, and behavioural response.

A mobilizing moment appeared in participant narratives when multiple ways of knowing were drawn upon to evaluate knowledge of climate change. Affective processes played a mobilizing role in participants stories. For example, in the words of one participant, “my emotional, or intuitive red flags that are up are huge red flags, and huge concern about this, which far outstrips my ability to know in a scientific way about it.” By engaging emotional or values-based frames of reference to interpret climate change, participants demonstrate an ability to contextualize the problem and recognize systemic impacts and their inequitable distribution. For example, an Indigenous participant describes the experience of “knowing” about climate change through intersections with colonization and capitalism. To this participant, climate change is connected to a generations-old story about forced displacement and resource extraction, and knowledge about changes comes from looking to Elders and to the land. In the participant’s words, “they all affect the land that we choose to live on or have no choice to live on.” When asked about the source of knowledge about climate change, the participant concluded with “I don’t know, like it sounds cliché, but lots of Indigenous communities are like “Yo, Mother Earth.” In this case, Indigenous identity and ways of knowing factor heavily in the framework for “sufficient knowledge.”

For another participant, knowledge of climate change is framed in terms of class dynamics. From this participant’s perspective, a story with fidelity must include a critical analysis of class relationships. This participant recognizes that because Canada remains economically-dependent upon carbon-intensive resources, climate change knowledge is embedded in the country’s history of colonization, free-market capitalism, and the inequitable distribution of harm due to fossil fuel extraction. Through such a lens, the assumption that inaction is based in ignorance is naive; those in the position to address climate change are well-informed about the science behind it: “That’s what needs to come down, is a combative sort of recognition of what is the class struggle at play rather than – and what are the interests at play, rather than, you know, attributing it to ignorance.” For this person, “sufficient knowledge” of climate change is linked to understanding the inequitable systems through which its impacts are distributed. Thus, rather than knowing about climate change in an abstract way, participants demonstrated that they are interpreting the facts in ways that are emotionally, morally, historically, and contextually relevant to their lived experience.

### Barriers between knowledge and agency

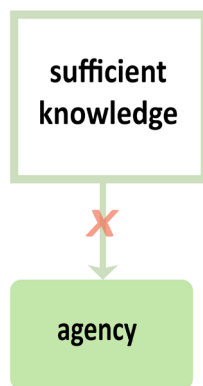


Figure 4.3 Mobilizing agency

In analyzing responses to the questions about climate change knowledge and feelings, participants perceive climate change to be relevant to their lives. However, given that participants are primarily based in contexts where climate change attitudes are polarized (Mildenberger et al., 2016), and given theories about public silence surrounding climate change (Norgaard, 2011), I aimed to interpret the frames employed within climate change narratives and participants’ perceived position relative to the problem. Do participants perceive climate change to be a central challenge in their lives and in their work as community leaders? How does climate change relate to that

which they perceive to be important?

Following Ganz (2011), the model begins with a perceived challenge and a personal relationship to knowledge about the challenge. I chose the term “agency” to describe the experience of not just “knowing” about climate change but “being a part of the story” about

climate change (figure 4.3). In locating their personal relationship to the challenge of climate change, participants demonstrate the ability to move from “sufficient knowledge” to a sense of agency about it. Agency, in this case, is about perceiving oneself as a character in the plot, as an agent of change in the story as it is unfolding. By exploring participants’ experience of a sense of agency, I uncovered learnings about the contexts in which “being a character in the story about climate change” becomes meaningful. This definition draws on literature from McKenzie (2006), who uses the term “agency” as a means of navigating the multi-faceted dimensions of individual subjectivity, “with its constitution changing in relationship to the relative power of various discourses over contexts and over time” (p. 201). Because contexts and perceptions are always changing, there is not one single story within which the participant self-locates but multiple perceived selves in multiple perceived stories. As McKenzie (2006) argues, locating a sense of agency is a playful process involving personal and political spheres, with “transformative political agency existing in the interstices of interaction between contingent and constituted subjects” (p. 202). From this perspective, McKenzie (2006) maintains, agency is about exploring one’s position within the discourse (p. 203). Reframed in Ganz’s (2011) terms, mobilizing agency involves casting oneself (“story of self”) as a change-making character in the framework for understanding climate change (“story of us and now”).

### **Dissonance: Overwhelmed emotions block story.**

Participant experiences of agency help illustrate why sufficient knowledge of climate change is not directly related to mobilization; in fact, in the experience of participants, the process of interpreting knowledge about climate change can be physically draining and emotionally overwhelming. As table 4.2 demonstrates, some participants spoke about minimizing overwhelming emotions by actively reducing the flow of information, with one participant sharing “I will consciously tell myself ‘I can’t afford to look t this right now’ and I will skip past the news.” Participants perceive a limited reserve of attention that can be directed towards climate change if mental and physical health are to be maintained. Rather than reflecting a lack of access to information, this quote suggests information *abundance* (Bernauer & McGrath, 2016) and strategies for strategically maintaining both awareness and wellbeing. Knowledge also relates to fears and frustrations within the lives of participants. Dissonance

occurs when the moral relevance of climate change knowledge becomes overwhelming and triggers coping mechanisms even from those who identify as believers, and perhaps *especially* from those who understand the deep systemic impacts that climate change guarantees. This expression of apathy might appear irrational, but it is used as coping mechanism for unspoken grief and fear elicited by knowing about climate change.

While many participants discuss coping strategies for preventing information from overwhelming their motivation to engage, some purposefully turn away from feelings altogether. Instead of censoring oneself from the source of discomfort, negative feelings themselves are muted. This sometimes results in tension between values and emotional instincts, as exemplified by a participant who explained “I try to do what I can do, and I just sort of emotionally shut down about all that other stuff. But still stay aware, right?” Ultimately, however, participants recognize the conflict between shutting down emotions altogether and processing the fear, grief, and hopelessness that they experience due to their sufficient knowledge of climate change.

### **Mobilizing moment: A contingent character in the story.**

Following McKenzie’s argument (2006), the experience and manifestation of a sense of agency is shaped by several contextual factors. Participants perceive themselves to be living in a plot in which climate change is a reality, but the implications of that fact make up the mobilizing moment with regards to agency. While they consistently express a sense of being in the story about climate change, the type of story being told and the type of role they occupy within it were not always clear. Is this a story of urgency and relevance or a story of distancing the problem and delaying action? Does the storyteller identify as a passive or active character in the story? In the experiences of participants, there are competing stories, that is, other problems and priorities on which they are already focused. As one participant describes, “....we’re all just sort of like ‘Yeah, this is this ongoing shitty thing that, of course, is a layer and applies to everything we do’ but it’s not really its own issue, really, that we talk about.” Climate change is in the realm of awareness but can elicit a sense of disempowerment that hinders participants’ ability to focus on addressing it all the time, resulting in a sort of slippage of agency about a problem that is ever-present and ever-worsening.

Notably, participants were drawn from a sample population that is already actively engaged in addressing social and environmental justice issues. This makes them ideal characters to cast as leaders in stories about climate change, but importantly, they are also leaders in other stories. Climate change may be perceived as a competing priority, and mobilizing moment emerges when climate change is considered *relative* to other stories within which the participant is already active. Participants reflected upon the ways that climate change is already influencing their lives and how their knowledge of its impact on systems forces a convergence of stories: “[C]limate change feels like, not the best use of our time when there’s really immediate needs that we could actually influence a lot more, or, that we feel like we could change to some degree.” In this mobilizing moment about agency, even those with sufficient knowledge and motivation must ask: “What kind of story is this? What kind of character am I? How can I manage my emotions about that?”

### **Fidelity: Character shaping the story.**

When participant narratives demonstrate a mobilizing sense of agency, their knowledge about climate change is interpreted in a way that reveals an active relationship to the problem. Rather than causing individuals to turn away from information or suppressing their emotions about climate change, knowledge is interpreted as culturally and personally relevant. In such cases, the participant is no longer just a bystander in the story, but an agent of change who shapes the outcomes moving forward. Table 4.2 demonstrates narrative fidelity about a sense of agency, where the challenge of climate change is reflected as a priority, as a central problem instead of a peripheral issue. Contingencies remain, but participants who experience narrative fidelity about their agency in the climate change story frame the challenge in a way that takes into account the contextual factors that limit agency.

Locating one’s position in the broader story about climate change, relative the unfair systems that contribute to and exacerbate it, involves processing difficult emotions that threaten to immobilize. As table 4.2 exemplifies, participants desire to be constructive through, or despite, their emotions about climate change. As another example, when describing the lack of agency displayed by the Saskatchewan government on climate change, one participant expresses, “I don’t know, it’s just like, this really big mix of emotions that are on both ends of the scales, and I

don't know what to do about that except just feel it.” Knowing that human agency impacts the challenge of climate change makes it difficult to come to terms with the inaction of peers and relatives, but also governments, previous generations, public leaders, and industries in the face of increasing ecological and social pressure. In locating a mobilizing sense of agency, participants demonstrate an understanding that the risks associated with climate change matter and are worth addressing in a constructive way, despite the contingencies on personal agency.

### Barriers between agency and a sense of responsibility

The next stage of the model explores responsibility (figure 4.4) and the perceived implications of contingent agency within participant narratives. In asking participants about their

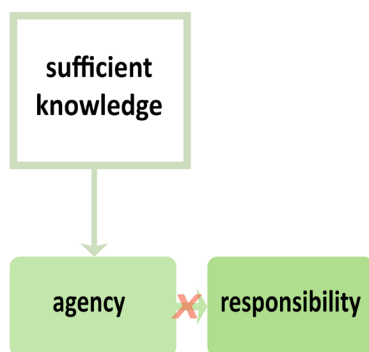


Figure 4.4 Mobilizing responsibility

knowledge and feelings about climate change and about the impact climate change has on their lives and futures allowed me to gain a deeper understanding of the various frameworks they use to make sense of their relationship to climate change.

Understanding one's relationship to the problem is essential to a sense of agency, but the implications of that relationship are based in a context that defines and limits how agency is manifested. McKenzie (2006) draws upon Lovell's work on

agency as performance to argue that “agency can be understood

as the ongoing process of (un)making ourselves through explorations of our positioning within discourse” (p. 203). In other words, performing agency involves both identifying as an agent of change in a given narrative and then exploring one's particular role within it. What choices are available to this character and what future outcomes might those choices make possible?

With a sense of agency about the challenge in the story, a character moves within the narrative to confronting the choices before them. In Ganz's terms, the choice-point in the narrative may be represented by a significant action or decision made by the character, but it is also conceptualized more abstractly as a “moment in time,” a “turning point,” a “tipping point” for the character related to the challenge(s) they face (2011). However, if a meaningful role in the story is perceived as untenable or non-existent, the narrative becomes dissonant. Thus, despite feeling a sense of agency about the challenge of climate change, a knowledgeable,

motivated individual may still face barriers when it comes to developing a sense of responsibility over the choices related to climate change. The experience of narrative fidelity about a sense of responsibility describes an individual locating their role and identifying the choices they must make about climate change within a timeline perceived to be meaningful.

### **Dissonance: Disembodied conviction.**

In responding to questions about what they know and how they experience climate change, participants demonstrate understanding that human actions and decisions have an impact on climate change. However, despite identifying with those causing the problem, some participants struggle to identify a clear role in solutions to address climate change. Climate change impacts are often incremental, and its timelines are multi-generational, meaning that even if an individual can contextualize their knowledge about climate change and locate a sense of agency about the problem, they may experience immobilizing emotions about their responsibility to make difficult choices to address it. Table 4.2 demonstrates that as individuals, participants perceive limits to their role. Climate change may be identified as a serious issue worthy of (someone's) attention but *knowing* what is wrong does not mean knowing what to *do* about it, or what level of sacrifice would make a significant contribution to the cause.

Time plays a significant role as participants conceptualize responsibility to act. Frustration and fear stem from acknowledging the tight window for collective action. Rather than denying that the problem of climate change is real and important, dissonance derives in this instance from a pragmatic disassociation from the challenge; conviction remains disembodied because of a lack of meaningful roles to play. Importantly, participants recognize this phenomenon not only at a personal level but within public and political spheres as well. In reference to political leadership, one participant describes, "...like now it's like, the new denialism – you can acknowledge that it's real and acknowledge that it's a problem, but then, not take enough action on it." Lack of responsibility is justified by a lack of power, even when participants suspect that it masks a vested interest in maintaining the status quo.

Table 4.2 includes an excerpt from another participant who points out that willingness to make pro-environmental sacrifices is often moralized, positioned as the "good" or "right" choice:



People cannot put food on the table... we shouldn't be moralizing these situations but instead, trying to like, respecting that the conditions are not great for a lot of things. And that, it'd be one thing if people were complaining that they couldn't have an oil job when they had six other jobs that they could be doing in something that's cleaner, but no one does.

As this participant points out, frameworks for climate change engagement that moralize pro-environmental choices might fail to capture the way that personal, political, and economic contexts can limit the availability or accessibility of choices. If moralizations backfire, as this participant anticipates, individuals may be cut off from personal responsibility, or they may revert to a dissonant position and emphasize the limits of their personal role in contributing to climate change. Furthermore, this participant notes that those with inequitable access to "green" choices are made to bear the guilt of environmental degradation when historically, more affluent and powerful populations have contributed most greenhouse gas emissions. As such, they perceive the choice-point around climate change as a choice between perpetuating an unjust order or "actually undermining the systems that makes it so that particular communities, predominantly, like, marginalized, Indigenous, people of color, undoubtedly working-class communities, [bear] the weight of what is going to be the environmental impact." From this perspective, economic conditions and timelines shape how an individual sense of responsibility is experienced and interpreted.

### **Mobilizing moment: Willingness to respond.**

Participants experience a moment of mobilization in their story when they accept responsibility over the choice-point in a personalized way and indicate a willingness to take action. As table 4.2 exemplifies, several participants describe choices they have already made to address climate change through the reduction of their personal emissions, such as through transportation, food choices, career paths, and household-level waste management and energy use. However, participants struggle to locate the *meaning* of these actions given the scale and scope of the challenge of climate change. Table 4.2 also demonstrates that for some participants, without government leadership, no other sense of personal responsibility is truly meaningful. If there was more time to reach a professional position where leadership could be effective, then

the sacrifice would be worth it. One participant wonders if in such a context, time would best be spent enjoying life and taking care of oneself:

There are a few creative things I want to do and I often feel like maybe I should focus on those, but then I feel guilty at not spending my time working on these big issues like climate change. And sometimes I also feel like, hey, if the world is going to burn anyway, maybe I should just be a bit selfish and do the creative things I want that will make me happy and make me a nicer person because I'm happier.

If sufficient knowledge and a sense of agency lead to a perception that personal choices are meaningless, that “the world is going to burn anyway,” how can climate change narratives elicit mobilizing emotions? In what spheres of life *is* a sense of responsibility to address climate change made meaningful?

### **Fidelity: Bound to change agenda.**

In moving toward fidelity, the mobilizing moment becomes an opportunity to transform personal guilt and shame into collective outrage about a lack of better choices given decades of public knowledge of climate change and a lack of leadership for meaningful action. Participants locate a sense of responsibility through reflection upon their values, their self-identity, and the timeline within which their story takes place. Essentially, participants feel personally bound to a change-making agenda. Despite contingencies and constraints upon the choices before them, participants demonstrate narrative fidelity in articulating a personal sense of responsibility rooted in deeply held values and existing stories of self. Table 4.2 demonstrates how some participants experience a sense of responsibility to address climate change intrinsically tied to their identities as First Nations people. In such cases, culturally-rooted ways of knowing shift the timeline and stakes of the story. As table 4.2 exemplifies, non-indigenous participants similarly express solidarity with a collective community of movement, framing responsibility in terms of relationship to community.

Significantly, when participants experience of the choice-point of the narratives reflect a focus on their role as parents, revealing conflicted feelings from both participants with children

and those still undecided about starting a family. One participant described sharing these concerns with others:

I've talked to some other people about this. I don't know if I want to have kids. And I think a lot of that is because of climate change, which I think is a common thing among people that I know, because it's just, at this moment at least, it's just so up in the air as to – like are we – this is such a critical moment, are we actually going to take action, and such that, like, yep we're on a good path, that I can like, envision, like, things being stable in 70 years? Or are we just not going to, and it's just going to crumble and then I feel really uncertain about the future.

The significance of this moment in time, and of this generation's choices, is literally a life and not-life situation for participants and their communities. Participants are bound to a social change agenda to ensure that their children, or would-be children, can thrive on a livable planet. Instead of foreseeing climate change as a distant threat, global warming is viewed as a dangerous reality in their lives and their children's lives.

As a final point about a sense of fidelity, one participant shared with me that my own culturally-rooted framework for time could be limiting my interpretation of intersecting plotlines, explaining,

Think of it in cycles, right? Like Indigenous people are more into, like, seasons and cycles, and like, if we want to think about something, it's like a cycle of something. Time isn't that linear... But I mean if time is linear and we are all going to accept that, then we have to acknowledge that we are in the future, right now.... and do we just have this short little chunk of time left? You know?

This flipping of the concept of time in narratives ended up being complementary to my model, and helps to clarify how exploring conditions for multi-generational responsibility is as much about looking back at how *past* choices define *present* choices as it is about looking at how *present* choices define *future* outcomes. Accepting the cyclical and interconnected nature of individual and collective stories is key to fostering a meaningful sense of responsibility to address climate change among participants.

