Analyzing an Emerging Field of Public Health Practice in Ontario, Canada: The Case of Climate Change Adaptation

by

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Dalla Lana School of Public Health
University of Toronto

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Abstract

This dissertation uses the case of public health adaptation to climate change in Ontario, Canada to develop an understanding of how new fields of public health practice emerge, and how practices become legitimated by practitioners. Since climate change became an identified public health issue by way of the *Ontario Public Health Standards, 2008* (OPHS), and given that health equity is a normative dimension of practice and climate change holds the potential to exacerbate existing health inequalities, this work makes three primary contributions. First, I utilize Bourdieu’s theory of practice to describe how social change occurs within the professional field of public health. Second, I share practitioner interpretations of the OPHS to develop an understanding of how policy on climate change adaptation is translated into practice. Third, I highlight the role of health equity in climate change work, as practiced by Ontario public health practitioners. The dissertation draws on data from a web-scan of the thirty-six Ontario public health unit web pages and twenty in-depth interviews with public health practitioners from twenty health units. By identifying specific practices and interpretations of public health policy related to climate change, I show how specific practices are imbued with discursive meaning that shape how public health action on climate change is framed and understood as ‘legitimate’.

Findings illustrate that climate change is very much an emerging field of practice, with a variety
of approaches taken by practitioners including inaction, the repackaging of existing environmental health activities, and championing innovative practices. I demonstrate how practitioners selectively utilize policy to both enable and constrain public health action on climate change, and to document how health equity is employed as a discursive strategy by the champions of this work to try and legitimate climate change adaptation as a unique sub-field of public health practice.
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“Every time I see an adult on a bike, I no longer despair for the future of the human race.”

-H.G. Wells
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Chapter 1

Introduction and Rationale

1.1 Theoretical Overview and Rationale

Communities in Ontario, Canada are already experiencing health impacts resulting from climate change. These include: rising temperatures and rising rates of heat-related morbidity and mortality; increases in acute respiratory disease from poor air quality; increases in food and waterborne illnesses; the spread of vectors to previously inhospitable climates and resultant increases in the incidence of vector-borne and zoonotic disease; and rising rates of accidental morbidity and mortality from extreme weather events (Health Canada 2008). Climate change is further implicated in food shortages and resulting food insecurities (IPCC 2013), and wreaking havoc on infrastructure in ways that affect economic livelihoods (Stern 2007) and mental health (Chand and Murthy 2008; Doherty and Clayton 2011). Perhaps most importantly, especially given that social justice is a foundational concept to public health practice (Krieger and Birn 1998), climate change also holds the potential to exacerbate existing health inequalities, where populations burdened by relatively poor health are projected to be most vulnerable to the health effects of regional climate shifts (Friel et al. 2011; Health Canada 2005).

In order to adapt to climate change before greater health consequences come to bear, researchers and practitioners in the field of public health are required to engage with and contribute to the establishment of a new sub-field of public health practice. In doing so, practitioners are able to shape programming and policy-making in innovative ways.

However, consideration of the processes by which change occurs in public health are lacking, especially those informed by relevant social theory. While the existing academic
literature on public health adaptation to climate change describes specific climate-related impacts and so-called ‘vulnerable populations’, there have been few theoretical and empirical investigations into how climate change is being framed as a public health issue by front-line practitioners (see Maibach et al. 2008), and how those framings are interpreted, translated and made actionable in terms of specific public health interventions. These questions are particularly relevant given that climate change is identified as an environmental health hazard by the *Ontario Public Health Standards, 2008/2013* (OPHS)—the provincial policy statement outlining mandatory action for public health units across the province—but that no practice-based guidelines are presented on *how* to engage with climate change from a public health perspective.

The degree to which public health units are engaging with climate change adaptation through programming and policy is therefore unclear, as are the particular logics or discursive framings that inform adaptation initiatives, and whether health equity is taken up (if at all) by Ontario’s public health community. More broadly, there is a need to build a generative theoretical understanding of how new fields of practice emerge, how they are legitimated, and by whom, in order to make explicit the goals and values of climate change adaptation interventions.

This dissertation analyzes the emerging field of climate change adaptation in Ontario, Canada. It is grounded in Pierre Bourdieu’s “theory of practice”. More specifically, I seek to understand why some practices (e.g. conducting climate change and health vulnerability assessments) may be viewed as ‘more legitimate’ than others, and how the adoption of certain practices shapes or reinforces particular understandings of the ‘rules’ guiding what constitutes ‘appropriate’ public health practice. Thus, this dissertation seeks to describe practices which achieve symbolic status and can be used to direct further action on this field, and what kinds of practice symbolically struggle to take root among this community of practitioners. Through an exploration of the narrative accounts of practitioners acting as ‘champions’ in the ‘struggle’ to
define what is normative in an emerging field of practice, this work seeks to understand how specific interpretations of public health adaptation to climate change shape practices and inform an understanding of this emerging sub-field of environmental public health practice.

Following Bourdieu, my analysis centers on how public health actors engage with climate change according to: their dispositions (i.e. habitus); relevant actionable resources (i.e. capital); and the ‘logics’ which govern practical action in the field of public health. Chapter II elucidates the concept of field more fully, but at this point it is worth mentioning that fields are the result of relations between social actors. Fields can be relatively discrete collections of actions bound around a common goal (i.e. public health adaptation to climate change), but can also resemble broader systems-level interactions between the spheres of influence and action which structure a given field. Fields are a particularly important analytic concept giving rising scholarly interest in the boundaries between disciplines, areas of practice, and professional settings (Fligstein and McAdam 2012; Hilgers and Mangez 2015; Lamont and Molnar 2002). Much of the scholarly work on ‘field’ has highlighted how boundaries are carved out and ‘boundary-work’ as a means of exercising social control over knowledge and disciplines (Berkhout 2010; Gieryn 1983). However, less attention has been given to the Bourdieusian notion of sub-fields and nested fields of practice which are both the product and producer of action on broader fields of play.

For example, public health adaptation to climate change in Ontario is a sub-field of environmental public health (i.e. it is labeled as an environmental health hazard in formal policy documents), and environmental public health is a sub-field of the broader professional field of public health practice more generally, which is composed of health promotion, the social determinants of health, toxicology, and occupational health, among others. The relationships between these fields and the actors that occupy them structure the more or less legitimate ways in which actors can engage with each other and the goals of fields and sub-fields (Bourdieu 1985;
1993). Thus, the terms ‘field’ and ‘sub-field’ are not meant to be used interchangeably, although all sub-fields are ‘fields’ in their own right. Rather, the usefulness of the terms lies in their ability to differentiate the scale or level of analysis employed (Shin 2012).

Bourdieu (1984) contends that by uncovering the taken-for-granted assumptions that guide practical action on particular fields of play, broader transformation of institutional systems can be made possible. While it would have been possible to use the theoretical work of any number of practice theorists (see Chapters II and III for a more fulsome description of why Bourdieu’s theory resonates more strongly with this work), Bourdieu’s sociological apparatus was selected for several reasons. His work challenges readers to consider the ‘arbitrary’ construction of field conditions and relationships between practitioners which may highlight why some practices might be viewed as ‘more legitimate’ than others. Moreover, his analytic concepts allow researchers to describe the structure of the broader field of public health in which the field of climate change adaptation is situated, which influences how and why this work gets selectively taken up in practice. By addressing the structures of climate change adaptation work in public health according to practitioners working within it, Bourdieu’s theory of practice allows us to question the continually evolving ‘rules’ and sens pratique (‘practical sense’) that (re)produce material conditions in this field and subsequently practical action. Bourdieu’s work also helps to explain how agents are able to guide the co-creation and co-construction of a field by ‘championing’ climate change work, and how resistance might be experienced in the face of the dominant logics at work. Studying the kinds of practices adopted in this field, and why some come to be considered ‘more legitimate’ than others invites researchers to question how and why particular logics persist through time or are changed through ‘struggles’ between actors with different dispositions.
In other words, fields refer to a constellation of social positions, implying a relational positioning between actors in how fields are constructed, their boundaries contested, and practical action made possible. Through the interaction between actors—in how they understand the rules of the field in relation to their own dispositions and resources they can deploy—fields can come into being and generate new social relationships and meanings. I build on this understanding to explore the relationships between actors within a field, as well as the intersections and overlaps between the fields that comprise public health as a field at large. In so doing, I posit that actors are not necessarily making boundaries in an emerging field of practice, so much as trying to insert a sub-field into a broader field of practice and legitimate that work according to pre-existing logics and practices already at play.

Detailing the conditions under which fields are created or changed requires an appreciation of how practices evolve, how people are drawn to some practices and not others, who the carriers of particular practices are, and how practices are employed in a strategic sense so as to better one’s field position (Shove 2010). Since climate change adaptation is an emerging field of practice informed by numerous others, what is required is a study that accounts for the practical experiences of agents involved in constructing and co-creating this field, and how the ‘rules’ of climate change adaptation are emerging in relation to changes in the broader field of public health and the evolving health needs of the public.

1.1.1 Understanding Social Change in Public Health Practice

Despite increasing scholarly attention directed towards public health adaptation to climate change over the last decade, there are limited case studies analyzing the degree to which scholarly and practice-based recommendations are being made actionable by public health
practitioners. Moreover, there is a limited understanding of how social change occurs in public health practice more generally.

In other words, why do some topics grab the attention of the public health community and not others? When an issue does grab the popular imagination of the public health community, how does this professional community organize and pursue practical action? Which practices are deemed more or less legitimate on those fields of action? And finally, how can social theory inform an understanding of the change process in public health at large?

As indicated by Rootman et al. (2012) in their book on health promotion in Canada, public health as a field of practice has a rich tradition of engaging with emerging issues. Baum (2002), Awofeso (2004), and O’Neill et al. (2012) identify eras of public health practice. This body of work traces historical legacies of practice and documents how practices are passed down through successive generational shifts in light of changing conceptions of health. Badgely (1994) traces the activities and programs espoused by Canadian public health officials from the early 1600s to the nineteenth century. Notably, this work confers with international accounts of public health practice that expanded from the sanitary era in the 1800s, to an era of practice dominated by health risk information (1970s and earlier), to the rise of health promotion and the population health approach.

Within these eras, public health as an institution has a rich tradition of engaging with a variety of issues as they emerge, and as our understanding of health expands to incorporate them into the purview of the broader field. For example, tobacco control, harm reduction, health promotion, population health, and the social determinants of health as new fields of public health all emerged in response to specific health issues and resulted in formal recognition of those issues in international declarations, key conferences, and formal policy statements (Rootman et al. 2012). The result of this field expansion is to consider new practices capable of mitigating the
risk of activities that are thought to be harmful to our health, or to develop programs that proactively prevented ill-health conditions from manifesting in the first place.

This rather linear understanding of issues leading to formal recognition which in turn contribute to the development of new practice has been a useful explanatory mechanism for describing how public health addresses public health problems. However, the process described above (according to Rootman et al. 2012) assumes that change processes in public health result from issue identification, and does not necessarily consider how practice-based interventions or programs can discursively reinforce or fundamentally change our understanding of the issue at hand. What is largely missing is a theoretical investigation into how fields come into being, and how the practices associated with those fields are negotiated and legitimated. Indeed, the goal of this project is to consider how practices can either reinforce our discursive understanding of a public health issue and its associated policies, or whether emerging practices can serve to fundamentally transform our understanding of issues and their associated actions. In other words, the work that follows attempts to start with public health practices and understand how they filter up into policy and issue definition, an approach that is suitable for analyzing fields of public health practice that are less mature or established. I therefore build off of Green’s (2006) call for practice-based evidence, and Carroll’s (2012) call for a theoretically informed analysis of social practices to help unpack the normative dimensions of public health work, to clarify the expectations and moral commitments of the public health community, and to contribute to innovation in the health field.

1.2 Research Questions
Employing a practice theory perspective on public health adaptation to climate change, this study is guided by the following research question: How are practitioners within public health units in Ontario, Canada working to adapt to the health impacts of climate change, and how do practitioners position responses as ‘appropriate’ or ‘legitimate’ in light of the established paradigms and discourses that are informing this emerging field of public health practice?

Figure 1. Ontario’s 36 Regional Public Health Units* Grouped by Census Division


Ontario was selected as the location of interest for several reasons. First, the OPHS names climate change as an important health hazard and mandates the delivery of numerous protocols related to climate change adaptation (e.g. vector-borne disease monitoring; water
quality monitoring; air quality monitoring). Second, Ontario is Canada’s most populated province with a history of robust and innovative public health activities, but also one with diverse communities, complex population health needs, and multiple climate impacts that vary according to the geographical location of health units. Its regionalized public health infrastructure of 36 health units (see Figure 1) is therefore ideally situated to respond to regionally specific health impacts. Third, and somewhat pragmatically, I lived in Ontario at the time of conducting this research and had pre-existing relationships to practitioners in the field who could speak to the kinds of questions I was interested in answering (see Chapter III for a more detailed description of these relationships and for a reflexive engagement with my intention in completing this study).

In order to understand and contextualize climate change adaptation work emerging across the 36 public health units in Ontario, Canada, several research goals were created. These goals include:

I. Conceptualizing Ontario’s public health response to climate change by building an understanding of how practitioners contribute to the emergence and expansion of new fields within public health through an exploration of the logics that govern practical action in nested subfields of practice;

II. Understanding how health equity is factored into climate change adaptation work (or not), given that health equity is a normative dimension of public health practice and climate change will exacerbate existing health inequalities;

III. Understanding how existing provincial policy guidelines on climate change adaptation (i.e. the Ontario Public Health Standards) are interpreted and made actionable (or not);
IV. Deriving lessons learned and implications for public health policy and practice that highlight those conditions that allow new fields of public health practice to emerge in order to address threats to human health and wellness.

1.3 Outline and Description of Dissertation Chapters

The remainder of this dissertation is organized to present the theory, methods, and findings before ending with a unifying discussion of next steps for future research, policy and practice. It should be noted that this is a dissertation by papers, and it therefore may not read like a conventional dissertation. Chapters II, IV, V, and VI are in various stages of the publication process. Accordingly, some chapters include abstracts and a statement describing their status at the time of submitting this dissertation to the School of Graduate Studies.

Chapter II is titled “Using theory to inform an emerging ‘field’ of practice: Reconciling structure and agency in public health adaptation to climate change”. This chapter serves to introduce the theoretical framework of this empirical investigation by situating climate change adaptation as an emerging field of public health practice, and to lay the foundations for addressing Research Objective I. Specifically, it outlines and describes ‘practice theory’ before applying Bourdieu’s (1984/1990) thinking tools of habitus, field, capital and practice to public health adaptation to climate change. Following Bourdieu, this chapter describes the interplay between multiple and overlapping fields of practice in environmental health and how the logics of those fields may inform the development of emerging fields. The chapter ends with a discussion of the utility of Bourdieu’s work to address the interplay between the structure of an emerging field of practice and the agency of practitioners attempting to influence practices and the ‘rules’ of public health adaptation to climate change. The primary contribution of this chapter
Chapter I: Introduction and Rationale

is to situate climate change ‘champions’ as an analytic category worthy of further investigation and to position these practitioners as ‘moral entrepreneurs’ attempting to influence what is normative and acceptable within organizational and professional standards of practice.

Chapter III is titled “Research Methods and Analytic Strategy”. It describes the data collection methods and analytic strategies employed to address the research objectives outlined above. Specifically, these include: a content analysis of public health unit web pages (N=36); and in-depth interviews with public health practitioners (N=20) from a geographically representative sample of health units. Because the remaining chapters are written as publishable manuscripts, they include methodological descriptions for the analysis completed in each chapter in a format suitable for publication. Therefore, Chapter III includes a more thorough description of my methodological orientation, including a rationale for method utilization and a broader description of recruitment, sampling strategies and analysis, as well as statements concerning reflexivity and my relationship to my dissertation topic, data collection and analysis.

Chapter IV is titled “‘We’re all brave pioneers on this road’: A Bourdieusian analysis of field creation for public health adaptation to climate change in Ontario, Canada”. This chapter describes the substantive findings of this dissertation and addresses Research Objective I/IV. Through the use of a ‘practice-based’ analysis of interview transcripts, this chapter conceptualizes practices as the embodied representation of dispositions of practitioners in relation to the structuring nature of a field. The ‘practices’ of climate change adaptation work identified by interview participants are discussed in relation to Bourdieu’s theory of practice to discuss how practices embody power relations embedded in the historical construction of public health as a professional field of practice. As a sociology of and for public health practice, this chapter analyzes the discursive framings of climate change adaptation and how they translate into practical action. Through a description and analysis of the different degrees to which health
units engage with climate change adaptation, the chapter concludes with a discussion of how field creation is made possible or is contested through power struggles inherent to the legitimization of public health practices, ideologies and institutional commitments. The primary contribution of this chapter comes in the form of theoretical innovation in field studies whereby findings from interviews are used to describe how field creation is not possible without individual, neo-liberal, and symbolic suffering.

Chapter V is titled “Health equity, population health and climate change adaptation in Ontario, Canada” which addresses Research Objective II. This chapter begins with a review of the literature on health equity in relation to climate change. It argues that population groups that already bear the highest burden of poor health outcomes are more vulnerable to the health impacts of climate change. A comprehensive focus on health equity allows researchers to interrogate how health equity can be promoted and enhanced given the overlapping agendas of health equity and climate change adaptation. This chapter employs a targeted analysis of how public health practitioners understand the equity dimensions of climate change and how those considerations inform their day-to-day programmatic activities. Specifically, the analytic concept of a climate change ‘champion’ is employed to underscore differences in understanding of equality versus equity and to describe how equity considerations inform practice. This chapter discusses the equity dimensions of practice, highlighting specific practice-based examples that link the discursive fields of climate change adaptation and public health. The chapter closes by addressing how equity is employed as a strategic discourse to further climate change adaptation initiatives, while it also exists as its own sub-field of practice.

Chapter VI is titled “Climate change + policy change = game change? Ontario’s public health policy response to the international climate crisis”. This chapter seeks to unpack how the OPHS protocols related to climate change are being interpreted and translated into practice by
public health practitioners, thereby addressing Research Objective III/IV. The analysis and ensuing discussion delineate a typology of actions associated with climate change adaptation in Ontario related to the OPHS, the barriers identified by practitioners who are attempting to develop adaptation initiatives, and the promising practices associated with on-going public health interventions among health units who are taking the lead on climate change adaptation across the province. The chapter ends with a presentation and discussion of policy recommendations from the empirical evidence collected for this dissertation, the academic literature, and other jurisdictions. These recommendations are made with the hope of enhancing the existing provincial policy statement on environmental health hazards to bolster the adaptive capacity of the public health sector across the province.

Chapter VII is the concluding chapter of this dissertation. This chapter provides a summary of the core findings of this study, a description of its strengths and limitations, and a discussion of next steps for research on public health adaptation to climate change. Moreover, it provides a short commentary on how my understanding of this research area has evolved over the past five years and where this research will take me in the future.

1.4 References


Chapter II

Using theory to inform an emerging ‘field’ of practice: Reconciling structure and agency in public health adaptation to climate change

N.B. At the time of submission, this paper received a revise and resubmit to the journal *Social Theory and Health*. This revised version has been resubmitted in September 2015.

**Abstract.** Drawing from diverse disciplines including planning, political science and the environmental sciences, public health practitioners are increasingly required to respond to climate change; to adapt to its effects and take action before greater health consequences come to bear. In doing so, practitioners are actively engaged in the creation of a new field of public health practice and are able to shape innovative programming and policy-making to respond to rising temperatures and a host of resulting health impacts. However, consideration of how multiple disciplines and their associated discourses are being used to inform and construct the emerging field of public health climate change adaptation are lacking, especially those informed by relevant theory. Pierre Bourdieu’s (1980) ‘theory of practice’ is useful in this regard. Bourdieu’s sociology offers a generative account of how agents engaged in climate change adaptation work do so according to: 1) their individual dispositions (i.e. habitus); 2) relevant resources (i.e. capital) able to be utilized; and 3) the particular ‘logics’ or ‘rules’ which govern practical action in a given field. This chapter provides a discussion of Bourdieu’s key thinking tools and applies them to the emerging field of public health adaptation to climate change. It concludes by discussing the interplay between the structures of emerging fields of practice and the agency of individuals working on climate change as ‘moral entrepreneurs’ before developing relevant next steps for research and practice.

2.1 Introduction
As a result of anthropogenic and natural climate forcings (e.g. rises in global greenhouse gas emissions) (IPCC2013), global temperatures have increased over the past century. Previously low-probability climate events (e.g. extreme weather events) are increasingly becoming the norm. In changing regional climates, certain populations are already experiencing health impacts resulting from climate change which include: rising temperatures and rising rates of heat-related morbidity and mortality; increases in acute respiratory disease from increasingly poor air quality; rising incidence of food and waterborne illnesses; increasing rates of vector-borne and zoonotic disease; and increases in accidental morbidity and mortality from extreme weather events (Health Canada 2008). Climate change is further implicated in wreaking havoc on infrastructure in ways that affect economic livelihoods (IPCC 2013; Stern 2007) and mental health (Chand and Murthy 2008; Doherty and Clayton 2011). Climate change also holds the potential to widen existing health inequalities, where populations already burdened by relatively poor health are also the most vulnerable to the health effects of climate change (Friel et al. 2011; Health Canada 2005).

In order to adapt to the complex effects of climate change before greater health consequences come to bear, researchers and practitioners in the field of public health are required to draw from diverse disciplines including planning, political science and the environmental sciences, among others. In doing so, practitioners are actively engaged in the creation of a new field of public health practice and are able to shape practices, programming and policy-making in new and innovative ways.

To date, theoretical contributions to the scholarly literature on climate change have offered several promising directions including: understanding the role of social capital in fostering adaptation to climate change and resilience in the face of climate-related disasters (Adger 2003); questioning the process of meaning-making in communicating and acting upon
climate science in relation to human interactions with nature (Jasanoff 2010); and critiquing the global political economy in the production of over-consumption implicated in creating futures of resource scarcity (Urry 2010; 2011). This has prompted some scholars to clarify the role of the social sciences in understanding the social dimensions of climate change (Yearley 2009), and to explain the utility of critical thought in a realm of emerging discourses and theoretical considerations (Shove 2010).

In public health, theoretical interrogations of climate change have centered on informing practice through the analysis of ecosystems as integrated settings for sustainability (Parkes and Horwitz 2009) and the associated development of an emerging ‘ecohealth’ paradigm that is rooted in complexity science (Parkes 2011; Parkes et al. 2003; Patz 2006; Webb et al. 2010). Poland et al. (2011) have taken up a practice-theory orientation to illustrate the importance of securing supportive environments for health equity in the face of accelerated global change.

Additional research has attempted to theorize health promotion ‘competencies’ for climate change adaptation and the co-benefits of existing interventions for the promotion of human health (Patrick et al. 2011; Patrick and Capetola 2011).

However, consideration of how multiple disciplines and their associated discourses are being used to inform and construct the emerging field of public health adaptation to climate change are lacking, especially those informed by relevant theory. What remains unclear is the degree to which public health units are engaging with climate change adaptation, what interventions and programs are being developed to adapt to climate change, and the particular logics that inform specific adaptation practices. More broadly, there is an identified theoretical need to understand how new fields of practice emerge, how they are legitimated, and by whom in order to make explicit the goals and values of public health action on adaptation to climate change.
In this contribution, I build on an emerging ‘practice theory’ orientation in the academic literature (Shove 2010). I contend that Bourdieu’s (1990) “theory of practice” is particularly useful in the context of public health adaptation to climate change for understanding social change in the broader ‘field’ of public health practice. Bourdieu forces researchers to ask important questions regarding environmental public health practice including: what is the ‘taken for granted logic’ of the environmental public health field (and those fields situated within it)? By continuing to focus on Bourdieu’s important questions, a theoretical understanding of the development of ‘new’ environmental public health practices may be developed. Bourdieu’s use of theory further allows researchers to identify how actors are actively involved in pursuing social change via public health scholarship, programming and policy.

In explicating Bourdieu’s primary thinking tools, this chapter reconciles how the structure of a field interacts with individual agency in ways that shape particular practice-oriented imperatives related to climate change. The chapter closes with a discussion of Bourdieu’s theory of practice and considering the important role that ‘moral entrepreneurs’—individuals with particular dispositions who move new fields of practice forward—might play in influencing research, policy and practice.

2.2 Theoretical Orientation: Practice Theory and Bourdieu’s “Logic of Practice”

Analyzing and critically appraising both ‘fields’ and the practices situated within them requires a robust theoretical apparatus that explicates how social practices develop as a result of the actors who utilize them, and the social contexts in which they are situated. Practice theory is far from a unified theory, but is a promising direction to inform the public health and
sustainability literature (see Poland, Dooris and Haluza-DeLay, 2011). While authors from diverse theoretical traditions (e.g. Giddens (1984), Schatzki (1996; 2001; 2002), Taylor (2004), Shove and Pantzar (2005)) offer unique contributions in relation to social practices, they all agree that practices are the realm of the social where society and the individual are inextricably linked and organized. In other words, practices are the site where social understanding is structured and articulated, and a theory of practice(s) should therefore seek to understand how practices develop and the extent to which individual and collective action are guided by structure and agency.

Practices are not always consciously organized, and similar to Giddens (1984), Bourdieu’s sociology emphasizes that “much of daily life is accomplished unthinkingly and routinely, through what he terms ‘practical consciousness’” (Williams 1995, p.582). However, such an overly deterministic accounting of Bourdieu’s work requires additional nuance. For example, Shove and Walker (2007; 2010) speak to room left for agency in Bourdieu’s theory when they state that “social practices are not merely ‘sites’ of interaction but are, instead, ordering and orchestrating entities in their own right” (Shove and Walker 2007, p.471). Moreover, practices employed in a given field are always assembled based on previous and related practices that are therefore successive and necessarily localized (Shove and Pantzar 2005). Thus, documenting how particular practices—as “assemblages of images (meanings, symbols), skills (forms of competence, procedures) and stuff (materials, technologies) that are dynamically integrated by skilled practitioners through regular and repeated performance” (Hargreaves 2011, p.83)—are (re)produced across fields can help to inform climate change adaptation work, especially that which takes place in local settings.

Practices are therefore of integral salience in the realm of climate change adaptation considering most tangible examples of adaptation initiatives will play out at the local level, given the geographical specificity of future changes in regional climate. This is not to say that higher
level policy changes at the national and international level do not constitute practices, but that the physical examples of adaptation options (vis-à-vis public health programs) are often distributed and implemented at the level of local public health action.

Bourdieu’s contributions are unique in that his ‘theory of practice’ transcends modernist dichotomies (i.e. structure/agency, object/subject) to comment on the gap in understanding between embodied, practical knowledge, and the allegedly ‘objective’ social structures which are able to be understood theoretically (Postone et al. 1993, p.2). Bourdieu’s sociology seeks to “uncover the most profoundly buried structures of the various social worlds which constitute the social universe, as well as the ‘mechanisms’ which tend to ensure their reproduction or their transformation (Bourdieu 1989, p.7). He uses the formula, Field + [Habitus x Capital] = Practice (Bourdieu 1984, p.101), not as an arithmetic articulation of how practices manifest, but to illustrate the relationship between his three primary conceptual elements. For Bourdieu, “practice results from relations between one’s dispositions (habitus) and ones’ position of power (capital) within the current state of play of that social arena (field)” (Maton 2008, 51). The remainder of this section outlines Bourdieu’s primary thinking tools and roots them in a discussion of climate change adaptation as related to public health practice.

2.2.1 Field

Bourdieu posits that the social world is comprised of a field of power—a social space upon which competition over resources takes place (Bourdieu 1992; 1998)—within which is nested multiple interrelated fields which can be further subdivided. Fields can change as a result of external pressures, for example, climate change necessitating a public health response due to increased burden of climate-related morbidity and mortality. However, fields can also change as
a result of internal ‘struggles’. Fields are particular social spaces and “there are as many fields of preference as there are fields of stylistic possibilities” (Bourdieu 1984, p.226). This is to say that fields are spaces of life-styles and distinctions, each with their own unique symbolic currencies resembling the internalized structures present in a given field. Bourdieu (1990) defines ‘fields’ as sites of symbolic struggle where agents seek to amass stocks of capital in ways that better their position in a field relative to other agents. Gaining a more privileged position on a field allows for the ability to institute a ‘taken for granted logic’ that dictates what resources are more important, and what competencies are to be valued. The result of this struggle for power is therefore the reinforcement or transformation of the existing logic of a field (Bourdieu and Wacquant 1992).

To use the analogy of sport, a field can be understood as a bounded arena of play governed by particular rules where ‘players’ take-up particular positions (Thomson 2008). ‘Playing’ in a field is to compete in an unending game over various types of capital. Each field has a particular set of rules—an understanding of the values and beliefs that govern practice and action—which is to say, each field has a particular logic. Agents participate and compete in more than one field at a time, and it is their habitus—or socially structured dispositions—that dictate how comfortable they are with “the rules of the game” in a given field. Thus, ‘playing’ in a field requires an actor to take rules (what Bourdieu refers to as doxa) for granted and recognize them as legitimate; an act which may serve to reproduce existing relations of power (Deer 2008).

Detailing the conditions under which fields are created or are changed requires an appreciation of how practices evolve, how they capture people and lose others, who the carriers of particular practices are, and how practices are employed in a strategic sense so as to better one’s field position (Shove 2010). Since climate change adaptation is an emerging field of public health practice informed by numerous others, research is required to account for the practical
experiences of agents involved in constructing and co-creating this field, and how the ‘rules’ of climate change adaptation are emerging in relation to the evolving health needs of the public.

