HEALTH PROMOTION & ENVIRONMENTAL ACTIVISM: HAIDA GWAII, BC, THE NORTHERN GATEWAY PROJECT, AND A MODEL OF COLLECTIVE INTEREST

by

Jessica Madrid

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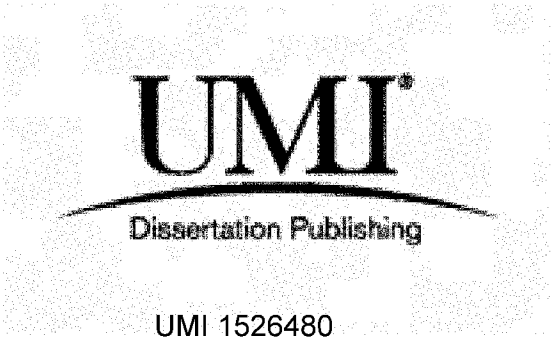

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Abstract

This study inductively explores the theoretical connections between health promotion and environmental activism. A conceptual framework was developed that illustrates the theoretical connections between these concepts. Deductively, this study responds to a call for quantitative and case study research on the social dimensions of environmental activism and health. An empirical model of collective interest (CI), which has been used to investigate protest behaviours, was adapted to emphasize a health promotion focus and the case study context: the Canadian archipelago, Haida Gwaii, BC, and its communities' opposition towards a controversial petrochemical project, the Enbridge Northern Gateway Project. The adapted version of the CI model was used to statistically analyse survey data using logistic regression techniques that suggested predictors of activism in this context. Together, the conceptual framework and the amended CI model were integrated into an analytical framework to address the research questions and implications for health promotion practice and policy.

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Acknowledgements

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Health Promotion & Environmental Activism:

Haida Gwaii, BC, the Northern Gateway Project, and a Model Of Collective Interest

Chapter 1: Introduction

This thesis responds to a need for theoretical, social, and empirical research to understand the relationship between health promotion and environmental activism. The research is framed by two main assumptions: first, that the condition of the natural or biophysical environment is a health issue worth addressing through health promotion endeavours; and subsequently, that activism is an important type of health promotion endeavour that all levels and sectors of society can participate in. These underlying assumptions are consistent with the pivotal World Health Organization (WHO) document, the *Ottawa Charter for Health Promotion* (1986), which clearly emphasized that a stable ecosystem with sustainable natural resources are pre-requisites for health. Within the Charter, health promotion is also understood as, "the process of enabling people to increase control over, and to improve their health" (WHO, 1986, p. 1), a definition that underlines the scope of the health promotion domain. The *Ottawa Charter for Health Promotion*, which has become central to health promotion theory and practice, also contains three additional points that are central to this thesis. These points are:

i) The biophysical environment[1] needs to be central to health promotion strategies.

ii) Health promotion is not just the responsibility of the healthcare sector, but involves everyone—individuals, families, and communities.

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[1] Acknowledging the diversity of definitions of environment as it relates to health and its determinants, this study is primarily concerned with the *biophysical* environment (excluding the built environment), broadly conceived of as the "structural elements... those that are important to biological life on earth" (VanLeeuwen, Waltner-Toews, Abernathy, & Smit, 1999, p. 214) and refers to the condition of air, water, earth, biota, as well as ecological processes (Tulchinsky & Varavikova, 2009).

iii) The environment, health, and health promotion are all highly intertwined with social and political landscapes.

According to the prominent Canadian health promotion researcher Trevor Hancock (2011b), the relevance of the *Ottawa Charter for Health Promotion* (WHO, 1986) is as important today as it was at the time of its writing, particularly because of its emphasis on the biophysical environment as a determinant of health. Be it for biological or psychosocial needs, the condition of the biophysical environment is increasingly acknowledged as a fundamental local and global health issue (Charron, 2012; Hancock, 2011a; Parkes & Horwitz, 2009; Poland, Dooris, & Haluza-Delay, 2011; United Nations [UN], 2010). Hancock (2011a) also notes how the health promotion approaches promoted in the Charter, such as a willingness to confront political and social forces that harm human health, are important to bring to the forefront, as these measures are often overshadowed by the biomedical model. Literature is emerging that promotes activism[2], a vehicle for social change, as an important health promotion activity that can confront political and social forces (e.g. Public Health Agency of Canada [PHAC], 2001; Shragge, 2003; Tarrow, 2011; WHO, 1998; 2005). Many issues of environmental concern are connected to political and social forces, as they arise from the implications of governmental policies and industrial practices, which are subject to public scrutiny.