## Barriers between responsibility and a sense of capacity

The next part of the model explores the bridge between responsibility over meaningful choices in the story and a sense of capacity to produce desirable outcomes through those choices (figure 4.5). In my model, for a participant to experience narrative fidelity, the connection point between a sense of responsibility over the choice-point in the story correlates with a sense of capacity to realize a desirable future-state. Despite adequate knowledge and motivation, participants still struggle to make sense of the outcome of the story and their capacity to manifest a positive vision of the future. Transitioning from the choice-point in the story to the perceived outcome demonstrates a connection between an individual's role in the story to the future, or futures, they imagine, given the nature of the challenge. However, in asking participants the question “How do you imagine the future?” I was often met with silence. Even among people who regularly engage with social and environmental issues from a systems-perspective, the future is a hard concept to engage with when climate change is the reason for the discussion. Uncertainty and a “looming doom,” as one participant describes it, comes through strongly, along with a few jokes about the apocalypse.

Overwhelmingly, a common theme emerged from questions about the impact of climate change on participants lives: discontinuity from the past and from the present. Participants anticipate futures characterized by change, and to make sense of potential outcomes, they draw on their core values and their understanding of power, their interpretations of past social changes, and their solidarity with others locally and around the world. All participants express concerns about the future they perceive humankind to currently be moving towards. Thus, the story of

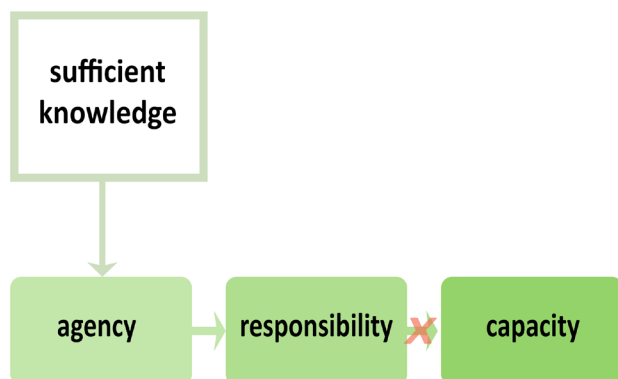


Figure 4.5 Mobilizing capacity

“us,” as humans, and “now,” as in this choice-point in the story about climate change, involves divergence from the current path forward. This is the heart of the story, where responsibility meets capacity. It represents a mobilizing moment that hopefully tips the narrative toward a desired outcome. However, in the case of climate change, responsibility to act may exist without a strong connection

to a sense of capacity to achieve the outcomes desired.

In terms of Ganz's work, moving from a sense of responsibility to a sense of capacity is about transitioning away from an isolation "story of self," where responsibility is only interpreted individually, to an integrated "story of us and now" that goes beyond the limits of individual roles to a collective sense of capacity to confront the uncertainties of the future. If a change in trajectory is needed, choosing (or accepting) a new path includes envisioning possible outcomes and understanding the relationship between individual-level choices and a collective capacity to meet shared goals. Unfortunately, despite climate change being a relatively simple problem to solve scientifically speaking, as reducing emissions reduces the greenhouse effect, social, cultural, political, and economic barriers make it difficult to picture a clear path forward. As such, the linkages between personal actions and meaningful outcomes may not be obvious, even when the stakes are clearly high enough to prompt a willingness to act.

### **Dissonance: Uncertain, foggy vision of the future.**

In their narratives, participants frame climate change as a relevant aspect of their experience as individuals and identify a willingness to play a role in addressing the problem. However, dissonant themes still characterize the narrative space between responsibility over the choice-point and the outcomes desired. In other words, participants experience barriers to a meaningful sense of capacity to confront the discontinuity woven into the story's timeline. Themes like privilege, despair, and even optimism emerged, blurring realistic visions and evaluations of the future. Responses centre upon themes of uncertainty and dread. Several participants reference feeling cut off from any vision of the future, whereas others feel more certain about worsening planetary and social conditions. Participants acknowledge that it is difficult to come to terms with this vision, qualifying their answer with "not to be all Debbie-downer, but..." Maintaining fidelity about "outcomes" within a science-based story about climate change introduces difficult implications and uncomfortable emotions about what could happen to the things that matter most to participants. As table 4.2 demonstrates, the degree to which the expectations of past generations cannot be counted upon is difficult to accept. When everyday demands require a focus on the present and hope for the future, it is easier to remove climate change from the picture altogether, despite knowledge and motivations.

Without foreseeing such an outcome, the story becomes dissonant and for some people, and while participants maintain a mix of pessimism and optimism about the future, this sense that the story could effectively end with this generation came up often, an outcome that is both dreaded and feared by participants. It is a pathway characterized by *decreasing* capacity with each generation to come, paradoxically inverse to the responsibility to act, which only increases with each generation to come. Thus, dissonance takes root in the heart of the story: the role of this generation cannot be aligned with capacity to manifest a livable future because the challenge is perceived to be too great in scale and urgency. The choice-point becomes meaningless, and all action becomes seemingly unnecessary because the future is blocked.

### **Mobilizing moment: Capacity contingent on interpreting discontinuity.**

Accepting the reality of climate change and internalizing its meaning is an act of courage because it involves interpreting discontinuity. Participants are not in denial about the existence of climate change, nor do they reject the fact that human actions have a role to play in both causing and mitigating the climate crisis. The complexities of uncertain factors make it difficult to imagine the degree to which discontinuity will impact everyday life, but as table 4.2 exemplifies, participants admit that the future does not look like the present or the past.

Several participants discussed their relationship to socioeconomic privileges in order to contextualize their relationship with the discontinuity that climate change promises:

I have a lot of privilege, so it doesn't really impact my life. Yet...My house is air conditioned, and it's heated. If it's a terrible summer, I don't worry about my garden not doing well, I can buy groceries. I have money. I have a steady job. I have health insurance. I'm pretty well-buffered.

This participant is acknowledging the ways that climate change still feels like a far-off, manageable problem at a day-to-day level, despite knowledge of the discontinuity to come. However, as table 4.2 demonstrates, participants also readily acknowledge the moral implications of inaction and delay and provide examples of how climate change is already harming quality of life for populations around the world. Notably, this brings up uncomfortable emotions. Feelings of despair and sadness emerge consistently within participant narratives with regards to the perceived outcome of the story. Loss must be confronted as it characterizes the

future, but also as it characterizes the present for many people and places, locally and around the world. By channeling solidarity, an emotion that Ganz (2011) argues can overcome the immobilizing effects of isolation (p. 277) participants confront the nearness of climate change.

### **Fidelity: Alignment with collective capacity.**

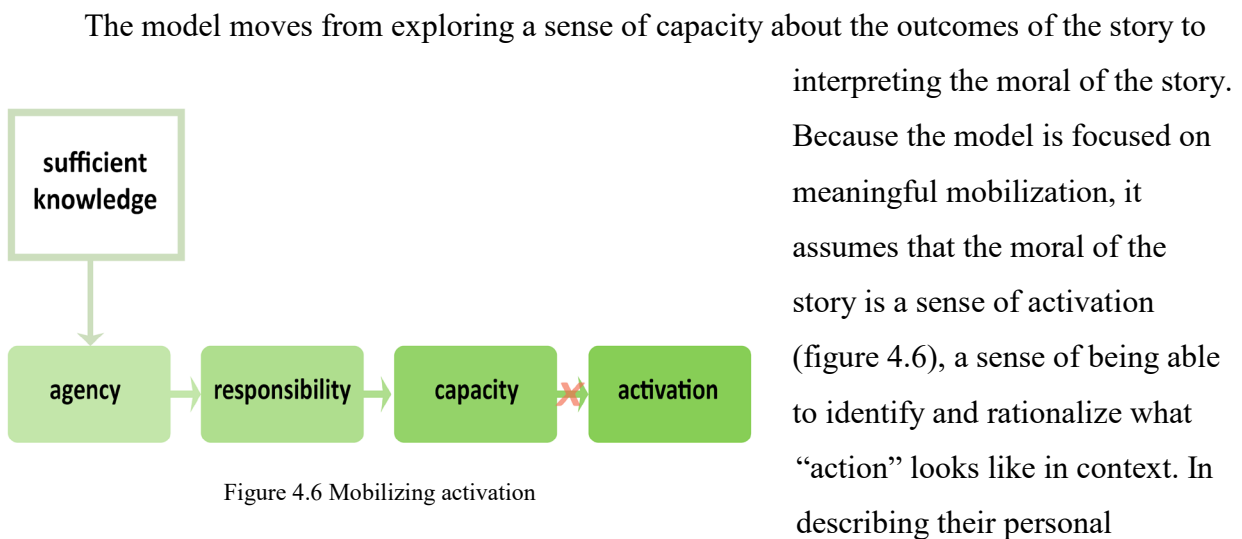
Climate change is understood by participants in its ecological and social complexity, and thus individual-level capacity is perceived as insufficient for addressing the challenges in the story. As a result of participants framing climate change as a systemic problem instead of an environmental problem, narratives with fidelity require solutions that target systems. The choice-point in such a story begins to revolve around planning for discontinuity at systems-level and capacity centres upon preparing for large-scale changes that are currently dependent upon collective decision-making. Thinking in terms of political capacity re-introduces significance and meaning to choices made and the difference those choices might make in the future. For example, this participant looks to grassroots Indigenous organizing and social movements to source a sense of capacity:

[W]hen you study the history of social movements, they would like, upheave governments and totally change the nature of the place you live in. And so I think, in my head, I sort of am like – who knows what’ll happen in the future [laughing] like maybe people, maybe climate change will start to get really bad and people will get pissed off and there will be a revolution?

My study participants already have experience with community-level organizing and find a sense of belonging and solidarity with others who work for social and environmental justice. By aligning themselves with organized efforts to improve the conditions for the changes ahead, alternative paths forward become clearer and can be assessed collectively relative to the current trajectory. As one participant describes, “You need to have plans built, potentially, by government to guide growth and change, and then have these initiatives that allow businesses and industry and individuals to connect in with that bigger strategy.” Planning for disruptive systems-level change and collaboration are key elements to future outcomes that elicit hope from participants. Fidelity comes from a vision of potential futures consistent with climate change knowledge and analysis of how systemic power dynamics limit remaining pathways.

A strong theme that emerged around this part of the model related to capacity to prepare for the future and fight against oppressive forces. Channeling their social and environmental justice values, participants demonstrate that a desirable future includes alternative paradigms for public decision-making and for governing relationships with each other and the land. As table 4.2 demonstrates, participants desire a greater level of collective preparedness for the challenges ahead. One participant anticipates that the current trajectory will lead to the outcome of conflict between groups advocating for the status quo and those demanding alternatives. Future outcomes are dependent on collective resistance, bringing into focus the role of power-holders undermining pathways toward crisis-aversion. Another individual imagines a hopeful outcome on the other side of this resistance pathway, envisioning a world where Indigenous worldviews are dominant instead of those paradigms that commodify the natural world. For participants, examples of collective capacity included policy-level action, disrupting unfair economic systems, shifting perspectives and balances of power, and changing the way societies relate to the land.

### Barriers between capacity and a sense of activation



responses to climate change, many participants point out the need for systems-level change and the urgent timeline for change in explaining their choice to engage in personal actions that are organized and that connect directly to a collective sense of capacity. Drawing upon their values of social and environmental justice, as well as their understanding of systems theory and community organizing, participants demonstrate a desire to be strategic and effective with their



personal responses to climate change. They perceive organized responses to be significantly more effective than individual actions, particularly when collective capacity targets unfair systems and power structures. In alignment with their expectations of discontinuity, participants bring into focus a lack of support and leadership to ensure that mitigation and adaptation efforts are meaningful. Participants critique existing economic, political, and social frameworks for their inability to accommodate the changes needed to address climate change in an equitable way.

For these participants, the “activation” part of the model is useful for exploring how personal spheres of influence are navigated in light of the magnitude of organized action needed to address existing emissions trends. The final question in the interview schedule asks participants how they are responding to climate change, and as a follow up question, I also asked how participants felt about the effectiveness of their response. Without prescribing a framework for effectiveness, this question offered participants a chance to evaluate the emotional logic of their story with regards to their perceived mobilization or immobilization. While many participants experience narrative fidelity with regards to the source of their capacity to confront climate change into the future, barriers still hinder their experiences of activation—their sense of being able to turn plans into reality—given the hostile contexts in which they embody their story.

The term “activation” was chosen for this last piece of the model after hearing it used by a participant in the context of storytelling. Ganz, whose work is used within the Next Up training program, is invoked by the participant to explain activation and the impact of a transformational story: “[L]ike if I were to talk about a “story of self,” and yeah, to talk about...having less than some other people, and like, experiencing racism in specific, if I were to tell a story, it could activate them.” The participant goes on to contend, “activation is just something that happens within you,” in contrast to a sense of empowerment, which the participant conceptualizes as something received from someone else. Adapting this participant’s definition of activation slightly, instead of just “happening,” this model conceptualizes activation as a morally and emotionally-logical conclusion to a meaningful story about climate change. How do individuals reconcile values of social and environmental justice with the rest of their narrative about climate change, and do these values lead to experiences of dissonance or fidelity, immobilization or mobilization?

### **Dissonance: Limited sphere of influence for meaningful action.**

As table 4.2 demonstrates, collective action may be identified as pathway to avoiding run-away climate change, but the barriers to organizing a meaningful response to climate change can still feel insurmountable to participants. Despite ample motivation and willingness to create a more just society, dissonance at this part of the story is common among participants. Participants experience uncertainty about the degree to which their embodied actions (their tactics) are meaningfully contributing to their goals, even when those actions are embedded in broader social change agendas. For example, one individual describes feelings of doubt about the influence of petitioning elected officials, and questions whether or not power-holders will be swayed by such a tactic: “it’s hard to keep doing that when it feels so meaningless, especially when you...see so little influence.” Participants are also already involved in organizing work on other social and environmental justice issues, and with limited resources, they ask themselves: Is contributing to collective action *in this particular way* meaningful?

The contexts in which their actions are embodied are not conducive to meaning-making, and participants express a desire to re-position so as to be more effective: “I already know that I’m vocal, like I’m quiet but I’m still vocal and I think it’s just a matter of pushing myself, you know, to that policy-making level.” However, as table 4.2 demonstrates, even those working on climate change at a policy-level feel blocked from making a real difference because of political opposition. Participants struggle to bring fidelity to the moral of their stories about climate change because of the complex opposition they encounter along the way. Motivation to keep taking action in such conditions includes regularly managing immobilizing emotions about existing opposition to meaningful change. Across their efforts in government agencies, representing their communities, parenting children, teaching, writing, organizing, and performing, participants have taken efforts to increase their spheres of influence and yet they still experience a lack of efficacy about their response to climate change.

Those participants who are actively responding to climate change describe experiences of “backlash” from political, economic, and cultural forces, as well as strain in their family and community relationships. As one participant explains,

So yeah, one of my ways, one of the things I’m doing to respond to climate change is to ignore climate change deniers, and that’s not particularly helpful, because I think in order for society to change, we need to be communicating and

people with different perspectives *must* communicate with each other. We're not going to find common ground if we never talk about it. And I think finding common ground is one of the things we must do if we want to make change, but when it comes to actually doing that, I don't have the energy. So that's something that makes me sad.

The energy and effort expended on climate change engagement at the interpersonal-level feels misplaced to this participant. Another participant describes attempts to start conversations about climate change with community-members:

I feel like I've been making a small amount of progress lately, on having different kinds of conversations that I feel are opening up dialogue between family and friends that think differently from me, politically, and hoping to, I guess, lay some groundwork for... I don't now, I don't know. Sometimes, it feels like it's effective and sometimes it really doesn't.

These participants care about their communities, but other members of those communities do not always share their perspectives on responding to climate change. These themes contribute to dissonance about a sense of activation, leaving the storyteller isolated and the story without a clear moral, blocking the path to meaningful mobilization.

### **Mobilizing moment: Brokering power to make sense of meaningful action.**

Because they recognize that systems-level solutions are needed to avoid exacerbating social and environmental injustices of climate change, many participants already contribute to community organizing and education efforts. However, despite identifying as someone "taking action," these participants remain unsure about the meaning of their actions, suggesting that their story contains conflict with regards to a sense of activation. For example, table 4.2 demonstrates conflict between feeling ineffective due to a limited sphere of influence and feeling like this knowledge is used as an excuse for inaction. Participants express a willingness to engage in meaningful actions that target systems, but they also recognize political, historical, and legal limits to that kind of engagement:

I wish for more young people to be involved in it, and push their leadership to have these conversations, and also include the Elders,

because I still feel like it's very much tokenistic back home. I just feel like decolonizing will at least help toward making better informed choices, and taking actions, like you know stopping the mining companies, stopping the pipelines. Not being afraid of ...the consequences of like chaining ourselves to pipelines and doing road blockades, you know what I mean? We're so fearful and I just feel like it would be a lot different if we were decolonized, I guess.

This participant draws connections between hostile conditions for meaningful actions and the colonial context in which such actions take place. Without addressing the political and cultural barriers to engagement, actions might feel tokenistic.

Overwhelmingly, participants identify limits to the collective capacity of individual citizens who aim to meaningfully mitigate and adapt to climate change. Their narratives demonstrate an understanding that having a significant impact on climate change must include “tremendous public pressure,” as one participant articulates, and they generally define effectiveness in terms of their ability to contribute to social movements building up such pressure. The mobilizing moment between capacity and activation thus centres around structures of power through intersectional lenses, relying on cultural stories, collective identities, social movement history to make sense of meaningful tactics.