Figure 2 demonstrates that the field of climate change adaptation can be seen as occupying the broader field of environmental health situated within an even broader field of public health practice. It is important to note that actors from multiple other fields (the nameless fields in Figure 2), even those unrelated to public health, may ostensibly be ‘doing’ climate change adaptation work in ways that improve population health. This kind of ‘boundary work’ is important to consider, in that this analysis does not seek to privilege environmental health as the sole field in which climate change adaptation is being taken up. Indeed, this is one depiction of a specific field of practice with explicit links to environmental change, which due to the complexity of climate change, necessarily overlaps with and is informed by numerous other fields.

Public health units or agencies must also be considered in terms of their organizational fields which necessarily map across the sub-field of climate change adaptation, the sub-field of environmental health protection, and the broader field of public health. In other words, “though the surrounding field affects its structure, this embedded field, as a specific relation of force and area of free play, defines the very terms and stakes of the struggle, giving a particular cast to them which often renders them unintelligible, at first sight, from the outside” (Bourdieu 2005, p.205).

![Figure 2. Conceptualizing public health fields related to climate change adaptation, their boundaries, and areas of overlap](image-url)
For Bourdieu, organizations also exhibit varying degrees of internal struggle. Thus, the advancement of a ‘taken-for-granted’ way of doing things has implications for broader fields of practice that link up or intersect with public health organizations. Public health institutions may therefore become legitimating forces in their own right. What is required is an understanding of how the field of climate change adaptation is being informed by the various logics of the related fields in which it is situated. Moreover, the theorization of the organizational field must also be taken into consideration. For example, a field change in an organization can result in or produce a shift in other fields of public health practice based on the implementation or incorporation of new practices made ‘legitimate’ at the local level. As an emerging field of practice, climate change adaptation is informed by numerous logics all competing for legitimacy which are being forwarded by different actors for different reasons. Accounting for the motivation in pursuing those courses of action can therefore be particularly illuminating in understanding how and why practical action manifests.
2.2.2 Habitus

Interpreting the logic or logics of a field and transforming that knowledge into action is the primary role of habitus, or the “generative principles of distinct and distinctive practices…[which] are also classificatory schemes, principles of classification, principles of vision and division, different tastes” (Bourdieu 1998, p.8). Habitus are comprised

“of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles which generate and organize practices and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them. Objectively ‘regulated’ and ‘regular’ without being in any way the product of obedience to rules, they can be collectively orchestrated without being the product of the organization action of a conductor” (Bourdieu 1990, p.53).

Habitus reflects dispositions and tastes accumulated over time. It is influenced by early socialization in school and through family up-bringing, and is constantly being refined in the presence of our evolving lives. It ‘structures’ in so far as it is continuously taking in information and reflexively adapting to it, but it is ‘structured’ because our actions are—in part—predetermined by previous decisions, our earlier life histories, and our interpretations of the rules of any given field.

Bourdieu contends that as a result of habitus, individuals are more likely to take up particular kinds of practices and do things in particular ways, influencing everything from the kinds of people we meet and associate with, to the types of work we prefer to engage in (Bourdieu 1984). However, Bourdieu (1987) flatly rejects determinist interpretations of a ‘structuring structure’ that guides individuals through life like automatons. Rather, Bourdieu
represents the subjective individual as comprised of many competing interests that are consciously and unconsciously weighed against each other (Bourdieu 1985; 1992).

Habitus therefore explains the dispositions that mediate social structures and practices, while directly contributing to the reproduction of those structures or their transformation (Brubaker 1985, p.43). Reflecting on the role of habitus requires us to consider what is unique about individuals who are able to effectively forward new practices that instrumentally alter, shape or create new or existing (sub)fields. Bourdieu’s conception of field implies that different agents will draw upon their biographies in different ways to shape a field in a strategic sense; which is to say that the emerging field of climate change adaptation is not just framed out of individual interest, but also based on strategic objectives embedded in practitioners’ everyday worlds. As a generative structure, Bourdieu uses the concept of strategy to resolve issues of structure/agency because habitus is tied to a practical mastery; a sense of practice and practical knowledge that is embodied by individuals (Maton 2008). Moreover, habitus interprets the logic of a field to generate practices, as if by second nature, by sens pratique—a practical, or subjective ‘sense’ of the field conditions as experienced by the individual actor which can be translated into ‘acceptable’ practical action by invested players who know how to ‘play the game’ (Bourdieu 1990).

The role of habitus can therefore provide an account of competing sets of dispositions in an emerging field like that of climate change adaptation. First, practitioners working on climate change adaptation in the public health sector may (sub)consciously reproduce their own symbolic power by drawing from dispositions that are more accepted within their broader field (including that of public health). A second set of perhaps less accepted dispositions might belong to those practitioners who are pushing the boundaries of conventional practice. These practitioners might possess what Crossley (2003; 2008) refers to as a ‘radical habitus’; a set of
dispositions able to actively challenge the existing logic of a field by reflecting on the previously unquestioned assumptions associated with the use of more institutionalized practices. Thus, by highlighting key aspects of public health practitioner’s habitus, a greater understanding of why action unfolds as it does is capable of being developed.

2.2.3 Capital

It is not just individual dispositions coupled with the conditions of a field that allow particular ideas and practices to gain influence and legitimacy. The power and motivation to secure recognition of a particular approach is also determined by stocks of capital available to actors, and those forms of capital that are deemed important for the functioning of a field. “Capital can be understood as the energy that drives the development of a field through time” (Moore 2008, p.105) and refers to the ‘stock’ of economic, cultural, social and ultimately, symbolic resources an individual can wield (Bourdieu 1987). Capital can be objectified, embodied or institutionalized. It is acquired over time, and is intrinsically tied to habitus (i.e. how capital is strategically employed through particular dispositions).

Everyone is endowed with a portfolio of capital, but the objective worth of different types of capital and its conversion to other forms is purely relational (Crossley 2008). Economic capital refers to material resources. Bourdieu (1984; 1998; 1999; 2005) has often written about how economic capital trumps all other forms, particularly in a social environment dominated by neo-liberal policy. Social capital is understood as the strength and number of social network connections of individuals, including norms of trust and reciprocity actualized in social relationships. Cultural capital refers to the competencies of individuals which demonstrate cultural understanding and belonging. Fourth and finally, symbolic capital are the “commitments
of debts and honour, rights and duties accumulated over successive generations” (Bourdieu 1990, p.119), or “any property (any form of capital) when it is perceived by social agents endowed with categories of perception which cause them to know it and to recognize it and give it value” (Bourdieu 1998b, p.47). Symbolic capital refers to those resources that have exchange value in a number of fields. The volume of capital controlled may provide competitive advantages, and the mastery over a large proportion of capital helps dominate a field (Bourdieu 2005).

Capital is important to any form of public health intervention. Public health agencies have significant resources in terms of personnel, space, materials/equipment, expertise (e.g. training, credentials) and economic power. Economic capital is thereby required to secure particular types of material resources, but Bourdieu encourages readers to consider other forms of capital beyond the material realm. Indeed, using material deprivation as the sole measure of social relations keeps us from seeing more subtle displays of power and dominance (Bourdieu 1999, p.4). For example, social capital is required to forge strong and trusting relationships across disciplinary boundaries to access the forms of knowledge required to implement an effective collaborative and interdisciplinary program. Cultural capital is required to demonstrate an understanding of relevant knowledge and a ‘feel for the game’, where the embodied competencies of individuals will speak not only to their individual abilities, but also to the acceptance of particular forms of practice in the broader public health community, and among those working on climate change adaptation.

The relative infancy of climate change as a concern for public health makes the symbolic capital of public health institutions of principal importance. Symbolic capital refers to the ability to name climate change as a significant public health threat, and to legitimize activities addressing the ‘upstream’ determinants of health. Thus, advocating for policy change at the national and international level, securing institutional funding for activities that proactively
address adaptation strategies, and advancing an understanding of climate change as an important public health issue are all tied to the cultural and symbolic capital of actors and institutions. In other words, economic resources could be converted into symbolic capital by funding innovative projects in communities that proactively adapt to the health effects of climate change. Further, by directing resources towards climate change, public health agents have the ability to name climate change as an important health issue thereby legitimizing associated practices.

2.3 Discussion: (Re-)Producing field conditions

In summary, climate change adaptation is an emerging field of public health practice, and accordingly, some public health actors and institutions are further along in solidifying their approaches to dealing with climate change. Bourdieu forces us to consider the ‘arbitrary’ construction of objective field conditions to consider why some practices (e.g. conducting health vulnerability assessments, developing ‘green’ organizational policies, etc.) might be viewed as ‘more legitimate’ than others, and how the adoption of a practice can shape or reinforce the broader field of environmental health in which the field of climate change adaptation is often situated.

By addressing the ‘objective’ structures of this emerging field, we are able to question the continually evolving ‘rules’ that (re)produce material conditions in this field and dictate practical action or the lack thereof. However, Bourdieu’s theory of practice also explains how agents are able to guide the co-creation and co-construction of a field, and how resistance might be experienced in the face of dominant logics at work. By studying the kinds of practices adopted in a field, and why some come to be considered as ‘more legitimate’ than others, Bourdieu invites
us to consider how and why particular logics persist through time or are changed through ‘struggles’ taking place in the field.

In commenting on the field conditions of climate change adaptation, the logic of the public health response to climate change is arguably an expression of approaches and paradigms that have long existed in environmental public health practice and associated scholarly literature. For example, several methodologies and assessments developed at the regional (e.g. Buse 2012; Berry et al. 2011), national (e.g. Health Canada 2011) and international level (e.g. WHO/PAHO 2012) derive adaptive strategies that aid in the planning process for public health actors and institutions, but fewer authors have taken up climate change mitigation—activities that reduce greenhouse gas concentrations to prevent further warming (Haines et al. 2006)—or the advocacy around such activities as a promising future direction in public health practice.

Approaches in the literature also tend to be divided on the most efficient and effective allocation of public health resources: focusing on the individual health outcomes of vulnerable groups or community health outcomes measured in aggregate. A related, but important question asks how the relative degree of emphasis by public health actors and institutions is oriented towards assessing the health of those most vulnerable to the health-effects of climate change, or building adaptive capacity into existing public health systems and their associated communities. While some early climate change assessments have yielded strategic recommendations for policies that seek to promote community health, fewer scholarly efforts have examined how health equity may be more effectively championed by engaging in climate change adaptation work (Paterson et al. 2012). Indeed, the dominant discourse in the climate change and health literature emphasizes ‘vulnerability’ to the impacts of climate change being a function of exposure to climate related hazards, physiological sensitivity, and individual or community adaptive capacity (Berry 2008).
The pervasive assessment of exposure to risk or hazard in the field of climate change is an interesting development in environmental public health. However, from a Bourdieusian perspective, it is worth mentioning that contemporary public health is the product of numerous historical eras which continue to inform practice. For environmental public health in particular, the sanitary movement in Victorian England is of principal importance. For example, the work of pre-eminent epidemiologists Edwin Chadwick and John Snow—and prominent sociologist Frederich Engels—assessed population exposure to harmful conditions, postulating that the removal of the exposure (e.g. unsanitary living/working conditions) would result in improved health. Because of the perceived utility in defining, assessing, predicting and controlling particular environmental determinants of health and associated vulnerabilities by the practicing community—and given that it lines up well with pre-established modes of epidemiological surveillance—this risk-management orientation has continued to be embodied by contemporary public health practitioners (Baum 2002). For example, practices aimed at mitigating environmental exposures (e.g. restaurant inspections, monitoring air and water quality) have been pervasive because of the recognition of associated practices as being institutionalized over decades of public health practice (Awofeso 2004). Climate change adaptation can therefore be seen as the site where an already institutionalized logic is being re-produced to inform practical action in the form of vulnerability assessments.

Nonetheless, climate change also offers the production of ‘new’ practices governed by emerging ‘logics’ capable of shaping field conditions as a result of efforts by individual actors and the stocks of capital available to them. If larger public health units with greater amounts of capital have the capacity to address complex issues such as climate change, these actors may have a direct and guiding influence on research and practice on climate change in broader fields.
Thus, while the structure of a field is important, so too is the translation of that structure or logic by actors who exhibit their agency through the ‘practice’ of climate change adaptation. To reiterate Bourdieu’s theory of practice, actors continually ‘struggle’ to legitimate particular ways of addressing climate change in the field of public health. What emerges from this discussion is a conceptualization of different kinds of actors engaging with climate change research and practice. In one instance, practitioners may be influenced by their training and their organizational goals in ways that reproduce a dominant understanding of how climate change ‘ought’ to be addressed. Practitioner dispositions will be primarily founded in approaches and practices that have proven utility and institutional support, thus constituting the conditions of their reproduction. Conversely, practitioners with a ‘radical habitus’ may have altogether different dispositions—by virtue of receiving training in other fields—better enabling them to challenge the existing structure of the field to shift its values and rules, and to ‘legitimate’ new practices.

Informing the professional development of a field with Bourdieu’s work highlights the important space that professionals occupy in influencing broader values in society (Garrett 2007). Bourdieu himself was heavily influenced by welfare state restructuring in France and expected that front-line social workers could be especially impacted in their practice of “so-called ‘social’ work to compensate for the most flagrant inadequacies of the logic of the market, without being given the means to really do their job” (Bourdieu 1998, p.3). Situating a uniquely professional and moral obligation to engage with the root causes of complex issues is particularly relevant for public health and climate change. Indeed, the depiction of morality in the climate change literature centres on discourses of elitism within the political response (Beck 2010); neocolonialist representations of North-South climate negotiations (Roberts and Parks 2006; Parks and Roberts 2010); and climate change’s implications for poverty and intergenerational equity.
(Adger et al. 2005; Rayner and Malone 2001). From a public health perspective, the moral imperative to act on climate change has received less attention. However, Bourdieu enables us to consider how practitioners with a ‘radical habitus’ might have unique dispositions and interests allowing them to be viewed as ‘moral entrepreneurs’ seeking to influence what is socially acceptable in a field by encouraging the adoption of particular practices (Pfuhl and Henry 1993).

‘Moral entrepreneur’ is a term introduced by Howard Becker (1963) to describe people who benefit from labelling other actors as deviant (Whitehead and Sarver 2010), or particularly active agents who act as either rule creators or rule enforcers (Baumgartner 2008). ‘Moral entrepreneurs’ are also increasingly seen as occupying a broader ‘humanitarian epistemic community’ who do everything from campaigning to ban landmines (Faulkner 2007), addressing poverty, hunger and nutrition through food activism (Hollows and Jones 2010), and ‘place-making’ in contentious legal/political borderlands of the US-Mexico (Taylor 2010). Moral entrepreneurs tend to be particularly effective at creating awareness, challenging the status quo, anticipating emergent outcomes of decisions, and mobilizing power (Yurtsever 2003).

Uncovering the dispositions of these change agents and the material constraints of the field in which they operate can inform an understanding of how and why new practices emerge in particular social arenas, and how they are experienced and interpreted (Martin 2003). By engaging with an emerging field, individuals have the potential to project a ‘moral’ obligation to adapt to the effects of climate change by protecting the health and well-being of populations, and sharing the goals and values of a broader epistemic community in order to promote health and social equity, and social and environmental justice.

Bourdieu’s theoretical perspective seeks to interrogate and understand the dispositions of actors operating in this new field to determine the kinds of logics being taken up (or avoided), and the ways in which particular practices are legitimized or ‘normalized’. Bourdieu’s theory of
practice therefore demonstrates the interplay between the ever changing structure of a field and the agency of public health practitioners in simultaneously engaging with public health discourses that straddle organizational, regional and national contexts, not to mention their own individual interests.

2.4 Conclusion: Next steps and lingering questions

This chapter has identified the relevance of Pierre Bourdieu’s theory of practice to conceptualizing climate change adaptation as an emerging field of public health practice. Several key questions have surfaced for future research.

For example, what are some of the contextual features of those public health units that more actively pursue climate change adaptation or view existing policies and programs through the lens of climate change?; who are the actors that are most successful in pursuing this particular course of action?; and what are the motivations of those actors as situated within an organizational field, and much broader field of public health? While this chapter has begun to address some of these substantive questions, empirical research is needed to further explain current public health adaptations to climate change.

On this point, several important questions remain unanswered: are there commonalities among the dispositions of those champions who act as moral entrepreneurs that naturally lead them to becoming agents of change? How are some practices adopted and others ignored, and in what ways are they legitimated, legitimating or both? Conceptualizing the kinds of resources (i.e. capital) that are meaningful to this field and understanding them in relation to the evolving rules that govern practical action on the field will undoubtedly inform practical implications for policy-making and programming in ways that promote health equity. Due to the recognized
potential for values to influence the policy process (Sabatier and Weible 2007), moral entrepreneurs may come to influence policy development by shifting value discussions amongst various advocacy coalitions in ways that may alter existing discourses of environmental health.

There is a great deal of work yet to be completed before any kind of definitive conclusions can be made about the goals, progress and broader discourse of climate change adaptation, particularly as it relates to the moral agenda of promoting health equity. Nonetheless, such research would make a timely contribution as public health actors are increasingly being expected to respond to climate change by adapting to its effects. Conceptualizing how this work is developing will be useful in deriving lessons that highlight the kinds of conditions that allow new fields to emerge and gain legitimacy among a host of other activities. Moreover, by emphasizing public health’s unique role in addressing the promotion of health equity, this research will be well situated to inform promising and innovative practices that uphold core public health values across multiple contexts.

2.5 References


Chapter II: Theoretical Orientation


Chapter III

Research Methods and Analytic Strategy

3.1 Introduction

This chapter describes the methodological approach taken to address the research questions identified in Chapter I. Specifically, this chapter details the epistemological presuppositions of the general approach including discussions of sampling, data collection, analysis and interpretation of data. Given that the methods utilized to address each subsequent research paper are documented and described in those chapters, this chapter provides a high level overview of the methodological approach employed, and offers a justification for the design and implementation of this research.

3.2 Theoretical and Paradigmatic Orientation

The paradigmatic orientation of this dissertation was adopted to be consistent with the assumptions of qualitative research. Qualitative research is “an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting” (Creswell 1994, p.1-2). The qualitative approach is therefore one attempting to understand certain qualities that may be essential to the nature of a particular phenomenon (Berg 1995; Silverman 2005). In distinguishing between a methodological approach (i.e. the paradigmatic and theoretical
approach I have taken in conducting research) and my research methods (i.e. specific protocols for data collection and analysis), this chapter section outlines the former as a means of grounding the study of climate change adaptation among Ontario public health units in a broader tradition of scholarly investigation.

The qualitative methods of this study have been selected to analyze Ontario’s regionalized public health system, and are informed by influences from the critical social sciences, critical realism and Pierre Bourdieu’s “theory of practice”. While practice theorists come from diverse epistemological and ontological traditions, Bourdieu’s ontology is consistent with a critical realist paradigm (Danermark et al. 2002; Lunnay, Ward and Borlagdan 2011; Reed 2008). Critical realists assert that some objects external to humans can be captured and described by human senses—that we can measure and describe some notion of a material ‘reality’, but that these emerging social realities are negotiated and interpreted by individuals who are a product of a variety of social institutions and discursive structures that evolve over time (Archer 1995; Bhaskar 1998; Guba and Lincoln 2000). Thus, critical realism accounts for multi-faceted interpretations and meanings of objects, subjects, and the very nature of reality itself without falling into forms of relativism and the negation of ‘objective reality’ that beset some other approaches in qualitative research (Madill, Jordan and Shirley 2000). Critical realism is guided by an implicit understanding of the need to explain various features of social life by revealing the (often hidden) mechanisms that (re)produce them (Archer 2010). Critical realists therefore call for greater reconciliation between and integration of interpretive and positivist approaches in research (Connelly 2001) while accepting that the world is socially constructed and any knowledge of an ‘objective’ material world is mediated through language and other forms of human expression. According to Carolan (2012), critical realism is an ideal epistemology for exploring emergent phenomenon:
“Rather than ascribing to essentialism, determinism, and immutability, evolution is non-linear, variable, and directed by forces from both “above” (downward causation) and “below” (upward causation)—all of which are properties that are consistent with critical realism and the concept of an emergent, stratified reality” (Carolan 2005, p. 12).

Epistemologically, the starting assumption of critical realist philosophy is that knowledge is transactional and subjective which implies that knowledge is informed and constructed by human values. Thus, to make visible the practical logics which guide action in everyday life, an exploration of practices and the individual motivations behind particular practices must be undertaken through research to make taken-for-granted forms of knowledge explicit (Custers and Aarts 2010). The theoretical and methodological orientation of this study is therefore uniquely situated to ask how particular ideologies and practices—as unique carriers of power and influence (Bourdieu 1984)—are (re)produced, and how subjective contexts and meanings might be interpreted in ways that address the material constraints of reality.

This project uses Bourdieu’s theoretical tools of habitus, field and capital to frame, organize, analyze and interpret data collected from Ontario’s public health community. Bourdieu’s theoretical apparatus has been useful in exploring how organizations or ‘firms’ can be conceptualized as fields while simultaneously occupying broader social spaces (see Bourdieu 2005), thereby determining, at least in part, the power relations that exist between and within organizations (Emirbayer and Johnson 2008). Since habitus—represented as the embodiment of individual and collective histories and the interplay between the past and present (Holt 2008)—and the rules of a given field (i.e. public health adaptation to climate change) are unable to be viewed objectively and must be interpreted (Reay 2012), my qualitative interviews consider the concept of habitus in relation to the dispositions of public health practitioners working on climate
change adaptation. Following Martin (2003), the ‘motivation’ of public health practitioners are explored as the primary site to observe social structure in action. In other words, one of the primary goals of this study is to observe social structure operating in the context of climate change adaptation and the broader field of public health practice by taking into account how practitioners navigate social spaces as new public health issues emerge or evolve. This approach requires an appreciation for the strategies and techniques practitioners use in their work given the social, organizational or professional contexts in which those practices unfold (Johnson 1993). Thus, the research process seeks to uncover the practices of actors situated in Ontario health units which are forwarded as useful in adapting to climate change, in an attempt to uncover the various mechanisms that dictate the legitimacy of practices in particular social arenas or ‘fields’. Related work has utilized Bourdieu’s theoretical and methodological approaches to understand the public servant’s habitus in Ontario (McDonough 2006), in considering the dispositions of medical practitioners working in hospital infection control (Brown et al. 2008), for detailing the discourses and language employed to discuss climate change in the field of American media (Sonnett 2010), and for outlining the discursive features of ‘professional practice’ more broadly (Kemmis 2010; Tatli 2011).

3.3 Study Design and Methods

This study uses two over-lapping research methods—a web scan and semi-structured interviews—to contribute to an understanding of new fields of practice emerge, and who the key players are in their formation and legitimation. The web scan is comprised of an analysis of 36 Ontario public health unit websites with a particular focus on the environmental health hazards
pages given that is where climate change work is typically located among health units around the province. Interviews were conducted with 20 public health practitioners from 20 of 36 unique health units. This section provides a brief overview of the design and rationale of each method and the sampling characteristics for each data source.

### 3.3.1 Web scan

Web scan data was captured through simple searches of each of the 36 Ontario public health unit websites. A webscan was utilized to familiarize myself with public-facing content about the environmental health activities of each of the 36 health units, to understand the discourses that appear to shape those activities, and to serve the basis for familiarizing myself with interview contexts. For those health units with standalone websites, the search terms “climate change” or “greenhouse gas” or “global warming” were used. For health units websites embedded in municipal or regional web domains, the same search terms were employed with the additional search term “and health”. All websites employed Boolean search operations making the documentation and collection of resulting ‘hits’ straightforward. Screenshots of websites were captured and saved digitally in separate folders according to health units. Screenshots for the environmental health websites (where climate change falls under the OPHS mandate) were also captured in an attempt to see how existing environmental public health practices were framed by each health unit.
3.3.2 Interviews

Semi-structured in-depth interviews were conducted with public health practitioners actively working on climate change as identified in the web scan who are working in public health units around Ontario. In instances where such an individual was not able to be found, I utilized the Ontario Public Health Directory from the Ontario Public Health Association to identify the person primarily responsible for environmental health hazards, of which climate change is a named policy priority. I endeavored to contact at least one person from each of Ontario’s 36 public health units, employing a purposive maximum variation sampling method which is suitable for iterative study designs.

3.3.3 Sampling Strategy: Maximum variation and referral sampling

My sampling strategy was devised to both test and build upon Bourdieu’s theoretical framework. This study employed a theoretical and maximum variation sampling frame to build and verify existing understandings of Bourdieu’s theory of practice. Theoretical sampling is a theory generating tool that iteratively and strategically selects data to collect in order to develop theory as it emerges (Coyne 1997). Since I attempted to obtain an interview from every Ontario health unit, the order with which I selected to conduct interviews was important. My sampling frame was therefore utilized to generate new insights about the phenomenon under study, but it also needed to account for the empirically robust accounts of climate change work according to practitioner habitus and their organizational field. I therefore employed a maximum variation sampling strategy to conduct my interviews.
Maximum variation sampling is a useful strategy in naturalistic and iterative qualitative study designs (Patton 1990). Maximum variation sampling seeks to sample potential interviewees on a range of characteristics relevant to the phenomenon under study, and seeks to capitalize on the variety of ways in which a phenomenon is taken up in practice (Coyne 1997). Sandelowski (1995) differentiates between two types of variation which can aid in the development of a maximum variation sampling frame: demographic variation and phenomenal variation. Demographic variation refers to variation in the demographic profiles of interview participants and is expanded here to include the geographic variation and distribution of health units across Ontario. Phenomenal variation refers to variation on the target phenomenon under study, and in the case of this study refers to the robustness of the public health response to climate change vis-à-vis the communication of health risks and programmatic areas of focus.

This approach to sampling is therefore particularly useful in two regards. First, observations or hypotheses that hold across wide variations in geography, demographics and how the phenomena of interest manifest are likely more robust than those derived from narrower samples. Second, by attuning oneself to the range of manifestations of the phenomena and its experience, or how it is taken up, the researcher is better situated to surface congruencies and nuances to explore with all interviewees.

Following this dual meaning of ‘variation’, I developed an iterative sampling frame rooted in maximizing representation according to geographic location (i.e. one health unit per census division until a census division was exhausted, with a mix of urban, peri-urban and rural areas as defined by census data) and a preliminary understanding of the phenomenon under study as captured through the web scan. In other words, I approached my solicitation of interviews in a more or less phased approach that sought to capture a range of health units according to their degree of engagement with climate change as identified by information from health unit
websites. Thus, each phase of interviews sought to conduct an interview with practitioners from geographically and programmatically unique health units. My sampling strategy—by interviewing a diversity of practitioners at different phases in my research process—was chosen so as to not bias subsequent rounds of interviews based on findings from health units that were too similar in their approach and focus. In other words, conducting interviews solely with large health units from the Greater Toronto Area—many of which are further ahead in developing programs and research on climate change—may have influenced my interpretation of how similar work was or was not being conducted in smaller, rural locales. Further, the first phase of interviews sought to provide insight into the research process and the core questions being posed, with subsequent interviews attending to convergences or divergences in the data across health units (Patton 1990). This approach resulted in 20 completed interviews.

During interviews, I would ask participants for referrals to other practitioners around the province to help triangulate the champions of this work in relation to OPHS protocol and web scan data. Referral sampling is a useful method to access ‘insider populations’ who likely know one another by virtue of their work on climate change adaptation (Atkinson and Flint 2001). Referral sampling is also a unique way to capture emergent knowledge which is intentionally political and interactional by highlighting where knowledge is located according to experts in the field and thereby activating social networks (Curtis et al. 2000; Noy 2008). Referral sampling was used to identify other key informants not previously identified through the web scan, but primarily to assist in identifying additional key informants in place of those who had turned down an interview or for those health units that did not respond to the initial request to participate. Asking interview participants for referrals was the last component of the interview protocol. If participants had contact information not previously identified through the web scan or from previous interviews, they were invited to share publicly accessible email addresses so
that I could contact them directly. In order to protect the anonymity of participants, participants making referrals were not identified by name, and if asked how I came across their involvement in their work, I would indicate that their name came up in conversations with other health unit staff. If they probed further, I would indicate that my research is governed by the University of Toronto Research Ethics Board and that in order to protect the confidentiality of respondents I was unable to share that information.

3.3.4 Interview Protocol

Interviewees were all contacted through publicly available e-mail addresses with a formal request to participate (see Appendix A). The initial contact included a one-page briefing note on the aims of the study (see Appendix B) and the informed consent form (see Appendix C) for them to sign and return to me by email if they agreed to participate. If I did not receive a response, I would send two additional reminder emails to follow-up at weekly intervals. If the organization had another interview candidate, I would then attempt to solicit their interest following the same protocol. Once I heard from each potential interviewee, we would schedule a meeting in person—wherever possible—to overcome issues of ‘distance’ in terms of geographic space and the invisible social space between researcher and subject (Bertrand and Bourdeau 2010). However, given the geographic differences between most health units and Toronto where the study was based, and in order to minimize costs and the ecological impact of the study, electronic interviews were primarily conducted using Skype or Skype to landline functionality (Hanna 2012; Saumure and Given 2011). Skype interviews serve the same purpose as telephone interviews but have the added benefits of video and the fact that interviews can take place at the
location of an interviewee’s choosing, thereby being less intrusive than a physical visit and more accommodating for the participant’s scheduling (Hay-Gibson 2009).