This thesis provides a response to the gaps in the literature related to health promotion and environmental activism. Inductively, this research endeavours to provide a theoretical connection between these concepts. I have also attempted a quantitative analysis that I have applied to a case study to further explore these theoretical connections. The deductive approach

[2] In this thesis, *activism* is understood as "the policy of active participation or engagement in a particular sphere of activity; specifically, the vigorous use of campaigning to bring about political or social change (Oxford English Dictionary, 2012), and *activist* describes one who engages in activism.

of this thesis builds on the work of Lubell and colleagues (2002; Lubell, Vedlitz, Zahran & Alston, 2006), whose work with models of collective interest[3] is cited as a response to a call for more empirical work on the social dimensions of environmental activism. Health promotion researchers Kegler and Miner (2004) have explicitly suggested the use of case studies when investigating environmental issues. In this thesis, I suggest that an adapted collective interest (CI) model, informed by health promotion perspectives, can be used to explore who participates in environmental activism in a case study context. The case study for this thesis concerns the Canadian archipelago, Haida Gwaii, BC, and the local opposition towards a controversial petrochemical venture, the Enbridge Northern Gateway Project (ENGP)[4]. This case study, which concerns a community facing a perceived environmental threat, is a timely, regional example of environmental activism that is purportedly rooted in concerns over the environment, health, and the relationship between them.

The impetus for this research was also based in my personal and professional connection to health promotion and environmental activism. I am a registered nurse with ten years of experience in the health promotion field where I have primarily worked as a front-line public health nurse. My desire to enter the nursing field and especially the health promotion domain was largely a result of my concern for the biophysical environment as a determinant of health. Prior to my professional practice I was devoted to many environmental activist efforts, which were fuelled by a desire to promote human well-being. I have carried this interest in environmental activism into my professional practice, which I believe has been generally well received by my colleagues and employers. However, on those occasions where I have been

[3] Models of collective interest, originally developed by Finkel, Muller, and Opp (1989), have been used to statistically examine who participates in protest behaviours. This approach is further described in Chapter 4.

[4] Enbridge, a Canadian corporation involved in the transportation, generation, and distribution of petrochemical products, has proposed the Northern Gateway Project, a 5.5 billion dollar pipeline/terminal project that would span from central Alberta's oilsands to the coast of BC (Enbridge, 2011).

called to provide a rationale for environmental activism in the health promotion domain, I have struggled to find literature that directly connects these concepts.

1.1 Research Purpose

The overarching purpose of this thesis is to explore the connections between environmental activism and health promotion, notably how environmental activism seems to share many similarities with other health promotion tactics, theory, and purpose. The research presented in this thesis is informed by combined calls for more empirical work on the social and health dimensions of environmental activism and, within the health promotion literature, for environmental issues to be examined through case studies (Kegler & Miner, 2004; Lubell, 2002; Lubell et al., 2006). The thesis presents findings from a study designed to respond to these research gaps by adopting a critical realist stance, emphasizing empiricism that is analysed and appreciated through a social lens (Bhaskar, 1989).

1.2 Research Questions

The scope of this thesis is delineated by three research questions, each of which contributes to the overall research purpose. These questions reflect the epistemology of this study and examine this issue from theoretical, as well as methodological, empirical, and health promotion practice/policy-based standpoints. Each research question (RQ) is intended to build upon the findings of the preceding question:

RQ I: How are health promotion and environmental activism theoretically connected?

RQ II: How can a model of collective interest be used to understand the practice of environmental activism from a health promotion perspective?

RQ III: What is revealed about participation in environmental activism when an adapted model of collective interest, informed by health promotion perspectives, is used to analyze a specific case study[5] concerning perceived threats to the environment and health?

1.3 Thesis Structure and Organization

The structure and organization of this thesis are described in this section to delineate how the research questions will be addressed. Table 1.1 summarizes the organization of this thesis by presenting how and where in this thesis each research question is addressed.

Table 1.1

Thesis Organization Summary Related to Research Questions

	Research Question	Data Source	Research Activity & Chapters Where Results/Findings are Presented
I	How are health promotion and environmental activism theoretically connected?	- Literature content - Fieldnotes - Qualitative findings	- Literature review (Chapter 2) - Development of thesis conceptual framework (Chapter 2) - Case study identification and fieldwork (Chapter 3, 4, and 5)
II	How can a model of collective interest be used to understand the practice of environmental activism from a health promotion perspective?	- Literature content - Fieldnotes - Quantitative survey data	- Literature review (Chapter 2) - Development of thesis analytical framework (Chapter 4) - Case study fieldwork with survey data collection (Chapter 4 and 5)
III	What is revealed about participation in environmental activism when an adapted model of collective interest, informed by health promotion perspectives, is used to analyze a specific case study concerning perceived threats to the environment and health?	- Literature content - Fieldnotes - Quantitative survey data - Qualitative findings	- Case study fieldwork with survey data collection (Chapter 4 and 5) - Development of thesis analytical framework (Chapter 4 and 6) - Quantitative survey data analysis (Chapter 5) - Supplementary qualitative data analysis (Chapter 5)

[5] Throughout this thesis, reference to the "specific case study" refers to Haida Gwaii, BC, and the opposition towards the Enbridge Northern Gateway Project. This is not always listed in full in the text, especially when referring to RQ III. The study context is further defined in Chapter 3 and further information regarding case studies as a research method is provided in Chapter 4, Section 4.2.