Mobilizing can emerge from embedding one's “story of self” to a “story of us and now” that disrupts existing power structure, allowing a storyteller to identify tangible, context-based actions while also framing a bigger, multi-generational story about resisting the power dynamics that cause and perpetuate climate change. For example, this participant frames the moral of the story about climate change in terms of relationship to the land:

Indigenous healing is leaning into the land. And, like, our just being Indigenous intersects with climate change because we need to heal by leaning into the land, and we need to heal because of the intergenerational effects of colonialism, but like, it's also those intergenerational effects that created this power structure, that created this industrial dynamic, so it all intersects. Just like, being ourselves – it's all affected, you know?

A sense of activation is thus sourced by this participant through solidarity with others already working for the rights of Indigenous peoples.

### **Fidelity: Activating multi-generational solutions.**

Those with narratives that maintain fidelity between the transitions from knowledge to agency, agency to responsibility, and responsibility to capacity face a “moral” of the story about climate change premised upon scientific facts and values of social and environmental justice. Because of the scale and urgency of climate change and the limits of their individual roles, participants recognize that any action taken in isolation bears little meaning on the outcome of the story, reflected in phrases like “I mean it’s something that you can start on your own, but you can’t finish it on your own” and “I can’t change the world, but I can change a portion of it [laughing] my little portion of it in this community.” Participants readily admit that they are stronger in collaboration with others, and they aim to focus on aspects of the problem over which they can make a difference.

While accepting limits is an important aspect of locating a sense of activation among participants, table 4.2 demonstrates that they are also dealing with frustrations about those limits. One participant describes using the “Circles of Influence vs Concern” model developed by Covey (1989) to make sense of where personal engagement might be effective<sup>7</sup>. This model is a tool for conceptualizing the difference between that which matters and that which is controllable. The participant employs the tool as a way to strategically focus energy on aspects of climate change within their reach, effectively minimizing the stress and frustration that accompanies a sense of activation.

So I know that the work that I do is having a positive impact. I know that, like, the work that I do, if you were to sort of quantify it in terms of reducing greenhouse gas emissions, the work that I do is orders of magnitude more of an impact than an individual can have in their driving habits, and their house, and their transportation and food, so I feel like I’m doing my thing in the work that I do, and then after that I just try to live a happy life [laughing] and enjoy my family and recreation and stuff, and not spend too much time on it.

In the experience of this participant, narrative fidelity is about activation at a public-level, and it tends to supersede activation at a personal-level. In other words, lifestyle actions that cannot be

---

<sup>7</sup> More information about this model is available at <http://uthscsa.edu/gme/documents/Circles.pdf> (accessed July 19, 2018).

leveraged to mitigate and adapt to climate change are not necessarily being abandoned by participants who experience narrative fidelity, but such small-scale responses are reframed in terms of their connection to capacity to reach the desired goal.

For some participants, the only pathways forward in their narrative that make sense involve economic, political, and cultural disruption. Those participants who identify themselves as contributing to organized resistance from the current path feel a sense of fidelity about their efforts. For example, one participant's narrative focuses on economic justice as a meaningful pathway toward a sustainable future. From this participant's perspective, without undermining the economic system perpetuating climate change (free-market capitalism), so-called "green" lifestyle choices will mean little more than petty moralizations. Table 4.2 exemplifies how to this participant, without systemic conditions for equitable choices, the majority of people are cut out of a meaningful story about climate change, further perpetuating the myth that people are ignorant or unfeeling about the magnitude of the problem. Political power over economic contexts is thus interpreted as the most effective pathway to a just future, "...how do we get political power so that we actually overcome the conditions, rather than, how do we get the fastest way to a green economy? The point being that the conditions will never be good, under capitalism, for that." In this way, narrative fidelity among participants in this study is about telling a common story about the intersections of social, economic, political, and ecological pressure that shape the cultural and contextual conditions of engagement.

### **Barriers to meaningful mobilization among young leaders**

My results framework stops short of examining or observing behaviours, and thus the data collected for this study cannot be used to definitively answer questions about how participants embody their climate change narratives. Participants were asked "What are you doing to respond" but the methods for the study did not verify the truth of their statements. This analysis focuses instead upon the story itself, and I am more interested in how the answer to this question relates to the rest of the story being told by participants than I am concerned about its veracity. As such, my analysis explores how the symbolic, interpreted, and perceived conditions for engagement impact the narrative pathways to an emotionally and contextually logical response. This chapter has illuminated how the model is useful for analyzing narrative results,

and I offer it as a way of exploring barriers to engagement and to facilitate discussion about how knowledgeable, motivated people experience the complexity of climate change in everyday life (figure 4.7). It is not a formula for stirring up the “right” emotions for mobilizing action, but

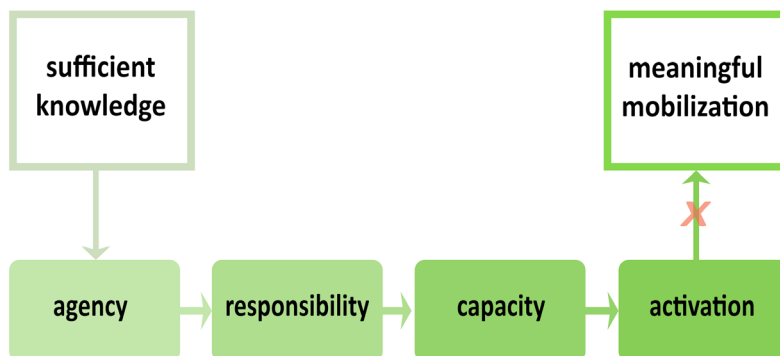


Figure 4.7 Meaningful mobilization

rather serves as a tool for explaining how in cases when knowledge *is* transformed into action in context, a mobilizing narrative likely lurks beneath the surface of silence. Bringing mobilizing narratives into the light through this visual model

clarifies how dissonance is experienced even among those assumed to be “easy-to-engage” and highlights how mobilizing moments can be leveraged to promote a meaningful story. All stories are subjective by their nature, but when grounded by values of social and environmental justice, the emotional logic of the narrative can be interpreted. In doing so, there is much to be gleaned for others who share these values, such as climate change educators, science communicators, community organizers, and population health professionals. By modeling moments where knowledgeable and motivated populations may face barriers to engagement, this study allows for a more nuanced exploration of mobilization and the contexts in which knowledge is translated into meaningful action.

Ultimately, using a storytelling framework illuminates the interplay between themes that contribute to both dissonance and fidelity about the meaning of climate change. Because they live, work, learn, and play in contexts characterized by dependence on fossil fuel use and by opposition to meaningful climate action, participants experience dissonance daily. In working through this dissonance narratively, that is, in making sense of what does *not* make sense about their experiences of climate change, participants highlight barriers to engagement as well as strategies for overcoming dissonance. These mobilizing moments appear across each individual narrative in some form, and many participants expressed a blend of mobilizing and immobilizing emotions related to climate change.

For the purposes of this thesis, I summarize key themes from the results as three archetypal stories that capture the range of experiences of mobilization narrated by participants. In stories characterized by dissonance, knowledge fails to produce meaningful action, and the model is useful for exploring where in the narrative interpretive barriers take root. In contrast, stories characterized by fidelity reflect a consistent connection between knowledge and a sense of activation, and the model is useful for exploring aspects of engagement that are emotionally, cognitively, and behaviourally meaningful *despite* cultural and contextual barriers. Bridging these two stories is a third archetype made up of mobilizing moments, where the underlying conflicts and contingencies that contribute to both dissonance and fidelity are illuminated. Within participant narratives, these mobilizing moments emerge around themes of dissonance and fidelity, but standing alone, this archetypal story encapsulates the inherent tensions that come along with interpreting climate change. The model is useful for understanding how these tensions are navigated.

### **Living with dissonance.**

As a result of this study, a key shift in my understanding about the barriers to climate change engagement is that narrative dissonance about climate change is not an avoidable phenomenon for participants. The intersection of their cultural identity as community organizers for social and environmental justice in a political, social, and economic context that is hostile to meaningful climate action results in dissonance about their agency over the challenge, their responsibility over meaningful choices, their capacity to create a desirable outcome, and the moral of the story, which does not always connect with a meaningful sense of activation in context. Immobilizing emotions are experienced precisely *because* participants are knowledgeable and motivated to address climate change within places and spaces where the conditions for meaningful action are only worsening with time.

Dissonance in a narrative based on social and environmental justice values largely stems from a lack of urgency to address climate change on the part of leaders and those with significant spheres of power. Participants doubt whether or not political leaders, in particular, are willing to make the sacrifices needed to change the current trajectory of society. When taking action on climate change means disrupting existing systems of power, lifestyle-level actions can feel



tokenistic without significant shifts in paradigm across the entire political spectrum. Within these contextual conditions, participants live with knowledge about the gravity of climate change and a motivation to address it through collective action, but they question the degree to which their personal sacrifices are impacting long-term change given the limits of their individual capacity.

Without alternative economic systems and without support and infrastructure for organizing collective efforts, participants experience isolation and powerlessness. Participants also desire safe spaces to share the difficult emotions they experience because of climate change. Suppressing these emotions leads to further isolation. Sharing stories of self, us, and now, could be a means of bringing difficult emotions about climate change and could elicit solidarity, which according to Ganz's theory helps to overcome isolation (2011, p. 277). However, without communities of support with which to share difficult experiences, participants may feel outnumbered by those who do not share a sense of agency or responsibility to address climate change, leading to feelings of doubt and disempowerment. Individuals who live with dissonance may refrain from talking about climate change in order to protect their energy and quality of life. Thus, living with dissonance is a difficult reality for knowledgeable, motivated young leaders in Saskatoon, Saskatchewan. Their experiences of climate change demonstrate how coping mechanisms and strategies are employed to manage the immobilizing feelings elicited by narrative dissonance.

### **Negotiating the (im)mobilizing moments.**

The archetypal story comprised of mobilizing moments conceptualizes the narrative subject as struggling to make meaning of climate change and lacking spaces to reckon with its relevance to everyday life. In the context of my study, several participants acknowledge that despite climate change being an undercurrent of their justice-based work, they are not often given the opportunity to talk about from their personal perspective. Participants indicate that sitting down to talk about climate change for an hour is not something they do on a regular basis, and that despite perceiving themselves as knowledgeable about climate change and relatively capable of making a difference, their climate change story remains under the surface of everyday life.

Wrestling with the relevance of climate change in their lives sometimes blocks a

sense of agency for participants and makes it harder to interpret their personal responsibility to address climate change. Instead of responsibility emerging from the timeline of the plot, a meaningful role in the story is often perceived to be contingent upon *others* locating a sense of responsibility. Inertia threatens to undermine the timeline for meaningful action, and thus participants struggle to connect their personal responsibility to a sense of capacity for a future worth making sacrifices to reach, even generations from now. Delayed action today can drown out hope for tomorrow, a reality that must be navigated by participants. Will this window of time for policy action be leveraged? Doubt about the willingness of leaders to champion systems-level solutions leads to fear about worsening outcomes. Participants are willing to engage in meaningful solutions, but if small lifestyle changes are not enough to make a meaningful difference, how can narrative fidelity about mobilizing be experienced? Can a sense of activation be reached when the conditions for action are difficult to navigate?

### **Fighting for fidelity.**

The final archetypal climate change story that emerges from the model is a narrative with fidelity, a story with emotional logic and a connected sequence of elements. In this case, the values of social and environmental justice that spark the story are carried through to inform the moral of the story, and participants are able to locate a sense of agency, responsibility, capacity, and activation about climate change. They frame the challenge of climate change in systemic terms, bringing in analyses of power and equity at the local and global level. However, despite accepting climate change as a complex ecosocial problem, participants who experience fidelity about the scale and scope of climate change are still able to position themselves meaningfully in relationship to climate change. By embracing, rather than rejecting, the difficult emotions that come along with engaging with climate change, participants stay motivated to act.

Participants who experience narrative fidelity about their climate change story are not naive about what it will take to confront the discontinuity that climate change promises, and they recognize that capacity to navigate the future is contingent upon organized action sustained over multiple generations as climate change threatens to undermine social, economic, and political systems. In order to confront the magnitude of social change needed to address climate change

in a meaningful way, participants channel their energy strategically and focus on action within their personal sphere of influence and control. While concerns about the bigger picture can threaten to overwhelm emotions, participants maintain narrative fidelity by conceptualizing their actions as nested meaningfully within strategic collective efforts. Participants are navigating mobilizing moments on a daily basis and, while many experience a semblance of fidelity within their narratives, true fidelity remains largely out of reach in this moment mired by dissonance.

Thus, through Ganz's narrative framework (2011) and my analysis of participant stories, this model of meaningful engagement emerges as a tool for exploration and analysis, and it has introduced deeper levels of nuance and understanding within my own story of climate change, both as a community organizer and as a population health professional. The model could facilitate reflection upon existing literature about climate change engagement, and it could serve as a framework for future inquiry into mobilization to address complex ecosocial challenges.

## **Chapter 5: Further discussion**

This chapter outlines the relationship between my study's findings and existing literature on the topic of climate change engagement and the gap between knowing about ecosocial problems and mobilizing to address them in a meaningful way. The discussion chapter draws upon existing literature and examples from non-academic writers to contextualize my findings, and it focuses in on answering the two research questions around which the study is premised. I provide a concise discussion of my key learnings and offer suggestions for recontextualizing results for population health theory and practice.

In response to the first research question about the experience of climate change, results demonstrate that the young leaders interviewed for this study experience barriers to engaging with climate change. Upon confirming that even knowledgeable, motivated young leaders experience narrative dissonance about climate change, this chapter discusses how concepts within my model relate to similar concepts within climate change engagement literature, such as implicit denial (Norgaard, 2011), environmental melancholia (Lertzman, 2013), and unspoken loss (Randall, 2009). Participants also confirm that, through the lens of justice, climate change narratives moralize resistance to the status quo in contextual terms, including political, economic, social, and cultural frameworks. These intersections are inextricable from participant experiences of climate change, and as such, this chapter discusses alignments between meaningful mobilization and contextual barriers such as settler futurity (Tuck et al. 2014), socially organized denial (Norgaard, 2011), and predatory delay (Steffen, 2017a). Participant narratives help to contextualize these theories about complex personal and social experiences of climate change.

My second research question relates to understanding potential alignments where population health professionals can facilitate meaningful engagement with climate change, especially among the knowledgeable, motivated leaders across stakeholder groups. Given that participant narratives stem from an equity-based, systems-based way of interpreting climate change, the results indicate opportunities where population health theory and practice could help overcome narrative dissonance and bolster leadership for meaningful mobilization. Particularly in a Canadian context (Government of Canada, 2018), where inadequate policies to mitigate

greenhouse gas emissions contribute to conditions that could undermine public health gains made in the last 50 years (Watts et al., 2017), population health professionals can build-up community capacity to address climate change by mobilizing individuals who are already knowledgeable and motivated to address climate change in a meaningful way.

### **Narrative dissonance and meaningful mobilization**

This study transformed how I conceptualize “sufficient knowledge” of climate change. I find that looking at “sufficient knowledge” through a narrative shifts the focus away from transferring knowledge about the problem to a focus on the relationship between knower and known. Values, experiences, emotions, and relationships all factor into interpretations of climate change among participants. A narrative approach proved useful to me for understanding the relationship between individuals and the knowledge they hold about climate change, particularly as it impacts their everyday lives. Importantly, participants demonstrate that identifying as a “believer” in climate change, a social marker as someone “not in denial of the human causes of climate change” does not automatically lead to a sense of agency about climate change.

Being a “believer” may provide individuals with a way of distancing their self-identity from “deniers,” but it also distances them from “experts,” who might be perceived as having a more meaningful role in addressing climate change. Notably, a survey among American health departments found that 77% of local directors experience a lack of perceived expertise to assess local health impacts of climate change, and 83% responded that they lack the expertise to plan for regional adaptation to climate change (Balbus et al., 2008, p. v). My study suggests that such individuals may stop short of acknowledging their affective and contextual relationship to their climate change knowledge if the problem is framed as irrelevant to daily life, or if overwhelming emotions emerge. However, others may be conscious of a deeper contextual relationship to their knowledge of climate change, able to ground the story in a relevant place (existing setting) and time (existing plotline). The model I developed could help to explore the fidelity of the frames used to communicate about climate change according to the narratives already being used to make sense of the world.

My study finds that the frames participants use to interpret the “problem” or challenges of climate change intersecting with other ecosocial problems, such as capitalism, austerity, and

colonialism, and acknowledging these intersections evokes mobilizing emotions like urgency, outrage, and solidarity. However, as Randall (2009) finds, climate change is a story that also involves grief, loss, and pain, and “believing in” the systemic impacts of climate change can also evoke immobilizing emotions like inertia, apathy, and a sense of isolation about the information being interpreted. Participants identify coping mechanisms such as distancing themselves from the problem in time and space and turning away from sources of information about climate change, similarly to Norgaard’s participants, who sought to “protect themselves a little bit” (2011).

Stories matter to the interpretive process. As Marshall argues, “[i]f listeners are not invited into a compelling emotional narrative about climate change that resonates with deeply held values, their scientific knowledge may not be activated” (2014, p. 24), and thus knowledge of climate change may be held independently from a relevant setting, plot, or set of characters to give the messages cultural and contextual meaning. Thus, thinking like an epidemiologist, for a mobilizing narrative about climate change to “spread” mobilization to an individual, the information must necessarily be nested within an existing narrative of emotional and moral significance to the listener and their scientific knowledge must be sufficient to contextualize climate change in terms of settings, characters, and plotlines with relevance to their everyday life.