The first round of sampling utilized the same interview guide. However, my first six interviews indicated that climate change adaptation was very much an emerging field of practice, with numerous health units not yet engaging with this topic in any kind of substantive way. This required me to develop a second interview guide for health units that were not particularly far along in their climate change adaptation work. Interview guides for those who were either ‘heavily’ or ‘lightly’ involved in climate change related work are attached in Appendix D. Interviews addressed the structured, structuring and nested nature of this emerging field in relation to the fields of environmental public health and public health practice more broadly, while also addressing the role of agency in the field’s construction, and the dispositions of practitioners working on the climate change file within their organization. In other words, interviews took up the social identities negotiated by practitioners in relation to their participation in this emerging field of practice within the broader organizational context and field of public health practice.

3.4 Analytic and Interpretive Approach

While the previous section of this chapter outlined the protocols for sampling, recruitment and data collection, this section aims to explicate the interpretive methods selected to analyze data. Each section briefly describes the general analytic approach and justifies the
approach in the context of the broader theoretical and paradigmatic orientation of this study. Additionally, each analytic tool is described in full, and the analytic process articulated.

### 3.4.1 Web scan Analysis

Once the web scan data were completed, digital files were saved for analysis. The analysis of web scan materials utilized a summative content analysis to describe which health units had a climate change focus and what that focus looked like in practice. Summative content analysis can be used to identify or quantify particular words or content with the purpose of understanding the contextual use and framings of that content (Graneheim and Lundman 2004; Hsieh and Shannon 2005). As a means of beginning my analysis of web-based materials, a summative content analysis was primarily utilized to identify which health units were engaging with climate change, the health issues that each health unit described in relation to climate change impacts, and the practices each health unit employs to adapt to or mitigate those impacts. The unit of analysis was therefore any climate change-related web-based information that surfaced through the web scan. This information was organized and captured in a Microsoft excel file in relation to health unit geography and size, and served as a preliminary step in understanding the field of climate change adaptation among Ontario health units.

However, summative content analysis is mindful that the data collected still requires interpretation within the context of the research questions being posed (Hsieh and Shannon 2005). Taking the lead from studies that came before my own, a subsequent analysis of web data was informed by a method suggested by Ritchie and Spencer (1994) which identifies key concepts and issues for analysis *a priori* through a review of the literature. Thus, I initially
scanned materials for health issues identified in the Health Canada (2008) document *Human Health in a Changing Climate*. Then, following Tatli (2011), web materials were analyzed by asking particular questions of the data, with a specific focus on: [1] what does climate change adaptation look like in key documents (i.e. how the problem is framed and in what context), [2] the types or families of practices that public health units are utilizing in their adaptation efforts (i.e. the proposed solutions or courses of action and how they are located within the field of public health practice), and [3] who the practitioners are that are working on these issues and how they position their work (i.e. what are their credentials and how might some practitioners more legitimately work on climate change issues than others?).

Throughout this process, I began to develop research memos outlining key findings and areas to pursue further during the interview stage of research. Web scan materials for each health unit were revisited prior to interviews to provide as a working knowledge from which to inform specific interviews. Any additional documents received through interviews were added to the existing web scan materials for subsequent analysis, although interview participants rarely shared additional files or resources.

One key limitation of the web scan is that it does not necessarily capture all of a health unit’s activities directed towards climate change adaptation, and that it is possible that some of this work remains ‘hidden’ from the public gaze. Moreover, the information that is present in these websites is taken at face value, and health unit staff may have different readings of this information or be able to link other areas of practice to climate change adaptation not already listed on an organization’s website.
3.4.2 Interview Analysis

Following the analysis of relevant web-based resources, I turned to interviews as a means of delving deeper into how public health practitioners understand climate change and are making it actionable in their day-to-day practice. Interviews have played a commonplace role in the collection of data in the social sciences (Gubrium and Holstein 2003; Kvale 1996; Platt 2012). In contemporary social science research, postmodern sensibilities inform the increasingly blurred roles in the interview process. This is a direct result of the deployment of new research tools in the conduct of interviews, greater scrutiny of the authority of the researcher in the research process, and increasingly questioning the ‘traditional’ hierarchical relations between interviewer and interviewee (Fontana 2003). Accordingly, interviews are viewed as transactional, inherently social, and necessarily dialogical, which is to say that my research recognizes the interview as co-created by interviewer and interviewee (Frank 2005; Warren 2012). This attitude toward the interview is in-line with the ‘new’ paradigm of qualitative research that has commitments to the emergent relations between interviewer and interviewee; the explicit recognition of the professional, personal and political stances held by the interviewer and interviewee that uses inquiry as a practical mode to fostering political action (Fontana and Frey 2005; Lincoln 1995) among a broader community of practice (in this case, among public health practitioners in Ontario).

My approach to analysis was closely informed by critical discourse analysis (CDA) to examine trends in communication content. CDA is a “type of discourse analytical research that primarily studies the way social power abuse, dominance, and inequality are enacted, reproduced, and resisted by text and talk in the social and political context” (van Dijk 1998, p. 352). CDA recognizes that discourse—spoken or written text, or a set of meanings by which
groups of people communicate about a particular topic—is not value free or value neutral. Rather, power relations themselves are discursive, constituting society and culture as situated in particular historical contexts (Fairclough and Wodak 1997). CDA attends to the ways that “discourse structures enact, confirm, legitimate, reproduce, or challenge relations of power and dominance in society” (van Dijk 1998, p. 353) to explore the relationship between discursive practices and the wider social and cultural structures that guide human processes (Fairclough 2013).

CDA studies language use, communication and discourse at the micro level, and power, dominance and inequality at the macro level in an attempt to bridge these two levels of analysis (Alexander et al. 1987). Following van Dijk (1998), the context of particular communications are part of or constitutive of social structure in action, and CDA can therefore be used to describe the linkages between context and social structure in the production and reproduction of power relations within a field of practice. CDA analyzes power in text by focusing on the control over communication as a symbolic resource (i.e. who controls the communication and for what ends?); the context of each document (i.e. what is its described purpose?); and the structure of talk and text including choice of and changes in topic (van Dijk 1998, p.355-356).

For Bourdieu (1991), “linguistic practice inevitably communicates information about the (differential) manner of communicating, i.e., about the expressive style, which, being perceived and appreciated with reference to the universe of theoretically or practically competing styles, takes on a social value and a symbolic efficacy” (p. 502). In other words, identifying distinct communicative and discursive practices can shed light on the expressly declared intent of a particular text, and also the unconscious production of symbolic meaning, and the reproduction of power relations. Bourdieu has argued that discourse is not only descriptive, but also
prescriptive (Bourdieu 1991); that is, discourse embeds potential courses of action for adapting to climate change within ways of defining it (Sonnett 2010, p.702). CDA is therefore in line with Bourdieu’s cultural and discursive framing of practice in that practices are always culturally and discursively formed or structured and are representative of symbolic meanings in language that legitimize discourses and practices (Kemmis 2010). It is also a tool that is explicitly linked to the epistemology of critical realism in so far as it is a textual analysis, but also an analysis of the discursive features of talk and text able to identify what is not said in an interview (Fairclough 2013).

Indeed, CDA has been a fruitful course of action to operationalize Bourdieu’s theory through textual analysis. In previously published empirical work, Sonnett (2010) outlines how dominant scientific and political discourses are related under the broader media discourse surrounding climate change to illustrate how social action is influenced by the organizational routines of media outlets. Sonnett uses Bourdieu’s concept of symbolic capital to show how power is communicated through language to ‘take up’ positions in discursive fields. Further, Tatli (2011) uses Bourdieu to develop a theoretical framework that highlights discourses in an analysis of the diversity management field by questioning what the discourse in the field looks like, what particular practices are employed on the field, and who is active in the field.

The discursive features present in interview transcripts form the basis of my analysis according to the broad class of discourse types that emerge through conversation (Riessman 2012). In other words, the recounting of particular events or features of climate change adaptation work can provide a ‘sense’ of the objective social world within environmental public health by paying attention to the kinds of discourses evoked in conversation which can be useful in capturing the often invisible interplay between structure and agency (King and Horrocks
Soliciting contextualized accounts from public health practitioners that address this unique interplay was used to address ‘the rules’ that structure climate change adaptation in Ontario’s public health field and associated practices at the individual and organizational level.

More specifically, my interviews picked up on the structured and structuring nature of fields in the Bourdieusian sense, while also addressing the role of practitioner agency in field construction/co-creation, and the varied dispositions of practitioners who work in this area. As described below, my process for analyzing interview data unfolded through an iterative process of qualitative inquiry to interrogate and interpret the discursive framing of Bourdieusian fields.

3.4.3 Field Notes

The analysis of interviews began with collecting field notes to assist me in recalling the tone and context of each interview. Field notes contained information regarding how the interview went, what questions ‘worked’ better or worse than others, notes on things that were overlooked, themes that seemed important, and the logistical details of the interview. During interviews, I would jot down ideas or key points to consider or that were emphasized by interview participants. Often, these notes would be used to generate prompts and ask clarifying questions. Following the interview, I would write anything else of note or anything in particular that stood out for me from the interview that had just been completed. Thus, field notes served as a preliminary insight generating tool from which to begin a more targeted analysis of interview transcripts using detailed notes and memos.
3.4.4 Transcription

Transcripts of each interview were produced, typically immediately following the conduct of each interview to document the interaction while it was still fresh in my mind, and to capture aspects of the tenor of each interview which may have otherwise been lost with time. I transcribed interviews using InqScribe software and a three-phase method to ensure accuracy of transcripts.

In the context of this study, accuracy in transcription stems from my critical realist epistemology whereby I believe that I can capture the intent of an interviewee through a rigorous accounting of our recorded conversation. However, the act of transcribing is, in and of itself, an interpretive act which required me to ‘read into’ the audio and translate it to text. The act of translating from one medium to another complicates the analysis insofar as transcription is a practice imbued with meaning (Buscholtz 2000). A misplaced comma, a missing word, or a muffled sound misinterpreted can drastically alter the interview participant’s interpretation of their own social reality.

In recognizing the delicate nature of this translation process, I first took a first pass at producing the transcript following appropriate protocols for transcription (Tilley 2007). I would then listen through interviews while reading the newly produced transcript, making necessary changes and fixing any errors that may have been produced in the initial phase. I would then take the edited transcript and read it through one last time with the tape rolling. Field notes were appended to transcripts to provide further context to the interview (Poland 1995).
3.4.5 Data Management: Content Familiarization and Organization

Following transcription, I began to actively organize and familiarize myself with my data. Separate digital folders were created for each interview transcript with an associated file of memos. I began to re-listen to interview audio while re-reading transcripts, recording memos in relation to specific passages that seemed to stand out to me, or documenting points that seemed to be emphasized by the interview participant. These readings of transcripts served not only to familiarize myself with my data, but to encourage the development of preliminary analytic insights within the data. After a series of two readings with audio, I began a new phase to (re-)organize and further analyze my data. The next step in my analysis was separated into two distinct phases: the creation of a cross-case display matrix and case summaries.

3.4.5.1 Cross-case Display Matrix

Following preliminary readings of transcripts, I began to organize my interviews with the aid of a cross-case display matrix (Miles and Huberman 1994). A cross-case display matrix is a visual representation of data in the form of a chart that enables comparisons across interviews or case study sites according to key variables of interest. Thus, this form of data organization treats data as a collection of social facts developed through the process of transcription, but requiring interpretation into how that data fits generic categories of analytic interest. My cross-case display matrix captured: the respondent’s name; their health unit; the census division (i.e. region) where the health unit is located; whether the health unit was primarily rural, urban or a mix of the two (based on Statistics Canada data); specific programmatic areas the respondent articulated as
being linked to climate change adaptation; the challenges of engaging in climate change related work; the assets or resources that were seen as most beneficial for engaging with climate change from a public health perspective; partnering agencies or organizations; and how health equity was factored into existing environmental health programming.

The ‘literal contextualization’ of my data in the form of a matrix sought to descriptively explore regional differences between research sites (i.e. context) and is rooted in a taken-for-granted assumption that transcripts operate as data linked explicitly to interview contexts (Stenvoll and Svensson 2011). Given that climate change holds the potential to impact areas of Ontario differently, I analyzed different regions (i.e. census divisions) according to their practical focus on climate change adaptation. The utility of this phase of my analysis was in enabling the description of key characteristics or dispositions of different practitioners according to their organizational context—in concert with webscan data—while facilitating comparisons between health units and across geographical regions on the various aspects of climate change work being conducted. Moreover, I continually updated and added to the existing memo file for each interview while completing the table, and subsequently created a master memo file that contained working thoughts on phenomena that were occurring across some or all cases including the documentation of counter factual instances related to early working hypotheses. A drawback of the cross-case display matrix is that it yielded a highly descriptive account of the data, taking respondent viewpoints ‘as given’. In other words, I was required to make relatively low-level interpretive decisions about what to include in the table, especially since the table categories were roughly organized around my interview guide. Thus, this approach is not particularly attuned to the co-created nature of the interviews and the broader contextual features that influenced how or why interviewees responded the way they did.
The second phase of data organization and interpretation delved deeper still in an attempt to account for the multiple contexts or ‘fields’ in which interview participants are situated, while also paying closer attention to the interviewer/interviewee relationship. Following the creation of the matrix, I created a condensed one- or two-page summary of the interviews based on my field notes and a minimum of three separate reading of transcripts.

Multiple readings of transcripts can “provide a broad, yet elastic, context for understanding the activities and their consequences within the institutional purview” (Holstein and Gubrium 2004, p.269) of the organizational field, and the broader field of public health practice, while allowing the analytic ability to reconcile the uniqueness of respondents with the need for a more general understanding of generic processes that occur across organizations and institutions (Miles and Huberman 1994). Following Tatli (2011), each reading sought to answer one of three key questions: first, who are the interviewees in each case in terms of training, experience, and occupational trajectory; second, what does the discourse of climate change adaptation look like for this practitioner (how is the problem defined and for whom?); and third, what are the underlying logics, rationales or motivations underlying specific types of climate change projects and programs?

The production of case summaries served as fruitful synopses of individual interviews that gave a preliminary overview of how dominant or ‘taken for granted logics’ were at play in shaping practical action within the field of environmental public health. The development of these case summaries relied entirely on my interpretation of interview talk-as-text, including
some preliminary ‘reading between the lines’ to assess the dominant and subversive discourses at play that enable the pursuit of some practices and constrain the uptake of others. In other words, the case summaries were intended to go beyond a critical commonsense understanding of the interviews and to begin developing a theoretical understanding of interview content (Kvale 2009), loosely guided by practice theory (see Giddens 1984; Shove, Pantzar and Watson 2012; Schatzki 2001), and more specifically Pierre Bourdieu’s logic of practice (1984; 1990). In other words, each of the three questions above were considered through the lens of Bourdieu’s tools of field, habitus, capital and practice in an attempt to identify key players, resources, and the structures that guide practical action on public health adaptation to climate change.

3.4.5.3 Category Zooming

It became almost immediately clear that in order to understand who these practitioners were, I would be required to understand the ‘logics’ at play in how public health actors framed their work in relation to climate change, and how those logics were situated in relation to the multiple nested contexts or ‘fields’ in which interview participant’s social worlds exist. Despite Bourdieu’s robust theoretical framework, he offers few analytic tools or procedures to unwrap the contextual relevance of multiple fields. It was therefore necessary to employ an amended version of Pamphilon’s (1993) ‘analytic zoom’ to conduct specific readings of transcripts for the individual, their organization, and the broader field of professional practice in relation to the emerging field of climate change adaptation. By delving more deeply into understanding how distinct sub-fields of public health interact with one another and how the logics overlap or were in conflict, I was able to garner a greater sense of the distinction between the logics of those
fields and the relative influence of the individual on a field’s evolution which was in concert with how fields structure individual action.

Using the cross-case display matrix and case summaries—in combination with memos produced throughout my analytic process—I began to distill ideas for several papers to be written to contribute towards my dissertation that would address my core research questions. The first paper sought to clarify the importance of field legitimation, including the relative interplay between fields and social actors in shaping the logic of the field of climate change adaptation. A second paper idea stemmed from a desire to articulate how practitioners interpret and take up the OPHS policy related to climate change. The third paper idea sought to address my final research objective by commenting on the role that health equity plays in climate change adaptation in Ontario’s public health sector. In order to fully explore these ideas, I employed an approach that approximates what Halkier (2011) refers to as ‘category zooming’—a form of data generalization that ‘zooms in’ on a particular aspect of qualitative inquiry with the goal of going into greater interpretive depth about the complexities of a single point (in my case, three points) in the broader study. This approach allows the qualitative analyst to start on areas of interest within the data. Methodologically, this approach “can be used to underline the contingency of types and categories” (Halkier 2011, p.793) to make general inferences about patterns in the data. In my case, the categories of ‘field’, ‘policy uptake’, and ‘health equity’ were the specific types of categories I was interested in pursuing.

I employed three specific categorical zooms according to independent readings of each transcript, highlighting instances of relevance for each analytic query. For the first paper, I employed the notion of nested context to ‘get at’ the logics of each of the fields in which practitioners were situated to compare, contrast and interpret individual understandings of the
‘rules’ of environmental public health in relation to climate change adaptation and the broader professional field. The framings of identified fields were compiled, paying particular attention to language in use in the data and counter factual instances related to specific discursive strategies employed by interview participants to contextualize their work. For the second paper, I analyzed transcripts through a policy lens, paying particular attention to practitioner interpretations of the OPHS, how those interpretations manifested in specific types of programs, and who the champion was that was doing the interpreting. For the final paper, I employed a similar process above by honing in on specific aspects of transcripts where health equity issues were present, and developed a thematic analysis around that particular topic.

For each of the three empirical papers identified above (see Chapters IV, V and VI), I was required to analyze transcripts through the lens of the social phenomenon under study (i.e. field creation, public health policy implementation, and health equity) (Frost et al. 2010). I memoed extensively during this targeted phase of my analysis. For all readings of a given transcript, I attempted to cluster or group together sections of text based on shared patterns of action, single cases, and an appraisal of contradictory evidence (Bradley et al. 2007; Miles and Huberman 1994). Memos were developed and compared to assess similarities, differences, and contextual nuance across interviews (Brown and Gilligan 1992).

The utility of this approach lies in its ability to investigate specific areas of interest within my data in a targeted way that meets academic requirements while expediting the peer-review publishing process (e.g. developing a dissertation monography and then writing papers from that pre-written material). By expressly targeting the analysis for specific papers based on previous stages of my analysis, my writing process was also simplified as I could target the account of my theory, methods and findings accordingly. Recognizing I will likely be unable to fully ‘mine’ all
of the data that is present within my 20 interviews, this approach allowed me to expressly address many of my research questions by combining it with the use of analytic memos. The drawback of this approach is that it may be biased towards answering my initial research questions based on my own strategic interests. The decision to proceed with this particular methodological framing was therefore made at the expense of a more detailed global understanding of my data that may have been made possible through more conventional approaches to data analysis (e.g. open coding). However, because my project is not about building theory (à la grounded theory), but rather utilizing a specific theoretical framing to inform the understanding of an emergent phenomenon, this approach was both suitable and useful.

3.4.5.4 Writing

Writing qualitative research is a “creative process involving authors, knowledge of relevant theoretical conversations, field experiences, and readers of our work in progress. Storylines emerge, then from an iterative meaning-making process in which authors simultaneously consider the learnings disclosed in the fieldwork” (Golden-Biddle and Locke 1997). Writing therefore represents the author’s attempt at participating in broader conversations with substantive, theoretical and methodological scholarly literature. Writing can coincidentally be conceived as the ability to synthesize research findings into a coherent ‘story’ formed from the interpretation of relevant data sources. Writing is therefore a means of communicating research findings with particular audiences and the broader public, but also an analytic tool allowing authors to engage with themselves, their readership and their subject matter in tandem.
As Pauline Evans succinctly put it, “the act of writing helps me to think. I think to write; I write to think” (Evans 2000, p. 270).

I utilized writing as a heuristic tool throughout my analytic process. As I compiled ideas, writing served as a tool to confirm hypotheses, compare interviews across contexts, and delve deeper into my own analysis and my relationship to the core research questions of the study. When utilizing the category zooming approach, memos began to isolate particular theoretical storylines and emphasize key characters, plots, and settings. Writing served as a means to bring these elements together in three succinct accounts. Given the analytic techniques identified above, my writing process sought to attend to striking a balance among description, analysis and interpretation based on identified themes and core analytic concepts that surfaced in the data (Sandelowski 1998).

### 3.5 Ethical Issues and Considerations

Ethics approval for this study was granted from the Research Ethics Board at the University of Toronto (Protocol Reference #28684). Participants consented to participate by signing a consent form prior to the interview and forwarding it to me by email. Prior to conducting the interview, I described the process of informed consent verbally, including the participant’s right to withdraw from the study at any time, including up to one week after the interview was completed. Once consent was obtained, the interview would begin.

Because study participants were all working public health professionals, and the community of practitioners is relatively small, I utilize a pseudonym to prevent participant
identification. Moreover, in order to fully protect the identity of participants, and because climate change is still perceived as a highly political issue, I have purposefully excluded the names of corresponding health units and their positions within the organization. Due to the specific nature of some projects, I do not use passages that would easily identify the interview respondent or their health unit. No ethical issues arose over the course of this study. None of my interview participants decided to withdraw and to the best of my knowledge, the anonymity of all interview participants has been preserved.

3.6 Reflection on Power and Reflexivity in the Research Process

3.6.1 Personal Disclosure of Motivation to Engage with Climate Change in Public Health

I approached my doctoral dissertation with broad interests in environmental public health and personal commitments to environmental justice and concerns regarding future climate change. My motivations for engaging in this work stem from an understanding that adaptation and mitigation efforts are well underway in communities around the world, but that public health as a sector is largely lagging behind others (Maibach et al. 2008). Moreover, the health impacts of climate change on Canadian communities could be significant, particularly for those populations who already bear a disproportionate burden of illness (Health Canada 2008).

My interests in this area led to authoring two of Canada’s first comprehensive climate change and health assessments for the Regional Municipality of Peel (in collaboration with Peel Public Health) and the City of London and Middlesex-County (in collaboration with Middlesex-
London Health Unit and Health Canada). This work was among the first in the world to document, describe and project existing and future vulnerability to climate change impacts as a function of exposure, sensitivity and adaptive capacity. In attempting to ‘tell the story’ of vulnerability in each community, we followed a newly adapted methodology developed by the World Health Organization and Pan-American Health Organization. The conduct of these assessments was one of my first professional opportunities to deeply engage with professional public health practice in Ontario. What I found particularly startling about assessment and reporting protocols was the overwhelming emphasis on quantitative evidence and a seeming obsession with assessing ‘risk’. The deeply internalized nature of the exposure/outcome pathway therefore informed the vast majority of our assessment approach, but given the fact that this field was still emerging, the quality (and quantity) of the evidence presented unique challenges in reporting. The highly politicized nature of what evidence is considered ‘robust’ or not, therefore reproduced a dominant biomedical model of characterizing health and ill-health, inhibiting the ability to go ‘upstream’ to address the root causes of climate change, or at the very least, the root causes of the inequities which promote vulnerability in the first place.

Frustrated by the need to more fully address the social, political, environmental and economic causes of climate change and its resulting health implications, I decided to utilize my doctoral dissertation to better understand how logics of practice inform public health action, particularly on a field that is relatively new. Thus, the ‘standpoint’ from which I conducted this study was primarily academic and emancipatory; to assist practitioners more proactively engage with looming environmental crises and to critically appraise those practices that are more or less successful in facilitating a public health approach that can successfully adapt to the health impacts of climate change. Fortunately, my participation in a more conventional ‘risk-based
analysis’ of climate change and public health offered me a good deal of credibility within public health circles, and I am indebted to these opportunities for facilitating access to my interviewees.

### 3.6.2 Reflexivity in the Research Process

On this note, I believe it is important to clarify the role of power in the process of undertaking this study. In interview research, the social position of researcher and the researched is a central concern. Thus, social differences may become magnified as a result of structured power relations based on differences in age, gender, class, sexuality, race/ethnicity, etc., and these power relations in turn inform my own relationship to the study, interview participants, data, analysis and writing. In the field of cultural sociology, social difference has often been interpreted in relation to the status of researchers as insiders or outsiders based on their position within a given culture. Power is always implicated in social research, and researchers are now almost universally required to explicate their own social positions, beliefs and practices in relation to the knowledge that is being produced (Mauthner and Doucet 1998).

All of my interviews were conducted over the phone, which may have minimized some of the immediate embodied distinctions in power relations (e.g. along the lines of racial/ethnic or class lines). However, in order to address potential imbalances of power and my own personal biases throughout the interview process, I took a reflexive approach to account for my own ideas and social position in relation to the co-created data collected in the interview process (Cooper and Burnett 2006).

Bourdieu utilizes the term ‘epistemic reflexivity’ to go beyond a superficial identification of the researcher’s social position (e.g. I am a white, thirty-something, male graduate student...
from a working class family who arrived at the topic of my dissertation from professional experience working on climate change adaptation with Ontario public health units) to identify how I embody intellectual biases within the academic field (Bourdieu and Wacquant 1992). Moreover, I sought to actively reflect on my research in a way that would be productive, given that an excessive emphasis on reflexive activities can inhibit intellectual entrepreneurship (Cutliffe 2003). For Bourdieu (1990), reflexive analysis needs to not only question the assumptions behind the research, but also the objective structures of the academic field and the habitus of all occupying players, including the researcher.

However, according to Bourdieu and Wacquant (1992), epistemic reflexivity may be impossible to achieve as an individual. This means I am limited in my ability to analyze the social relations between myself as a researcher and the knowledge claims I make without external support in the form of academic critique or through the interrogation of my knowledge claims by readers. Indeed a valid critique of reflexivity lies in the claim that researchers are unable to transcend the effects of a field because the social positioning of knowledge is partly determined by the field itself (Maton 2003). Working from these constraints, I draw from Bourdieu’s notion of epistemic reflexivity to confront my own analytic and theoretical biases when interpreting and writing up knowledge claims, asking: am I truly generating new knowledge, or is this merely a reflection of my predetermined theoretical beliefs, and is the former more or less problematic than the latter?

In an attempt to come to terms with a reflexivity that will therefore always be partial and unfinished, I attempted to account for my own positioning within this field of practice and my own research interests (as recommended by Bourdieu (2003)) which value health equity as an important aspect of public health practice, and to reflexively read interview transcripts for my
own voice to interrogate how my own background, history and experience in relation to that of the respondent might shape the interview (Brown and Gilligan 1992).

Beyond personal reflection, I was particularly attentive to the context of each interview (i.e. the personal dynamics between researcher and researched, as well as the respective context of each health unit being represented in the interview process). Attention to the personal and organizational contexts of research participants helped to explore how my own experiences in this field of practice shaped my interpretation of participants’ viewpoints (Ellingson 1998). I strived to retain a sense of openness towards participants’ perspectives in an attempt to reconcile them with my own (Finlay 2008). In doing so, I try to move beyond the problematic of personal narcissism in reflexivity (Weick 2002) to embrace a more uncomfortable form of reflexivity that allowed my preconceptions to be challenged, and my pre-existing beliefs concerning my subject matter—including my epistemological and theoretical positions (see Chapter II for more detail)—to be changed (Pillow 2003).

### 3.7 Study Limitations

Since I have attempted to capture some of the strengths and limitations of my methodological approach over the course of this chapter, I would like to identify a few additional limitations in the broadest sense that should be considered while reading the remainder of this dissertation.

First, this study captures the accounts of only 20 public health practitioners from 20 of 36 health units in the context of the public health sector in Ontario. Since field creation and
formation likely follows different processes in other provinces and regions around the world, the results need to be applied to other contexts cautiously, especially in these early stages of an emerging field. Qualitative research provides a complex and nuanced depiction of the processes in a social situation, so its utility is in how such nuanced, complex processes may be similar to or divergent from those operating in other contexts (Graneheim and Lundman 2005; Krefting 1991; Shenton 2004). Transferability (rather than generalizability, which masks contextual factors) in such research is in its ability to be used by scholars and practitioners to understand these other contexts (Gobo 2004). Future research to build on this work in regions outside of Ontario and sectors beyond public health will enable a more fulsome discussion of the transferability of this work.

Despite having reasonably good representation of health units across Ontario’s various census divisions, capturing the perspectives of only 20 practitioners may be problematic. For example, as indicated later in this dissertation, the bulk of the climate change work being undertaken around the province takes place in the Greater Golden Horseshoe area on the northern and western shores of Lake Ontario. Due to the population size, density, primarily urban land use, and relatively dense array of environmental organizations working on climate issues, this is not surprising. However, it was clear in interviews with practitioners from these organizations that multiple people were working on the climate change file. Thus, by not interviewing multiple people within a single organization, I may not have adequately captured the diverse ways in which practices hold meaning and are reproduced across space and time.

Interviewing a single respondent from each health unit was nonetheless beneficial for at least two reasons. First, for health units occupying rural and northern areas, there was typically only a single staff member responsible for climate-related work and I was therefore able to
discuss their programming and practice with the most knowledgeable staff member. Second, for larger health units with multiple individuals, past research (see Paterson et al. 2012) has utilized a focus group methodology to assess adaptive capacity of the public health sector which may have inadvertently privileged managerial voices and underplayed perspectives of other staff present who felt they could not give voice to their concerns. The benefit of conducting single interviews and protecting the anonymity of interview participants is therefore to capture a more candid account of how climate change adaptation work is unfolding, and how certain practices are imbued with power and influenced by organizational hierarchies.

A second limitation of this research is that due to the emerging nature of climate change adaptation in Ontario, and indeed, the rest of the world, this study’s results will be time-sensitive. In other words, this work sought to understand how fields develop and become legitimated based on the practical engagement with a particular issue. It is therefore well-positioned to make substantive conclusions on the subject matter, given that these conclusions may only hold relevance for a limited window of time.