### **Overcoming barriers to agency**

Exploring how the “challenge” of climate change is interpreted within participant narratives highlights the context underpinning the relationship between knower and known, and it unveils the importance of climate change relative to that which already matters in their lives. My analysis of this part of the story brings forward the concept of **agency** and its role in bridging contextual knowledge of climate change with a sense of responsibility to address it through personal sacrifices.

I conceptualize a sense of agency as a feeling of being in the narrative about climate change, and as Marshall (2014), Tuck et al. (2014), and Callison (2014) have written about, my findings suggest that agency about climate change is informed by cultural relationships. As Marshall argues, personal stories about climate change are informed by core values and

identities, which are shaped by social relationships (2014, p. 25) and by relationships to place and land (Deranger, 2015; Tuck et al., 2014). Values and identities are embedded in existing and historical power dynamics, including “access, control and governance of land” (Deranger, 2015) and as Deranger contends, “[t]he Indigenous position has been rooted in the need to preserve and protect sacred lands, waterways, species and territories from the threat of industrialization” (2015). Through a social and environmental justice lens, climate change is relevant to population health and our stakeholders *because* of its complex relationship to the social and environmental determinants of health and their distribution.

### **An agent of change in a bigger story.**

As my model highlights, even those who experience a sense of agency about climate change encounter barriers to performing agency in a meaningful way. Contingencies impact a sense of agency, and as McKenzie argues, translating subjectivity in socio-cultural terms “suggests a reflexive response to the interdiscursivity manifest in the shifting between cultural narratives,” facilitated by an “understanding of knowledge as subjective” (2006 p. 219). In other words, there are multiple, competing narratives in which individuals perceive themselves, and identifying as a particular character in a particular narrative is a transient experience dependent, in part, upon the individual’s ability to recognize themselves as being in a narrative relationship with knowledge in the first place. However, knowing that one is *in* the story is different than knowing one can *shape* the story, revealing a mobilizing moment in the narrative. Other studies have demonstrated that individuals might experience overwhelming emotions due to their knowledge of all of the ways climate change impacts that which matters most, either opting to ignore the problem and distorting the narrative to better-align with their values, as Wibeck discusses (2014), or finding ways to cope with the dissonance of knowing about a threat and doing little to mitigate it or prepare for it (Lertzman, 2013; Norgaard, 2011). In such cases, the performance of agency may be blocked, and knowledge may not be mobilized in a meaningful way.

In designing communications and engagement strategies about climate change, population health professionals could consider that publics may need safe spaces to process difficult emotions that stem from interpreting climate change in a contextually meaningful way,

and that additional measures may be needed to ensure that worry is not debilitating but rather channeled into a sense of responsibility. Randall argues that rather than judging those who are lost in overwhelming emotions about climate change, such individuals deserve support to move *into* an “emotional experience of the reality” of the challenge (2009, p. 122). To achieve narrative fidelity in this way, information must also be contextualized with characters, settings, and language that are culturally familiar to listeners, and it should address gaps between reasonable concerns about risk and a meaningful response to address climate change. As Moser (2014) advises, “[a]ssist people in appraising the risks they face from climate change and the options they have in responding to them” (p. 349) to help bridge agency and responsibility. As the findings of Doherty and Webler (2016) support, moving from agency to a meaningful sense of responsibility may be facilitated by framing both the relevance of their *relationship* to the issue *as well as* the relevance of their *response* to it.

### **Overcoming barriers to responsibility**

Exploring participants’ relationship to the choices within their climate change narratives unveils conflicting values and emotions as participants come to terms with their role in the story. As with the challenge of climate change, interpretations of the “choice-point” of the story are contextually and culturally specific, and they centre upon the stakes of the challenge for communities or places with which participants feel a personal connection. The significance of this “moment in time” with regards to human agency over climate change is palpable among those who interpret facts through a social and environmental justice lens, as their solidarity with others impacted around the world conflicts with their value of peace and wellbeing for all. Participants express emotions like outrage, fear, solidarity, and urgency fueling their sense of responsibility to “do something” meaningful about climate change. However, individuals in my study understand the human causes of climate change, but they make meaning of climate change in a context where there is widespread denial of this fact (Mildenberger et al., 2016) and where communities continue to depend on fossil fuel industries for revenue and employment (Eaton, 2017). In such contexts, social norms work *against* narrative fidelity and participants experience tension about their willingness to act to address climate change.



Within the literature about climate change engagement, an exciting conversation has emerged about the reasons that people fail to mobilize to address climate change despite public awareness of the problem (Doherty & Webler, 2016; Lertzman, 2013; Norgaard, 2011; Stoknes, 2014). This conversation frames individual climate-related behaviours, such as ignoring the problem or engaging in personal actions to address the problem, as being a part of broader, conflicted narratives. In alignment with my study framework, these authors hesitate to claim that a lack of pro-environmental behaviour reflects a lack of empathy or a lack of motivation to choose otherwise. Lertzman, in a conversation with Marshall (2014), maintains that when people act in a way that seems to conflict with their awareness of climate change, they are not “lying” but “struggling to negotiate” and navigating “a tangle of conflicting needs” (p. 202). In other words, they are not shirking their sense of responsibility, but may be unsure of the weight of their particular contributions given the scale of climate change and the scope of the barriers they might encounter in addressing it. Inaction from governments complicate feeling of guilt about failures to live up to a “green” lifestyle; individuals who understand climate change acknowledge that if governments do not perform their responsibility at a systems-level, individual-level sacrifices are meaningless.

My model may facilitate understanding about why guilt does not always lead to mobilization to address climate change. As Rees et al. found (2015), while guilt and shame correlate with intentions to act, shame, and not guilt, is linked to mobilization (p. 449). Guilt is conceptualized in their study as a negative emotion related to “doing harm,” suggesting that something a person has *done* is morally suspect, whereas shame is conceptualized on the basis identity, suggesting that something about who the person *is* contains a moral defect. My study nuances the relationships between shame, guilt, and mobilization, and it reframes these emotions around the choice-point of the narrative. For example, while all participants recognize that humans are causing climate change, a guilty conscience about personally causing climate change may be harder to reconcile emotionally than a sense of shame about living in a moment in time when the window for shifting away from the status quo is quickly closing.

### **Not to blame, but at hand.**

Because young leaders are disconnected from feeling “guilty” for causing a problem that has been public knowledge since before their birth, my learnings about responsibility through

this study focus attention on the emotions and perspectives related to the narrative's *timeline*. My analysis finds that participants encounter immobilizing emotions about their choices with regards to climate change, particularly as they confront the limits of their personal roles, the lateness of potential mitigation and adaptation decisions, and when they consider present and potential loss. In the words of climate change communicator Alex Steffen "the steepening aspect of this crisis," the concept that the longer humans delay meaningful action to cut down emissions, the more difficult it will be to do so, "demands that we err on the side of boldness, not caution; that we define responsibility not as doing the comfortable minimum to preserve the status quo, but transforming it as rapidly as we can" (2016). Thus, it is not being "to blame" that motivates knowledgeable individuals to change the course of human history, it is a sense of being "at hand" during a window of time that is rapidly closing, a window in which bold choices could result in saving countless human lives and improving quality of life for many others.

The concept that individuals are not wholly responsible for the embodiment of their choices is not a new concept to population health professionals, who are well-versed in eco-social theory that clarifies the complex pathways along which wellbeing is determined. As Bell (2011) explains, the health impacts that stem from climate change follow the same complex pathways, and global economic and political forces shape the local conditions for managing those impacts (p. 805). The choices that might lead to health are not always perceived by individuals as choices at all, and yet systemic barriers remain unaccounted. Similarly, in framing environmental choices, many individuals fall prey to similar feelings of guilt and inadequacy about their lack of apparent willingness to act despite perceiving poor conditions for action. Even those who are knowledgeable about the stakes of the problem and who demonstrate that they want to be a part of meaningful solutions continue to face barriers to narrative fidelity about their choices. On the other hand, those individuals in my study able to foster a meaningful sense of responsibility identify as being a part of a disruptive change agenda, one that would ultimately improve choice-conditions for all people. As Steffen outlines,

“[f]ifty percent emissions reductions per decade means that climate action can no longer be orderly, gradual or even continuous with our expectations—and that’s before we factor in the need to ruggedize human civilization to withstand the massive disturbances we’ve already set in motion. Fifty percent a decade means nonlinear, disruptive change.” (2017b)

Young leaders may not have caused climate change, but they perceived themselves to be positioned to engage with a disruptive change agenda, one that embraces the high stakes of the story. As Steffen's (2017b) timeline makes clear, leaders like those in my sample population are figuratively responsible for turning systems around from the direction in which they are currently headed and ensure that there are no delays along the way. As a generation, our "role" in addressing climate change stems from the fact that if we do not act, who else will exist to do so?

### **Overcoming barriers to capacity**

Like any compelling narrative, the drama of the story comes from how the characters' choices play out in a given context and how they impact the outcome of the narrative. In the context of my study, meaningful mobilization is dependent on a narrative in which a sense of responsibility to address climate change connects with a sense of capacity to influence future outcomes. Confronting the discontinuity that the future represents is cognitively and emotionally challenging, as other researchers have explored (Randall, 2009; Whitmarsh et al., 2013). Randall (2009) finds that people have an easier time projecting loss and change into the future than accepting that climate change is presently impacting ecological and social systems in a detrimental way (p. 119). This not only leads to dissonance about the "story of now," it also makes future outcomes emotionally overwhelming:

What we see in the treatment of loss and climate change is a process where fear of loss leads to it being split off and projected into the future. The present continues to feel safe but at the expense of the future becoming terrifying. On the one hand, nightmare, on the other false comfort. (Randall, 2009, p. 119)

My model may facilitate exploration into how a "nightmare" vision of the future serves as a barrier to narrative fidelity about a sense of capacity to influence outcomes for the better. Without frameworks for capacity to confront the discontinuity that climate change guarantees, meaningful mobilization could be blocked.

The process of accepting that climate change implies disruptive change influences how agency and responsibility are performed within the narrative. Despite holding uncertainty about capacity to address future challenges, participants in my study are familiar with community organizing and they identify systems-level solutions as means of improving the quality of human

life over multiple generations. Instead of locating capacity at a personal level, individuals in the study turn to sources of collective capacity, such as social movements and historical moments when strategic, organized actions were leveraged to impact meaningful change. Conceptualizing capacity in terms of intergenerational solutions is narratively consistent with framing the challenge of climate change in terms of historically-rooted socio-political processes, such as capitalism and colonialism, and lends fidelity to the story. However, in conceptualizing climate change as a symptom of other ecological and social issues, the scope of meaningful actions for mitigating and adapting to climate change come into focus with widespread implications about the need for disruptive change across multiple cultural, political, social, and economic systems.

### **A collective, disruptive, and strategic path forward.**

Literature about climate change engagement suggests that the perception that collective efforts can make a meaningful difference in confronting climate change positively impacts mobilization (Doherty & Webler, 2016, p. 882). My model may be useful for exploring how perceptions of collective capacity to influence the future relates to a sense of activation, conceptualized here as an ability to embody roles and responsibility in the context of everyday life. Doherty and Webler (2016) suggest that when uncertainty about the future is framed in positive terms, a sense of being able to collectively mitigate climate change is heightened (p. 883), and Whitmarsh et al. (2013) argue that other researchers demonstrate framing outcomes in terms of “positive leadership” and “visioning of the future” can promote engagement with climate change (p. 19). However, like the participants in my study, individuals who are knowledgeable and motivated about climate change may experience doubts about the meaning of collective capacity in the absence of strong institutional leadership. In the terms of Roser-Renouf et al. (2014), they perceive low “response efficacy” (p. 168). Randall contextualizes this point in terms of grieving the losses of climate change and confronting the limits of human capacity to confront the enormity of the challenge in a short amount of time: “How small steps might lead to large ones is not defined. In fact, it turns out that there is no reliable evidence that they do” (2009, p. 120). So-called climate solutions that offer delayed, piecemeal strategies for emissions-

reductions compromise the timeline along which decarbonization must occur<sup>8</sup> ultimately undermine narrative fidelity about capacity over outcomes.

Instead, leaders could be building alternative systems that confront uncertainties about humanity's collective capacity to manage this disruptive century, starting with key questions about the future of ecological and social systems. In Randall's words:

How economic growth can continue in a genuinely decarbonized world is not described. How biodiversity can be protected in the high-tech futures is not discussed. How the proposed version of happiness plays out against the aspirations and identities of diverse social classes, or the realities of entrenched economic interests is not considered. (2009, p. 120)

Individuals who experience narrative fidelity about climate change question how these gaps in capacity might be managed and how the forces opposing change might be addressed. As Steffen discusses (2017), "predatory delay" is a phenomenon whereby those with a vested interest in the status quo employ a variety of social, political, economic, and cultural mechanisms to delay meaningful climate action, and it represents a significant force against those trying to redesign systems to avoid catastrophic levels of warming. Conceptualizing these forces of delay could be useful for those unsure about why individual responsibility cannot translate into capacity for meaningful change.

Large-scale public action is needed to mobilize systems-level mitigation and adaptation efforts, requiring consideration about the conditions for leveraging collective capacity. Population health professionals have a role to play in reframing mitigation and adaptation in terms of systems-level disruptions that improve conditions for collective action. Climate change engagement literature finds that while people like those in my study, who are morally motivated by pro-environmental values, may be willing to make sacrifices to reduce emissions despite unfavourable conditions for action, "far more who act to reduce their emissions do so for proximal, personal or social reasons, such as convenience, saving money or improving health" (Whitmarsh et al., 2013, p. 13). Here population health could play a central role and could champion equitable access to low-carbon choices. Collective capacity could represent a

---

<sup>8</sup> According to the IPCC, the timeline for mitigating catastrophic climate change is to halve global emissions every decade until 2050, by which point negative emissions will need to be achieved to maintain targets (2014), and in order to avoid overshooting 1.5°C of warming, serious emissions reductions must occur before 2030 (IPCC, 2018).

meaningful pathway to redesigning systems so that they facilitate climate change mitigation and adaptation rather than serving as a barrier to mobilization.

Significantly, this perspective on capacity differs from viewpoints premised upon myths of individuation, which focus solely upon lifestyle choices as a means of addressing climate change. Wibeck (2014) argues that for climate change communicators to maintain legitimacy with their audiences, they ought to be clear about the difference between the impact of lifestyle choices “in relation to responsibilities of other mitigation options” (p. 404). In line with this argument, Goodman (2015) maintains that “public health and medicine can be independent voices of conscience, which, along with empowered communities, can confront entrenched interests” that perpetuate climate change (p. 38). Rather than focusing on changing individual lifestyle choices, population health professionals can facilitate narrative fidelity by helping publics clarify the ecosocial pathways on which their futures depend and facilitate strategic, collaborative, and multi-generational solutions forward toward survival.

### **Overcoming barriers to activation**

In exploring the moral of the climate change narratives experienced by young community leaders in Saskatoon, Saskatchewan, I learned that my study participants are open to activating an effective response to climate change, but despite their understanding of the complex dynamics of systems-level change, barriers to mobilization remain and dissonance persists. While the story about *why* action is needed may be clear to such individuals, the moral of the story, the “so what?” question may remain unanswered. If the story elicits mobilizing emotions like urgency, hope, and a sense of effectiveness, the “moral” of the story ought to be mobilizing. However, despite acknowledging a sense of responsibility about present and future changes, individuals may struggle to apply their abstract understanding of their “choice” in practical, contextual, or actionable terms. Individuals with this kind of knowledge and viewpoint may reflect upon their understanding that in isolation, personal sacrifices are meaningless to mitigate and adapt to climate change, and instead of support from public representatives, they may perceive social conditions as hostile to a meaningful response to climate change. Some participants in my study opted to focus energy on self-care and supporting others who work on social and environmental justice issues, as the conditions for action are poor enough that burn-out and overwhelmed

emotions commonly emerge as responses to climate change. Poor conditions promote a strategic use of time and energy among participants in my study, and in systems-thinking terms, those who feel effective in their efforts are focused on key leverage points, such as paradigmatic change and shifting perspectives on the purpose of systems (Meadows, 2008).

### **A cohesive story, an effective response.**

Community leaders who know about climate change and who care about justice are perceptive of the role of power in shaping public narratives and public agendas for change, and for this reason, they aim responses on changing the power dynamics that currently maintain the status quo. Thus, a meaningful sense of activation is essentially conceptualized as improving the conditions for narrative fidelity about the challenge, choice, and outcome of the story. Through care for themselves and their communities, and through strategic action plans that disrupt social, political, economic, and cultural paradigms, individuals who are knowledgeable and motivated to act may come to experience narrative fidelity about a mobilizing moral to their climate change story. Importantly, climate action cannot be meaningful and isolated at the same time; individuals who perceive their actions to be meaningfully are contributing to a *collective* strategy for disruptive change.

As Ganz theorizes, leadership is about framing public narratives in a way that translates values into action (2011, p. 274), and thus a key take-away from this study is that, if collective mobilization is the goal, leaders must actively shape their climate change narratives and seek opportunities to listen to and help shape the stories of others. Doherty and Webler (2016) find that opinion leaders can influence social norms and increase a sense of efficacy within others by “engaging in public climate actions to discuss their behaviour” (2016, p. 882). Roser-Renouf et al. (2014) similarly finds that opinion leadership, “defined in terms of interpersonal discussion and self- perceived interpersonal influence” has a strong mediating impact on climate activism (p.175). As such, by articulating and sharing mobilizing “stories of self, us, and now,” a sense of activation may develop and fidelity within the narrative may be experienced. Within population health, it is worth considering the terms and frames used to tell our own story of climate change, and both professional and academic associations should invest in the skills required to engage publics meaningfully. Getting clear about the values that shape population health practice and

theory may facilitate a stronger narrative with a more obvious rationale for promoting disruptive change agendas.