However, all research is only relevant for a limited time, particularly under conditions characterized by dynamic social processes. Given that fields are configurations of social relations, these relations will necessarily shift. The utility in this work therefore lies in its ability to capture the trajectory of a field to inform an understanding of its development over time. Indeed, as the field of climate change adaptation continues to evolve, old logics of practice will be challenged and new practices will undoubtedly emerge providing new lessons for how social change is understood in the context of professional public health practice. Moreover, given the interpretive stance of this research, my account of the data will always be somewhat partial given my pre-existing engagement with environmental public health, and given the fact that I have
been trained as a critical social science scholar. My commitment to critical scholarly endeavors is therefore always at the centre of my analysis, and despite trying to overcome personal and intellectual biases through reflexive readings of my data, this reflexivity will always be tentative and partial for the reasons discussed in an earlier section of this chapter.

An additional limitation of this study is the degree to which it relies on Pierre Bourdieu’s theoretical apparatus to engage with the concepts of structure and agency in relation to field formation and development over time. While I situate Bourdieu’s work within the broader tradition of ‘practice theory’, it is his work that primarily informs my theoretical biases, whereas I could have just as easily drawn from other practice theorists, which as a body of work, is rather diverse in its application.

Nonetheless, I think it is worth noting that my thinking when developing this dissertation was heavily influenced by the work of Michel Foucault, Anthony Giddens, Theodore Schatzki and Elizabeth Shove. Foucauldian traditions in discourse analysis largely informed my methodological approach to data analysis. By emphasizing the discursive strategies employed by practitioners in inviting them to comment on their practices addressing climate change adaptation, I was able to observe power at work. Giddens’ (1984) structuration theory—a form of poststructuralist thought that claims any analysis of the reproduction of social structures must focus on macro and micro analyses of study phenomenon—served as a constant reminder to privilege neither structure nor agency in my analysis of social fields, but rather the interplay between the two. Schatzki’s more phenomenological orientation to social practices is largely rooted in the work of Bourdieu and Giddens, and I found his work particularly encouraging in focusing my attention on specific practices and how “understanding these structures/intelligibility is the basic ordering medium for social existence” (Schatzki 1996, p.12).
Schatzki’s take on social practice required me to consider how particular practices function as learned abilities through regular and repeated action, how they unfold over space and time which is linked the rules or principles of their creation, and that practice can be simultaneously performative and a continuous happening in how it helps to organize groups and structure beliefs (Schatzki 2001). This point was further elaborated on in Elizabeth Shove’s work which I also found highly instructive in my analytic thinking and writing. Shove, Pantzar and Watson (2012) forced me to consider how practices carry meaning, require particular competencies, and can become artefacts of social existence. The meanings, materials and competencies required to wield a practice must therefore be interpreted within the context of broader social fields and the rules and structures which influence them.

It is therefore fair to say that I gleaned wisdom from numerous practice theorists in designing my study and undertaking subsequent analysis. However, Bourdieu’s work resonated on a deeper level, primarily because it represents some of the most rigorous thinking on the topic of practice among contemporary social theorists. Moreover, numerous practice theorists today evoke Bourdieu’s work to support their own, and Giddens, Schatzki and Shove are heavily influenced by Bourdieu’s conceptualization of practice, as well as his primary thinking tools of field, habitus, and capital.

3.8 Comment on Analytic Rigor

In order to evaluate the rigor or quality of qualitative research, Seale (2004) suggests three areas of evaluation including [1] the relevance of the research question; [2] the plausibility of the claims made through analytic investigation; and [3] the evidence employed to support
research claims. Expanding upon this characterization of qualitative research, I engaged with Caelli et al.’s (2003) criteria to further enhance my methodological rigor by [1] noting my own position within my research project; [2] distinguishing my research methods from my overarching methodological strategy; [3] making explicit my approach to rigor; and [4] identifying my analytic lens and techniques. Recognizing the critical realist epistemology that underlies this study’s theory and methods, it is important to reiterate that interpretive research emphasizes that there are multiple ways of ‘knowing’ the social world, and that analytic richness and depth are preferred over breadth. Thus, qualitative research is ostensibly concerned with the trustworthiness of a knowledge claim as opposed to its validity (Gubrium and Holstein 2003).

In order to be accountable to my data, it was important for me to fully explicate the notion of context throughout the study to enhance the readers’ ability to engage with my participants’ voices and draw their own conclusions about how the field of climate change adaptation is unfolding across Ontario’s public health units. By transparently articulating my analytic process and placing my data in the context of practitioner’s professional lives, their organizations, and their own interpretations of the broader field of professional practice, I thereby invite readers to interrogate the reliability of my interpretations through a deeper engagement with the research practices that produced them and the substantive findings (Eakin and Mykhalovsky 2003).

In summary, my methodological and analytic rigor stems from my ability to choose a set of methods (i.e. web-analysis and in-depth, semi-structured interviews) and a set of analytic techniques suitable for addressing my core research questions. It is further enhanced by making clear connections to the existing theoretical literature on social practices. I have attempted to account for my own research practices in sampling and collecting data while systematically
documenting my analytic procedures and the limitations associated with these approaches. This enabled me to pay close attention to my collected data and my own interpretations of that data. To complete more in-depth analysis and interpretation, I combined multiple analytic phases and procedures in an iterative process that created an in-depth familiarization with my data. Finally, a significant amount of ‘dialoguing’ between myself as researcher and my data collected occurred throughout my research process. As a result of the reflexive orientation I took towards my study, I was able to arrive at interpretations that are grounded in my data. By preserving the individual uniqueness of interviewees and encouraging relational comparison across groups of actors, organizations or institutions (Noblit and Hare 1983) I was able to explain the structure of a field and the positions of the actors occupying that social space.

3.9 Conclusion

This chapter describes the methodological approach taken in analyzing the emerging field of public health adaptation to climate change. The strengths and limitations of the approach (i.e. qualitative web scan and in-depth interviews) are laid out in relation to theoretical and substantive goals of this investigation. Moreover, I have attempted to comment on my own positionality in the research process to uncover critical procedural, ethical and reflexive issues in conducting this study.
Chapter III: Research Methods and Analytic Strategy

3.10 References


Chapter III: Research Methods and Analytic Strategy


Chapter IV

“We’re all brave pioneers on this road”: A Bourdieusian analysis of field creation for public health adaptation to climate change in Ontario, Canada

N.B. At the time of submitting this dissertation, this paper was submitted for peer-review to the journal Sociology of Health and Illness, and I await the editorial decision.

Abstract. Despite significant engagement with new and emerging issues in public health practice, the public health literature has few theoretical explanations for how social change occurs across its professional field. In this contribution, I utilize Pierre Bourdieu’s sociological concepts and in-depth interviews with public health practitioners to document and describe the emerging field of public health practice in Ontario, Canada. This paper describes pathways to change in Bourdieu’s work before applying his conceptual tools to develop a typology of action on climate change adaptation in Ontario. This typology is discussed in relation to the dominant and emerging logics that practitioners ascribe to promoting practical action on this sub-field of environmental health practice. A key finding is that the expansion and legitimation of new fields of public health practice is not possible without significant personal and organizational risks, which can be understood in the context of the Bourdieusian notion of ‘social suffering’.

Implications for a theory of social change in public health practice are discussed.

4.1 Introduction

Public health adaptation to climate change is an emerging field of practice (Buse and Poland, in press). To date, local, regional, national and international public health actors (CDC 2014; Health Canada 2008; WHO 2012; WHO/PAHO 2012) have documented the health
impacts associated with global climate change, and are beginning to design interventions to prevent growing social and healthcare costs which are estimated to be in the billions of dollars world-wide (WHO/WMO 2012). Adaptation refers to the ability of a system to adjust to climate change (IPCC 2013). While we know a great deal about the practical challenges associated with engaging in public health adaptation to climate change (see for example, Huang et al. 2011; Maibach et al. 2008), less is known about how new fields of practice emerge. This is especially true within public health as a discipline, signaling the need for an analysis of how actors take up new or emerging health concerns in light of their existing public health training and professional (pre-)dispositions.

This chapter takes a Bourdieusian perspective on social practices to more fully understand the public health response to climate change. Using data from in-depth interviews with public health practitioners working on climate change adaptation in Ontario, Canada, I demonstrate how traditional approaches to public health continue to be reproduced in and through responses to new problems and issues. These results help to build a typology of social change to reveal how particular approaches become taken-for-granted within public health organizations and the broader field of public health. In doing so, I describe how professionals responsible for promoting and protecting the public’s health are actively involved in field creation and legitimating new ways of ‘practicing’ public health, and how innovation is challenged by dominant power structures and hierarchies at play within the professional discourse of environmental public health and public health at large. What follows is simultaneously a critical sociology of and for public health; to empirically build upon Bourdieu’s theory of social and cultural change, and to provide emergent insights into how public health actors can better adapt to what has been identified by Costello et al. (2009) as one of the most significant health concerns of the 21st century.
4.2 Practice theories of change and the sociology of Pierre Bourdieu

The ‘practice turn’ in contemporary social theory responds to the rise of individualism, structuralism, systems theory, humanism and poststructuralism in the sociological literature (Schatzki, Knorr-Cetina and von Savigny 2001). Practices are understood as the site of the social where meaning is negotiated, and structure and agency are simultaneously expressed. Practices structure and articulate relations of power, subtly illuminating conscious and unconscious motivations behind individual and group action. Practice theory has been applied to study climate change (Shove 2010), culture (Reckwitz 2002), organizations (Whittington 2011) and the sustainability discourse (Rettie, Burchell and Riley 2012; Shove and Walker 2010; Spaargaren 2011).

Analyzing ‘practice’ goes beyond individual analyses to comment on the persistence of social acts, and the barriers to changing the conditions that organize the everyday (Hargreaves 2011). Practice theorists articulate change as resulting from of the negotiating and incorporating of new forms of competence into everyday life through the reinvention of old practices, or the merging of images and artefacts associated with new practices in ways that facilitate their broader cultural circulation and uptake (Shove and Pantzar 2005). Practices are altered when images and artefacts change the popular imagination of practitioners (Shove and Walker 2010; Shove, Pantzar and Watson 2012). Geels and Schot (2007) claim that changes in practices occur as a result of three specific processes: [1] the successful piloting of ‘niche innovations’ and the learning processes that result which can gain support from powerful actors; [2] external pressures
that require a change in behavior; or [3] the breakdown of existing rules in a specific field (p. 400).

4.3 Bourdieu’s Theory of Practice

Pierre Bourdieu (1930-2002) is perhaps the world’s most prominent and celebrated practice theorist who sought to integrate structure and agency to develop emergent analytic insights into social life (Bourdieu 1977). Bourdieu (1984) famously used the equation (Habitus x capital)+ Field = Practice (p.101) to describe the inseparability of his core conceptual tools.

Habitus can be conceptualized as the culmination of psychological and bodily dispositions. It is both the product and producer of itself; that is, habitus is a collection of individual and collective histories inscribed on the body resulting in a dynamic expression of both the past and present (Reay 2012). Capital—which Bourdieu divided into economic, cultural, social and symbolic forms—refers to the kinds of ‘legitimate’ resources able to be competed over, acquired or ‘spent’ in a given field. Capital interacts directly with a practitioner’s dispositions in a field of play. Field refers to an endless array of stylistic preferences; a collection of social spaces with predefined rules or logics (what Bourdieu termed doxa) occupied by ‘players’ who compete over the ability to determine what resources and actions are considered legitimate. According to Grenfell and James (2012), “what is thinkable and unthinkable, expressible and inexpressible, and valued or not, is the product of the field structures within which they arise and the principles of legitimation operating there. This legitimation establishes an orthodoxy—or doxa” (p. 509, original emphasis). Fields are innumerable, all with their own
relatively autonomous logics (Friedland 2009). Figure 3 depicts the relationship between these elements in the context of public health adaptation to climate change (i.e. ‘practice’).

**Figure 3. Adaptation to climate change in public health practice according to Bourdieu’s ‘Logic of Practice’**

It is worth noting that fields exist within other fields, and the broader field of public health is comprised of numerous fields of practice. A sub-field within public health is environmental public health, for example, and within it, the emerging field of climate change adaptation in Ontario. Moreover, public health units—as organizations (Bourdieu 2005)—are fields comprised of social actors competing over capital, recognition, and the right to determine which public health issues require the greatest attention. Recognizing the nested nature of fields is necessary to conceptualize how logics permeate the boundaries of fields, and how power relations may privilege some professional competencies over others.
Following Bourdieu, this work assumes that practices are the embodied representation of dispositions and the structuring nature of a field of professional practice. Bourdieu’s field raises questions such as: Where do fields come from? How and why are they created, by whom, and to what end? These questions prompt scholars and researchers to attend to the social construction of emerging fields of practice as for investigation. It is the contention of this paper that understanding field creation will compliment and build upon our existing understanding of social and cultural change in Bourdieu’s collection of work, and in public health more specifically.

4.4 Pathways to change in Bourdieu’s work

Field creation has received relatively little attention among Bourdieusian scholars who are quick to critique Bourdieu’s logic of practice for leaving little room for social change (Alexander 1995; Jenkins 2000). Such critiques argue that Bourdieu is overly deterministic in the deployment of habitus in reproducing social orders over time (King 2000).

However, David Swartz (1997, p. 213-214) outlines three potential avenues for cultural reproduction or change in Bourdieu’s work. The first path occurs in instances where the habitus is particularly well aligned with the logic of a field in a way that produces practices corresponding to existing field structures. This phenomenon can be thought of as cultural reproduction, or the absence of change. The second path is one where the expectations and dispositions of habitus do not sync with the rules in a given field. Termed ‘hysteresis’, individuals are left feeling like a ‘fish out of water’ where “the environment they actually encounter is too different from the one to which they are objectively adjusted” (Bourdieu 1990,
Chapter IV: “We’re all brave pioneers on this road”

Hysteresis results from habitus being introduced to a new field of social relations to which it is unaccustomed, and/or from a change in the structure of the field from *exogenous* force which challenges existing views about how practices should or ought to be conducted. Hysteresis can also result from individuals being exposed to new ideas which influence the reflexive consideration of their own habitus in relation to the *doxa* of a field. The third path is a result of an *endogenous* change in the rules of a given field. When the separation between an individual’s subjective aspiration and objective field conditions is wide enough, it is “likely to produce a break in the tacit acceptance…to make it possible to invent or impose the goals of a genuine collective action” (Bourdieu and Passerson 1979, 97). Thus, in particular instances, avant-garde ideas can run counter to the orthodoxy of the existing doxa and actively promote change (Bourdieu 1993; Grenfell and James 2012). Such a change would likely be predicated on the agency of individuals to actively engage with and transform the existing ‘rules’ of a field in a manner which may be inconsistent with previous logic.

What is perhaps less clear from Bourdieu’s theory of change is how the interplay between multiple, nested fields of practice can converge, overlap, and complicate social change. A significant body of theoretical literature on social ‘boundaries’ and their contestation documents how symbolic boundaries can enforce or normalize social relations, group formation, or forms of cultural distinction, while also producing conditions for transformation of particular social spaces (Bourdieu 1984; Lamont and Molnar 2002; Pachucki, Pendergrass and Lamont 2007). Yet, the primary focus of this body of work describes competitions over jurisdictional boundaries *between* professions (Lamont and Molnar 2002), and while notions of organizational change and hysteresis have started to be applied to the public sector (Kerr and Robinson 2009; McDonough 2006; McDonough and Polzer 2012), fewer theoretical works have engaged with Bourdieusian notions of change vis-à-vis the interrelationship between sub-fields of practice or field creation.
What follows is an empirical investigation of boundary struggle within the profession of public health, and a discussion of how fields can be created through the agency of actors in a given field who have dispositions that differ markedly from that of the status quo of the field.

### 4.5 Methods and Analysis

This study used semi-structured interviews with employees of Ontario public health units. In total, all 36 health units were contacted for a one-hour interview and interviewees were recruited by email from a webscan where participants were contacted based on whether they were listed as having engaged in climate-related programs or were situated in an environmental health hazards division. This is notable given that the *Ontario Public Health Standards, 2008/2014*—the provincial policy guidelines for public health practice—locate climate change as an environmental health hazard.

I conducted all data collection, transcription and analysis with formal ethical approval from the University of Toronto Research Ethics Board. Informed consent was obtained in writing and verbally prior to the interview. Interviews asked about the personal and professional backgrounds of participants, what their health unit is doing related to climate change adaptation, and how they position that work in relation to other areas of public health practice. The goal of the interviews was to capture the individual, institutional, organizational, professional, and symbolic logics that undergird environmental public health work in relation to climate change. This approach is in line with Bourdieu’s assertion that interviews can encourage participants to reflect upon their own lives and reach new levels of social consciousness (Bourdieu and
Wacquant 1992; Bourdieu 2003; Mesny 2002). All interviews were transcribed by the author and pseudonyms are provided to preserve the anonymity of research participants. Similarly, given that climate change is a politically charged topic, health units that participated in this research study are not identified by name. This study received ethical approval from the University of Toronto Research Ethics Board.

The analysis of interview transcripts was necessarily iterative in an attempt to delve into the particularities of the Bourdieusian notions of field, habitus, capital and practice. Specifically, the analytic methods employed in this study were used to navigate multiple ‘fields’ and levels of analysis including the personal, the organizational and the professional. Moreover, following Bourdieu and Wacquant (1992), this analysis paid particular attention to the positions occupied by research participants within their organizations to determine who can legitimately ‘compete’ for the right to name climate change as a priority and how that is received within a hierarchical agency. This necessarily required an investigation of relevant dispositions of different actors that occupy the field of climate change adaptation within public health.

Three interpretive analytic tools were used to explore the data and establish rigor. First, to preserve the contextual uniqueness of each interview and to highlight key findings at the level of individual interview respondents, case summaries were produced. Case summaries resemble condensed transcripts that pay particular attention to key individual actions, interpersonal

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1 This point was evidenced in several interviews where participants cited the importance of the interview as a context with which to explore and reflect on existing activities and approaches. One respondent indicated that: “It was this morning in thinking about this and how the subtle ques, internal ques, of power and influence kind of resonate and you know, it's a good thing that we're having this conversation because if I didn't know I was going to talk to you in a free way, open way, I probably would have internalized that” (Draven, Environmental Health Researcher and Policy Analyst).
dimensions of working on climate change, and other thematic issues that arose during the interview. Case summaries were also utilized to reflexively assess the interview process through a language-centred analysis of my own social location in relation to those being interviewed. Second, a cross-case display matrix (Miles and Huberman 1994) was produced to visually display key variables loosely organized around the interview questions that largely spoke to organizational responses to climate change. Throughout these processes, extensive qualitative memos were produced to begin distilling key ideas and core findings. Finally, the analysis utilized memos and the data produced from the first components of the analysis to conduct a form of analytic triangulation called ‘category zooming’ (Halkier 2011) that allows researchers to pursue greater interpretive depth on single points and findings from the broader study. This approach seeks to develop analytic insights, explore counter evidence, and determine how particular theoretical concepts were being taken up in the interview context.

4.6 Results

In total, 20 health units had a staff member volunteer to participate in the study, 13 refused to participate on the grounds that they had no climate change orientation to their existing work, and three did not respond (see Table 1). The 20 completed interviews offer a geographically representative sample of Ontario health units when aggregated by census division: four of six health units from the central east (including Toronto for the purpose of analysis and anonymity); two of four health units from the central west; two of four from the central south; two of six from the east; six of nine from the southwest; and four of seven from the north.
Table 1. Interview sample by census division (N = 20)

<table>
<thead>
<tr>
<th>Health units by census division (N)</th>
<th>Number of health units represented in interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central East (6)*</td>
<td>4</td>
</tr>
<tr>
<td>Central West (4)</td>
<td>2</td>
</tr>
<tr>
<td>Central South (4)</td>
<td>2</td>
</tr>
<tr>
<td>East (6)</td>
<td>2</td>
</tr>
<tr>
<td>Southwest (9)</td>
<td>6</td>
</tr>
<tr>
<td>North (7)</td>
<td>4</td>
</tr>
<tr>
<td>Total (36)</td>
<td>20</td>
</tr>
</tbody>
</table>

*Includes Toronto for the purpose of analysis and anonymity

Findings from the interviews illustrate that climate change adaptation is very much an emerging field of practice in the context of Ontario, Canada. Overwhelmingly this work is being conducted in environmental health departments around the province as a result of climate change being identified as a ‘health hazard’ in the *Ontario Public Health Standards, 2008/2014*—the policy statement that governs actions and specifies mandatory protocols that health units need to meet and report on to the provincial Ministry of Health and Long-term Care. While action on climate change is mandated by the *Ontario Public Health Standards*, results from this study indicate varying levels of engagement with climate change in Ontario. The Bourdieusian analysis identified three typologies of response, each with their own associated practices and logics (see Table 2). These categories include ‘waiting to see’, the repackaging of existing actions, and championing new issues and techniques.
4.6.1 Waiting to see

Several public health units interviewed had not taken substantive action on climate change and purport a ‘business as usual’ approach to their work. This included one respondent from Eastern Ontario, two from southwestern Ontario, and two from northern Ontario. Rather than highlighting climate change as an environmental hazard, these practitioners tended to reiterate the ongoing importance of associated practices which include conventional activities for environmental health departments such as conducting food inspections, monitoring air and water quality, and surveillance of vector-borne disease. However, in these cases, climate change was not factored into any strategic programming or program development, nor were those specific practices listed above linked to climate change impacts or the perceived utility of utilizing existing practices to meet changing environmental health demands. This approach is further represented by 13 health units declining to participate on the grounds they felt they had little to offer to the research project. Accordingly, climate change adaptation is yet to be a fully-fledged field of practice within public health in Ontario. In the face of provincial policy and external pressure from the emergent health issues associated with climate change, these cases indicate that a traditional public health habitus is reproducing existing actions in a way that is commensurate with a dominant public health doxa. These practitioners tended to therefore fall back on well-developed environmental health practices, with little to no recognition of climate change factoring into how they implement those practices. Indeed, one respondent indicated that they were unaware if they were pursuing particular actions related to climate change in a
“conscious” way (Vladamir, Environmental Health Manager). This point was also reiterated by other interview participants. For example:

“Actually we have not really done much to address it. We are waiting for the uh, province to come up with, um, I think some province wide, um, I think program or protocol that will apply” (Olaf, Environmental Health Manager).

4.6.2 Repackaging Existing Action

Several health units that are actively pursuing a climate change and health agenda, albeit to varying degrees. For example, there were those health units who engaged in climate-change related programming on an issue-by-issue basis (N=7; four from the southwest, two from the north, and one from the central south census divisions). In these instances, practitioners had largely been handed the ‘climate change file’ as a result of its identification in the Ontario Public Health Standards and resulting policy mandated activities of monitoring health outcomes, communicating specific risk factors to the public, and conducting analysis on collected data. In these cases, field change was triggered by an exogenous event (i.e. climate change influencing health outcomes and associated policy changes). As one practitioner phrased it, “well, it’s not traditional public health, right?” (Riven, Associate Medical Officer of Health). This policy change forced practitioners to reflect on existing approaches, and in some cases to adjust
### Table 2. Typologies of public health action on the field of climate change adaptation in Ontario, Canada

<table>
<thead>
<tr>
<th>Intensity of Climate Change Adaptation</th>
<th>Typology of Public Health Action</th>
<th>Description</th>
<th>Doxa</th>
<th>Mechanism for change</th>
<th>Dispositions of associated practitioners (habitus)</th>
<th>Practice-based examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower</td>
<td>Climate change not a 'named' public health issue nor an immediate priority</td>
<td>Inaction – ‘Waiting to see’</td>
<td>No substantive action on climate change from a public health perspective</td>
<td>Business as Usual</td>
<td>Limited understanding of climate change impacts; core public health competencies</td>
<td>Existing environmental health activities</td>
</tr>
<tr>
<td></td>
<td>Repackaging existing action</td>
<td>Engaging in climate change-related programming on an issue-by-issue basis</td>
<td>Reactive Risk-Management</td>
<td>Crisis or hysteresis through changing field conditions</td>
<td>Reductionist thinking; transferability of public health core competencies; individual-focused (health risk communication); basic understanding of climate change impacts</td>
<td>Heat alert and response systems; Revisions to emergency response protocols; VBD surveillance and monitoring</td>
</tr>
<tr>
<td>Higher</td>
<td>Championing</td>
<td>Climate change-specific programming</td>
<td>Proactive Risk Mitigation</td>
<td>Agency through ‘radical habitus’</td>
<td>Holistic thinking; leadership; flexibility; passion; commitment to social change; community-focused; reflexivity; advanced understanding of climate change impacts</td>
<td>Advocacy; Collaboration with regional climate change strategies; Vulnerability and Adaptation Assessments; Providing input on official plans</td>
</tr>
</tbody>
</table>
their practices by repackaging them to meet the challenge of climate change:

“We were kind of watching what was happening out there. We started to do the heat alerts and it was a very kind of hodge-podge process to start with and I think we were doing them just before or just around when the standards came out....And then, I caught wind of [a neighboring health unit]. So I went to one of their presentations, took a look at all of that and went, I don't believe in re-creating the wheel. If it's been created and it's been accessibility tested and used and so on and so forth and it works...So I started conversations with [them] about adapting their materials” (Syndra, Environmental Health Manager).

These results indicate that in cases of hysteresis, practitioners fell into everyday routines to extend familiar practices to a new emergent issue. Practical action in this instance was reactive. As one respondent indicated, “health protection is generally a reactive type of program where you're going to one fire and putting it out and then going to the next fire” (Zac, Environmental Health Manager). Instead of proactively engaging with the risks presented by climate change (which are well-documented in the literature), practitioners tended to engage on an issue-by-issue basis, and claim that this kind of reactive approach is a logical response:

“The environmental health protocol tends to be, there's some proactive component, but the major things are a little bit more reactive. You know, that's what we call demand work. It's not optional. You know, and so far I think from my experience in public health at least, we've been probably mostly reactionary in that regard. So we wait for sort of signals of change to occur and then try to deal with it, right? I wouldn't say in public
health, like in actual public health practice as opposed to the academic world, I would say it's probably the case that we haven't done a whole lot of precaution/advocacy on climate change” (Lucian, Environmental Health Manager).

“Yeah, I think it's that slow moving target in that sort of slow evolution of the changes. Possibly over two to three generations that probably makes it a little bit difficult to plan for it in an active conscious way. I think a lot of times health units are kind of set up, you know their mind set is sort of reactive as opposed to proactive” (Vladimir, Environmental Health Manager).

Accordingly, when the dominant ‘reactive’ logic of the sub-field of environmental health protection is invoked to justify action on climate change, we witness the reproduction of particular logics, dispositions and responsibilities borrowed from existing fields (e.g. emergency preparedness and response). This was especially true around the implementation of heat alerts or vector-borne disease surveillance which seemed to be the most tangible issues for practitioners to link to climate change:

“Extreme temperature types of programming and protocols that we have in place...have had in place now for a number of years here” (Yorick, Environmental Health Manager).

“We also had the heat response program and we'd also had the research on the urban heat island. So there was a nice connection for us to focus in on. And it was an area that
really we could do some research on from a healthy policy perspective, is that there were lots of opportunities to think of well what does this mean? So I think that’s really an area that we’ve latched on to. And because we were the environmental protection office at the time, there was a nice link between air quality and heat and you could see how all the factors would come in together. The other, you know, west nile virus, we’ve had a little bit of input into development of programs” (Caitlyn, Environmental Health Manager).

The repackaging of these kinds of activities in the context of climate change signifies a doxic understanding among practitioners of the dominant mode of ‘practicing’ environmental public health. It is noteworthy in this regard that risk-communication was a common response among these practitioners. Communicating health risks to the public is, however, necessarily political, particularly when adaptive measures may be outside of public health actor’s jurisdiction:

“‘We are going to be seen as the scapegoat because something’s going to happen and we are going to have to react to it and people are going to look to us and think ‘well why didn’t you think about the health impacts beforehand?’ And we’ll be able to say, ‘well, we had, but the problem with some of this stuff requires changes in the built environment or has real infrastructural problems around that because that's public works ’” (Udyr, Environmental Health Research and Policy Analyst).

It is therefore clear that public health practitioners’ dispositions become out of alignment due to exogenous challenges to conventional ways of practicing environmental public health
(e.g. water quality testing, air quality monitoring, restaurant inspections). These ‘shocks’ create discomfort within the public health community, and in order to realign their habitus with the doxa of the environmental health field, they end up reproducing *modus operandi* that align with dominant logics of practice.

### 4.6.3 Championing

A third response to climate change involves proactive action. These practitioners (N=8; two from the central west, one from the east, four from the central east and one from the central south, but all primarily located within the Greater Golden Horseshoe—the most populous region in Canada which borders the western shores of Lake Ontario) reflexively recognized the field conditions of public health and broke with conventional practice. ‘Champions’ are largely drawn to climate change’s “novelness; the fact that it’s such an emerging area of science and research and it’s kind of operating in the abstract in a lot of ways” (Draven, Environmental Health Research and Policy Analyst).

Instead of becoming overwhelmed by the complexity of climate change, champions embraced the challenge with passion and enthusiasm. As one practitioner put it: “we’re all brave pioneers on this road” (Evelyn, Environmental Health Manager). Champions therefore require passion and enthusiasm for the topic area that goes beyond professional interest:

“I would say that’s the single most important thing is having a variety of people who are really passionate about this kind of work and initially we had people representing various organizations but in the end the ones that were the most committed and got the
most done were people who were themselves personally passionate about this kind of thing” (Quinn, Environmental Health Promoter).

“I would say that it kind of fitted into the health, initially I would say other people saw it as fitting into the health hazards mandate in some form. Something, the environment's something I have kind of had a bit of a passion for, for quite some time and so I guess it was, if it had to be slotted somewhere it seemed to be my responsibility. It was a kind of a logical one. And then certainly I had what I guess what I would call 'enthusiasm' for it, and I had the opportunity to do more with it than my colleagues perhaps here. Although, generally with most health departments I find that it does fall within the Environmental Health Department” (Jarvan, Environmental Health Manager).

These practitioners typically had habitual predispositions towards embracing sustainable lifestyles outside of their professional roles:

“Even in the office that I work in, we're a sub-office of our main office and we don't have organic waste pickup. So we do have that in our main building and I offer to take home people's banana peels because I don't like seeing that being thrown in the garbage when I can put it in my compost piles. So I think it's so important that we link together what we're trying to do on climate change and what we're trying to do [professionally]” (Janna, Environmental Health Manager).
Climate change champions see themselves as advocates and change-makers. They attempt to innovate their work by conducting climate change and health vulnerability assessments, engaging in built environment and green infrastructure projects, providing input on official plans and regional climate change adaptation strategies, and closely collaborating with less likely public health allies such as conservation authorities, municipal planners, and civil engineers. The nuance of this work forces champions to ask challenging questions about the ‘rules’ of public health work:

“What are other places in the world doing on this? What are the gaps? Why does not, don't, you know, public health units why are they not involved? So, really getting into understanding, like you have, some of the underlying barriers and constraints to addressing some of these issues” (Draven, Environmental Health Research and Policy Analyst).

From these practitioners’ perspectives, conventional dispositions towards practice tend to reproduce the status quo. Thus, the influence of the field illustrates how particular ways of practicing public health become embedded and reproduced over time which may constrain action or stifle the development of new practices as sub-fields emerge and take root:

“I think there's a tendency in public health, we think of ourselves as progressive, and I think we're actually quite conservative. There's a lag. There's always a lag. There's a 20 year lag in addressing childhood obesity, right? I think now there's a 25 year lag since, what was it 1989 that the IPCC came into existence... I think we wait for the evidence.
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We wait 'til there's a degree of political demand before we start to move” (Alistar, Medical Officer of Health).

Questioning field conditions creates opportunities to see where power is concentrated within a field, and how resistance to new ways of working on emergent issues manifests. This highlights the role of champions as agents of change who can question the taken for granted logics at play institute new practices. However, one champion found that influencing the adoption of a proactive climate change agenda was difficult to achieve:

“I think, in the grand scheme of change, that when you are pushing against power and influence, it's like this elastic band. It stretches like entropy. You stretch it so far and you need to find a way of putting in place some tool so when it bounces back it holds, but it holds at a further distance, right? You can't just force it without some support. You can't force it on your own otherwise it will snap back. And I knew that it wouldn't go away, I knew that climate change was always going to be there and I knew public health had a huge role, but by operating within the existing institutions of power, I knew that there were limits to what I could do and to a certain extent I had to play by the rules, and I was told point blank that I did in fact have to play by the rules, otherwise you're out. You're not part of the system. You're other, right? So I waited. I ended up getting sidelined on just virtually everything related to climate change. And [my manager] decided to go with somebody else on the issue s/he was more comfortable with who towed the line” (Draven, Environmental Health Research and Policy Analyst).
The result of questioning what is taken for granted on moral grounds ultimately pushed this practitioner’s work towards the margins of conventional practice:

“But what’s interesting is [laughing], that first of all, all of this happened, everything I’d done happened behind the scenes. Like, none of it was done in any formal way. There was, it was just me knowing where the levers were, when to pull them, who to connect with, how to influence, where, you know, how to communicate risk, how to communicate the relationships, being persuasive and ultimately communicating information to do good. Right? Like that’s, at the end of the day, that’s what I hoped to achieve is to kind of move the bar and hope, help to kind of transform society when, in my own little way, towards where I think it needed to go” (Draven, Environmental Health Research and Policy Analyst).

These testimonials suggest the extent to which new fields are taken up in practice can be constrained by hierarchical power relations that exist within fields, and for those who challenge existing practice, suffering can ensue. It is not enough to simply possess a radical habitus if you lack the power to institute change. Some champions (as illustrated above), through social networks and a great deal of persistence, were able to launch a full scale climate change adaptation campaign within their health unit. However, this was not without significant stress on the practitioner’s professional life, and other health units remain slow to adopt this work.

4.7 Social suffering and field creation
The results of this study confer well with Bourdieu’s theory of practice. However, they also build upon Bourdieusian theories of social change by highlighting the relative importance of individual agency in field creation, and the relatively durable logics that result from the interplay between practitioners, their respective organizations, and broader professional fields of practice. Thus, individuals who wish to engage with climate change are forced to examine the existing field and find points of alignment between traditional dispositions and new or innovative actions.

The study results also illustrate how field creation—and the legitimation of practices in instances of hysteresis—are unlikely without social suffering. To quote Bourdieu (1984):

“The field of struggles, the system of objective relations within which positions and postures are defined relationally and which governs even those struggles aimed at transforming it” (p. 157).

This study’s analysis has confirmed that forms of social suffering are prevalent at the level of individuals, across organizations, and are reflected in the broader professional discourse (see Table 3). First, ‘champions’ who are trying to forward the field of climate change adaptation often face resistance at the personal level in ways that challenge them professionally and creatively. This resistance reflects the embedded power relations in a given field and is based on the fact that climate change is largely a ‘non-traditional’ area of public health practice.
### Table 3. Categorization of social suffering in field creation according to level of analysis

<table>
<thead>
<tr>
<th>Level of analysis and social suffering</th>
<th>Description</th>
<th>Supporting quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual (Personal)</td>
<td>The pushback observed by climate change ‘champions’ whose proactive orientation and radical dispositions towards climate change were unlike the normative expectations of the broader public health field</td>
<td>“I think I get punished, to be honest, for it” (Draven, Environmental Research and Policy Analyst). “I don’t think it’s really seen as something that is important here. But I could be wrong, but I know in the past that my role has been to focus on physical activity and not the environment” (Quinn, Public Health Nurse).</td>
</tr>
<tr>
<td>Organizational (Neoliberal) Suffering</td>
<td>Lacking resources to engage with climate change</td>
<td>“We don't really have the resources to start any kind of planning and anything in depth as the project goes to climate change” (Vladimir, Environmental Health Manager) “I'm one of three program managers, so that's all the programs in the OPHS. So as a result, wear quite a few hats as opposed to an environmental health manager in Southern Ontario who would maybe have food safety or rabies, or a combination of one or two. I've got about 9 programs” (Zac, Environmental Health Manager).</td>
</tr>
<tr>
<td>Professional (Symbolic) Suffering</td>
<td>The tacit and unconscious modes of social domination that occur through a mis-recognition of power relations in a given field and results in the reproduction of particular practices as more or less legitimate based on the orthodoxy and power relations of that field.</td>
<td>“I would say that from the medical community, climate change is not really looked at as a significant potential health problem as yet. I honestly don't think it's recognized” (Garen, Medical Officer of Health). “And again, the focus here is on health and the chronic disease and the obesity. Like I said, the chronic diseases and obesity rates that are higher here. So that's the focus. That's the main focus” (Jayce, Environmental Health Manager) “It's hard when you're dealing every day with these tangible, putting out fires sort of reactionary sort of things a lot of time, you know with the job here... But, yeah, it's a little bit head scratching in terms of climate change and what we're to do” (Riven, Environmental Health Manager).</td>
</tr>
</tbody>
</table>
Second, it was clear from interviews that many health units lack the capacity or resources to pursue climate change; an issue that was explained by practitioners as the differential degree to which public health units are resourced and able to fully address emerging challenges. Some health units indicated that they lack the time, staff, and funding to engage in health promotion and prevention around climate change impacts. This in turn signals a degree of organizational suffering, whereby all health units are given the same policy mandate, but not necessarily the same resources to meet a given policy requirement. Because funding for public health is split between the province and regional municipalities in Ontario, health units within more populated jurisdictions tend to be better resourced. This explains why health units in the Greater Golden Horseshoe region of Ontario tend to have an increased focus on climate change relative to their rural counterparts who have fewer resources and an unequal ability to pursue new practices or topics of study. A lack of resources is expressed as a lack of focus on emerging health issues, and through the downloading of responsibility of health risks onto individuals through well-rehearsed regimens of risk communication rather than attempting to understand and alter the structural conditions that produce ill-health outcomes in the first place (Ayo 2012; Baum and Fisher 2014).

Third and perhaps most germane to the topic of this chapter is the notion of symbolic suffering. Symbolic suffering or symbolic violence occurs when dominated members of society accept their marginalization in relation to the dominant aesthetic (Bourdieu and Wacquant 1992). Thus, the dominated are complicit in their dominance by accepting the arbitrary imposition of rules over them and their subjugated population (Bourdieu 1998). The reproduction of forms of dominance in the field of public health is demonstrated here in three ways. First, there is a high degree of influence from medical discourses in the leadership of public health practice, and if a particular issue is not recognized as a health issue by the medical community, it will have a
difficult time gaining acceptance among an evidence-based discipline such as public health. Relatedly, interviews indicate that practitioners in a state of hysteresis reiterate the importance of health protection (responding to ill-health as it manifests) over health promotion (i.e. prevention) in the field of public health at large. Finally, the pervasive assessment of exposure and risk largely lead to reactive practices, rather than a proactive engagement with climate change as a social, environmental, political, and public health issue. In doing so practitioners may be at a loss as to how to actually influence the conditions under which ill-health manifests.

4.8 Discussion

When confronted with a wicked problem that has the potential to affect all existing areas of practice, public health actors across Ontario have taken one of three positions: wait to see, react according to existing professional expectations, or question existing practices and innovate. The first two of these actions illustrate the durability of a professional habitus. In the first instance, we see the reproduction of the dominant doxa within public health at play—to continue to monitor and analyze population health outcomes and wait for specific signals that indicate a problem within the existing system. In the second instance, an objective shift in field conditions required public health practitioners to react and realign field conditions with their professional habitus. This produced an emphasis on how existing actions address (or can be adapted to address) the emerging threat of climate change (e.g. heat alerts, air quality monitoring, sun safety, etc). The last instance, however, illustrates a break between habitus and field, a form of hysteresis that allows practitioners to reflexively account for the inadequacies of existing public health logics.
These findings align with Bourdieu’s (1990) theory of practice, Swartz’s (1990) conceptualization of change in Bourdieu’s work, and Crossley’s (2003) notion of a ‘radical habitus’—or individuals with dispositions that are attuned to influencing social change. Findings also generate new theoretical insight into how logics permeate field boundaries and influence what is accepted as more or less legitimate practice. The broader field of public health is heavily oriented around quantifying risk, summarizing evidence, and attending to biomedical markers of health and wellness. There is therefore a propensity for these approaches to infiltrate sub-fields and reproduce themselves as dominant practices. In instances of hysteresis, public health practitioners are more likely to resort to well-developed competencies and everyday procedures that are widely applied to ‘traditional’ public health issues. This may be problematic if those existing practices are ill-equipped to address and prevent the root causes of climate change and its related health impacts. The contention here is that the competition over (re-)creating and legitimating specific climate-change related practices cannot occur without domination (Golsorkhi, Leca, Lounsbury and Ramirez 2009). These findings contain significant implications for how we understand processes of change within public health practice, as well as for the emergence of new subfields of public health practice. They confer with Rootman et al.’s (2012) contention that public health practitioners and institutions do indeed respond to issues as they emerge, but that a more specific focus on practices can illuminate the discursive structures that either promote or inhibit change.

### 4.9 Conclusion
This analysis aimed to complement Bourdieu’s existing theories of social and cultural change, and add a nuanced description of field creation and the emergence of new dispositions and competencies. Moving beyond Bourdieu, findings from this chapter illustrate that agents are a pre-requisite for the emergence of new fields. Empirically, results demonstrate how practitioners navigate, negotiate and translate existing rules and resources to convince others of the importance of that work, and that those with a radical habitus can produce entirely new cultural frames in emerging and existent fields. These findings confer with Fligstein and McAdam’s (2011) theorization of strategic action fields, that new fields develop strategically based on human agency, and that the allocation of resources in the initial stage of field formation determine the cooperative or competitive nature of the field. While evidence suggests that Bourdieusian notions of hysteresis and cultural reproduction are evident in the contestation of how public health ‘ought’ to be practiced, this analysis has signaled the interdependence between organizations, actors and professional culture, and how individual agency can strategically be employed to create and frame new fields of action, albeit with structured resistance by the dominant public health doxa.

In utilizing a practice theory perspective, this chapter has illustrated the utility in not only Bourdieu’s primary thinking tools, but the merits of uncovering the taken-for-granted logics that exist within and between fields. By thinking relationally about fields and the practices within them, this work has demonstrated how agents are able to influence the adoption of new ways of practicing public health. This lends consideration to how new fields come into being and for what reasons, while also highlighting the limitations of conventional ways of thinking and doing in the face of changing field conditions.
4.10 References


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Chapter V

Health Equity, Population Health, and Climate Change Adaptation in Ontario, Canada

N.B. At the time of submitting this dissertation, this paper was accepted with minor revisions to the journal *Health Tomorrow*, and will be appearing in the December issue. Please also note that due to the format requirements of this journal, pseudonyms are not provided for quotations.

Abstract. Climate change holds the potential to exacerbate existing health inequalities, yet understanding how public health practitioners conceive health equity and health equality in relation to climate change has received little attention in the scholarly literature. This contribution utilizes in-depth interviews with public health practitioners from health units across Ontario, Canada to characterize understandings of equity in relation to on-going climate change adaptation work. Perceptions of health equity and associated public health practices are described before discussing the resulting implications for how and why practitioners take up the equity agenda in relation to climate change. In doing so, this work problematizes existing public health tools and competencies and signals the emergence of new practices capable of simultaneously promoting adaptive capacity to climate change and reducing health inequity in Ontario.

5.1 Introduction

Climate change is associated with increasing incidence of heat-related morbidity and mortality, increasingly poor air quality and resulting respiratory conditions, increasing accidental morbidity and mortality attributable to extreme weather—as well as the increasing incidence of mental health impacts post disasters, the spread of vector-borne diseases to previously inhospitable climates, and risks associated with food and water contamination (Health Canada...
However, these impacts will not be distributed evenly across the Canadian population, and research suggests that population groups who already experience relatively poor health outcomes compared to national or provincial averages are likely to be differentially impacted, and thus, climate change holds the potential to exacerbate existing health inequalities (Health Canada 2008).

To date, the scholarly literature has primarily focused on climate justice and the health equity implications of climate change for developing countries (Campbell-Lendrum and Corvalan 2007; Ikeme 2003; Kjellstrom et al. 2007), but less attention has been given towards health equity related to climate change in the North American context (Buse 2013). In this contribution, understandings of health (in)equity and health (in)equality by public health practitioners are critically examined. Using empirical data from a case study of climate change adaptation in Ontario, Canada, I analyze and discuss how public health practitioners working on climate change locate health equity in their work, and identify practices related to the promotion of health equity. The discussion problematizes existing tools and approaches for addressing health equity in relation to public health adaptation to climate change, and builds a theoretical case for how the health equity discourse can further the field of climate change adaptation in public health.

5.1.1 Situating health equity in the context of public health adaptation to climate change

The primary focus of North American climate change and health research has thus far sought to document existing vulnerabilities and the uneven health outcomes resulting from
physiological sensitivity or differential exposure to climate variability and extreme climate events based on key demographic, social and cultural variables (Berry, Paterson and Buse 2014; Ebi, Kovats and Menne 2006; WHO/PAHO 2012). This literature employs “vulnerability assessments” to identify vulnerable populations according to socioeconomic status, social isolation, and geographic proximity to climate-related hazards. Such assessments indicate that populations more vulnerable to climate change tend to have higher rates of pre-existing chronic conditions or disability and include groups such as the elderly, children, and those experiencing relative socio-economic deprivation or social isolation (Berry and Cheng 2013; WHO/PAHO 2012).

Climate change therefore requires a nuanced understanding of health inequity and health inequality in relation to specific interventions. For example, sharing health risk information about the impacts of climate change—a requirement in the Ontario Public Health Standards—will not serve vulnerable populations equally (Ebi and Semenza 2008). This is primarily because such health promotion activities often fail to incorporate an understanding of how health behaviours and risks are influenced by environmental, socioeconomic and cultural settings (Baum and Fisher 2014).

Promoting health equity has been identified as a central goal of public health practice (Krieger and Birn 1998; Marmot et al. 2008). It has been enshrined in the Canadian public health profession since the development of the Ottawa Charter of Health Promotion and more recently as an underlying value for practitioners in the Public Health Agency of Canada’s (2008) Core Competency Statement. A large body of scholarship focuses attention on definitional differences between inequalities in health and wellness and inequities (Braveman 2006). Health inequalities largely refer to an unequal distribution or difference in health outcomes between or within
populations, whereas health inequity is more specifically concerned with what is right, fair, or just based on whether the cause is unavoidable or unnecessary (Braveman and Gruskin 2003; Kawachi et al. 2002).

Following de Maio (2014), what is fair or moral is ultimately a subjective assessment rooted in deep political values and normative philosophical understandings of morality. While some might argue that this is a semantic difference, the intentional use of the evaluative words “equity” or “inequity”, rather than the merely descriptive ‘inequality,’ invites us to consider the broader social, political, cultural, and environmental contexts that produce health and ill-health in the first place:

“If our analysis remains focused on inequality, it becomes distracted by the symptoms of the problem, rather than its determinants. Inequity reflects the essence of the problem; inequality is an empirical measure of inequity made apparent through statistical analysis...Inequality is the observable and collective expression of inequity. Inequalities are measured; inequities are judged” (Guzman 2009, p.116).

Nevertheless, it remains unclear how these values are understood, interpreted and embodied by public health practitioners, and how values are translated into concrete action to address the social and environmental determinants of health, particularly in relation to climate change adaptation programming. This chapter utilizes a comparative analysis of interviews with public health practitioners working on climate change adaptation initiatives across Ontario, Canada to inform an understanding of the degree to which equity considerations factor into climate change adaptation at the level of regional public health authorities. This chapter
addresses how health equity is conceptualized by public health practitioners in relation to climate change and documents how the meanings associated with equity are translated into practical action. The chapter ends with a discussion of the theoretical implications these results hold for understanding the discursive construction of emerging fields of public health practice and the role of healthy equity therein.

5.2 Methods

This chapter is part of a broader study that examined the emergence of climate change adaptation among Ontario health units. The study used a critical realist epistemology informed by Pierre Bourdieu’s (1980) ‘theory of practice’ to understand how some practices in public health are forwarded as more legitimate than others, and to examine the moral and professional commitments of the people responsible for the climate change file across Ontario’s 36 regional health units. The primary focus of the investigation was to understand how individuals are able to promote social change within public health organizations in the face of new and emerging fields of public health practice (i.e. climate change adaptation).

I used qualitative semi-structured interviews with employees of Ontario public health units. All 36 health units were invited to participate in a one-hour interview and research participants were recruited by email from a web-scan where participants were contacted based on whether they were listed as having engaged in climate-related programs or were situated in an environmental health hazards division. In cases where multiple people from a single health unit were identified, I invited that group to select the person they felt was best able to speak to the interview questions. This sampling protocol was designed given that climate change is mandated
Chapter V: Health equity and climate change adaptation

Buse, C

To be addressed under the environmental health hazards protocol of the *Ontario Public Health Standards (2008/2014)*.

I conducted all data collection, transcription and analysis with formal ethical approval from the University of Toronto Research Ethics Board. Informed consent was obtained in writing prior to the interview, which were conducted by person wherever possible, but primarily over the telephone. Interviews were recorded to ensure the accuracy of collected data. Ultimately, I completed 20 interviews with practitioners from 20 different health units, with 13 health units refusing to participate on the grounds that they did not feel they had engaged with climate change as a public health issue, and three did not respond.

Research participants were asked about their personal and professional backgrounds, what their health unit is doing related to climate change adaptation, and how practitioners understand and act on health equity concerns related to climate change. Interviews were transcribed verbatim by the author. Given that climate change is a politically charged topic, pseudonyms were created to ensure anonymity of research participants, and the health units that participated in this research study are also not identified by name.

Additionally, three interpretive analytic tools were iteratively used to explore the data, establish rigor, and develop themes emerging from the data. First, to preserve the contextual uniqueness of each interview and to highlight key findings at the level of individual interview respondents, case summaries were produced. Case summaries are essentially condensed transcripts that identify key individual actions, personal reasons for engaging with equity issues, and other thematic issues that arose during the interview. Given that interpretive decisions were made in terms of what was included or excluded in the case summary, they were not intended to be complete synopses of interview transcripts and were therefore not sent to research participants.
for validation. Rather, case summaries were simultaneously utilized to reflexively assess the interview process through a language-centred analysis of my own social location in relation to those being interviewed (Mauthner and Doucet 2013). Second, a cross-case display matrix (Miles and Huberman 1994) visually displayed key variables loosely organized around the interview questions that largely spoke to organizational responses to climate change. Throughout these processes, extensive qualitative memos were produced in relation to how practitioners conceived the notion of health equity in their climate change work, and what practices specific health units leveled at the equity question. Finally, the analysis utilized memos and the data produced from the first components of the analysis to conduct a form of triangulation called “category zooming” (Halkier 2011) that allows researchers to pursue greater interpretive depth on single points and findings from the broader study. This approach seeks to develop analytic insights, explore counter evidence, and determine how the concept of health equity was taken up by practitioners in the interview context.

5.3 Results

The 20 completed interviews offer a geographically representative sample of Ontario health units when aggregated by census division. A key finding that emerged from interviews was that eight interview participants were innovative champions of climate change work, actively pursuing new practices and new ways of engaging with this issue. The remaining twelve assumed an environmental approach that was oriented towards traditional elements of public health practice including disease monitoring and surveillance.
5.3.1 How do practitioners conceive of health equity in relation to climate change?

When asked what role health equity plays in climate change adaptation programming and how it informs day-to-day practice, practitioners often asked for clarification, such as “what do you mean by health equity?” (Lucian, Environmental Health Manager) or “so what exactly do you mean by that though, like in terms of health equity and the social determinants of health for public health programming?” (Ezreal, Policy Analyst). This may be the result of widespread recognition within the public health community of the definitional difference described above.

Indeed, half of the research participants accepted, in principle, the importance of the health equity agenda and how it was (or could be) linked to climate change adaptation. In reflecting upon this and wanting to more deeply engage with supposed underlying core values of Canada’s public health community, I prompted practitioners to describe their understanding of equity in relation to climate change and to identify any associated programs where both were being addressed.

Findings suggest that health equity is most typically associated with a focus on “vulnerable’ populations.” Vulnerable populations were often perceived as individuals who are differentially exposed or physiologically sensitive to climate-related health impacts (e.g. seniors, children and attendees of outdoor events are all more susceptible to the physiological impacts of extreme heat; new immigrants may face language barriers in terms of understanding and adapting to extreme weather events). However, health equity was most typically associated with poverty:

“I mean we've got, and I shouldn't say this...but we're poor! [laughs] We have vulnerable populations. I mean it's not an issue that is disappearing. We have real hard case poverty
rates [in this area] that are above the Ontario average and we are aware of this” (Udyr, Program Coordinator).

Both champion practitioners and non-champion practitioners often conceived of health equity as measurable differences in resource access or distribution between or within population groups and how those differences manifest in terms of disparate health outcomes through monitoring and surveillance.

Several practitioners went on to add that populations living in poverty may be doubly disadvantaged because low incomes are often associated with poor housing or living in areas that may be differentially exposed to extreme weather events (e.g. living in a flood plain). For example, one research participant claimed “there is a bit of a tendency for poorer people to live in lower lying areas. I mean that's not a universal thing, but there is definitely a tendency there” (Lucian, Environmental Health Manager). This was echoed by other research participants as well:

“We know that, for example, for flooding, the areas of [laughing], like most areas in most flooding events, they tend to impact the areas of town where...the population with the lowest income tend to live. With the poorest housing stock. That type of thing. And, so, we do know that we have like this, um, people with low socioeconomic status and the most marginally housed people are the people that are most likely to be affected by flooding” (Evelyn, Environmental Health Manager).
The common focus on poverty and multiple layers of social or economic disadvantage was not surprising given that practitioners also often evoked the discourse of the social determinants of health to contextualize their thinking around health equity:

“As far as health equity advocacy work and different strategies and activities, and in terms of bigger projects and plans to address all that. You know, that's a priority identified again within health hazards” (Jayce, Environmental Health Manager).

“In generalities, the health department is very well aware of health equity issues and social determinants of health and in my mind the two are linked, though I know they are a little bit different. Um, we do have a couple of people working on both, I'm going to say both, I might not be right about this, but certainly the social determinants of health and as I mentioned what flows out of those kinds of things or issues around health equity” (Ezreal, Policy Analyst).

The quotes above not only exemplify how provincial policy and the values of specific health units inform understandings of equity, but they also signal that health equity exists as its own subfield of public health practice with its own meanings and cultural competencies, some of which may overlap with climate change activities.

For example, some practitioners took a more nuanced view of equity issues in relation to climate change. Specifically, the champions of climate change adaptation work tended to utilize the language of “differential exposure”, “sensitivity” and “adaptive capacity” to describe their activities. This language is explicitly related to climate impacts and adaptation which may be unfamiliar to those who do not have a working knowledge of the emerging field, but which
seems to be used by practitioners to bridge the sub-fields of climate change adaptation and health equity:

“Our poor are the ones that are least able to cope with it so we analyze it from an exposure perspective, as I said. Poor people, vulnerable people, people that aren’t able to protect themselves, could be exposed differently which is an issue of location, urban vs. rural in our area and their individual susceptibilities or sensitivity, call it what you want” (Viktor, Environmental Health Promoter).

This proposed model that I’ve developed to reduce vulnerability is something that embeds some of the familiar terms and some of the familiar approaches and processes that public health typically is accustomed to, with the exception of the whole vulnerability piece: the sensitivity, exposure, adaptive capacity. Those are new terms that I need some work to do to educate on. But, you know, just presenting this, I’ve actually, you know, gone around informally and presented this to various departments...And it really resonates” (Draven, Policy Analyst).

The use of climate-specific language for describing health equity is aligned with existing scholarly work on climate change and health. Its discursive use helps to further contextualize the relatively new and emerging nature of climate change adaptation in the public health sector. However, it should be noted that this language for describing differential health outcomes is still heavily steeped in a definition of equity that privileges distributional health inequalities or disparities over considerations of fairness or justice in the conditions that lead to those disparities in the first place. Moreover, the methodology employed to identify health vulnerabilities is very much rooted in epidemiological principles of monitoring and surveillance (WHO/PAHO 2012),
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with the hopes that such activities will lead to interventions. This approach is therefore reactionary rather than precautionary. To build on these arguments further, I contextualize these understandings of health equity by identifying the practices associated with climate change adaptation that have an explicit equity focus, as identified by interview participants.

5.3.2 What are the specific practices that comprise the field of climate change adaptation in relation to health equity?

The fact that there was little variation between research participants in terms of their description of equity issues in relation to climate change is unique insofar as there are key differences in program development and service delivery linking health equity and climate change adaptation across Ontario health units.

5.3.2.1 An emerging focus on heat extreme heat preparedness and risk communication

The most common association identified between climate change and health equity manifested in terms of heat alert and response systems (HARS)—response plans that when a certain temperature is reached trigger a range of activities aimed at mitigating heat exposure in the general population. It is worth noting that practitioners likely evoked heat-related programs primarily because it is an area that is most tangibly or logically understood in relation to climate change. Heat programming is also mandated in the *Ontario Public Health Standards (2008/2014).*
However, there is nuance in how HARS are delivered across health units. In more populated areas, health units run a suite of programs including the implementation of cooling centres in public spaces, piloting cooling spaces in apartment buildings, and the dissemination of risk information to the public. In smaller, rural health units which have less staff and resources dedicated to day-to-day logistics, HARS typically consist of basic outreach activities to communicate the health risks associated with exposure to extreme heats, as well as disseminating strategies to avoid overheating:

“So I think by that way, we’re achieving a level of health equity by spreading the message in a way that is, you know, it's not just us that's saying it, we're sending it to, it's like train the trainer kind of thing where you send it to different groups and then they deal with it in, with people they work with” (Yorick, Environmental Health Manager).

The practice of communicating risk in an attempt to bolster adaptive capacity can, however, be problematized in the context of a relatively robust literature that challenges the degree to which behaviour change is possible, particularly for groups that experience systemic disadvantages (Baum and Fisher 2014). The communication of health risks further gives the illusion that health units are doing something on climate adaptation issues, while simultaneously downloading the responsibility for ill health outcomes to other agencies or to the public themselves. There are also additional challenges for evaluating who uses this kind of health information and to what end, and whether priority populations are reached at all. For example, several champion practitioners expressed concern that communicating heat information may be culturally incompatible with some populations in their community. When probed on a cooling centre pilot project for apartment buildings, one champion noted that:
“There were some cultural aspects of a room that some groups didn't like to mix or felt uncomfortable. Other people felt that they would go other places. So they would go visit their friends. Unfortunately, some of the real vulnerable people just stayed in their apartments because they didn’t have the ability to get down to a cooling room” (Caitlyn, Manager).