In order to minimize dissonance about population health frameworks for the challenge, choices, and outcomes related to climate change, professionals can promote a science-based and justice-based framework for rationalizing action. Doing so is also in alignment with existing population health goals, such as responding to the Truth and Reconciliation Commission's *Calls to Action* (2015). As participants in my study highlight, Indigenous ways of knowing, being, and doing are particularly well-aligned with narrative fidelity about climate change from an ecosocial justice perspective, and advocate for greater control over lands and decision-making by First Nations, Métis, and Inuit peoples. This is consistent with what Tuck et al. call "a refusal of settler futurity," as "understanding and fostering sustainable relationships to land and the environment cannot happen when those activities are accountable to a futurity in which settlers continue to dominate and occupy stolen Indigenous land" (2014, p. 14). Population health professionals should thus be contextualizing climate change and its health impacts in terms of cultural and land-based determinants of health, as well as within the historical context of colonization and the forced displacement of Indigenous peoples from ancestral lands.

Ultimately, population health professionals can integrate sufficient knowledge of climate change into strategic, well-resourced plans for urgent and disruptive systems change. As Steffen implores, "We are about to begin the last decade. The time has come to become the people who can first re-imagine and then remake the world in the time we have left" (2017a). Without adopting new models for addressing contextual and cultural barriers to action, even those who are knowledgeable and who are motivated to act may struggle to overcome narrative dissonance about climate change, resulting in experiences of immobilization about climate change precisely during the window of time in which mobilization can meaningfully alter the trajectory of population health at a planetary level.

### **Learnings about mobilization**

This study finds that among knowledgeable, motivated young community leaders in Saskatoon, Saskatchewan, narratives employed to make meaning of climate change are characterized by dissonance, which implies that there are parts of the story that are difficult to



make sense of given participants' perceptions of cultural and contextual barriers. Individuals like those interviewed for this study exist in social conditions that regulate emotional and behavioural responses to climate change (Norgaard, 2011), and because of these poor conditions for making sense of climate change, attention and energy may be directed elsewhere despite, and in some cases *because of*, knowledge and motivation to act. When designing engagement efforts with knowledgeable, motivated audiences, population health professionals should expect that would-be changemakers are grappling with these barriers on a regular basis, even those who are actively engaged in climate solutions or who are assumed to already know about and care about climate change. These individuals employ coping mechanisms and strategies for working through mobilizing moments. Through the lens of justice, narrative fidelity about climate change is experienced when behaviours are conceptualized as being part of collaborative, strategic, and disruptive social change agendas.

As Ganz's framework theorizes (2011), when young leaders tell meaningful stories about climate change, they are able to locate a sense of urgency about the challenge of climate change despite social conditions that perpetuate inertia; feelings of outrage about injustice and inaction overcome feelings of apathy; solidarity with collectives facilitates an escape from isolation; a hopeful vision of the future is held alongside a fearful one, and individuals experience a sense of purpose about the difference they are making rather than being overwhelmed by doubts about a lack of influence and control over the outcome of the story (p. 277). In accordance with narrative theory, participant stories reflect their perceptions of reality, but stories also *shape* the manifestation of reality, and by reframing public narratives about climate change to promote fidelity and to elicit mobilizing emotions, population health professionals could help shift the balance of power toward cultural and contextual conditions for action.

An emerging body of literature is highlighting the benefits of applying narrative frameworks and methods to questions about climate change engagement (Fløttum & Gjerstad, 2017; Pashen & Ison, 2014; Stenmark, 2015), and by employing a narrative framework, my model offers a unique visual tool for exploring the interplay of dissonance, fidelity, and the mobilizing moments in between at multiple stages of interpretation about climate change. This study demonstrates how narrative can be a useful tool for uncovering deeper understanding about contextual phenomena like the experience of climate change. Thinking about mobilization through a narrative lens captures the complexities surrounding personal and public realms, the

nuance of emotional and moral reasoning, and the contingencies that characterize the context in which mobilization occurs.

### **A narrative-based model for meaningful mobilization.**

My model for meaningful mobilization equips me with a new way to explain my own experience of climate change, and it offers a means of exploring the emotional logic, or fidelity, of my own “story of self, us, and now.” I began this study by relaying my own climate change narrative to my colleague, and I returned to the transcript periodically to reflect on my pre-understandings and my interpretive process. One part of the transcript in particular stands out to me upon completing the study, because it reflects my initial frustration about a lack of models to cope with the isolation and immobilizing feelings I experience about climate change. I am quoted as saying “I struggle to not let my frustration turn into apathy, because I think it’s really hard when your emotions have no outlet, turning them off is rational...I feel frustrated with the models I’ve been given to cope with it.” In finishing this thesis, I now have a tool for analyzing my complex feelings and a way of describing how cognitive, affective, and behavioural dimensions of dissonance interact in context. I have also developed deeper relationships with those who share my “story of us and now,” and presently, I feel less alone in my experience of climate change. Discussions about narratives and climate change are emerging more prominently, with articles from Moezzi et al. (2017), Gjerstad & Fløttum (2017), and Fløttum & Gjerstad (2017) released in the last year, and recent works from local graduate students Carlson (2017) and Kouri et al., (2016) represent significant contributions for narrative approaches to systems-level analysis.

While the model I developed through this study has already proven to be a useful tool in my personal life and in my research and organizing work, there are limits to my “horizon” on the topic of engagement with complex ecosocial problems, and in completing the study, I am left with several questions that could shape future inquiry about the experience of climate change. Importantly, as a settler and a researcher who experiences white privilege, my worldview is limited, and my presentation of the results may be most relevant to readers with a similar background or perspective. For example, during the research process it was highlighted that conceptualizing time in a linear way is more reflective of Eurocentric perspectives than conceptualizations that may visualize time cyclically or circularly. I am left asking: How can

multi-generational aspects of “stories of self, us, and now” be visualized to better capture the overlapping and ever-evolving nature of narratives that give life meaning?

Lastly, as I reflect on my initial climate change narrative, I find that some of my pre-understandings persist, and I continue to experience dissonance about climate change as I try to make sense of the apparent disconnect between knowledge and action. My personal interview transcript reads:

I feel helpless but I’m helping. I feel hopeless but I’m hoping. I feel angry but I’m coping. I feel sad but I’m moving. And I feel terribly alive. And all that comes with that [crying] no matter who or when you are, it just sort of crystalizes for me. And so I think that now about climate change, I don’t even feel like I’m doing something special. I feel like I’m part of a human narrative and I just desperately want more chapters.

These tensions remain within my own climate change narrative, but the conflicting emotions that surround the dissonance in my story are now modeled as moments where mobilization can occur. The paradoxical nature of making climate change meaningful is a perception I share with my participants, and literature suggests it is a widespread phenomenon worth exploring further. As such, I close this study with a renewed focus on learning about the frames and relationships that mobilize action in difficult conditions, and on gaining a deeper understanding about how to improve the conditions for action in the first place, through equitable, population-level supports.

## **Chapter 6: Significance**

This thesis presents an argument for exploring barriers to climate change engagement through a narrative lens, and it demonstrates how through such a lens, the contextual and cultural dimensions of climate change come into focus, exposing dissonance about the meaning of mobilization among young community leaders who are knowledgeable about the problem and motivated by values of social and environmental justice. Without strategically addressing the cultural, social, political, and economic contexts in which leaders make sense of climate change, communicators may fail to translate knowledge about climate change into meaningful action to mitigate risks and adapt to changing systems. This study is significant because it offers a tool for interpreting those contexts, and it has given me a renewed sense of purpose about exploring climate change narratives as a means of bridging knowledge and action. I argue that to leverage leadership at the community level, population health professionals must confront the narrative dissonance that characterizes dominant public narratives about climate change. By offering a model for exploring narrative dissonance and the process of meaning-making about ecosocial challenges like climate change, this study could provide a significant contribution to the literature about climate change engagement as well as to population health theory and practice.

This chapter uses Tracy's (2010) framework for significance to organize a discussion of theoretical, practical, heuristic, and methodological insights produced through this study. I begin by drawing out theoretical and practical contributions of the findings, particularly as they relate to population health, and demonstrate how the study helps to explore existing theory about a contemporary problem in a new way (Tracy, 2010, p. 846). This section of the chapter also discusses ways that population health could reframe a "story of self, us, and now" about climate change to increase narrative fidelity and elicit mobilizing emotions among interpretive communities like my study population. Heuristic contributions are also available through this study, as the model I developed could help to further the exploration of other researchers and community members (Tracy, 2010, p. 846). Next, I discuss the methodological significance of the study to myself as the researcher and consider how the study activities served to deepen my

own understanding about narrative-based inquiry into the lived experience of complex ecosocial problems.

### **Theoretical significance**

This thesis contributes to population health theory by troubling assumptions about why knowledge about the risks has failed to mobilize action to meaningfully address climate change. By focusing in on how complex health challenges are experienced by young community leaders, I gained a deeper understanding of the processes of meaning-making used by individuals who are already knowledgeable and motivated to act. The contextual and cultural filters through which information about climate change is interpreted are discussed at length in the literature about climate change engagement, and this thesis offers a model for mapping internal conflict narratively. Given the importance of “opinion leaders” in shaping community narratives (Doherty & Webler, 2016; Roser-Renouf et al., 2014), and given theory about public narratives, power, and community capacity (Ganz, 2011; Wallerstein, 2002; Wiggins, 2012), it is theoretically significant that leaders who espouse values of social and environmental justice experience narrative dissonance about climate change. This study could inform quantitative and survey-based research about the barriers to engagement and highlight the intersecting, tangled way that barriers are experienced in everyday life. These findings could contribute to a more holistic perspective on the pre-conditions for climate activism, particularly as they manifest in regions socially divided about climate change, economically dependent on greenhouse gas-emitting industries, and politically void of climate leadership.

Using my model to navigate meaningful mobilization may help identify how population health theory could contribute to narrative fidelity in the story about climate change. As Lertzman suggests, the supposed “gap” between knowledge and action is not a vacuum in which information about climate change is dropped (in Marshall, 2014, p. 202), but rather contains a complex narrative that spans the conceptual space between believing in and addressing climate change. That narrative is informed by competing values, identities, and social relationships, as well as by perceptions of the conditions for action. Population health is a value-based discipline devoted to improving quality of life and minimizing the gaps in health outcomes across populations (WHO, 2008), meaning that population health narratives are moral stories. Framing

climate change as part of a larger public narrative about population health brings to light the moral imperative to address the injustice it exacerbates and to manage the disruption it requires. I argue that rather than de-contextualizing information from its moral implications, the challenge, choice, and outcomes of climate change could be described in affective terms that centre the values shared between audience and communicator.

Given that ecological and social systems are deeply compromised by climate change, population health professionals can provide theoretical clarity about the pathways along which inequities emerge in addition to providing moral clarity about the dangers of further delaying systems-level action. While there are multiple viewpoints on advocacy within population health theory (Carlisle, 2000), it is worth questioning the moral relevance of a health framework that absolves professionals of responsibility to address ecological and social collapse. This thesis argues that translating values into action is a discursive act (Ganz, 2011) and that population health has a role to play in framing mobilizing narratives that centre values of justice. As such, this thesis offers a theoretical model for infusing public narratives about ecosocial risk with moral relevance, and additional research could further strengthen understanding about the relationship between moral stories and collective action.

### **Practical significance**

The practical significance of this thesis applies to population health professionals and other educators or organizers building up community-based power. This study does not uncover barriers to mobilization that were previously unaccounted for in climate change engagement literature, but in organizing barriers to action structurally, I offer a practical means of evaluating, designing, and intervening upon public narratives about climate change. Using the model I developed, “stories of self, us and now” can be analysed for dissonant moments, and the themes that threaten to block a sense of agency, responsibility, capacity, and activation can be highlighted. This could be a useful exercise for those trying to make sense of conflicting emotions about climate change and could help support community resistance to social norms that suppress mobilization. The model is not a formula for mobilization but rather a pathology of immobilization, and it serves to expose moments in the narrative where barriers to action take root.

Practically-speaking, engagement models for climate change need to be able to distill complexity about the meaning of risk so that they are relevant to individual leaders' lives, which are embedded in context-specific social and cultural situations. As Hancock (2015) argues, framing the problems like climate change through an ecosocial lens could benefit not only others in the health system, but multiple publics; “[b]ecause the challenges we face are both ecological and social, and interdependent, we need to adopt an eco-social approach not only in population health promotion and public health but in society as a whole” (p. e254). My model could be used to analyze population health narratives about climate change and consider the degree to which they convey a sense of agency, responsibility, capacity, and activation. To illustrate the application of the model, table 6.1 presents a series of questions related to population health indicators that could reveal moments of dissonance and fidelity within our own approach to climate change as leaders in the health system:

Table 6.1 Reflection questions for population health professionals			
<i>Agency</i>	<i>Responsibility</i>	<i>Capacity</i>	<i>Activation</i>
Do population health measures and frameworks reflect the importance of mitigating and adapting to climate change?	Are population health professionals equipped with the competencies and skills needed to play their role in addressing climate change?	Do population health plans and models for the future account for social and ecological discontinuity from the past and the present?	Can population health professionals meaningfully contribute to change through tangible actions in the context of everyday life?
How do population health stakeholders and communities know that climate change matters to us as population health professionals?	How do our stakeholders and communities know that addressing climate change meaningfully is part of our roles and responsibilities?	How do our stakeholders and communities know population health is strategically mitigating catastrophe and preparing for the future?	How do our stakeholders and communities know that population health professionals are moving significantly toward shared goals?

This type of reflexive exercise could expose dissonance within existing population health practice and identify opportunities to strengthen the fidelity of an ecosocial approach to engagement in practice.

Ideally, as population health professionals frame challenges, choices, outcomes, and morals related to climate change in both public communications and in our own practical frameworks, disruptive systems-level changes can be factored into a short timeline for decarbonization. Promising strides have been made on this front by committed researchers and practitioners, many whom have been working to bring attention to environmental issues for

decades within the population health community. However, the “slow” response from the mainstream public health field (Hancock et al. 2015, p. 78) should be worrisome, given that, according to a recent report from the Office of the Auditor General, “most Canadian governments were not on track to meet their commitments to reducing greenhouse gas emissions and were not ready for the impacts of a changing climate” (Government of Canada, 2018). Without health equity as a dominant framework for climate change, Canadians may be interpreting climate change without a nuanced understanding of how health risks can compound over the course of life, or they may lack understanding about how and why certain populations become more vulnerable to climate change than others. Population health theories could help to frame the challenge of climate change in ways that capture the complexity of present and future risk while maintaining focus on how human agency largely determines how risk is embodied.

### **Heuristic significance**

The heuristic significance of this study refers to its potential influence over a variety of audiences and its usefulness for furthering inquiry. This study deepened my own curiosity about narrative dissonance and the strategies employed to overcome it. In the context of this study, my model functions as a tool for exploring and explaining experiences of climate change. The model could also be applied for exploring other contexts in which a “gap” between knowledge and action is perceived. Looking at the situation through a narrative lens could reveal conflicting experiences of challenges, choices, outcomes, and morals that elicit immobilizing emotions. As such, my model could facilitate the application of narrative to inquiry about lived experience of coming to understand and embody knowledge and could be useful for adapting messages for different audiences based on their unique cultural and contextual position.

### **Methodological significance**

The last type of significance outlined by Tracy (2010) is methodological. One way that a researcher can demonstrate methodological significance is by employing a unique method of representing narrative data (Tracy, 2010, p. 846). My experience using narrative methods to interpret the lived experience of an ecosocial phenomenon serves as a significant example of



how narrative frameworks capture the complexity of health risks in the 21st century. This speaks to a broader methodological question for this discipline, namely, what is population health in a post-Holocene world, and how appropriate are 20th century models for making sense of it? The disturbance of the Earth's systems over the last several decades is now producing dangerous consequences, prompting doubt about the continuation of human civilization and well-being in the Anthropocene (McMichael, 2013). Now that humankind has exited the global conditions in which human health was founded, it is essential that young researchers critique the limits of existing models for describing, evaluating, and intervening upon ecosocial systems. Whether theory-based, practice-based, heuristic, or methodological tools are in question, conceptualizations of "health" ought to be adapted for a rapidly warming world and the conditions for quality of *lifecourse* should be explicitly prioritized. What methods do we need to create or adapt to capture the stakes of population health in such a crucial window for action? I encourage young researchers to be creative and rigorous in their approaches and call upon my peers to infuse health research with heart and honesty.

In terms of my own praxis, conceptualizing meaningful mobilization in narrative terms has been useful for me in my work as a researcher and a community-organizer, and it has facilitated my personal reflections about climate change and health. For example, as a settler, thinking about the dissonance within my perspective on climate change helps me to understand how my own broken relationship with the land undermines the fidelity of my "story of self, us and now." I am entrenched in ways of knowing, being, and doing that I perceive to be antithetical to a healthy and meaningful path forward, and what I know about climate change and what (little) I see leadership doing about climate change conflicts with my values of social and environmental justice. However, as motivated as I am to do something meaningful to address climate change, I remain unsure about my capacity to create a future, a new economy, where the limitations of social and ecological systems are respected.