Champions were also quick to point out the limitations of existing risk communication approaches and the documenting and monitoring of so-called vulnerable populations. These practitioners had a keen awareness of the stigmatizing impacts of labeling a particular community as vulnerable and were actively struggling with how to intervene in a way that was equitable and fair:

“So for example, if we identify that low socio-economic status is a risk factor for exposure to extreme heat and then we start mapping those locations of low socioeconomic status, some municipalities may not want that information to be identified on a map. Whether they feel it's going to stigmatize that neighbourhood or it might affect their economic development if they're trying to bring growth into their communities. So we're kind of struggling with on one hand, we need to protect the public and we need to target where that, the public is most vulnerable. How do we reach that target population if we're not allowed to show that information and share that with our municipalities? So right now we are having an internal conversation to address that challenge” (Janna, Environmental Health Manager).
5.3.2.2 Other promising practices for integrating health equity in climate change adaptation

By virtue of occupying larger health units with more staff and resources, champions may be better equipped to attune themselves to equity issues in their communities. Moreover, by virtue of having resources to focus on new and potentially innovative program design, well-resourced health units may be able to more actively For example, one Medical Officer of Health suggests that the burgeoning focus of Ontario health units on built environment issues (i.e. promoting walkable and ‘green’ communities) are a meaningful way of addressing equity:

“Certainly the built environment piece overlaps explicitly with health equity. In our literature review, for example, we looked at the potential for built design to address poverty issues and found that mixed neighbourhood issues are important for that...The complete, complete communities and complete streets approach helps everybody, including and probably in particular, including people of lower income” (Alistair, Medical Officer of Health).

This focus on the built environment also required increased collaboration with regional and city planners to ensure that communities are being developed in a sustainable and health promoting manner was corroborated with other practitioners. This was further evidenced in interviews by positioning the focus on the built environment to mitigate urban heat islands.

Moreover, at least four Ontario health units—the majority of which are located in larger metropolitan areas and have larger staff, budgets, and more resources—developed climate change and health vulnerability assessments specific to their regions which provide baseline
epidemiologic surveillance and monitoring of specific populations who may be more vulnerable to specific health impacts. Three others developed various forms of health impact assessments related to heat, vector-borne diseases and extreme weather events. These approaches primarily resorted to using disease monitoring and surveillance data to describe current vulnerability, and project future vulnerability. As suggested above, such assessments were largely driven by the fact that these organizations tended to employ health equity as a discursive tool from which to frame a broad array of strategic priorities and utilize the goals of a pre-existing subfield of public health practice to engage in other activities on the fringes of more conventional practice.

However, given the novel nature of the vulnerability assessment approach and the fact that these practices are early on in their tenure, few programs have resulted from this form of surveillance and monitoring and further research may be needed to determine the utility of vulnerability assessments in producing practices that are capable of eliminating or reducing health disparities, rather than just documenting them as a baseline.

5.3.2.3 Health units have varying levels of climate change adaptation capacity across urban and rural regions which stifles or enables innovation

The findings above indicate that there are a variety of health equity programs linked to climate change adaptation across the province, but that some health units are so under-resourced they lack the capacity to even engage in the communication of environmental health hazards with vulnerable populations, or have yet to complete this work but are planning on incorporating this type of program in the future. For instance, one research participant indicated that cooling centres are an important element to incorporating health equity considerations into climate change adaptation programming:
“You know, I think heat alerts, working with municipalities about heat alerts and having as part of that their consideration about cooling centres? Would be particularly important for people of lower income who don't have access to air conditioning, right? So we, this is speaking to intentions. We haven’t gone on with this, but we intend to go on with this type of thing. So there you're getting into health equity and climate change adaptation explicitly” (Alistair, Medical Officer of Health).

A lack of programming targeting heat was mirrored with a general low level of focus on climate change in predominantly rural or northern health units. Several practitioners identified health equity as a strategy within their health hazards division, but almost all health units had limited resources to engage with climate change and related equity concerns. This was largely identified as being a product of how health units are funded across Ontario (a mix of provincial and municipal/regional government funding). Thus, health units with a larger constituency have a larger tax base to draw from, and accordingly, have more staff and funding to pursue innovative activities. This is in contrast to rural and remote health units that utilize their limited resources to address what they identify as priority health concerns throughout their respective regions.

“Climate change already takes a back seat in terms of staff and resources with the programs that we all have to do, and then within that program we’re talking about the environmental soils study report and the housing situation here, in terms of mold complaints, etc. And then with the rest of that, if there's any room leftover we, if we were to contemplate climate change and radon and indoor air quality, outdoor air quality, etc.” (Jayce, Environmental Health Manager).
At this point, it is important to identify that the champions of climate change adaptation work were almost exclusively employed by health units in the Greater Golden Horseshoe region of Ontario. It is not surprising that the Greater Golden Horseshoe is a central hub of climate change adaptation for public health. This area comprises the majority of Ontario’s population and accordingly there are a dense array of social service and environmental organizations working at the nexus of climate change and equity issues. Indeed, several research participants indicated unfavourable comparisons to Toronto Public Health in terms of geography, density and access to resources: “We’re not like Toronto at all and we can’t be, because we are predominantly rural…We’re not the same…and there are a lot of other agencies in Toronto that depend on those heat alerts to then initiate their action plans” (Syndra, Environmental Health Manager).

5.3.2.4 Equity as a guiding concept for climate change practice

Equity issues were identified as a guiding concept to inform the overall practice of a health unit for both champions and those who assumed a more conventional environmental health approach to engaging climate change. For instance, an associate medical officer of health-before describing their health unit’s HARS--first provided context to the equity component of their work by positioning it in relation to a vulnerable population plan which provides emergency outreach to vulnerable populations across all hazards:

Our vulnerable populations plan is all hazards, right? It's not just heat. And it's also, again, a way of reaching vulnerable groups in whatever situation that's required... So, we cross-reference that plan with our heat messaging, and so all our groups dealing with
vulnerable populations will receive that kind of heat messaging as well” (Riven, Associate Medical Officer of Health).

Similarly, one champion who was responsible for conducting his health unit’s climate change and health vulnerability assessment indicated that equity was a strategic priority, but not in relation to the on-going climate change adaptation work.

However, most champions of climate change adaptation who explicitly discussed the strategic positioning of climate change and health equity work together in an attempt to identify common ground and synchronize research and practice agendas:

“So [health equity] really is an underlying area that we have focused on especially in the last five years. [Our Medical Officer of Health] has really seen equity issues as being a priority issue. We still do broad based public health, provide some messages out to the general public, but we really see that the most vulnerable are the ones that are the most impacted by various health determinants” (Caitlyn, Manager).

Thus, not only is health equity its own subfield of practice, but practitioners, and champions in particular utilize the discourse of health equity to lend symbolic capital and credibility to their climate change adaptation work. In attempting to address existing vulnerabilities and disparities in health outcomes, climate change champions tended to evoke health equity as a legitimate entry point into climate change adaptation work. Health equity was therefore employed as a discursive strategy by champions to “bridge the gap that exists across the province” (Draven, Policy Analyst) on climate change adaptation. The simultaneous
acknowledgement of existing health equity concerns, when coupled with the fact that climate change can exacerbate those conditions, also tended to resonate more highly with senior decision-makers, thereby opening up possibilities for more innovative actions than conventional risk communication.

5.4 Discussion: Health equity as discourse vs. health equity as field

The way in which equity is defined and understood by public health practitioners led to a relative absence of critical considerations of health equity as an explicitly moral goal to be pursued by the public health community. This in turn led practitioners to equate health equity with health disparities. Semantically, inequalities or disparities in health result from inequities. As demonstrated above, defining equity as health disparities with little consideration of whether those differences are moral or just engenders particular responses (i.e. risk communication) with the goal of balancing health outcomes for vulnerable populations—a goal which may be unachievable if the root causes of inequalities such as poverty and the conditions that maintain it remain unaddressed.

However, taking a deeper look at the practices described by practitioners in addressing health equity and climate change adaptation suggests that the champions of this work may be more proactive in addressing equity issues in their communities than are those practitioners with more conventional public health dispositions. Despite a common focus on population health disparities, champions tended to pursue activities to guide adaptation at the local level in ways that were perhaps more cognizant of existing inequalities. Moreover, the champions appear to be more proactive in identifying and leveraging financial and staff resources to address health
equity issues. Conversely, practitioners who did not use equity as a concept to help guide their work tended to highlight their health unit’s existing risk communication programs and a lack of resources to implement additional programming.

The ways in which equity work is practiced was nuanced, but appears to be most often related to health unit budgets and resource allocation. In some cases, but primarily in the Greater Golden Horseshoe, equity served as a guiding concept to influence climate change adaptation as well as a multitude of pre-existing programs. In other cases, health equity was identified as a guiding concept for a variety of public health activities, only not for climate change. For others still, the equity discourse was absent entirely, or had not been given ample attention due to the day-to-day activity needs of the community. Thus, there are very real equity issues between health units across the province and the implications this has for programming between smaller and larger health units.

The findings above indicate that the champions of this work, by virtue of primarily occupying larger health units, tend to be the most attuned to health equity issues. Findings also serve to further illustrate how the Ontario Public Health Standards (2008/2014)—which mandates health units to communicate the health risks of climate change among other actions—are not necessarily translated into practice by all health units. Moreover, I suggest that practitioners strategically employ health equity as a discourse from which to legitimize additional actions related to climate change, whereas health equity—as a strategic priority identified by health units across Ontario—has also become a field of practice in its own right oriented towards the social determinants of health and eliminating health disparities.

As a discursive field (Snow 2008), health equity becomes a strategy employed by actors to align existing goals and values of public health practice with emerging logics and rules of
climate change adaptation. This is likely due to the fact that the field of health equity has acquired vast amounts of symbolic capital in the broader field of public health over the last 30 years. With the explosion of interest and action on the social determinants of health, health equity has a degree of legitimacy which climate change adaptation as an emerging field may lack. Accordingly, the practices associated with health equity (e.g. surveillance and monitoring of vulnerable populations; information campaigns designed to improve health behaviours of the most marginalized) can come to be reproduced on the field of climate change adaptation because they already have a degree of professional credibility, and practitioners are already adept at implementing such activities. These approaches place the onus of responsibility on the individual rather than addressing systemic factors that produce ill-health conditions in the first place. Thus, the existing discourse promotes particular understandings of equity and associated practices, many of which are familiar to practitioners and build on existing public health competencies of monitoring, surveillance and risk communication. The discourses are prescriptive, how they are framed engenders the resulting practical responses. Insofar as new practices emerge from the strategic employ of the health equity discourse, results here therefore suggest that the discourse is also simultaneously representative of a sub field of practice which overlaps with the emerging field of climate change adaptation. Practitioners borrow logics and discourses from the field of health equity as a way to legitimate emerging practices in others which also serve to reinforce dominant understandings of health equity. The relatively durable dispositions of actors trained in public health and the structuring nature of the rules for understanding health equity in the broader field of public health have reproduced an understanding of health equity in the sub-field of climate change. Instead of utilizing climate change as an opportunity to engage in moral discussions of disparate health outcomes between groups, the emphasis on documenting vulnerabilities and communicating health risks is established as both normative and legitimate.
Interventions targeting the health impacts of climate change for priority populations, such as new surveillance and monitoring activities and HARS represent borrowed logics from other sub-fields of public health practice, including health equity. From a practice theory perspective, these findings lend credence to the notion that practices are imbued with materials, competencies, and meanings, and that those meanings are telling of the motives of actors. Whether conscious or subconscious, the practices discussed here are representative of both the structuring nature of the field of public health, and the agency of actors attempting to influence the health of vulnerable communities.

The power of cultural and professional competence is therefore wielded by practitioners who are able to further legitimate particular ways of ‘doing’ public health. The implications for social change are that practices are re-conceptualized with new language, but constantly reproducing old meanings and recycled logics. This is not to say that nothing is new or innovative about the climate change and health equity agenda in Ontario. For the first time in Ontario’s public health history, practitioners are being forced to face uncomfortable questions about how to combine fields of practice in ways that are commensurate with the values of the profession, the goals of the communities they represent, and the interaction between a hierarchical society rife with inequalities and the reality of our changing climate. Practices will therefore continue to evolve as the meanings associated with them change. This is evidenced by early adopters in the Greater Golden Horseshoe region of Ontario conducting vulnerability assessments, promoting green and walkable communities, entering into discussions about sustainability within their organizations and out in their communities, contributing ideas to official plans, and revitalizing emergency response protocols in light of increasingly severe weather patterns. These are all profound and positive changes in our efforts to begin adapting to climate change.
However, this article suggests this change to be a slow and necessarily iterative process, at least for the field of public health. Despite health equity and climate change both being areas of policy priority identified by the provincial government, many health units still lack the organizational capacity or the political will to meaningfully address the root causes of health equity issues in their communities, let alone create a suite of potentially transformative practices associated with the field of climate change adaptation; a field which is still slowly gaining a foothold in many parts of the province. Thus, legacies of public health’s history continue to inform how we understand environmental hazards and what to do about them. This is not necessarily a negative process, but reproducing reductionist ways of thinking in an attempt to fit linear cause and effect relationships on complex health issues may be ill-suited to addressing multiple and compounding layers of social disadvantage.

5.5 Conclusion

Employing an equity analysis on this collection of interviews has served to contextualize how health equity is understood by public health practitioners working on climate change adaptation in Ontario, Canada. This analysis raises concerns about operational ability to engage with vulnerable populations, drawing attention to the broader political economy of resource distribution within and between health units and the resulting differences in practices with an explicit equity component. This work also lends support for insights into the change process of practices within public health, how fields emerge, and how their boundaries are contested or reinforced through practice.
Much of the health equity literature suggests that the public health community must entertain conversations about what is moral, fair, and just for the health of the public. Engaging in this discussion requires practitioners to go beyond simply documenting and describing unequal health outcomes. Rather, an equity lens involves addressing the root causes of inequality, a task which professionals may be under-prepared to engage in given the root causes of climate-related health outcomes are outside of the conventional realm of public health activities. Thus, drawing in other actors, leveraging unique policy resources, and being staunch advocates of a moral agenda rooted in justice and fairness may be required. New tools such as adaptive management, collaboration with new allies (e.g. conservation authorities, planners), and applying greater local political pressure to existing systems that generate many of the health inequities that we see today will be necessary to pursue such an agenda.

5.6 References


Chapter 6

Climate Change + Policy Change = Game Change? Ontario’s Public Health Policy Response to the International Climate Crisis

N.B. At the time of submission, this paper was under review as a book chapter contribution to a forthcoming edited volume titled Examining The Role of Environmental Change On Emerging Infectious Diseases and Pandemics published by IGI Global and the University of East Anglia. The editor gave this manuscript a ‘revise and resubmit’, and it was resubmitted for subsequent review in July of 2015. The most recent revised copy is attached.

Abstract. The health impacts of climate change have received significant attention in the international scholarly literature. Despite this, there is an absence of research evaluating existing policies aimed at promoting and protecting population health. This chapter provides an implementation analysis of the Ontario Public Health Standards (OPHS), 2008/2014--the provincial policy statement that governs mandatory public health activities in the province which includes taking action on climate change. This chapter responds to two specific questions: First, how are Ontario's 36 regional health units interpreting and implementing this policy statement; and second, how are those interpretations translated into practice. Using a web-scan and in-depth interviews with practitioners from twenty Ontario health units, this paper presents four interpretations of the OPHS, a typology of best practices related to regional adaptation, and policy recommendations to bolster domestic and international adaptive capacity to emerging infectious diseases associated with climate change, and a variety of other health-related climate impacts.

6.1 Introduction

Climate change is rapidly affecting human health around the globe and posing new challenges for public health infrastructure and systems (McMichael 2013). This chapter analyzes
the degree to which existing policy is successful in bolstering adaptation to climate change in the public health sector. In doing so, the chapter provides guidance for government officials and public health practitioners in supporting the existing actions of champions.

6.1.1 Background: Climate Change in Ontario, Canada

Canada’s climate is rapidly changing, and as a result, so too are the health risks posed to Canadians (Séguin 2008). While global average temperatures are projected to increase by between two and four degrees Celsius by the end of the twenty-first century, Canada will experience more rapid temperature increases (IPCC 2013). Between 1948 and 2006, southern Ontario has already experienced a 1.3 degree Celsius increase, and projections for the province indicate that it will experience a two to four degree Celsius increase by 2050 (Feltmate and Thistlewaite 2012). Climate change will also pose significant economic implications, particularly for major urban areas. For example, the cumulative cost of premature mortality risk attributable to heat and air quality impacts from climate change in Toronto between 2010 and 2100 is estimated at between $65 and $96 billion, and the healthcare costs attributable to air quality impacts from climate change alone in the same time period are estimated to be between $72 and $285 million (NRTEE 2011). These estimates do not factor in the rising cost of extreme weather. Indeed, the July 2013 storm that struck much of southwestern Ontario which has proven to be the province’s most costly “natural” disaster with estimated damages totalling upwards of $850 million.

Climate change has been called the greatest public health threat of the twenty-first century (Costello et al. 2009). Primary risks include the direct biological consequences of extreme weather events (i.e., heat, cold, violent weather) and temperature-enhanced air pollutants
in urban areas; secondary risks include risks mediated by biophysical or ecological processes including food security/foodborne disease, water scarcity/waterborne disease, and changes in disease vectors as previously inhospitable climates become warmer; and tertiary risks include a host of mental health issues, displacement and migration, and the exacerbation of existing health inequalities (Friel et al. 2011; McMichael 2013; Séguin 2008).

Some research has begun to explore how institutional policies and programs at the national level are fostering the country’s capacity to adapt to climate change’s health impacts (Lesnikowski et al. 2014; Panic and Ford 2013). In the United States, empirical work demonstrates that public health staff lack the appropriate training and skills to engage with climate change programmatically or substantively, and that adaptation and prevention have yet to be made a priority among American health departments as a result (Maibach et al. 2008). In the Canadian context, specific public health adaptation options have yet to be implemented in many regions across the country (Canadian Public Health Association 2006), so an investigation into emerging activities and best practices is warranted. Further, while numerous frameworks and strategies for public health adaptation to climate change exist in the literature, there are fewer instances that empirically examine existing policies and resulting implementation.

This chapter uses the public health system in Ontario as a case study for evaluating the programmatic outputs of public health policy related to climate change adaptation. I use a web scan and in-depth interviews with key informants from Ontario’s environmental public health practitioner community to 1) illustrate the markedly different interpretations of provincial public health policy protocols related to climate change; and 2) develop a typology of adaptation activities being undertaken at the level of Ontario health units.
6.1.2 Why Study Ontario? The Ontario Public Health Standards (2008) and Climate Change Adaptation

Ontario is Canada’s most populated province. The public health system is regulated at the provincial level by the Ministry of Health and Long-Term Care (MOHLTC), but program and service delivery occurs at the regional level with a cost-sharing mechanism that splits operational costs between the province and regional municipalities (Deber 2003). The province has thirty-six regional health units (see Figure 1) which are governed under the *Ontario Public Health Standards, 2008/2014* (OPHS). The regional nature of Ontario’s public health system is arguably well designed to engage with climate change because health units can respond to regionally specific health needs, as well as the regional specificity of climate change.

The OPHS are published as:

*As the guidelines for the provision of mandatory health programs and services by the Minister of Health and Long-term Care pursuant to Section 7 of the Health Protection and Promotion Act, R.S.O. 1990, C.H.7. (MOHLTC 2008, 1)*

The OPHS are also one of the first pieces of Canadian policy creating a mandate to address the emergent health implications of climate change. The OPHS classifies climate change as an
environmental health hazard, and broadly organizes the protocols for addressing environmental health hazards around preventing or reducing the burden of illness from hazards in the physical environment. Specific protocols include a mandate to:

1. Conduct surveillance of the environmental health status of the community;
2. Conduct epidemiological analysis of surveillance data, including monitoring trends over time, emerging trends, and priority populations;
3. Increase public awareness of health risk factors associated with the following health hazards: indoor air quality, outdoor air quality, extreme weather, climate change, exposure to radiation, and other measures as emerging health issues arise. These efforts shall include adapting or supplementing national and provincial health communication strategies, and/or developing and implementing regional/local communications strategies; and
4. Assist community partners to develop healthy policies to reduce exposure to health hazards (MOHLTC 2008, 46–47).

It merits attention that “climate change” appears in the OPHS document under only the third protocol where it is simultaneously identified as an environmental health hazard and sets a requirement to raise public awareness about the health risks associated with a changing climate.

An analysis of all the activities and protocols related to climate change in the OPHS is beyond the scope of this chapter. A previous review by Clarke and Berry (2012) compared the OPHS with existing climate change and health adaptation frameworks. Their findings indicate that the OPHS requires many traditional risk-management activities identified in pre-existing climate change adaptation frameworks related to emergency response and surveillance and monitoring. However, these claims have not been empirically validated by environmental health
managers mandated to work in the field of public health in Ontario, and some scholars are critical of whether “traditional” risk management activities are well suited to addressing the complexity of climate change’s related health impacts (Morris 2010). Clarke and Berry’s results neither describe existing adaptation initiatives across the province nor how environmental health practitioners see existing protocols as linked with actions required on climate change adaptation. In moving somewhat closer to this end, Paterson and colleagues (2012) conducted interviews with ten health units in Ontario to assess public health adaptation activities. Their findings suggest that public health officials are particularly concerned with temperature, air quality, and extreme-weather-related impacts. However, their analysis is limited primarily to health units in the southwest which reduces the provincial generalizability of their results. Their work also does not describe existing adaptation activities that are either on-going or in development throughout the province.

6.2 Methods and Analysis

This study followed a two-phase data collection and analysis strategy. First, I conducted a web scan of each of the 36 Ontario public health unit websites between January and April of 2013. For those health units with stand-alone websites, the Boolean search terms “climate change” or “greenhouse gas*” or “global warming” were used, making the documentation and collection of resulting hits straightforward. For health units’ websites embedded in municipal or regional web domains, I employed the same search terms with the additional search term “and health.” Content analysis was used to document how health units describe the health impacts of climate change, and what programs each health unit tied directly to climate change.
Next, I conducted twenty semi-structured interviews with public health professionals from twenty Ontario health units. While all thirty-six health units were contacted for an interview, twenty had a staff member willing to participate in the study, thirteen refused to participate on the grounds that they could not contribute anything to it (i.e., there was no climate-change orientation to their work, nor were there plans to incorporate climate change into their work in the near future), and three health units did not respond. I transcribed interviews following appropriate protocols (Poland 1995).

The twenty completed interviews have strong regional representational by census division (see Table 1) and capture a wide-ranging spectrum of action on climate change. Interviews sought to uncover personal perspectives from active practitioners working in the field in an attempt to uncover how the then-five-year-old policy mandate was being translated into practice and what that meant for their work on a day-to-day basis. Due to the perceived political nature of climate change, I protect research participants’ anonymity through the use of pseudonyms, and their specific organizations are not identified by name. This study received ethical approval from the University of Toronto Research Ethics Board.

The analysis of interview transcripts followed an iterative strategy involving three distinct phases. First, a cross-case display matrix was produced following Miles and Huberman (1994) that sought to produce a visual display of key variables and themes loosely organized around the interview questions, while enabling me to draw comparisons across cases according to some of the distinctions present within core themes. Second, in an attempt to preserve the contextual nuance of each interview, case summaries (Poland et al. 2009) of each interview were produced that resemble a condensed transcript highlighting key programmatic areas of interests, comments on policy uptake, and other thematic issues that arose during the interview. Third and finally, I employed “category zooming” — a form of analytic generalization that “zooms in” on a
particular aspect of qualitative inquiry with the goal of going into greater interpretive depth about
the complexities of a single point in a broader study (Halkier 2011). This approach loosely
resembles a targeted analysis of spoken text (in the form of interview transcripts) with the goal of
understanding of how discursive features of policy interpretation manifest in distinct and
particular forms of policy implementation.

6.3 Results

6.3.1 Four Interpretations of OPHS Protocols Related to Climate Change Adaptation

Given that the OPHS is the central organizing set of guidelines to inform public health in
the province, it is no surprise that the majority of interview participants (14 of 20) identified the
existing guidelines as their entry point into engaging with climate change from a public health
perspective. As one respondent put it: “The whole ministry put out the new ministry standards
and I’m sure that you’re probably familiar with those as well … the standards and protocols,
2008, right? And in there they outlined climate control as one of our initiatives that needs to be
addressed” (Syndra, Environmental Health Manager).

However, interpretations of what the OPHS required resulted in varied responses to
program development across Ontario health units. The degree of engagement with climate
change at the program level can be conceptualized in terms of four specific interpretations of the
OPHS policy.

Inaction was the lowest level of engagement with climate change and it is notable that
many of the public health unit staff interviewed for this project indicated that they did not have a
comprehensive climate change program. Vladimir, an environmental program manager said “I’d have to say that if we were really to talk about climate change here as something we are sort of pursuing in a conscious way right now, I would have to say that we’re really not” and that “climate change isn’t up there as a label on anything that we do.” This point is reiterated by other managers:

“I have to say right off the bat that we don’t directly call it that. We don’t have a climate change management program [laughing]” (Riven, Associate Medical Officer of Health).

“We haven’t done a tonne on climate change really” (Lucian, Environmental Health Manager).

“Well I don’t know if we do it in a ... way that we conscientiously are doing this because of, you know, we’re under the umbrella of climate change adaptation. But I think—but specifically—probably similar to other health units, where we’ve been involved in a number of ways ...I guess easily would be the extreme temperature ... types of programming and protocols that we have in place ... have had in place now for a number of years here” (Yorick, Environmental Health Manager).

“Actually we have not really done much to address it. We are waiting for the ... province to come up with...I think, some province-wide...program or protocol that will apply” (Olaf, Environmental Health Manager).
Barriers to public health adaptation are well documented in the peer-reviewed literature and include perceived uncertainties about future climatic and socioeconomic conditions; the lack of financial, human, and technological resources; limited social capital to engage other sectors; the highly specialized nature of public health and other institutions that might limit or make invisible adaptations taking place in other sectors; and cognitive limitations around behaviour change (Huang et al. 2011). Wardekker et al. (2012) add that the multi-causality and complex cause-effect relationships between climate change and associated known and unknown impacts further complicate planning.

Interviews with public health practitioners in Ontario illuminated similar findings, whereby constraints in or lack of resources of time, energy, money, and political leadership to run new programs were identified as a primary reason for inaction (see Table 4). However, Ontario public health practitioners further identified that problem denial may be an issue within health units, and that other areas of research and practice are prioritized. A final barrier was the notion of “blame avoidance” (Howlett 2014), whereby the uncertainty and time lag associated with climate change — while problematic from a programming perspective — were coupled with a question of what business or authority public health had engaging with climate change relative to other sectors.

One respondent claimed that public health’s involvement might be conceived of as “the kindergarten kids trying to play with the big boys. I don’t know, I suppose again, it’s a question of what areas do you have a mandate over?” This respondent went on to clarify this point by adding:

“Can we lead the charge on it? I’m not sure that would be the role of public health — to lead the charge on climate change — because the factors causing it are so, I mean they’re individual choices, but they’re also macro. They’re systems, they’re factories,
they’re regulations. You know, it’s a whole different set of jurisdictions that deal with the major polluters. We can influence individual behaviour, to the extent that’s even possible, but really only through information and education. We don’t have a lot of levers to pull that would make a major difference systemically across the board”

(Riven, Associate Medical Officer of Health).

Table 4. Barriers to developing public health programs to adapt to climate change in Ontario

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Supporting Quote</th>
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<tr>
<td>Problem Denial</td>
<td>“[CC] is hardly ever addressed as far as I hear. I’m not sure why and I think some of it might be personal. People aren’t going to change, so maybe a bit of it is denial?” – Quinn, Health Promoter</td>
</tr>
<tr>
<td>Prioritization of Other Areas</td>
<td>“I don’t think it’s really seen as something that is important here.” – Syndra, Environmental Health Manager</td>
</tr>
<tr>
<td>Blame Avoidance</td>
<td>“I think there’s concern that it’s just too much. It’s just too far in the future. It’s uncertain, it’s scary, and is it really our business?” – Alistair, Medical Officer of Health</td>
</tr>
<tr>
<td>Lack of Resources</td>
<td>“We don’t really have the resources to start any kind of planning and anything in depth as the project goes to climate change” – Jayce, Environmental Health Manager</td>
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</table>

A second interpretation of the OPHS highlights only the communication of health risks associated with climate change as the primary means of policy implementation, but none of the other OPHS-mandated protocols related to environmental health hazards. In this case, practitioners viewed public engagement and raising awareness of climate change’s health impacts as their sole programmatic responsibility:
“Under [the OPHS], it was mandated by the Board of Health outcomes ... the board of health shall increase public awareness of health risk factors associated with the following health hazards, and one of those health hazards was part of climate change — which was something that we were tasked to do” (Darius, Environmental Health Manager).

“Namely [climate change programming] has been with our heat alerts and our cold alerts. Um, and through that mechanism, that’s where most of the work has been associated with” (Zac, Environmental Health Manager).

“That’s what we do. So we make sure people are informed. So we have protocol here when those events happen to make sure that we communicate or issue immediate releases to ... the media we have around here. In addition to that, we do work with municipalities to make sure that the information is disseminated door to door” (Olaf, Environmental Health Manager).

“So we’re not at the stage where the public health standards say you have a role in prevention at the level of the health unit, because even if that word were mentioned, rather than just mitigating the appearance of risk, then there’s mitigating risk, then there’s preventing. So of the kind of three, we’re only at the very beginning ... communicating risk. That’s the first level” (Riven, Associate Medical Officer of Health).
The emphasis on risk communication was further highlighted through the web scan, where the majority of risk-communication activities were on an event-by-event basis (i.e., communicating the health risks of extreme heat during a heat alert). Some health units also linked to comprehensive climate change impact documents (see, for example, Séguin 2008), or presented reviews of region-specific climate impacts through independent research or vulnerability assessments.

How climate change is tied to specific health effects is also highly dependent on the region in which a health unit is located. Figure 4 communicates which health impacts of climate change were described on health unit websites as organized by census division. Findings show that health units in the “Golden Horseshoe” area (i.e., Central West and Central South census divisions, which encompass the Greater Toronto Area [GTA] through to Niagara Falls) of the province tend to have more active outreach for identified health impacts. Perhaps because this is the most populous part of the province, these health units tend to be larger and well-resourced. Also, by virtue of the urban areas they occupy, there may be richer opportunities for collaboration with neighbouring health units and environmental not-for-profits. Finally, given the pre-existing concerns of extreme temperature and air quality issues in the Niagara-GTA corridor and the inseparability of these issues from the climate change discourse, the path dependence in program development before and after the development of the OPHS has led those health units to make natural connections to climate change.

A third interpretation of the OPHS mandate was to “mainstream,” “backfill,” or “integrate” climate change into existing programs. This approach primarily involves practitioners viewing existing programs through the lens of climate change, or “in other words, link[ing] them with an integrated strategy that says if there’s an opportunity to promote climate
Figure 4. Percentage of climate change impact areas reported by Ontario health units according to census division

[Diagram showing the percentage distribution of climate change impact areas across different census divisions in Ontario, with axes representing various impact areas such as Extreme Temperature, Vectorborne Disease, etc.]
change within the programs, do it at no cost” (Viktor, Environmental Health Manager). The approach of mainstreaming is well documented by Paterson et al. (2012) and therefore does not require additional analysis here.

The final category of interpretation of provincial policy resembled a more active engagement with the issue in a way that is commensurate with the OPHS protocols and beyond. The organizations that have so far “championed” climate change as a public health issue are actively linking climate change to existing and emerging health concerns in their regions, and are beginning to develop specific partnerships and programs to address climate change’s health impacts.

6.3.2 A Typology of Adaptation Strategies Among Climate Change “Champions”: Pre- and Post-2008

Findings from the web scan and interviews indicate that prior to the implementation of the OPHS in 2008, climate change was rarely taken up by any health units in Ontario. However, climate change does factor into three unique streams of programmatic action prior to the 2008 policy mandate. First, instances where climate change, greenhouse gas emissions, or global warming were mentioned included activities around “Clean Air Days” and provincial “Idle free” legislation — particularly around schools, which demonstrates the inseparability of climate change with the broader air quality discourse. This was reiterated by one of the interview participants who said:

“We still today support Clean Air Day and as an organization the municipality still offers free bus rides every first week of June. That happens on that Wednesday. So we still do the advertising. That never went away. We still continue to do that piece, but it’s
a very minor piece now in comparison to what we tried to make of it” (Syndra, Environmental Health Manager).

A second piece of programming prior to 2008 was the monitoring of health-related impacts from poor air quality and extreme heat, often in collaboration with the Ministry of Environment. In this instance, there is some evidence from the web scan that indicates the discourse of climate change was invoked to further communicate the health risks associated with exposure to poor air quality and high temperatures, although the active linking of these issues to climate change was primarily present in health units occupying the GTA-Niagara corridor.

Finally, although occurring to a lesser degree, some public health units began creating advocacy coalitions with research institutions and community organizations, such as the Clean Air Partnership and the Greater Toronto Area Clean Air Council, to begin to develop strategic plans for how best to approach climate change from a public health perspective. Numerous working groups were formed at the provincial level, including the participation by several health units in the development of the 2008 environmental health hazard protocols. Some regional municipalities entered into conversations around the development of regional climate change strategies and emissions inventories, with several health units playing a supporting role.

Following the enactment of the OPHS, however, climate-related practices began to proliferate across the province, largely driven by practitioners reading the protocols as an impetus to “champion” climate change at the regional level. Table 5 provides an overview of six specific areas of climate change adaptation from Ontario public health units broadly classified as: capacity building and knowledge exchange; management and planning; surveillance and analysis; communication and outreach; green infrastructure; and localized food production.
Table 5. Typology of adaptation strategies pursued by Ontario public health units

<table>
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<tr>
<th>Adaptation Strategy</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Capacity building and knowledge exchange</td>
<td>Training workshops; provincial meetings; roundtable exercises; information sharing</td>
</tr>
<tr>
<td>(Intersectoral) management and planning</td>
<td>Reviews of official plans; participation in regional climate change strategies; sourcing funding</td>
</tr>
<tr>
<td>Surveillance and analysis</td>
<td>Warning or observation systems (heat, air quality, vector-borne disease, water quality); epidemiological surveillance; vulnerability assessments</td>
</tr>
<tr>
<td>Communication and outreach</td>
<td>Dissemination of behaviour change messages (e.g., sun safety campaigns)</td>
</tr>
<tr>
<td>Green infrastructure</td>
<td>Organizational “greening”; built environment initiatives; urban forestry strategies</td>
</tr>
<tr>
<td>Localized food production</td>
<td>Development of local food charters</td>
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The majority of actions fall under the first four strategy types, with green infrastructure and localized food production emerging in but a few health units as upstream strategies to combat (i.e., mitigate) and adapt to climate change. In the interview data collected, it appears that the emerging “best practices” for climate change adaptation in Ontario currently fall under four programmatic areas. First, conducting vulnerability and adaptation assessments to assess baseline community vulnerability and the adaptive capacity of public health and community infrastructure seems to currently be in vogue among Ontario health units as an “aggressive” strategy to better understand the impacts of climate change across populations:

“*The health unit wanted to do something like other health units... [Health unit name omitted] has aggressively done the climate change work for their vulnerability assessment, so we wanted to be participants in that, so that we can better protect our community*” (Darius, Environmental Health Manager).
At least three health units had completed comprehensive climate change and health vulnerability assessments that looked at health impacts at present and into the future using climate models to project future changes to health. An additional two health units conducted scoping reviews of the literature to broadly identify “vulnerable populations” that may or may not be present in their geographic area, but which are captured in the peer-review and grey literature.

Second, participating in regional climate change strategies is an adaptation option that was undertaken by at least eight health units. While such strategies are largely a capacity-building and collaborative exercise, public health units are active members of regional conversations on this subject and are aggressively considering how their existing competencies and expertise might contribute to an integrated regional strategy.

Third, “organizational greening” has been undertaken by at least two health units, where corporate practices have been analyzed to seek out energy efficiencies and lead by example before developing community interventions. This has proven to be a transformative step in fostering a broader culture of sustainability in the workplace:

“It’s certainly taking it internal, right, instead of...[absolutely] mitigation vs. adaptation in the community. It’s sort of looking internally and saying what could we or should we be doing ... to reduce our carbon footprint and other impacts on the environment. Leading by example. So, we’ve ... gradually implemented many of the recommendations about procurement, about reduced light usage, the temperature settings in our buildings, reflective coatings on windows. Sort of energy-conservation measures. We’ve really gone after transportation. So we’ve communicated repeatedly the importance of people carpooling and not travelling at all if they can webcast it instead or teleconference it instead or using public transportation or even active transportation if it fits” (Alistair, Medical Officer of Health).
A final emerging best practice relates to the built environment. Some health units highlighted their participation in urban forestry strategies, active transportation initiatives, and regional infrastructure development. However, several practitioners were critical of the emerging provincial emphasis on built environment strategies in relation to climate change (Dimoulas-Graham et al. 2012; OPHA 2011; Perrotta 2011), and questioned the degree to which the climate change discourse was actually present in built environment work:

“And while, right now, the ministry and the Chief Medical Officer of Health for Ontario is promoting chronic disease prevention and obesity reduction strategies, and health units working with the municipalities on the built environment, I think that sometimes they’re promoting the built environment in terms of increasing physical activity. Like building walkable communities. I think this is an opportunity to also identify the benefits of a walkable community from an air-quality and climate-change perspective. And I think if the chief MOH is going to be speaking out on the built environment, then she should not just be addressing the importance of the built environment for physical activity and walkability. She should also say, walkability is not just a physical activity issue — it’s an air quality and climate change issue, because you make a community walkable, you are reducing greenhouse gases (GHGs). So ... I think that unfortunately they don’t want to get message overload and they think they’ve got to target one message. That might be the strategy they are using, but I think there’s such a unique opportunity right now if you are promoting walkability for physical activity, in just your second breath you could say you are reducing GHGs and addressing climate change and air quality” (Janna, Environmental Health Manager).
“I think we at some point need to look at how you take it to the centre. There is an Ontario Public Health, public health sector strategic plan that was just launched by the Chief MOH in April... You could find that online on the Ministry of Health’s website. It’s called Make No Little Plans... And it has a section on the built environment, and this is actually, environment, environmental health in general, and a specific area of focus on the built environment. It doesn’t explicitly speak to climate change, and I think a future iteration of that plan should. It would be a worthy target that a future version of it actually speak to climate change. To actually become sort of a collective area of focus for all of public health. I would hate in a hundred years for people to look back and say ‘where were you?’” (Alistair, Medical Officer of Health).

In both of these examples, practitioners signal that existing practices in public health may not go far enough with respect to the built environment, thereby actively questioning the degree to which co-benefits of climate change adaptation work are being stressed or emphasized. From their perspective, this raises an important question about how the work is focused and framed when climate change is left out of the conversation.

6.4 Discussion: Public Health Policy as Constraining and Enabling for Emerging Fields of Public Health Practice

Results indicate that fourteen of twenty interview participants referred to the OPHS mandate to engage with climate change from a public health perspective, but participants had drastically different interpretations of what the policy meant and how it should be implemented. The organizations that tended to be furthest ahead in terms of climate change work do not
frequently cite the OPHS, but describe particular programs they have developed and delivered. In this regard, the broad mandate present within the OPHS leaves room for a range of possible interpretations that can either limit or open up new opportunities to take action. For example, one environmental health manager indicated that the standards give practitioners new opportunities to explore climate change in relatively nuanced ways:

“The public health standards now provide a little bit more latitude. So there’s you know, more opportunities to do more health promotion around exposure. So we, you know, for example, we’re responsible for increasing public awareness around health risks associated with a lot of health hazards, and one of them being climate change and extreme weather and outdoor air quality. So, that gives us a little more [laughs]. At least I feel like I have a little more latitude or opportunity to explore more than we have in the past and in — you know, there’s more of a role on supporting public policy in the standards as well” (Evelyn, Environmental Health Manager).

However, the opposite can also be true, where a broad policy mandate is read in a way that stifles innovation and action is directed to meet only a minimum standard:

“So the question’s going to be, once the information is out there, how long is it going to take for the broader Ontario public health to start changing its attack on stuff? ...I’ve also said to people that the health standards talk about outreach and communication on climate change and extreme weather and leave it kind of broadly” (Udyr, Research and Policy Analyst).
What is clear from this discussion is that the existing policy mandate in Ontario has created space for practitioners to pursue a variety of strategic options related to climate change adaptation, and that a broad policy mandate can either enhance or inhibit innovation. However, it is probably fair to conclude — especially given the number of health units that declined to participate in this study given they had little to offer — that the OPHS have not translated into equal action on climate change across health units and that policy implementation is not necessarily commensurate with the intentions of the formal policy statement.

In this regard, the intensity of action on climate change adaptation can take the form of positive responses where health units use procedural tools to support existing actions and core functions of public health practice by integrating climate change into pre-existing programming. However, increased innovation can also take form through small-scale positive responses that use substantive programmatic “experiments” to carve out entirely new areas of practice. Such innovation recognizes the limitations of a health-protection focus that reactively responds to health impacts instead of engaging in a proactive agenda to mitigate and adapt to health impacts that are forecasted twenty-five or even fifty years into the future.

In this regard, successful pilot projects open the possibility for future policy change, while an alternative interpretation of existing policy protocols might reinforce the status quo of public health practice by re-emphasizing traditional responsibilities. Moreover, some health units may interpret the broad policy mandate as lacking clarity, or worse, as creating new responsibilities with the same amount of resources — which may effectively inhibit innovation and prevent health units from engaging with climate change entirely.
6.5 Policy Recommendations to Bolster Adaptive Capacity

Several policy recommendations follow from these findings. While many existing actions on climate change are oriented toward building capacity to begin to address emergent health implications, there is still a lack of awareness of climate change as a public health issue, and a lack of clarity in the existing provincial protocols. It is therefore clear that policy should enhance the emphasis on the association between environmental issues and health, including the health-enhancing effects or co-benefits of pro-environmental behaviours (Plotkinoff et al. 2004).

The OPHS is a significant piece of legislation that outlines protocols for health surveillance and monitoring. However, there is a need to engage in the prospective surveillance of health impacts that are projected to increase under climate change (Ostry et al. 2010) which requires the provision of relevant high-resolution regional climate models to forecast a variety of scenarios into the future and engage in adaptive management based on those projections. This would require additional resources to be allocated to health units and increased awareness about how to use climate-specific information (Clarke and Berry 2012). Such resources may be accessible by mandating closer collaboration between environmental scientists at the Ministry of Environment, or researcher academics.

Since climate change will strain health services unequally across the province, there is a need to understand existing vulnerabilities in the health sector, as well as broader community vulnerabilities. Some of the identified limitations of existing environmental health assessment methodologies might be overcome by conducting localized vulnerability assessments (Shin and Ha 2012; WHO/PAHO 2012). Several health units have embarked on this path. Undertaking a vulnerability and adaptation assessment requires practitioners to apply their in-depth local knowledge of human health in the context of climate change. Since the impacts of climate
change will be regionally specific and health units already have regionally specific health needs, assessment methodologies should strive to identify adaptation options that are customizable for local conditions and populations (Ostry et al. 2010) to better contextualize community vulnerabilities given that these are often intertwined in unique, place-based settings (Yardley et al. 2010). Numerous frameworks exist to assess local vulnerabilities based on the conduct of a scoping review, the assessment of current health vulnerabilities under historical climate conditions, the assessment of future health vulnerabilities under future climate conditions, the prioritization of suitable adaptation options, and the evaluation of those options (Wardeklier et al. 2012; WHO/PAHO 2012).

However, undertaking a vulnerability and adaptation assessment requires that program managers are able to continually evaluate programs and policies in real time. Due to the uncertainty of climate change models and regional impacts, managers will be required to update baseline information from assessments and refine programs as patterns in health impacts continue to emerge. Adaptive management protocols have been forwarded as a potentially useful policy tool for engaging in climate change adaptation in the public health sector (Ebi 2011; Hess et al. 2012). Adaptive management relies on collaboration between multiple stakeholders that participate in co-defining particular problems and identifying particular solutions with the goal of projecting the possible consequences of pursuing different decisions over time and weighing stakeholder tolerance to outcomes over the longer term. This approach is broadly related to the developmental evaluation (Patton 2011) of existing programs, and emphasizes the procedural “learning by doing” and evaluating program efficiency and effectiveness under changing climatic and social conditions. Adaptive management is well suited to addressing complex problems, and the OPHS policy statement could go to greater lengths to mandate the evaluation of environmental health hazard programs by the provincial governing body in order to reflect and
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assess the changing nature of best practices over time, while ensuring that information pertaining to promising practices is communicated back to health units in a timely fashion (Morris 2010).

Finally, a significant focus in the international literature on public health responses to climate change emphasizes the health co-benefits of adaptations in other sectors through healthy public policy initiatives (Cheng and Berry 2012; Haines et al. 2009; Younger et al. 2008). To that end, the use of health impact assessment methodologies in collaboration with other sectors (Patz et al. 2008) is a useful mechanism to understand the influence of policy decisions on human health. This is particularly salient given that there is a relative paucity of attempts to incorporate climate-change-related health impacts as an input into existing environmental health impact assessment methodologies due to challenges with data collection, data quality, and persistent issues around stakeholder engagement (Turner et al. 2013). While “built environment” initiatives are a growing area of focus for Ontario health units (OPHA 2011; Dimoulas-Graham 2012), climate change rarely enters into these discussions.

6.6 Conclusion

The relatively broad policy mandate from which to engage with climate change from a public health perspective leads to differing interpretations and programmatic outputs. On one hand, the broad policy mandate has enabled public health officials to put off acting on the province’s changing climate by waiting for more definitive protocols. On the other hand, public health officials from health units that are relatively better resourced (i.e., have more staff and funding) have used the broad mandate to engage in and justify innovative adaptation activities. Future research and provincial policy development should strive to be mindful of existing
disparities between health units to ensure that programs can be adequately delivered across contexts. In order to truly engage with the upstream determinants of health, public health decision makers will need to name climate change as a legitimate threat to public health and engage with the discourse in a way that shows how public health institutions can contribute to solving one of the most complex and challenging issues of the twenty-first century.

6.7 References


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Chapter VII

Conclusion

7.1 Introduction

Earlier chapters of this dissertation engaged with the idea that climate change adaptation is an emerging field of public health practice. Accordingly, this subject was ripe for an analysis of how new practices become more or less accepted over time and to uncover the processes by which practices are legitimated. This research developed an understanding of the barriers and enablers of this work, and described the actors responding to the health impacts of climate change across Ontario’s public health sector. It also developed a robust theoretical accounting of how social change vis-à-vis practices can be made possible, and drew attention to the relative persistence of power relations in the conduct of environmental health work. Previous chapters also examined the strengths and limitations of existing provincial policy statements on environmental health through the lens of climate change adaptation, and identified policy gaps to make suitable recommendations for Ontario’s diverse health units. To summarize and conclude this body of work, this concluding chapter includes:

- A brief commentary on how this field of practice has evolved since beginning to work on this project, and how I see the climate change and public health adaptation sub-field evolving into the future; and
- A summary of key findings and contributions to the scholarly and substantive literature on public health adaptation to climate change;
• A discussion of implications for practice and advice for practitioners struggling to legitimize new practices.

### 7.2 Reflections on Developments in the Field

Before summarizing the core contributions of this body of work, it is worth examining a few recent developments from the field given that this dissertation unfolded over a period of six years. This section describes a few of these developments which hold potential to shift the ‘rules of the game’ in public health and open up new opportunities to engage with a proactive practice agenda for climate change adaptation.

Politically, federal parties have generally indicated that the responsibility of climate change adaptation and mitigation lies within provincial jurisdiction. The upcoming federal election sees no party actively campaigning for significant changes to the federal government’s approach to dealing with climate change, save perhaps the Green Party of Canada. This has required the provinces to devise their own policies and strategic plans for dealing with climate change.

In Ontario, the newly re-named Ministry of Environment and Climate Change (MOECC)—formerly the Ministry of Environment—represents the literal naming of climate change as a priority for the recently elected Ontario Liberals. Not only is mitigation a significant component of this portfolio, but adaptation has begun to come into focus with working groups being established and conversations being convened on how to mainstream adaptation efforts across sectors and government divisions.
An additional element of the MOECC has been to enter into serious conversations about placing a price on carbon. The MOECC recently announced the implementation of a cap and trade scheme (Office of the Premier 2015) similar to the model currently operating in Quebec. In theory, this program seeks to reduce greenhouse gas emissions by setting limits on emissions on a sector and industry basis, while rewarding innovative companies who are more efficient at managing emissions levels. The incentive to reduce emissions allows any cap room to be ‘sold’ or ‘traded’ to other businesses who had been less efficient in managing their emissions. Notwithstanding critiques of cap and trade systems—insofar as they are typically not stringent enough in requiring reductions from business as usual emissions (McAllister 2009) and the inherent problems of creating a market for a publicly traded environmental hazard (Avi-Yonah and Uhlmann 2009)—there are potential benefits. Not only could such a program hold significant potential to reduce greenhouse gas emissions domestically, but revenues from the auctioning off of ‘pollution permits’ by the provincial government could be used to address the hefty costs associated with readying infrastructure to reduce flood risk, planting more resilient species of trees in urban areas to limit the urban heat island effect, and engaging in a variety of proactive and adaptive responses that address the co-benefits of climate change adaptation beyond those of human health. To date, no such commitment has been made by the province, as they have instead opted to reinvest any revenue in mitigation rather than adaptation initiatives (Office of the Premier 2015).

On the public health front, a 6-year review of the Ontario Public Health Standards was recently completed (see MOHLTC 2008/2014), with a revised list of standards posted on the Ministry of Health and Long-term Care website and circulated to regional health units. It is noteworthy that there were few changes to the environmental health hazards section. Climate change remains a named health hazard, but no additional guidance or protocol is provided
beyond communicating health risks, no mandate provided to engage with other partners to address this issue, and little advice on how best to communicate health risks of an incredibly complex issue informed by the study of ecology, atmospheric chemistry, land-use planning, and economics.

While this can be seen as problematic, findings from Chapter VI suggest something altogether different. While a broad policy mandate can be limiting, insofar as it absolves health units from particular responsibilities, it has also been enabling for relatively well-resourced health units who are willing to take the lead on new and emerging public health issues. Ontario health units have a proven history of working effectively with one another and learning from other jurisdictions. One need only look back to the significant air quality concerns present in southwestern Ontario in the 1980s and 1990s to understand how a cross-jurisdictional health issue emerged and was effectively targeted by health units. This is not to say that health units ‘solved’ air quality issues in Ontario. They were, however, a significant component of on-going conversations at the local, regional, and provincial level, and were able to engage in new practices such as remote air quality monitoring stations and hazards assessments of vulnerable areas due to newly accessible resources developed by other health units and made available through the province.

Indeed, practitioners on the ground are already seeing revitalized support from the MOECC and other government actors to engage in new program delivery efforts. However, it will have to be through the leadership of local health units to continue to develop and implement innovative practices in the absence of a firm policy mandate. This makes the role of climate change champions, and securing meaningful support for their activities, that much more important.
Vulnerability assessments are starting to gain momentum as a novel methodology for assessing health risks on an emerging field (see Berry et al. 2014). Such assessments, while suitable for capturing the effects of climate change on health may be limited in identifying and addressing the long term impacts of climate change, or indeed the underlying causes of vulnerability. Moreover, existing assessments at the level of Ontario health units are largely done in isolation without collaboration from other sectors and may therefore not be attentive to a variety of spatial and temporal scales or a diverse set of environmental and social values.

The value of integrative thinking—the merging of ideas and tools from diverse disciplines and practice areas—in relation to complex challenges lies in its ability to bridge and bond ideas; to bring together myriad considerations of a problem and trace the choices and actions of particular decisions in a way that promotes comprehensive attentiveness to an inclusive array of perspectives and interests. An integrative approach to climate change necessitates inter-sectoral collaboration, but also requires a careful and considered calculus in weighing certain perspectives in relation to broader goals oriented towards proactive adaptation. Learning and adapting in the assessment process to changing conditions must be a requirement in order to account for changing processes that will need to be refined or revisited as this work continues to unfold (Ebi 2011).

7.2.1 Looking to the future

As interest in climate change vulnerability and adaptation assessments continue to gain traction and interest among health units across Ontario and the rest of the world, my sense is that there will be ample opportunities for continued innovation across this emerging field of public
health practice. As it currently stands, tools and methodologies that are more rooted in classical epidemiological approaches to health surveillance and health risk communication are the primary means of engaging with climate change planning and programming. Moreover, these are largely being employed by relatively well-resourced health units.

Once the conventional appetite for the measurement and quantification of health risks is satisfied, my hope is that suitable adaptation options will be illuminated and more preventative action can take place. This is being evidenced in the Region of Peel where Peel Public Health has partnered with the regional tree planting strategy, where increasing the urban tree canopy is a low cost, high return investment in reducing permeable surfaces and alleviating flood risk, reducing the urban heat island effect, and improving air quality (Toronto and Region Conservation Authority 2011). Adaptation options like these will continue to grow as existing vulnerabilities are identified. The challenge will be to continue to monitor their effectiveness, and find ways of working with regional allies to make the case for public health involvement, and to make the case for these kinds of initiatives more generally. More broadly, there is a demonstrated need to ensure that these and similar lessons are not only shared widely throughout the public health community, but also to earmark new sources of funding and apply these learnings for other health issues, but also for other sectors and jurisdictions.

An additional push factor for taking up new programs seeking to bolster the adaptive capacity of Ontario health units is the accelerating pace of change and resulting impacts of climate change. Toronto has experienced a recent surge in extreme rainfall events that have exceeded the ability of its storm water management system and raising serious concerns about water contamination and indoor air quality issues related to basement flooding (City of Toronto 2013). The July 8, 2013 storm was estimated to cost more than $1 billion and has been labelled
Ontario’s most costly ‘natural’ disaster on record (Environment Canada 2013). As events like these continue to become the ‘new normal’, decision makers will need to consider more proactive adaptation measures, in which public health units can and ought to play an integral role.

While this ‘wait and see’ approach has been critiqued in previous chapters of this dissertation, it is worth noting that the measured and felt reality of climate impacts will likely be more meaningful in terms of promoting tangible action relative to the perceived impacts. Indeed, historical droughts and extreme heat in the United States have raised significant awareness for climate change and are forcing public health practitioners to consider the implications of water security and wild fires on their day to day practice (Keim 2008).

Moreover, due to the pioneering efforts of climate change champions across Ontario, there remains significant hope for more accelerated and innovative action on climate change. As illustrated in Chapters IV, V and VI, these actions appear to already be underway in numerous jurisdictions across the province. As these activities continue to gain exposure throughout the provincial public health community, interest and lessons learned will proliferate and the field will continue to grow and evolve.

### 7.3 Contributions to Research, Policy and Practice

Having documented these historical and prospective changes to the field of public health and climate change adaptation, it is now worth highlighting the key substantive, theoretical and methodological contributions of this dissertation.
7.3.1 Theoretical contributions

This dissertation utilized a Bourdieusian practice theory orientation to generate an understanding of how new fields of practice emerge, how the field of climate change adaptation is being framed and legitimated by different players on Ontario’s public health community, and to better understand the specific practices that respond to a changing understanding of public health over time. Given that the term ‘climate change’ made its first appearance in the Ontario Public Health Standards in 2008, my dissertation was timely in exploring the emergent nature of this sub-field of public health practice.

This dissertation illustrates the utility of Bourdieusian social theory in understanding emerging fields of practice through an analysis of specific practices and the legitimacy accorded to the actors employing them. In placing practices under analysis and documenting their dynamic interaction with practitioners and the fields of play in which they are positioned, I show how some courses of action are viewed and interpreted as more promising than others. In other words, this work documents and explains how particular logics operate within fields and across levels of analysis to influence how and why some practices come to be positioned as more or less legitimate in relation to long-standing traditions of thought and action within public health.

My analysis provides evidence for processes of cultural (re-)production in public health at large, but it also exemplifies how field creation and social change are made possible in the face of social suffering in the personal, organizational, and professional realms. The professional struggles endured by individual practitioners and public health organizations is rarely documented and articulated. At the level of public health organizations, neo-liberal cuts have limited the fiscal realities of conducting public health work across the province. The struggles
endured by individual champions and public health organizations are rarely acknowledged, let alone documented. However, it is clear from Chapter IV that minimizing suffering by supporting champions, partnering with likely and unlikely allies, and securing additional dedicated funding for public health at large meaningfully support field creation and innovation in emerging fields of public health practice. Focusing my analysis on understanding the relationship between practitioners and their practices requires a critical and reflective engagement with the interaction between the two. Following Bourdieu, exposing the relational positioning of ideas and actors on a field of play illuminated the structures of public health practice and the agency of champions to change the rules of the game in public health at large, thereby reducing symbolic suffering and broadening the scope and focus of public health practice.

Thus, an additional contribution of my work lies in the explication of fields as social spaces and contexts for scholarly analysis and understanding. Insofar as fields do not exist in an objective space—they are configurations of actors that are fluid and dynamic—fields are a useful conceptual tool for understanding the forces that guide strategic practical action. The practices that emerge as a result of these dynamic interactions therefore tell us a lot about the structuring nature of that field (i.e. the rules of the game) and the dispositions of the actors participating in its creation or the negotiation of its boundaries. By unpacking the blurry boundaries of social fields and sub-fields of public health, my research contributes to elaborating Bourdieusian notions of field and social change in a contemporary environmental health context. While fields have previously been articulated as relatively discrete arenas of social action (Fligstein and McAdam 2008; Martin 2003), this work unpacks how fields overlap with or become situated within numerous others at broader levels.
Notwithstanding considerable academic research on ‘boundary objects’ and ‘boundary work’ (Lamont and Molnar 2002), relatively little has been written about the interplay between and nesting of fields. By examining this interaction, this research integrates and illuminates how broader fields socially influence and contribute to action in sub-fields (i.e. public health dispositions and discourses influence environmental health which in turn dictates legitimate action on the field of public health adaptation to climate change). While this remains an area for further investigation, sub-fields have been used here to demonstrate the complexity of social life and the subversive nature of power structures that operate to influence social action and the adoption of new practices. For this dissertation, the true utility of field and sub-field was exemplified in documenting and detailing the scale of investigation and the relative contexts therein.

7.3.2 Methodological Contributions

This work employed a Bourdieusian analysis of social practices. When considered through the use of analytic tools including habitus, field, and capital, my dissertation exposes existing power structures in public health practice and develops an understanding of how practices are embodied and reproduced over time. While this dissertation did not strive to develop new research methodologies, several methodological insights flow from this work.