Ultimately, the model is a useful method for analyzing my own state of motivation and sense of efficacy, helping me to locate a sense of mobilization about climate change despite the dissonance that characterizes my narratives about it. Thus, the methodological significance of this study to my own research career is that the model gives me language for exploring the strain of making sense of climate change in present conditions. While dissonance appears to be an unavoidable experience for those driven to create a more just and sustainable world, the model I

developed in the study reveals the structure of a story that *does* make sense, with the potential to mobilize courageous collective action in contexts of uncertainty. Instead of asking individuals to source meaning in isolation, I argue that leaders should focus on improving the conditions for population-level mitigation and adaptation strategies. By accounting for and addressing cultural and contextual barriers to engagement, narrative methods can bridge knowledge and action and uncover the pathways to meaningful mobilization.

## References

- Allan, B., & Smylie, J. (2015). First Peoples, second class treatment: The role of racism in the health and well-being of Indigenous peoples in Canada. Toronto, ON: Wellesley Institute.
- Austgard, K. (2012). Doing it the Gadamerian way - using philosophical hermeneutics as a methodological approach in nursing science. *Scandinavian Journal of Caring Sciences*, 26(4), 829-834. <https://doi.org/10.1111/j.1471-6712.2012.00993.x>
- Balbus, J., Ebi, K. L., Finzer, L., Malina, C., Chadwick, A., McBride, D., ... Maibach, E. (2008). *Are we ready? Preparing for the public health challenges of climate change*. Environmental Defense Fund. <https://doi.org/10.1007/s00259-011-1921-y>
- Bell, E. (2011). Readyng health services for climate change: A policy framework for regional development. *American Journal of Public Health*, 5(101), 804-813. <https://doi.org/10.2105/AJPH.2010.202820>
- Bernauer, T., & McGrath, L. F. (2016). Simple reframing unlikely to boost public support for climate policy. *Nature Climate Change*, 6(7), 680–683. <https://doi.org/10.1038/nclimate2948>
- Berstein, E., Wallerstein, N., Gutierrez, L., Labonte, R., & Zimmerman, M. (1994). Empowerment Forum: A Dialogue between Guest Editorial Board Members. *Health Education Quarterly*, 21(3), 281–294.
- Braveman, P. (2006). Health disparities and health equity: Concepts and measurement. *Annual Review of Public Health*, 27(1), 167–194. <https://doi.org/10.1146/annurev.publhealth.27.021405.102103>
- Brown, V.A., Ritchie, J.E., & Rotem, A. (1992). Health promotion and environmental management: a partnership for the future. *Health Promotion International*, 7(3), 219–230.
- Bushell, S., Colley, T., & Workman, M. (2015). A unified narrative for climate change. *Nature Climate Change* 5(11), 971–973.
- Callison, C. (2014). *How climate change comes to matter: The communal life of facts*. Durham and London: Duke University Press.

- Carlisle, S. (2000). Health promotion, advocacy and health inequalities: a conceptual framework. *Health Promotion International*, 15(4), 369–376.  
<https://doi.org/10.1093/heapro/15.4.369>
- Carlson, H. (2016). *How competing narratives influence water policy in the Saskatchewan River Basin* (Master's thesis). University of Saskatchewan, College of Graduate Studies Research, Saskatoon, Saskatchewan. Retrieved from: <http://hdl.handle.net/10388/7549>
- Carlson, H., Fisher, J., & Malena-Chan, R. (2018). *Bridging the gap: Building bridges between urban environmental groups and coal-producing communities in Saskatchewan*. Saskatoon, Saskatchewan: Climate Justice Saskatoon.
- Carpiano, R. M., & Daley, D. M. (2006). A guide and glossary on postpositivist theory building for population health. *Journal of Epidemiology and Community Health*, 60(7), 564–570.  
<https://doi.org/10.1136/jech.2004.031534>
- Climate Action Tracker. (2018). Canada [country summary]. Retrieved from:  
<https://climateactiontracker.org/countries/canada/>
- Cochran, P., Huntington, O. H., Pungowiyi, C., Tom, S., Chapin, F. S., Huntington, H. P., ... Trainor, S. F. (2013). Indigenous frameworks for observing and responding to climate change in Alaska. *Climatic Change*, 120(3), 557–567.  
<http://dx.doi.org.cyber.usask.ca/10.1007/s10584-013-0735-2>
- Connelly, F. M., & Clandinin, D. J. (1990). Stories of Experience and Narrative Inquiry. *Educational Researcher*, 19 (5), 2-14. <https://doi.org/10.3102/0013189X019005002>
- Costello, A., Abbas, M., Allen, A., Ball, S., Bell, S., Bellamy, R., ... Patterson, C. (2009). Managing the health effects of climate change. Lancet and University College London Institute for Global Health Commission. *The Lancet*, 373(9676), 1693-733.  
[https://doi.org/10.1016/S0140-6736\(09\)60935-1](https://doi.org/10.1016/S0140-6736(09)60935-1)
- Costello, A., Maslin, M., Montgomery, H., Johnson, A. M., & Ekins, P. (2011). Global health and climate change: moving from denial and catastrophic fatalism to positive action. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 369(1942), 1866-82. <https://doi.org/10.1098/rsta.2011.0007>

- Covey, S. R. (1989). *The 7 habits of highly effective people: Powerful lessons in personal change*. New York, NY: Simon and Schuster.
- Crist, J. D., & Tanner, C. A. (2003). Interpretation/Analysis Methods in Hermeneutic Interpretive Phenomenology. *Nursing Research*, 52(3), 202-205  
<https://doi.org/10.1097/00006199-200305000-00011>
- CSDH. (2008). Closing the gap in a generation. *Closing the Gap in a Generation. Health Equity Through Action on the Social Determinants of Health. Final Report of the Commission on Social Determinants of Health*, 246. <https://doi.org/10.1080/17441692.2010.514617>
- Curtis, S. E., & Oven, K. J. (2012). Geographies of health and climate change. *Progress in Human Geography*, 36(5), 654–666. <https://doi.org/10.1177/0309132511423350>
- Deranger, E. T. (2015, June 23). Canada’s tar sands aren’t just oil fields. They’re sacred lands for my people. *The Guardian*. Retrieved from:  
<https://www.theguardian.com/commentisfree/2015/jun/23/canadas-tar-sands-oil-fields-sacred-lands>
- Dhillon, S. K., Wilkins, S., Law, M. C., Stewart, D. A., & Tremblay, M. (2010). Advocacy in occupational therapy: Exploring clinicians’ reasons and experiences of advocacy. *Canadian Journal of Occupational Therapy*, 77(4), 241-248. <https://doi.org/10.2182/cjot.2010.77.4.6>
- Dixon, J., Malena-Chan, R., & Schaefer, J. (2016). “Qualitative health research: Critical appraisal.” Community Health and Epidemiology 990, University of Saskatchewan. Saskatoon, Saskatchewan, October, 2016.
- Doherty, K. L., & Webler, T. N. (2016). Social norms and efficacy beliefs drive the Alarmed segment’s public-sphere climate actions. *Nature Climate Change*, 6(9), 879–884.  
<https://doi.org/10.1038/nclimate3025>
- Eaton, E. (2017). *Climate Politics in the Patch on Climate Change Issues*. Regina, Saskatchewan: Canadian Centre for Policy Alternatives. Retrieved from:  
[https://www.policyalternatives.ca/sites/default/files/uploads/publications/Saskatchewan%20Office/2017/10/ccpa-sk\\_climate-politics-in-patch\\_oct2017.pdf](https://www.policyalternatives.ca/sites/default/files/uploads/publications/Saskatchewan%20Office/2017/10/ccpa-sk_climate-politics-in-patch_oct2017.pdf)
- Ermine, W. (2007). The ethical space of engagement. *Indigenous Law Journal*, 6(1), 193–203.  
<https://doi.org/10.3868/s050-004-015-0003-8>

- Fisher, W.R. (1984). Narration as a human communication paradigm: The case of public moral argument. *Communication Monographs* 51, 1-22.
- Fløttum, K., & Gjerstad, Ø. (2017). Narratives in climate change discourse. *Wiley Interdisciplinary Reviews: Climate Change*, 8, e429. <https://doi.org/10.1002/wcc.429>
- Fondacaro, M. R., & Weinberg, D. (2002). Concepts of social justice in community psychology: Toward a social ecological epistemology. *American Journal of Community Psychology*, 30(4), 473–492. <https://doi.org/10.1023/A:1015803817117>
- Freire, P. (1970). *Pedagogy of the Oppressed*. New York and London: Bloomsbury Academic.
- Fritze, J. G., Blashki, G. A., Burke, S., & Wiseman, J. (2008). Hope, despair and transformation: climate change and the promotion of mental health and wellbeing. *International Journal of Mental Health Systems*, 2(1), 13. <https://doi.org/10.1186/1752-4458-2-13>
- Ganz, M. (2011). Public narrative, collective action, and power. In S. Odugbemi & T. Lee (Eds.), *Accountability through public opinion: From inertia to public action* (pp. 273–290). The World Bank. Retrieved from: [https://dash.harvard.edu/bitstream/handle/1/29314925/Public\\_Narrative\\_Collective\\_Action\\_and\\_Power.pdf?sequence=1](https://dash.harvard.edu/bitstream/handle/1/29314925/Public_Narrative_Collective_Action_and_Power.pdf?sequence=1)
- Gimbel, E. W. (2016). Interpretation and Objectivity: A Gadamerian Reevaluation of Max Weber's Social Science. *Political Research Quarterly*, 69(1), 72–82.
- Gjerstad, Ø., & Fløttum, K. (2017). Stories about Climate Change in Political and Survey Discourse 1. *Remaining Relevant – Modern Language Studies Today*, 7. <https://doi.org/10.15845/bells.v7i0>
- Golden, S. D., McLeroy, K. R., Green, L. W., Earp, J. A. L., & Lieberman, L. D. (2015). Upending the Social Ecological Model to Guide Health Promotion Efforts Toward Policy and Environmental Change. *Health Education & Behavior*, 42(1\_suppl), 8S–14S. <https://doi.org/10.1177/1090198115575098>
- Goodman, B. (2014). The debate on climate change and health in the context of ecological public health: A necessary corrective to Costello et al.'s "biggest global health threat", or co-

- opted apologists for the neoliberal hegemony? *Public Health*, 128(12), 1059-1065.  
<https://doi.org/10.1016/j.puhe.2014.08.017>
- Government of Canada. (2016). *Pan-Canadian framework on clean growth and climate change*. Retrieved from:  
<https://www.canada.ca/content/dam/themes/environment/documents/weather1/20170125-en.pdf>
- Government of Canada. (2018). *Perspectives on Climate Change Action in Canada—A Collaborative Report from Auditors General*. Retrieved from: [http://www.oag-bvg.gc.ca/internet/English/parl\\_otp\\_201803\\_e\\_42883.html#hd2g](http://www.oag-bvg.gc.ca/internet/English/parl_otp_201803_e_42883.html#hd2g)
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.
- Hammack, P. L. (2008). Narrative and the cultural psychology of identity. *Personality and Social Psychology Review*, 12(3), 222–247. <https://doi.org/10.1177/1088868308316892>
- Hancock, T. (1993). Health, human development and the community ecosystem: three ecological models. *Health Promotion International*, 8(1), 41-47.
- Hancock, T. (2015). Population health promotion 2.0: An eco-social approach to public health in the Anthropocene. *Canadian Journal of Public Health*, 106(4), e252–e255.  
<https://doi.org/10.17269/cjph.106.5161>
- Hancock, T., Spady, D. W., Soskolne, C. L., & (Editors). (2015). *Global Change and Public Health: Addressing the Ecological Determinants of Health*. Retrieved from:  
<https://www.cpha.ca/sites/default/files/assets/policy/edh-brief.pdf>
- Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14(3), 575-599.  
<https://doi.org/10.2307/3178066>
- Health Council of Canada. (2012). *Empathy, dignity, and respect: Creating cultural safety for Aboriginal people in urban health care*. Toronto ON: Health Council of Canada. Retrieved from: [http://www.healthcouncilcanada.ca/tree/Aboriginal\\_Report\\_EN\\_web\\_final.pdf](http://www.healthcouncilcanada.ca/tree/Aboriginal_Report_EN_web_final.pdf)

- Howard, C., Rose, C., & Hancock, T. (2017). *Lancet Countdown 2017 report: Briefing for Canadian policymakers*. Ottawa, Ontario: Canadian Public Health Association. Retrieved from:  
[https://www.cpha.ca/sites/default/files/uploads/advocacy/2017\\_lancet\\_canada\\_brief.pdf](https://www.cpha.ca/sites/default/files/uploads/advocacy/2017_lancet_canada_brief.pdf)
- Howard, C., Rose, C., & Rivers, N. (2018). *Lancet Countdown 2018 report: Briefing for Canadian policymakers*. Ottawa, Ontario: Canadian Public Health Association. Retrieved from: <http://www.lancetcountdown.org/media/1418/2018-lancet-countdown-policy-brief-canada.pdf>
- Hulme, M. (2009). *Why we disagree about climate change: Understanding controversy, inaction, and opportunity*. Cambridge, UK: Cambridge University Press.
- International Panel on Climate Change (IPCC). (2014). Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. Geneva, Switzerland: IPCC. Retrieved from:  
[http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports.shtml](http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml)
- Intergovernmental Panel on Climate Change (IPCC). (2018). Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. Retrieved from: <http://www.ipcc.ch/report/sr15/>
- Jones, M. D. (2014). Communicating Climate Change: Are Stories Better than “Just the Facts”? *Policy Studies Journal*, 42(4), 644-673. <https://doi.org/10.1111/psj.12072>
- Jones, M. D., & Song, G. (2014). Making Sense of Climate Change: How Story Frames Shape Cognition. *Political Psychology* 35(4), 447-476. <https://doi.org/10.1111/pops.12057>
- Kahan, D. M., Jenkins-Smith, H., & Braman, D. (2010). Cultural cognition of scientific consensus. *Journal of Risk Research*, 14(2), 147-174.
- Kindig, D., & Stoddart, G. (2003). What Is Population Health? *American Journal of Public Health*, 93(3), 380–383. <https://doi.org/10.2105/AJPH.93.3.380>



- Klein, N. (2014). *This changes everything: Capitalism vs. the climate*. Toronto, ON: Alfred A Knopf Canada.
- Kouri, L., Guertin, T., & Shingoose, A. (2016). Engaging student mothers creatively: Animated stories of navigating university, inner city, and home worlds. *Engaged Scholar Journal: Community-Engaged Research, Teaching, and Learning*, 2(2), 103-114.  
<https://doi.org/10.15402/esj.v2i2.172>
- Krieger, N. (1994). Epidemiology and the Web of Causation: Has Anyone Seen the Spider? *Social Science & Medicine*, 39(7), 887–903. Retrieved from:  
<http://www.havenscenter.org/files/krieger1.pdf>
- Krieger, N. (2001). Theories for social epidemiology in the 21st century: an ecosocial perspective. *International Journal of Epidemiology*, 30(4), 668–677.  
<https://doi.org/10.1093/ije/30.4.668>
- Krieger, N. (2012). Methods for the scientific study of discrimination and health: An ecosocial approach. *American Journal of Public Health*, 102(5), 936–945.  
<https://doi.org/10.2105/AJPH.2011.300544>
- Labonte, R. (1994). Health Promotion and Empowerment: Reflections on Professional Practice. *Health Education Quarterly* 21(2), 253-268. <https://doi.org/10.1177/109019819402100209>
- Leiserowitz, A. (2006). Climate change risk perception and policy preferences: The role of affect, imagery, and values. *Climatic Change*, 77(1–2), 45–72.  
<https://doi.org/10.1007/s10584-006-9059-9>
- Leiserowitz, A. (2008). Communicating the risks of global warming: American risk perceptions, affective images and interpretative communities. In S. C. Moser & L. Dilling (Eds.), *Creating a climate for change: Communicating climate change - facilitating social change* (pp. 44–63). New York: Cambridge University Press. <https://doi.org/10.1111/j.1540-6261.2005.00690.x>
- Lerner, M. (1986). *Surplus Powerlessness*. Oakland, CA: The Institute for Labor and Mental Health.

- Lertzman, R. (2013). The myth of apathy: Psychoanalytic exploration. In S. Weintrobe (Ed.), *Engaging with climate change: psychoanalytic and interdisciplinary perspectives* (pp. 117–133). New York: Routledge.
- Lertzman, R. (2014). Psychosocial contributions to climate sciences communications research and practice: An overview. London: University College London. Retrieved from: [http://www.ucl.ac.uk/public-policy/policy\\_commissions/Communication-climate-science/Communication-climate-science-report/psychosocial\\_final.pdf](http://www.ucl.ac.uk/public-policy/policy_commissions/Communication-climate-science/Communication-climate-science-report/psychosocial_final.pdf)
- Leviston, Z., Price, J., & Bishop, B. (2014). Imagining climate change: The role of implicit associations and affective psychological distancing in climate change responses. *European Journal of Social Psychology*, 44(5), 441-454. <https://doi.org/10.1002/ejsp.2050>
- Levy, B. S., & Patz, J. A. (2015). Climate change, human rights, and social justice. *Annals of Global Health*, 81(3), 310-22. <https://doi.org/10.1016/j.aogh.2015.08.008>
- Lopez, K. A., & Willis, D. G. (2004). Descriptive Versus Interpretive Phenomenology: Their Contributions to Nursing Knowledge. *Qualitative Health Research*, 14(5), 726-735. <https://doi.org/10.1177/1049732304263638>
- Lorenzoni, I., Nicholson-Cole, S., & Whitmarsh, L. (2007). Barriers perceived to engaging with climate change among the UK public and their policy implications. *Global Environmental Change*, 17(3-4), 445-459. <https://doi.org/10.1016/j.gloenvcha.2007.01.004>
- Maibach, E. W., Leiserowitz, A., Roser-renouf, C., & Mertz, C. K. (2011). Identifying Like-Minded Audiences for Global Warming Public Engagement Campaigns : An Audience Segmentation Analysis and Tool Development, 6(3), e17571. <https://doi.org/10.1371/journal.pone.0017571>
- Maibach, E. W., Roser-Renouf, C., & Leiserowitz, A. (2008). Communication and Marketing As Climate Change-Intervention Assets. A Public Health Perspective. *American Journal of Preventive Medicine*, 35(5), 488-500. <https://doi.org/10.1016/j.amepre.2008.08.016>
- Maldonado, A., Collins, T. W., Grineski, S. E., & Chakraborty, J. (2016). Exposure to flood hazards in Miami and Houston: Are hispanic immigrants at greater risk than other social groups? *International Journal of Environmental Research and Public Health*, 13(8), 775. <https://doi.org/10.3390/ijerph13080775>

- Marshall, G. (2014). *Don't even think about it: Why our brains are wired to ignore climate change*. New York and London: Bloomsbury USA.
- Masuda, J. R., Poland, B., & Baxter, J. (2010). Reaching for environmental health justice: Canadian experiences for a comprehensive research, policy and advocacy agenda in health promotion. *Health Promotion International*, 25(4), 453–463.  
<https://doi.org/10.1093/heapro/daq041>
- McAdams, D. P., & McLean, K. C. (2013). Narrative Identity. *Current Directions in Psychological Science*, 22(3), 233–238. <https://doi.org/10.1177/0963721413475622>
- McKenzie, M. (2006). Three portraits of resistance: The (un)making of Canadian students. *Canadian Journal of Education*, 29(1), 199–222. <https://doi.org/10.2307/20054153>
- McMichael, A. J. (1999). Prisoners of the Proximate: Loosening the Constraints on Epidemiology in an Age of Change. *American Journal of Epidemiology*, 149, 887–897.  
<https://doi.org/10.1093/aje/kwx111>
- McMichael, A. J. (2008). Public health, the environment and the 21st century: a wider field of vision. *European Journal of Public Health*, 18(2), 101. doi:10.1093/eurpub/ckn008
- McMichael, A. J. (2013). Globalization, Climate Change, and Human Health. *New England Journal of Medicine*, 368(14), 1335–1343. <https://doi.org/10.1056/NEJMr1109341>
- McMichael, T., Montgomery, H., & Costello, A. (2012). Health risks, present and future, from global climate change. *BMJ*, 344, e1359. <https://doi.org/10.1136/bmj.e1359>
- Meadows, D. (2008). *Thinking in systems: A primer*. D. Wright [Ed.]. White River Junction, VT: Chelsea Green Publishing Company.
- Mildenberger, M., Howe, P., Lachapelle, E., Stokes, L., Marlon, J., & Gravelle, T. (2016). The distribution of climate change public opinion in Canada. *PLoS ONE*, 11(8), e0159774.  
<https://doi.org/10.1371/journal.pone.0159774>
- Mishler, E. (1995). Models of narrative analysis: a typology. *Journal of Narrative and Life History*, 5(2), 87–123.

- Moezzi, M., Janda, K. B., & Rotmann, S. (2017). Using stories, narratives, and storytelling in energy and climate change research. *Energy Research and Social Science*, 31, 1–10.  
<https://doi.org/10.1016/j.erss.2017.06.034>
- Morse, J. (2012). *Qualitative health research: Creating a new discipline*. Walnut Creek, California: Left Coast Press.
- Moser, S. C. (2014). Communicating adaptation to climate change: The art and science of public engagement when climate change comes home. *Wiley Interdisciplinary Reviews: Climate Change*, 5(3), 337-358. <https://doi.org/10.1002/wcc.276>
- Myers, T. A., Nisbet, M. C., Maibach, E. W., & Leiserowitz, A. A. (2012). A public health frame arouses hopeful emotions about climate change: A Letter. *Climatic Change*.  
<https://doi.org/10.1007/s10584-012-0513-6>
- NASA. (2018). *Global climate change: Vital signs of the planet* [webpage]. Retrieved from: <http://climate.nasa.gov>
- National Collaborating Centre for Determinants of Health. (2015). *Let's Talk: Advocacy and Health Equity*. Antigonish, NS: National Collaborating Centre for Determinants of Health, St. Francis Xavier University. Retrieved from:  
[http://nccdh.ca/images/uploads/comments/Advocacy\\_EN.pdf](http://nccdh.ca/images/uploads/comments/Advocacy_EN.pdf)
- National Collaborating Centre for Determinants of Health. (2013). *Let's talk: Public health roles for improving health equity*. Antigonish, NS: National Collaborating Centre for Determinants of Health, St. Francis Xavier University. Retrieved from:  
[http://nccdh.ca/images/uploads/PHR\\_EN\\_Final.pdf](http://nccdh.ca/images/uploads/PHR_EN_Final.pdf)
- National Oceanic and Atmospheric Administration. (2018). *Trends in atmospheric carbon dioxide* [webpage]. Boulder, CO: United States Department of Commerce. Retrieved from:  
<https://www.esrl.noaa.gov/gmd/ccgg/trends/global.html>
- Nisbet, M. C. (2009). Communicating Climate Change Why Frames Matter for Public Engagement. *Environment: Science and Policy for Sustainable Development*, 51(2), 212–223, 12–23. <https://doi-org.cyber.usask.ca/10.3200/ENVT.51.2.12-23>
- Norgaard, K. M. (2011). *Living in denial: Climate change, emotions, and everyday life*. Cambridge, Massachusetts and London, England: The MIT Press.

- Nussbaum, M. (2001). *Upheavals of thought: The intelligence of emotions*. New York: Cambridge University Press.
- O'Neill, S., & Nicholson-Cole, S. (2009). "Fear won't do it." *Science Communication*, 30(3), 355-379. <https://doi.org/10.1177/1075547008329201>
- Ojala, M. (2015). Hope in the face of climate change: Associations with environmental engagement and student perceptions of teachers' emotion communication style and future orientation. *Journal of Environmental Education* 46(3), 133–148.
- Paschen, J. A., & Ison, R. (2014). Narrative research in climate change adaptation - Exploring a complementary paradigm for research and governance. *Research Policy*, 43, 1083–1092. <https://doi.org/10.1016/j.respol.2013.12.006>
- Patrick, R., Capetola, T., Townsend, M., & Nuttman, S. (2012). Health promotion and climate change: Exploring the core competencies required for action. *Health Promotion International*, 27(4), 475-485. <https://doi.org/10.1093/heapro/dar055>
- Patt, A. G., & Weber, E. U. (2014). Perceptions and communication strategies for the many uncertainties relevant for climate policy. *Wiley Interdisciplinary Reviews: Climate Change*, 5(2), 219-232. <https://doi.org/10.1002/wcc.259>
- Pitre, N. Y., Kushner, K. E., Raine, K. D., & Hegadoren, K. M. (2013). Critical feminist narrative inquiry: Advancing knowledge through double-hermeneutic narrative analysis. *Advances in Nursing Science*, 36(2), 118–132. <https://doi.org/10.1097/ANS.0b013e3182902064>
- Polkinghorne, D. (1988). *Narrative knowing and the human sciences*. Albany, NY: State University of New York Press.
- Randall, R. (2009). Loss and Climate Change: The Cost of Parallel Narratives. *Ecopsychology*, 1(3), 118-129. <https://doi.org/10.1089/eco.2009.0034>
- Reading, C. (2013). *Understanding Racism*. Prince George, BC: National Collaborating Centre for Aboriginal Health. Retrieved from: <http://ezproxy.roosevelt.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=lxh&AN=18140658&site=ehost-live>

- Reading, C. L., & Wien, F. (2009). *Health Inequalities and Social Determinants of Aboriginal Peoples' Health*. Prince George, BC: National Collaborating Centre for Aboriginal Health. Retrieved from: <https://www.ccsa-nccah.ca/docs/determinants/RPT-HealthInequalities-Reading-Wien-EN.pdf>
- Reichert, J., & Zielke, B. (2008). Editorial: Theories that matter. On some pragmatic aspects of social constructionism. *Forum Qualitative Sozialforschung*, 9(1).
- Rees, J. H., & Bamberg, S. (2014). Climate protection needs societal change: Determinants of intention to participate in collective climate action. *European Journal of Social Psychology*, 44(5), 466-473. <https://doi.org/10.1002/ejsp.2032>
- Rees, J. H., Klug, S., & Bamberg, S. (2015). Guilty conscience: motivating pro-environmental behavior by inducing negative moral emotions. *Climatic Change*, 130(3), 439-452. <https://doi.org/10.1007/s10584-014-1278-x>
- Riessman, C. K. (2008). *Narrative Methods for the Human Sciences*. Thousand Oaks, CA: SAGE Publications.
- Roeser, S. (2012). Risk Communication, Public Engagement, and Climate Change: A Role for Emotions. *Risk Analysis*, 32(6), 1033-1040. <https://doi.org/10.1111/j.1539-6924.2012.01812.x>
- Roser-Renouf, C., Maibach, E. W., Leiserowitz, A., & Zhao, X. (2014). The genesis of climate change activism: from key beliefs to political action. *Climatic Change*, 125(2), 163–178. <https://doi.org/10.1007/s10584-014-1173-5>
- Royal Commission on Aboriginal Peoples (RCAP). (1996). *Report of the Royal Commission on Aboriginal Peoples*. Ottawa: Indian and Northern Affairs Canada. Retrieved from: [http://www.ainc-inac.gc.ca/ch/rcap/sg/sgmm\\_e.html](http://www.ainc-inac.gc.ca/ch/rcap/sg/sgmm_e.html)
- Shabecoff, P. (1988, June 24). Global warming has begun, expert tells Senate. *New York Times*, p. A00001. Retrieved from: <https://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html>
- Spence, A., & Pidgeon, N. (2010). Framing and communicating climate change : The effects of distance and outcome frame manipulations. *Global Environmental Change*, 20(4), 656–667. <https://doi.org/10.1016/j.gloenvcha.2010.07.002>

- St. Denis, V. (2007). Aboriginal Education and Anti-Racist Education: Building Alliances across Cultural and Racial Identity. *Canadian Journal of Education*, 30(4), 1068–1092.
- Steffen, A. (2016, April 29). Predatory delay and the rights of future generations [blog post]. Retrieved from <https://medium.com/@AlexSteffen/predatory-delay-and-the-rights-of-future-generations-69b06094a16>
- Steffen, A. (2017a, January 5). The last decade and you [blog post]. Retrieved from <https://thenearlynow.com/the-last-decade-and-you-489a5375fbe8>
- Steffen, A. (2017b, December 7). On climate, speed is everything [blog post]. Retrieved from <https://thenearlynow.com/on-climate-speed-is-everything-5bc47203bc7a>
- Stenmark, L. (2015). Storytelling and wicked problems: Myths of the Absolute and climate change. *Journal of Religion and Science*, 50(4), 922-936. <https://doi.org/10.1111/zygo.12218>
- Stoknes, P. E. (2014). Rethinking climate communications and the “psychological climate paradox.” *Energy Research and Social Science*, 1, 161–170. <https://doi.org/10.1016/j.erss.2014.03.007>
- Tagalik, S. (2010). *A Framework for Indigenous School Health : Foundations in Cultural Principles*. Prince George, BC: National Collaborating Centre for Aboriginal Health. Retrieved from: <https://www.ccsa-nccah.ca/docs/health/RPT-FrameworkIndigenousSchoolHealth-Tagalik-EN.pdf>
- Thomas, F., Sabel, C. E., Morton, K., Hiscock, R., & Depledge, M. H. (2014). Extended impacts of climate change on health and wellbeing. *Environmental Science & Policy*, 44, 271 - 278. <https://doi.org/10.1016/j.envsci.2014.08.011>
- Tracy, S. J. (2010). Qualitative Quality: Eight “Big-Tent” Criteria for Excellent Qualitative Research. *Qualitative Inquiry*, 16(10), 837-851. <https://doi.org/10.1177/1077800410383121>
- Truth and Reconciliation Commission of Canada (TRC). (2015). *Truth and Reconciliation Commission of Canada: Calls to Action*. Retrieved from: [http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls\\_to\\_Action\\_English2.pdf](http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf)



- Tuck, E., McKenzie, M., & McCoy, K. (2014). Land education: Indigenous, post-colonial, and decolonizing perspectives on place and environmental education research. *Environmental Education Research*, 20(1), 1–23. <https://doi.org/10.1080/13504622.2013.877708>
- United Nations Framework Convention on Climate Change (UNFCCC). (2015). *Adoption of the Paris. Paris, France*. Retrieved from: <https://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>
- van der Linden, S., Maibach, E., & Leiserowitz, A. (2015). Improving Public Engagement With Climate Change: Five “Best Practice” Insights From Psychological Science. *Perspectives on Psychological Science*, 10(6) 758 –763. <https://doi.org/10.1177/1745691615598516>
- Wallerstein, N. (2002). Empowerment to reduce health disparities. *Scand J Public Health*, 30, 72–77.
- Watts, N., Adger, W. N., Ayeb-Karlsson, S., Bai, Y., Byass, P., Campbell-Lendrum, D., ... Costello, A. (2017). The Lancet Countdown: tracking progress on health and climate change. *Lancet (London, England)*, 389(10074), 1151–1164. [https://doi.org/10.1016/S0140-6736\(16\)32124-9](https://doi.org/10.1016/S0140-6736(16)32124-9)
- Watts, N., Amann, M., Ayeb-Karlsson, S., Belesova, K., Bouley, T., Boykoff, M., ... Costello, A. (2018). The Lancet Countdown on health and climate change: from 25 years of inaction to a global transformation for public health. *The Lancet*, 391(10120), 581–630. [https://doi.org/10.1016/S0140-6736\(17\)32464-9](https://doi.org/10.1016/S0140-6736(17)32464-9)
- Whitehead, M. (1991). The concepts and principles of equity and health. *Health Promotion International*, 6(3).
- Whitehead, M., & Popay, J. (2010). Swimming upstream? Taking action on the social determinants of health inequalities. *Social Science & Medicine*, 71(7), 1234-1236.
- Whitmarsh, L., O'Neill, S., & Lorenzoni, I. (2013). Public engagement with climate change: What do we know and where do we go from here? *International Journal of Media & Cultural Politics*, 9(1), 7-25. [https://doi.org/10.1386/macp.9.1.7\\_1](https://doi.org/10.1386/macp.9.1.7_1)
- Wibeck, V. (2014). Enhancing learning, communication and public engagement about climate change - some lessons from recent literature. *Environmental Education Research*, 20(3), 387-411. <https://doi.org/10.1080/13504622.2013.812720>



- Wiggins, N. (2012). Popular education for health promotion and community empowerment: A review of the literature. *Health Promotion International*, 27(3), 356-371.  
<https://doi.org/10.1093/heapro/dar046>
- Wilson, R. E. (2015). Positioning within a cultural context: using Ricoeur's preunderstandings as a heuristic for narrative data analysis in exploring identity, structure, and agency. *International Journal of Qualitative Studies in Education*, 28(8), 887-905.  
<https://doi.org/10.1080/09518398.2014.948097>
- World Health Organization (WHO). (1986). *The Ottawa Charter for Health Promotion*. Retrieved from <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>
- Wright, C., Nyberg, D., & Grant, D. (2012). "Hippies on the third floor": Climate Change, Narrative Identity and the Micro-Politics of Corporate Environmentalism. *Organization Studies*, 33(11), 1451-1475. <https://doi.org/10.1177/0170840612463316>
- Zerubavel, E. (2015). *Hidden in Plain Sight: The social structure of irrelevance*. New York, NY: Oxford University Press.

## Appendix A: Recruitment letter and interview schedule

Rachel Malena-Chan  
Graduate student, Community Health and Epidemiology  
University of Saskatchewan  
306-260-0906  
ram322@mail.usask.ca

Climate change engagement: Narrative frameworks for population health promotion

Hello,

You're invited to participate in a research project that is aiming to understand how young leaders in Saskatoon perceive and make sense of climate change. Climate change poses a serious challenge to public health in the 21<sup>st</sup> century. It impacts health and equity here and around the world. The way that climate change is framed in the media, by government leaders, or by community organizations can make people feel ineffective and disempowered, which challenges efforts to protect health through action to prevent and adapt to climate change. This research project explores how community organizers experience climate change; how they think about it, how they feel about it, and how they respond to it. In order to better understand the preconditions for climate change engagement, I want to hear from people who are motivated by their values to work for change.

If you consent to being a participant in this study, we will meet for an individual interview at a location of your choice, which will take between 30-90 minutes. Afterward you will be encouraged to continue thinking about the interview questions. I will send you a transcript of your interview and at that time, you can make any additions or changes you see fit. After all of interviews have been conducted, I will send all of the participants a synthesized version of the overall story being told. Your contributions will not be attributed to you by name unless you consent, and you will be invited to provide me with any feedback you may have. The study approach is based on Marshall Ganz's Story of Self, Us and Now (2011).

The individual interviews will be open-ended, prompted by the questions:

- i. What do you know about climate change?
- ii. How does climate change make you feel?
- iii. How does climate change impact your life?
- iv. When you picture the future, what do you imagine?
- v. What are you doing to respond to climate change?