In order to understand why some practices are seen as more legitimate than others, I rigorously attended to the social dynamics which produce and allow practitioners to take up particular practices. The analytic focus on discursive and practical action through a webscan and in-depth interviews required a targeted yet iterative approach to all stages of analysis. In order to
‘read between the lines’ of conventional environmental health practice, a nuanced and reflective engagement with ‘fringe’ activities that lay outside of conventional action was required to interrogate how some practices are different than others as reconciled and described by practitioners themselves. By understanding how practices are viewed and positioned in relation to others by practitioners in a field, I illustrated how power relations within Bourdieusian fields produce deterministic forces which influence actor’s decisions. Such an analysis required analytical strategies that do not fall into a determinism trap by accounting for individual agency offered to practitioners through organizational hierarchy, training, and competence in navigating the broader public health system. This dissertation demonstrates how a careful and reflexive application of the Bourdieusian framework of Field + (Habitus x Capital) = Practice (Bourdieu 1984) allows us to explicate the dynamics in the field and sub-fields that shape practices. Thus, this work challenges the notion that any of Bourdieu’s concepts can be separated methodologically, and that a Bourdieusian analysis must maintain a relational focus between habitus, field, capital and practice.

Second, this work supports the notion that people can talk about their practices in a deep and engaging way when called upon, countering the notion that habitus is un-reflexive or pre-cognitive (Hitchings 2012). In-depth interviews allowed practitioners to be quite forthcoming about the utility and futility of their day-to-day work on climate change and that they were keenly aware of power dynamics that influenced their ability to act in particular ways. Indeed, this was true for champions and other practitioners alike. This is notwithstanding other scholarly concerns regarding how we present ourselves in interviews and that what is said may not necessarily correspond to an ‘objective’ reality (Holstein and Gubrium Potter and Hepburn 2005). Nonetheless, inviting participants to reflect on their own practices was therefore a useful
way of soliciting a critical engagement with their own dispositions (habitus) and the broader rules of public health.

Finally, this work provides additional support that methods studying talk and text and the cultural and discursive framings therein can illuminate symbolic meanings in language that legitimize practices. The application of Bourdieu’s concepts of habitus, field, capital and practice centred on an analysis of how actors and organizations formed and framed their practices in relation to their dispositions, resources at their disposal, and an understanding of what they ‘ought’ to be doing on climate change adaptation relative to other organizations and individuals. To this end, critical discourse analysis is an effective methodological tradition to inform an understanding of what is said and left silent in interviews and other forms of text based data on social practices.

7.3.3 Substantive contributions

Substantively, this work underscores the fact that we require champions to spur innovation in the field of public health. Policy changes and practical recommendations are likely to remain unimplemented if they are not led by individuals with passion and vision. Moreover, we know from Chapter VI that broad policy statements may be enabling for some—in the case of some champions, the policy statement just legitimized work that was already underway—but without more specific directions on how to implement and be accountable in terms of said implementation, they can also be used to justify inaction. Accordingly, broad policies give issues legitimacy by giving the public the sense that they are being addressed. Yet without practical tools and suggestions for practice, they remain words on a page with little ability to be translated.
Examples of such policy and practice recommendations are leveled in Chapter VI, and additional recommendations follow at the end of this chapter.

Additionally, this work unpacked and detailed a variety of actions being considered, developed, and implemented by Ontario’s public health community that speak to climate change adaptation. While the majority of these activities tended to reproduce existing risk management orientations towards public health—forgoing the possibilities that a more holistic vision of environmental health might engender—there are still a variety of actions that are spurring future action. This is not to discredit the importance of monitoring and risk surveillance, but that given the increased emphasis on the social and ecological determinants of health (CPHA 2015) among Ontario’s public health community, this dissertation’s critical bent highlights where and why action on climate change adaptation is (or is not) occurring.

7.4 Integrative Discussion

Following O’Neill et al. (2012), while change in public health occurs as issues emerge, my dissertation demonstrates that individual agency is key and flows from those with a radical habitus who are capable of questioning the existing modus operandi of public health practice. Through a relatively elastic interpretation of policy, climate change champions are able to pilot niche innovations which can then scale back up the policy process and redefine our understanding of issues and appropriate responses to them.

A broad policy mandate was, however, not necessarily enough of a rationale for practitioners to engage with this emerging field given the significant personal and professional risks. While this research (particularly Chapter IV) shows how environmental public health
practices are reproduced over time to reinforce a dominant reactive public health doxa, it also shows that the logics of other sub-fields of public health practice can enable the expansion and legitimation of new professional practices. For example, as shown in Chapter 5, the champions of climate change adaptation tended to be particularly well-attuned to health equity dimensions of practice, and strategically employed the health equity discourse as a way to legitimate action on climate change. The strategic insertions of existing discourses into new fields are a mechanism of social change in public health. This work demonstrates that health equity constitutes a form of symbolic capital with a high conversion values across sub-fields of practice. Accordingly, this work illustrates that the emergence of issues and key policy declarations are not enough to manifest action. It signals the critical role of more localized focus on practices which can then feed back into the (re-)definition of a public health issue and associated policy protocols. Thus, there is significant value in utilizing practice-based evidence (Green 2006) to inform our understanding of how social practices emerge, are maintained, and can transform the processes that guide the development of new fields (Carroll 2012).

This work has also shed light on important disparities that exist between health units across Ontario, in so far as there are varying degrees of ability to respond to emerging health issues depending on the capitals able to be accessed and the localized understanding of health concerns. This form of roll-out neo-liberalism is one in which health units are all given the same policy mandate, but not necessarily the same resources to engage with that mandate. This helps us understand the prevalent degree of inaction on climate change adaptation across the province. A relatively broad policy mandate has been utilized to justify inaction (as shown in Chapter IV), through a strategy of “wait to see” whether provincial decision-makers develop clearer guidelines for action. Thus, the presence of a policy mandate gives the appearance that the public health community is taking action on climate change (and other issues), but a closer examination
reveals the diversity of ways in which this is taken up, and the very real limitations faced by
many health units. This is a form of symbolic violence. Explicating Bourdieu, socio-political
action plays out across (1) material resources; (2) the contours of a field in terms of both their
symbolic and distributive dimensions; and (3) the processes of legitimation, according to Swartz
(2014). These processes are clearly demonstrated in the climate-related health field of Ontario.

It is also worth noting that the existing provincial policy statement on environmental
health hazards is heavily steeped in epidemiological risk surveillance language. This dissertation
has problematized how such an orientation can symbolically reproduce tacit understandings of
how the public health community ‘ought’ to engage with applied practice. Following Bourdieu,
and understanding that fields are the sites of social action where rules and practices are
designated as legitimate (or not), it is possible that failure to orient one’s work towards the
applied practice of risk surveillance can come with significant professional risks. Indeed, the
champions of this work indicated that they were often challenged for not following the
‘conventional rules of public health’ dominated by more traditional biomedical or
epidemiological health protection doxas that tend to be more reactive than proactive.

As indicated in Figure 2, at the outset of this dissertation, climate change adaptation was
situated as an emerging sub-field of environmental public health within the broader field of
public health according to its identification as an environmental health hazard. While I continue
to maintain that climate change adaptation is an emerging sub-field of public health practice, it is
important to highlight that as this field grows and expands, it continues to successively integrate
discourses from other sub-fields of public health practice, and other external professional fields.
It is therefore important to consider the relatively porous boundaries of emerging sub-fields, and
to monitor their trajectory over time. Indeed, an important area of further investigation will be to
‘check-in’ with this field at various points in time, to comment on its continued development, key milestones, and additional strategies employed by the practicing community to further its expansion. This will enable an ability to track the trajectory of this field and develop further understanding for the successive iterations of practice that emerge from those documented in this dissertation, and to contribute to a more nuanced understanding of social change.

Climate change adaptation should not be conceptualized as a new era of public health practice akin to those typologies developed by Baum (2002), Awofeso (2004), and O’Neill et al. (2012), but rather as a sub-field of practice. However, this work does suggest the continued expansion and redefinition of ecological public health issues within the practice-based community. Through a case study of a sub-field of public health practice, this work has developed a theoretically informed account about pathways to change in public health. Moreover, this work has drawn the influence of practice back to our understanding of public health issues and associated policies. This process illustrates how practices can drive the expansion of social fields, and are not just the product of our understanding of an issue as theorized by Rootman et al. (2012). This work has also situated the importance of understanding sub-fields of practice—to clarify the level of analysis—which can highlight how broader practices can scale up and out of a sub-field and into the field of public health at large.

### 7.5 Implications for research and practice

Flowing from these contributions, there are several key implications for future research and practice on public health adaptation to climate change. Previous chapters have made explicit policy and practice recommendations. Thus, comments here will speak to the broadest
motivations for this study and layout paths for future research with additional insights for the public health practice community.

7.5.1 **Effective collaboration and analyzing fields beyond public health**

This dissertation has described the scope and scale of action on climate change adaptation by Ontario health units through a rigorous accounting of sub-fields of public health practice (i.e. environmental public health, climate change adaptation). However, this study is limited in its analysis of overlapping fields outside of public health. While some degree of collaboration with environmental organizations, planners, and other actors working on climate change was signaled by Ontario’s public health community, it is unclear how the logics of these additional overlapping fields of practice intermingle to result in practical action. If all fields require struggles over resources and power, studying overlapping fields holds the potential to understand the distribution of power between or within a variety of fields engaging on the same topic. Such an analysis would illustrate more effectively how to leverage dominant discourses, actors, and capital to meet the changing demands of public health work more broadly. It may also illuminate how new relationships and practices come into being.

Practically, this means that public health practitioners are already endeavoring to partner with a variety of likely and unlikely allies in order to gain access to new resources and additional forms of symbolic support. This partnership work is incredibly important to meeting the integrative thinking challenge outlined above. Thus, I echo the call from previous scholars for the need for strong community engagement and development approaches to program and policy planning and implementation (Ebi and Semenza 2008; Moench et al. 2011; Reed et al. 2011;
Tyler and Moench 2012). This will necessarily require public health practitioners to broaden their understanding of engagement to work more collaboratively with citizen-led initiatives, industry groups, and civil society organizations. The democratization of public health work in the context of the pressing need for climate change adaptation activities will undoubtedly provide additional opportunities for understanding how fields are formed, boundaries contested, and practices legitimized.

7.5.2 Illuminating additional discursive lessons from the field of health equity

The emphasis on health equity in Chapter V indicates the presence of two overlapping areas of discursive interest in mitigating or managing the inequitable distribution of health impacts from climate change. Further research could endeavor to understand the relationship between those discourses used as legitimating features of public health practice (i.e. health equity) and the broader structures guiding action which have seen limited gains in closing socioeconomic and demographic gaps in health status despite forty plus years of engagement with these issues. The degree to which public health actors are able to engage with and influence social policies that are indirectly related to health outcomes is therefore paramount to understanding action on health equity and any resulting changes to population health status. Understanding how best to discursively frame key messages and policy recommendations would therefore be useful.

According to practitioners, health equity is an already widespread and legitimate sub-field of public health practice may hold a suite of discourses and framing tools able to be
employed by champions to further their public health adaptation work. Climate change is a pressing health equity issue given that the most marginalized groups and individuals across Ontario—who already have disproportionately poor health outcomes—are the most likely to experience climate-related morbidity and mortality. By framing climate change impacts as an equity issue, additional support for emerging and novel activities may be made actionable.

7.5.3 Towards an understanding of public health competencies for dealing with climate change

A more fulsome analysis of public health competencies may be required to understand existing strengths and areas of improvement for practitioners across public health’s numerous sub-fields. The Public Health Agency of Canada (2008) developed a core competency statement in 2008 which focuses broadly on skills that include the public health sciences; assessment and analysis; policy and program planning, implementation and evaluation; partnerships, collaboration and advocacy; diversity and inclusiveness; communication; and leadership. However, as argued by Buse (2014) and Gislayson et al. (2014), new concepts and training are likely required to meaningfully engage with the ecological determinants of health related to climate change. In this light, ‘ecohealth’ research and practice offers ideas and skills which include sustainability, transdisciplinarity, gender and social equity, multistakeholder participation, systems thinking and knowledge to action (Charron 2012). In their application of these concepts to public health competencies, Gislayson et al. (2014) found that ecohealth thinking lends new concepts and tools able to more holistically engage with climate change and
public health adaptation thereby offering the capacity to foster new skillsets among the next generation of public health practitioners.

Practitioners interviewed for my dissertation indicated that they welcomed opportunities for advanced training in epidemiology, land use planning, and climate modeling. However, the ability to support and integrate these knowledge bases is resource intensive and beyond the capacity of most health units to currently do well. A more thorough analysis of the skills necessary for adapting to climate change would be useful, particularly in terms of how to more effectively influence decision-makers, develop knowledge networks and communities of practice that facilitate the flow of information, and account for and measure complexities inherent to climate change impacts and their resulting implications for human health.

7.5.4 Understanding the distribution of power across nested fields of social action

This work also unpacked the relative importance of power and hierarchy in the conduct of public health work, especially in the context of organizational and professional fields. The challenge for researchers and research participants brought about in this analysis is that it is one thing to provide opportunities to vocalize the power relations at play in a given field, but another to fully be able to challenge those power structures without the support of key decision-makers. The notion of organizational hierarchy and the objective positioning of employees in more or less senior positions therefore adds an additional layer of political (and resulting analytic) complexity within the broader and more abstract field of public health practice. Thus, cultural and professional competence in the field of public health (i.e. risk management as a strategic
approach to health protection) has become a practical strategy that reproduces hierarchical understandings of practice and reinforces existing power structures.

The challenge for the researcher is to tease out the relative influence of the organizational and professional field on practical action. Assessing and accounting for the interaction between the two remains an area for future methodological consideration. For example, the struggle of practitioners to challenge those structures is compounded with a requirement to do mandated public health work while being a productive member of a public health organization to potentially advance one’s career. The challenge here is that the mandatory guidelines provide significant room for interpretation. It is these interpretations that this dissertation has analyzed, exposing the geographic, organizational, and professional politics and power at play within public health at large. On an individual level, some practitioners have changed day to day practices based on their understanding of environmental change, but they are still going up against institutionalized power that embeds a very particular notion of how we in public health 'ought' to act. Case study methodologies comparing organizational operations with practitioner interpretations of core public health values and competencies would undoubtedly shed additional light on this issue.

### 7.5.5 Finding ways to support champions

My analysis indicated that supporting champions of this work is a key leverage point for influencing social change and practical action. Passionate individuals have found ways to endeavor into proactive mitigation and adaptation efforts both with and without the recognition of policy as an enabling factor. Finding ways for organizational leaders to support their internal
champions is therefore critical to supporting this work. Health units that are further along in their climate change adaptation work were also more likely to be passionate advocates for environmental protection and for health equity. It is the work of these individuals that needs to be continually supported since they are the ones driving the practice agenda.

### 7.5.6 Additional recommendations for the practice community

Finally, for those public health actors looking to contribute to this emerging field of practice, I have several closing considerations that flow from the recommendations above. If the notion of ‘struggling’ on a field of practice seems uninviting, it is clear from this research that this is a shared perspective. While not a recommended course of action, numerous practitioners continue to bide their time until the political tides turn, or until additional resources are made available to undertake new work.

For those seeking to engage with climate change as a priority public health issue, several actions can be taken which are currently in step with other members of Ontario’s public health community. Many champions indicated that seeking out allies within and beyond their organization were necessary to support the early stages of their work, but particularly people with power and influence, or those who already have well-established climate change and health portfolios. In cases where organizational support is lacking, finding others engaged in this work and seeing what kind of support public health organizations might be able to lend as a partner was also forwarded as a typical preliminary step. Related to the above, champions of this work often expressed the need for a strong and well-crafted narrative for public health action on climate change. Similar to recommendation two above, finding support for this work will be
impossible without the framing climate change as a significant public health threat. Thus, feasible entry points include utilizing existing research to quantify the health savings of proactive action on climate change adaptation (see NRTEE 2011, for example), and employing newly accepted tools (e.g. vulnerability assessments, communication of health risks, provincial policy statements) to justify this work and gain organizational support are all feasible entry points. Additionally, advocacy efforts that encourage the adoption of climate change as a priority public health area beyond the provincial protocol area of environmental health hazards may be pertinent for those seeking a more proactive rather than reactive engagement with this topic. As illustrated in Chapters IV and VI, the logic of conventional environmental health protection—while important for addressing some climate impacts—may be ill-suited for a variety of preventative adaptation measures. Influencing this discursive change in policy language—notwithstanding the enabling and constraining features of policy described earlier in this dissertation—may provide additional avenues of engagement for health promoters and other public health professionals.

7.6 Conclusion

I approached my doctoral research at a time when climate change adaptation was only just beginning to take off in the province of Ontario. The evidence presented here is reflective of my own critical engagement with this field, and the systematic research conducted. As the field continues to become more established my understanding has become more nuanced. In the early phases of my dissertation work, there were perhaps only a handful of public health units that were actively pursuing a climate change adaptation agenda or participating in regional conversations. However, over the past five years, a variety of actions and actors have changed
this conceptualization to the typology of actions found in Chapters IV and VI. This field will continue to change and evolve, but my contention is that the champions of this work are those who will continue to move it forward, innovate practice, and develop solutions to one of the 21st century’s most pressing environmental issues.

Despite the considerable challenges ahead, in light of this research, I am given great hope by Ontario’s public health system and its staff. As Clarke and Berry (2012) suggest, Ontario’s public health standards and associated protocol are well situated to respond to climate change’s health impacts. However, because Canada’s most populated province is slated to feel significant impacts in terms of extreme weather, poor air quality, and vector-borne disease, I remain steadfast in my policy recommendations. Ontario must bolster proactive policies, regulations, and actions to mitigate the health impacts of climate change and reduce existing health inequities before they are exacerbated any further.

### 7.7 References


Appendices

Appendix A. Invitation to participate

Dear [contact name],

My name is Chris Buse and I am writing to invite you to participate in a Ph.D. dissertation research project titled “Analyzing an emerging ‘field’ of public health ‘practice’ in Ontario: The case of climate change adaptation” (see 1 page project summary attached). Specifically, I am interested in speaking with people/professionals from Ontario’s public health sector who have worked on, are currently working on, or are planning to work on climate change adaptation (broadly defined). Your work with [name of health unit] was identified through a web-scan of climate change-related public health activities among Ontario public health units. I hope you will agree to participate in an interview. If you do not wish to participate in the study, or know of someone better suited for this interview, please let me know so I do not disturb you with follow-up phone calls or emails.

The interview can be completed at a time of your choosing, in-person or by telephone/Skype, and will last about 45-60 minutes. I have attached a Research Informed Consent form which provides: additional information about the topics that will be discussed during our conversation; and ethical information about the study including your rights as a research participant. If we are able to meet in person, I will bring a copy of this letter for you to sign when we meet. If you agree to be interviewed by telephone or Skype, I ask that you consent to participate in whichever of the following two ways is most convenient:

1. Respond to this email indicating that you consent to participating in our project and that you agree to have your interview recorded;

OR
2. **Print, sign, scan, and e-mail a copy of the consent form to me (chris.buse@utoronto.ca).**

Thank you in advance for your consideration to take part in this study. I understand that you are extremely busy. If I do not hear from you, I will be contacting you by email or telephone in a few days to follow-up with you. If you have any questions about this study, please contact me or my supervisor using the contact information provided below. I very much look forward to hearing from you.

Sincerely,

Chris Buse, MA, Ph.D. Candidate (Primary Researcher)  
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Appendices

Appendix B. One-page Study Description for Interviewees

TITLE: Analysing an emerging ‘field’ of public health ‘practice’ in Ontario: The case of climate change adaptation

Climate change is already impacting the health of Canadians through a variety of direct (e.g. heat related morbidity and mortality) and indirect pathways (e.g. exacerbation of health inequalities). Accordingly, public health practitioners are increasingly expected to respond to climate change; to adapt to its effects before greater health consequences come to bear. In doing so, practitioners are engaging in the creation of an emerging field of public health practice.

Some early climate change assessments have yielded strategic recommendations for policies that seek to promote community health in the context of Ontario, Canada. However, few scholarly efforts have examined how health equity may be more effectively championed through a proactive engagement with climate change from a population or public health perspective. Several important questions remain unanswered, including:

- How is public health adaptation to climate change being made actionable by health units in Ontario?
- How is this new area of practice being framed and by whom? And,
- What can be learned from the experiences of those engaged in this work?

More broadly, there is a theoretical need to build a generative understanding of how new fields of public health practice emerge, how they are legitimated, and by who. Engaging public health practitioners in this discussion may surface useful lessons learned from the experiences of people who are able to move innovative projects forward.

What is therefore required is a study that accounts for the practical experiences of public health practitioners involved in constructing and co-creating this field to meet the evolving health needs of the public. This study is informed by the theoretical and methodological insights of Pierre Bourdieu—a prominent French sociologist. The study explores promising examples of climate change adaptation work being taken up from a public health perspective in Ontario and aims to better understand the motivations of practitioners who are engaging in this work. Using data from a web-scan of the 36 public health units in Ontario, Canada, and in-depth interviews with public health practitioners around the province, this study will examine:

I. The ideas, resources and approaches that are used by climate change ‘champions’ in the public health sector to advance this area of practice;

II. The kinds of pushback, resistance or challenges climate change ‘champions’ have faced;

III. Where considerations of equity factor into climate change adaptation as it is taken up by public health actors; and

IV. The lessons that can be learned from public health actors engaged in this work.

Implications for practice will be shared with research participants and Ontario’s public health community in a short report that will provide an executive summary of key findings. Findings will also be disseminated at national and international conferences and in the scholarly press.

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Appendix C. Informed Consent Form

Analyzing an emerging ‘field’ of public health ‘practice’ in Ontario: The case of climate change adaptation

**Principle Investigator:** Chris Buse, Ph.D. Candidate  
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**Purpose:** This study examines the emergence of adaptation to climate change as a new ‘field’ of activity/focus within and across public health units in Ontario, Canada. The study seeks to identify “lessons learned” and “promising practices” that can inform public health practice. Interviews in this study will be conducted with public health professional who have worked on, are currently working on, or are planning to work on various climate change adaptation activities. Interviews will cover:

- Your involvement in this work;
- Your perspective on this work and the approach that your public health unit takes in moving it forward;
- Challenges you and your organization have faced, and milestones achieved;
- How health equity is considered in relation to your various climate-related activities.

We realize that some information on your organization’s climate change-related work is available on your website, but that some of your additional activities and plans may not be listed. Hopefully you will agree to participate in an interview, knowing that there is much that can only be explained in conversation.
Conflict of Interest: The study itself has no ties to industry or government partners, and will be conducted exclusively as a dissertation research project by a doctoral student from the Dalla Lana School of Public Health (DLSPH) at the University of Toronto.

Study Procedures: Your interview will last about 45-60 minutes at a location of your choosing, in person (where appropriate or possible) or via the telephone or Skype (to help reduce the carbon footprint of the study). With your permission, your interview will be recorded so that the researcher has an accurate record of what was discussed.

Potential Risks: It is not anticipated you will experience any harm as a result of participating in this interview. You may feel uncomfortable answering some questions. However, your participation in the study is voluntary and you can choose not to answer a question, or withdraw from the interview at any time with no negative consequence to you.

Potential Benefits: Hopefully you will see the interview as an opportunity to reflect on your past and on-going work related to climate change in the public health sector. In this regard, your contribution can help to strengthen climate change adaptation activities around the province. By sharing your experience, others may be better able to understand and respond to the kinds of challenges common in this kind of work.

Confidentiality: Your identity and the identity of your organization will be kept strictly confidential. Only the primary researcher, his supervisor and dissertation committee will have direct access to interview recordings and transcripts. Your name and the name of your organization will not be identifiable in any study reports or publications, unless you grant permission in writing for the researcher to use your real name or that of your organization. Throughout the duration of the study all recorded data will be locked in a secure location at the University of Toronto. Physical materials will be stored in a locked filing cabinet and digital files and recordings will be kept on the principle investigator’s computer in password protected files. All study materials will be destroyed within five years of the end of the study. All researchers from the University of Toronto are required to inform you that if respondents reveal intention to seriously harm themselves or others that this be revealed to authorities, as required by law.

Remuneration/Compensation: No financial compensation is available for participating in this research. However, by sharing your experience you may be able to contribute to improving public health adaptation to to climate change throughout the province and across Canada.

Contact for concerns about the rights of research subjects: If you have any concerns about your treatment or rights as a research subject, you may contact Daniel Gyewu (d.gyewu@utoronto.ca) and the Ethics Review at the University of Toronto at 416.946.5606.

Contact for information about the study: If you have any questions about this study, please contact Chris Buse or his supervisor, Blake Poland, at the contact information listed above.

Consent: Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time. If after completing an interview you feel you no longer wish to share your information as a part of the study, you may contact the primary investigator within seven days to withdraw any and all data from the study at which point the interview records will be destroyed. If the information collected is used for another study, the researcher
will request permission from you to use your contact information or the information you provided in your interview. Please also note that your choice to participate will not influence your future relations with the researcher, his supervising committee, or the University of Toronto.

Your signature below indicates that you have received a copy of this consent form for your own records and that you consent to participate in this study.

____________________________________________________
Participant Signature       Date

____________________________________________________
Email address       Phone Number

Your signature below indicates that you agree to have the interview audio recorded.

____________________________________________________
Participant Signature       Date
Appendix D. Interview Guides

INTERVIEW GUIDE A:

FOR ORGS/RESPONDENTS WITH A HISTORY OF CLIMATE CHANGE ADAPTATION WORK

1) Please tell me about the work that you do with the Public Health Branch of the York Region Community and Health Services Department?
   [Probe: organizational structure; personal history with organization; training; education; work]

2) How did you become involved with climate change related work?
   [Probe: personal motivations; history and trajectory]

3) What are you and your colleagues to address issues of adaptation to climate change in the York region?
   [Probe: what does this work look like on a day-to-day basis (in terms of practice); focus and rationale of particular initiatives; who else are they working with]

4) What role does health equity play in the climate change work that you and your colleagues are conducting?
   [Probe: priority populations; specific activities; specific foci]

5) How is the work you and your colleagues do on climate change positioned relative to other programs or work that your organization conducts on a day-to-day basis?
   [Probe: how do other members of your organization think about and navigate climate change as a public health issue; does climate change adaptation require a different approach compared with other environmental health issues; what do you think a public health approach that engages with climate change adaptation should ideally look like?]
6) What has been challenging in climate change adaptation work from a public health perspective?
   [Probe: push-back encountered (personal, organizational, external)]

7) What has worked well in your climate change adaptation work?
   [Probe: practices, resources or assets that interviewee found useful/important; looking to the future, what resources or assets would be important to further this work?]

8) Based on our conversation today, are there any documents that it would be helpful for me to see and that would help me better understand the work you do?

INTERVIEW GUIDE B:
FOR ORGS/RESPONDENTS WITH NO HISTORY OF CLIMATE CHANGE ADAPTATION WORK

1) Please tell me about the work that you do at [name of health unit]?
   [Probe: organizational structure; personal history and trajectory with organization]

2) Are there any activities that you and your colleagues are currently engaged in that you think has a direct or indirect link to climate change adaptation?
   [Probe: genesis of activities; what does this work look like on a day-to-day basis (in terms of practice); focus and rationale of particular initiatives; who else are they working with]

3) What role does health equity play in the initiatives you identified? How important would health equity be when engaging with climate change from a public health perspective?
   [Probe: priority populations; specific activities; specific foci]

4) Does climate change adaptation require a different approach when compared with other environmental health issues your organization engages with?
[Probe: how do other members of your organization think about and navigate climate change as a public health issue]

5) What do you think a public health approach that engages with climate change adaptation should ideally look like in [this region]?

6) What do you think might be challenging about developing climate change adaptation work in your region?
   [Probe: push-back encountered (personal, organizational, external); what challenges do you foresee having as this area continues to grow and emerge?]

7) What kinds of resources or assets would be important to engage with climate change adaptation from a public health perspective in this region?
   [Probe: practices, resources or assets that interviewee found useful/important]

8) Based on our conversation today, are there any documents that it would be helpful for me to see and that would help me better understand the work you do?
Appendix E. Research Ethics Certificate

UNIVERSITY OF TORONTO
OFFICE OF THE VICE PRESIDENT, RESEARCH

PROTOCOL REFERENCE # 28684

March 21, 2013

Dr. Blake Poland
DALLA LANA SCHOOL OF PUBLIC HEALTH
FACULTY OF MEDICINE

Mr. Christopher Buse
DALLA LANA SCHOOL OF PUBLIC HEALTH
FACULTY OF MEDICINE

Dear Dr. Poland and Mr. Christopher Buse,

Re: Your research protocol entitled, “Analyzing an emerging field of public health practice in Ontario, Canada: The case of climate change adaptation”

ETHICS APPROVAL

Original Approval Date: March 21, 2013
Expiry Date: March 20, 2014
Continuing Review Level: 1

We are writing to advise you that the Health Sciences Research Ethics Board (REB) has granted approval to the above-named research protocol under the REB’s delegated review process. Your protocol has been approved for a period of one year and ongoing research under this protocol must be renewed prior to the expiry date.

Any changes to the approved protocol or consent materials must be reviewed and approved through the amendment process prior to its implementation. Any adverse or unanticipated events in the research should be reported to the Office of Research Ethics as soon as possible.

Please ensure that you submit an Annual Renewal Form or a Study Completion Report 15 to 30 days prior to the expiry date of your current ethics approval. Note that annual renewals for studies cannot be accepted more than 30 days prior to the date of expiry.

If your research is funded by a third party, please contact the assigned Research Funding Officer in Research Services to ensure that your funds are released.

Best wishes for the successful completion of your research.

Yours sincerely,

Judith Friedland, Ph.D.
REB Chair

Daniel Gyuwu
REB Manager