**This recruitment letter is going out to everyone in the Next Up Saskatchewan network, but you are welcome to share it with others that might be interested and who meet the criteria. Prospective participants should contact me directly using the information above. I am hoping to interview between 8-12 people to start.**

Here are the criteria for participants:

1. Demonstrates an interest in, but not necessarily a primary focus on, climate change
2. Relevant leadership experience with social justice or environmental justice movement in Saskatoon
3. 18-32 years old, with flexibility to accommodate diverse stories
4. Willingness to share their lived experience of climate change, including perceptions of public narrative and personal responses
5. Inclusion of community leaders from diverse cultural and social backgrounds within the sample, in particular those who identify as Indigenous Peoples of Treaty Six territory

The project will make up my thesis for the Master's in Community and Population Health Science program at the University of Saskatchewan. If you have any questions or if you would like to inquire about participating in this research project, please don't hesitate to contact me using the information above.

Rachel Malena-Chan

Note: The recruitment letter stipulates that participants be between ages 18-32 because the Next Up program is offered to people within this demographic. However, some interested individuals who participated in the program, have since surpassed the age limit. Because the program was in its seventh year at the time of the study, the study population age limit was increased to 40 years old. Because no participants were under age 20, the participant age range was changed to 20-40-year olds.

Narrative frameworks for community empowerment  
MSc Research Project – Population and Community Health  
**Interviewer: Rachel Malena-Chan**

Interview Script

Introduction: Using the consent form to move through the background content

1. Welcome and intro to project
  - a. Interpretive phenomenology – understanding lived experience
  - b. Individual interview and journal purpose – story of self
  - c. Data synthesis purpose – story of us and now
2. Purpose of study
  - a. Climate change and community empowerment in Saskatoon
  - b. Public narrative, emotion and relationships amongst community organizers
  - c. Personal narrative, motivation and values of individual leaders
3. Overview and logistics
  - a. Review consent form and interview process
  - b. Reminder to only answer questions they feel comfortable answering
  - c. Reminder that we can stop the interview or the tape at any time

Rolling tape

1. Can you tell me a bit about yourself?
2. Can you tell me about your involvement in social or environmental justice work in Saskatoon? <ol style="list-style-type: none"><li>a. How did you come to do the work you're involved in? What does it mean to you?</li><li>b. Why are you, or how did you get, here in Saskatoon? What is your relationship to this place?</li></ol>

<p>3. What do you know about climate change?</p> <p>a. How did you come to know it?</p> <p>b. How do you know it's true?</p>
<p>4. How does climate change make you feel?</p> <p>a. What do you do about your feelings?</p> <p>b. Have you ever shared these emotions with others?</p>
<p>5. How does climate change impact your life?</p> <p>a. Where do you see the impacts of climate change?</p> <p>b. Have you ever talked to others about these impacts?</p>
<p>6. When you picture the future, what do you imagine?</p> <p>a. How does climate change affect your thinking about the future?</p> <p>b. What kind of timeline do you use when you're thinking about the future?</p>
<p>7. What are you doing to respond to climate change?</p> <p>a. How do you feel about the effectiveness of your response?</p> <p>b. Have you ever "responded" alongside other people?</p>

8. That was my last question. Is there anything else you want to add before we stop?

Tape cuts.

Post interview:

1. Thank you for your participation. How are you feeling right now? Is there anything you need? (Water, tissues). Here is the number of a local counseling service you can access free of charge.
2. I'm sure you'll be thinking about the concepts and ideas you shared me in the coming days and I'd encourage you to write down your thoughts as you feel comfortable. I'm leaving you with a journal in which I've written the interview questions from today. If you have experiences between now and the time of the group dialogue that make you think about these questions, or that change your "climate change story," perhaps make a note of it. You won't be asked to share the contents of the journal in any physical or literal way; it is yours

p.2/3

alone. It is meant to prompt your reflections and help you keep track of your own learning as we explore these themes together.

3. You'll get a chance to review the transcript of this interview and make any changes or omissions you see fit. The transcript will be emailed to you via the address you provided in the consent form. The information from this interview will be brought together with the other participants' and I will begin to analyse a "Story of Us and Now" based on your stories.
4. After all of the interviews are complete, I will synthesize the data and then give you a week to decide if you want to withdraw before sharing the analysis with you and the other participants for feedback.
5. **Do you know of anyone else who meets the recruitment criteria and who might be interested in participating in the study? There is no obligation to tell other people about your involvement here today, but if you would like to invite others to participate in the study, here is an informational letter that you can circulate. You can let prospective participants know to get in touch with me directly if they are interested, using the information at the top of the page. I can also send an electronic version to the email you have provided.**
6. Thanks so much for your participation in this project! I hope it was a valuable experience for you.

p.3/3

## Appendix B: Examples of plotline analysis

### B.1 Participant example 1

CHALLENGE/PROBLEM	CHOICE/STAKES	OUTCOME/VISION	MORAL/ACTION
<p>Climate change is...</p> <ul style="list-style-type: none"> <li>- Bad. It's linked to systemic forces and a worldview that is embedded in culture, in industries</li> <li>- Linked to greed, materialism, selfishness</li> <li>- Relates to relationships of racialization, highlights tensions resulting from colonialism</li> <li>- Part of the struggle against oppression, as a First Nations person, part of the overall impact of colonization on the land and on Indigenous bodies</li> <li>- Results from power inequities, short-term thinking of extractive industries</li> <li>- Damaging land-systems Indigenous people rely on, changing things within Indigenous communities and understood through Indigenous ways of knowing</li> <li>- Impacting local communities through spills and pollution</li> </ul>	<p>The stakes are...</p> <ul style="list-style-type: none"> <li>- Frustrating to face, because we need to do better as a human race</li> <li>- Highest, most intensely felt by First Nations communities, who are closest to the extractive industries</li> <li>- Political and social as well as physical – even those cleaning up the mess aren't allowed to talk about the source of the problem</li> <li>- Trickle down from a high level, politically, between band leaders and provincial government</li> <li>- Land-based in a way that hurts Indigenous people</li> <li>- Shared, and when we get down, we can help others and turn it into resilience</li> <li>- Really hard to talk about, but important to talk about with the next generation, too</li> <li>- Not understood by everyone equally, resulting in isolation</li> <li>- Felt directly by friends and family, through empathy, becomes real burden, makes you feel helpless</li> <li>- Hard to respond to without great personal sacrifice, counter-cultural action</li> <li>- Political and economic in nature – based on relationships of power between communities and industry</li> </ul>	<p>The future looks...</p> <ul style="list-style-type: none"> <li>- Full of conflict – these are long-standing root problems that don't go away over night</li> <li>- Reframing the conversation to talk about stories and not just information could help to activate people and help connect the dots</li> <li>- Increasingly progressive, in some ways, and hopefully things are getting better for the next generation</li> <li>- Like something we can influence for the better, if people wake up, get aware</li> <li>- Like this- things are more cyclical for Indigenous people – and the reserves might be all used up</li> <li>- Bleak if we don't stop commodifying the land</li> <li>- Like us - we are the future of someone, we are the result of others' decisions</li> </ul>	<p>I'm responding by...</p> <ul style="list-style-type: none"> <li>- Minimizing consumption and materialism at the individual level, set a good example for others and encourage young people to follow suit (though it's hard to know what impact this is having)</li> <li>- Changing how people think about Indigenous people, changing the dominant narrative</li> <li>- Speaking out, though this results in isolation</li> <li>- Taking small steps</li> <li>- Acknowledging personal knowledge, taking up responsibility as a Cree person to protect the land, and help the next generation to know their role, too</li> </ul>

## B.2 Participant example 2

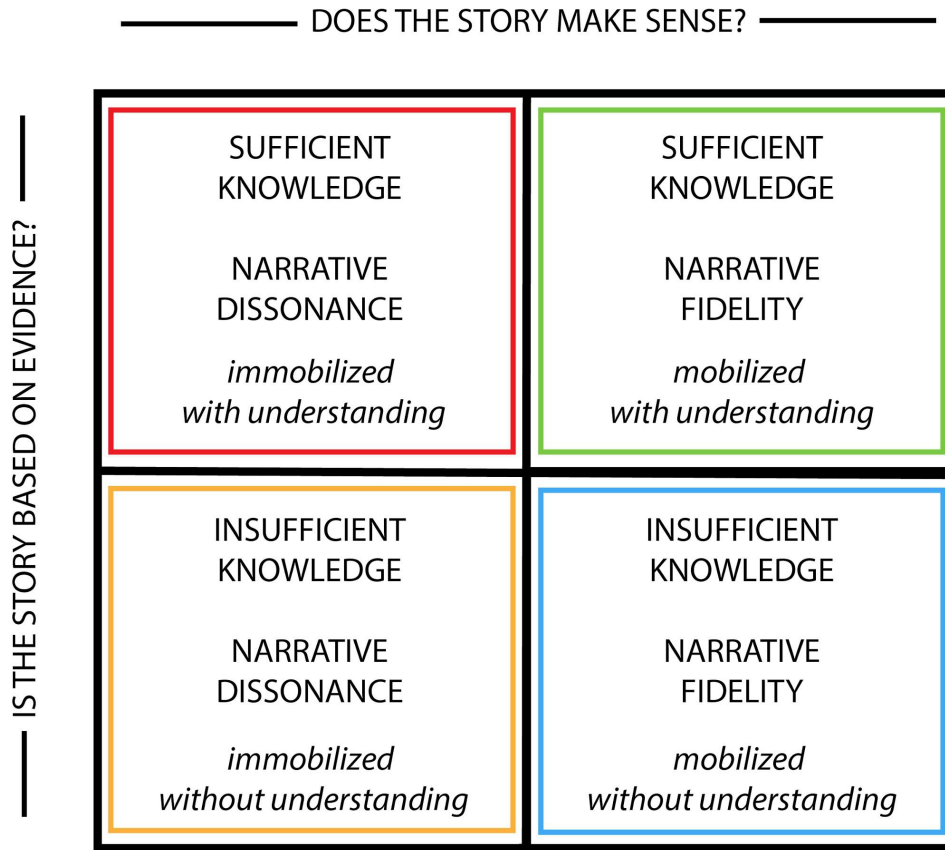
CHALLENGE/PROBLEM	CHOICE/STAKES	OUTCOME/VISION	MORAL/ACTION
<p>Climate change is...</p> <ul style="list-style-type: none"> <li>- A scientific reality with implications about past, present, and future decisions for humankind</li> <li>- Something that can be understood scientifically, but also emotionally and relationally</li> <li>- A problem with impacts that outstretch a human lifetime</li> <li>- Affecting people worse outside the Prairies</li> <li>- Destructive and frustrating</li> <li>- A big problem – bigger than any individual can tackle – which can make it feel like the weight of the world is on your shoulders</li> <li>- Very difficult to confront, even hard to talk about with others who understand and care about it</li> <li>- Not feeling as immediately pressing as other health and social problems that can be addressed more directly</li> </ul>	<p>The stakes are...</p> <ul style="list-style-type: none"> <li>- High enough to warrant personal sacrifice, including limiting transportation, food choices</li> <li>- So intense that conversation shuts down, or turns to focus on things that relieve a feeling of overwhelming responsibility</li> <li>- Not felt directly in Saskatoon, but in other parts of the world, people are forced to leave their homes, they are facing increasing conflict, flooding of homelands</li> <li>- Higher, more palpable for those who depend on the land for livelihood or income</li> <li>- Felt acutely at a personal-level, but they aren't discussed amongst even close friends</li> </ul>	<p>The future looks...</p> <ul style="list-style-type: none"> <li>- Like what they write about in science fiction – or at least that's what it feels like</li> <li>- War, famine, privatization of water</li> <li>- Capitalism, economic conditions, will shape scarcity of natural resources</li> <li>- Uncertain – enough to warrant concern about having children, considering what they might face</li> <li>- As scary as it has for every generation – but maybe we have the most reason to be afraid</li> <li>- Hopeful if technology is considered, but it's people's decisions that will make the difference in the end</li> <li>- Potentially idealized or romanticized like in television, with an abundance of sustainable technological solutions, but that is unrealistic</li> </ul>	<p>I'm responding by...</p> <ul style="list-style-type: none"> <li>- Making personal sacrifices, though it's interesting that I don't talk to others about it</li> <li>- Refusing to engage with deniers on the topic, even when they are in my own family</li> <li>- Following the leaders within Indigenous communities, integrating spirituality into activism</li> <li>- Writing letters to representatives (though this doesn't feel effective)</li> <li>- Attending rallies and creative actions (though this is more to bolster support than change decision-makers' minds)</li> <li>- Looking to the examples from Indigenous people and others that are more directly impacted</li> <li>- Linking action to broader movements for justice – like Idle No More</li> </ul>



### B.3 Participant example 3

CHALLENGE	CHOICE	OUTCOME/VISION	MORAL/ACTION
<p>Climate change is...</p> <ul style="list-style-type: none"> <li>- Not a "felt" problem in Saskatoon, hard to see the evidence, even though interdependent systems are changing</li> <li>- Problem for future generations in Saskatoon</li> <li>- Global health challenges already felt by others around the world</li> <li>- Not currently framed as a crisis, meaning reactive political decisions rather than proactive ones</li> <li>- Lack of political will, meaning environmental issues are viewed as discretionary</li> </ul>	<p>The stakes are...</p> <ul style="list-style-type: none"> <li>- Other peoples' lives, quality of life for he, his family, his children's children – already impacting his life and the global systems that he interacts with everyday</li> <li>- He recognizes the limits of the existing system to accommodate the challenges that climate change exacerbates and produces</li> <li>- If others don't act, his actions won't add up to enough to protect other people, his family</li> <li>- He feels motivated, but frustrated at the slow pace that others are moving</li> <li>- He feels hopeless about the rate of change he's seen so far</li> <li>- He acknowledges that the changes he witnesses isn't what's motivating him – they are hard to perceive</li> </ul>	<p>The future looks...</p> <ul style="list-style-type: none"> <li>- Different – especially the social and ecological landscapes</li> <li>- Migration, conflict due to changing weather patterns</li> <li>- Vulnerable people, vulnerable countries are most at risk but local communities will also be impacted</li> <li>- Already putting pressure on the city's infrastructure and things are worsening for public budgets and private citizens</li> <li>- Narratives that dominate favor low-taxes, small governments</li> <li>- Other problems also compounding with environmental degradation increasing overall risk and incentive to change practices</li> </ul>	<p>I'm responding by...</p> <ul style="list-style-type: none"> <li>- Targeting systems-level change</li> <li>- Making personal choices, but enjoying family and trying not to think too much about hopelessness or frustration about climate change</li> <li>- Supporting others and reaching out to a web of support to overcome feelings of helplessness and isolation</li> <li>- Feeling limited by the range of public narratives about climate change, but also about the systems that would impact climate change at the population level – taxation, government leadership, stable funding, resource commitments that match the urgency of the problem, mitigation over adaptation, proactive over reactive</li> </ul>

## Appendix C: Interpretive schema



Note: This diagram provides context for my early interpretations of narrative dissonance, narrative fidelity, and meaningful mobilization. Assuming that my participants' stories are based on sufficient knowledge of the problem of climate change, I constructed this diagram to help conceptualize the difference between ending up in the red box (experiencing dissonance and thus immobilization because of or despite understanding) or ending up in the green box (experiencing fidelity and thus mobilized because of or despite understanding). Outside the scope of this study are stories not based on a scientific understanding of climate change. This study does not focus on stories based on a lack of evidence about climate change, but my model for mobilization could be useful for analyzing stories in all four categories and the types of action or inaction they produce. Using the same logic, these stories may be categorized in the orange box (with dissonance about climate change stemming from a story that is neither scientifically-sound nor coherently grounded in moral values) or in the blue box (narrative fidelity about a scientifically-unsound perception of climate change, which may elicit mobilization toward a goal that is out of sync with scientific reality).

## Appendix D: Timeline of study activities

February 2017	Ethics approval Recruitment letter sent out to Next Up Saskatchewan Alumni listserv - Via email from program coordinator
March 2017	Responding to interested individuals; consent letters sent out to potential participants Posted recruitment letter to Next Up Saskatchewan Alumni Facebook page (private group) 2 participant interviews - Requesting that participants pass on recruitment letter to other individuals who meet the study criteria
April 2017	8 participant interviews (one via Skype)
May 2017	Transcribing interviews
June 2017	Circulating transcripts for participant review (member-checking #1) - Decision to anonymize all quotes Journaling and reviewing the literature - Initial analysis and early model construction
July-August 2017	Coding plotlines (challenge, choice, outcome, moral) - Sub-themes and their relationships beginning to emerge
September 2017	Circulating participant plotlines for review and member-checking (member-checking #2) Meeting with committee, refining methodological theory and scope of results
October - December 2017	Integrating participant feedback and committee suggestions into interpretation and study model Coding sub-themes related to narrative dissonance and fidelity Via NVIVO using categories from the model Analyzing sub-themes and reviewing literature related to findings
January 2018	Creating knowledge translation video for participants of thesis results (member-checking #3) - Integrating participant feedback and finalizing interpretations Ethics approval renewed
February 2018	Presentation for Student Research Day Follow-up with committee members about thesis structure and content
February - August 2018	Writing and reviewing thesis - Integrating participant quotes and contextualizing findings for population health
October 2018	Presentation for Atlantic Medical Health Officers annual conference Manuscript submission - Health Promotion and Chronic Disease Prevention in Canada Journal Knowledge translation with Next Up Saskatchewan 2018/2019 cohort