Chapter 2, or the literature review, directly addresses the first research question by examining health promotion and environmental activism from theoretical standpoints, identifying additional concepts of interest that connect these main thesis concepts. Key concepts and interrelated themes from the literature review are presented in a thesis conceptual framework.

Chapter 3 provides an overview of the study context by describing the case study of Haida Gwaii, BC, and opposition to the proposed ENGP. Haida Gwaii is briefly described in terms of its geography, ecology, socio-economic factors, and history of activism. The history of the ENGP is also presented in this chapter.

Chapter 4 describes the methodology of this research and begins with an explanation of the philosophical stance of this study (i.e. critical realism), which provides the basis for the research study design. Case studies as a research method are also reviewed in this chapter as well as an overview of CI models and specific study hypotheses related to RQ III. This chapter concludes with an overview of supplementary qualitative data that was collected during fieldwork and approaches that were used in the analyses of these data.

Chapter 5 provides the empirical results and qualitative findings obtained from the data collection and analyses described in Chapter 4. Specifically, this chapter describes data management (i.e. data entry, screening, cleaning, and coding) and the outcomes of the statistical analysis, which reveals predictors of environmental activism in the case study context. Also, this chapter describes the supplementary qualitative findings that emerged through the data collection process.

Chapter 6 contains a discussion of the key findings of the study, as well as reflections on the study design and research implications. In this chapter, the three research questions are

revisited to discuss how they were addressed through the inductive and deductive approaches of this study. The strengths and limitations of this study are acknowledged, addressing the merits of pitfalls of the study design, as well as new insights gained from the research process. A synthesis is also provided, whereby the findings in relation to the research questions are further explored in relation to the thesis conceptual and analytical frameworks. This chapter also includes directions for further research and recommendations for health promotion practice and policy, prior to closing with overall conclusions. Following the core text of this thesis, the included appendices supply the final logistical details of this research and provide supporting information relevant to the research.

Chapter 2: Literature Review

This chapter presents the results of the literature review that framed the research. The research question guiding this literature review was: "How are health promotion and environmental activism theoretically connected?" (RQ I). The literature review was an inductive process that provided the conceptual foundation to address RQ I and inform future phases of research designed to address RQ II and III. The literature was reviewed for relevant information concerning health promotion and environmental activism by using key/subject searches in several scans of academic journal databases (e.g. Academic Search Premier, CINAHL, MEDLINE), Internet search engines (e.g. Google Scholar), and post secondary institution library catalogues (e.g. Geoffrey R. Weller Library, University of Northern British Columbia).

2.1 Main Study Concepts

The literature review began by seeking research that was related to both health promotion *and* environmental activism. However, as searches using these two terms together did not provide a significant base of literature, the strategy of breaking down the term *environmental activism* into two concepts, *environment* and *activism*, was used. Relating the concept of health promotion to these two separate concepts generated a more substantial body of literature to review. The strategy of this literature review was therefore to examine the three main study concepts of the biophysical environment, activism, and health promotion, and then to delineate the theoretical connections between these concepts, which involved the identification of eight additional concepts of interest (Section 2.2).

2.1.1 The biophysical environment. The term *environment* is complex to define. For example, the Oxford English Dictionary (2012) includes nine entries for this word, including such broad definitions as "encompassing or surrounding something". Depending on the study discipline, the term environment may be interpreted in very different ways. Within the social sciences, this term may refer to a physical place, such as a setting (e.g. home, workplace) or it may refer to a context in which events occur (e.g. social, economic, and political environments). Within the natural sciences, the term environment is often related to the biophysical environment, or ecology (Last, 2007; Tulchinsky & Varavikova, 2009; VanLeeuwen et al., 1999). In the health sciences, which straddle the social and natural sciences, both types of definitions appear in the reviewed literature, which demonstrates how this term can be challenging to distinguish within this discipline.

This study is primarily concerned with the natural, or *biophysical* environment. The Oxford English Dictionary (2012) entries that are most in line with this research define the environment as "The natural world or physical surroundings in general, either as a whole or within a particular geographical area, especially as affected by human activity" or "The physical surroundings or conditions in which a person or other organism lives, develops, etc. or in which a thing exists; the external conditions in general affecting the life, existence, or properties of an organism or object". For the context of this research, other relevant definitions include VanLeeuwen et al.'s (1999) definition of the biophysical environment as, "structural elements… those that are important to biological life on earth" (p. 214) or Tulchinsky and Varavikova's (2009) description of the environment as the condition of air, water, earth, and biota. In keeping with VanLeeuwen et al. and Tulchinsky and Varavikova, the definition of biophysical environment for this research excludes the built environment.

Describing the environment in terms of biophysical structures and systems draws a connection to the concept of the *ecosystem*. The Oxford English Dictionary (2012) defines ecosystem as "a biological system composed of all the organisms found in a particular physical environment, interacting with it and with each other". This definition is closely aligned with the Oxford English Dictionary's definition of environment with respect to biophysical qualities interacting with one another. The reviewed literature reveals that especially over the last two decades, there has been a movement towards using the term ecosystem in lieu of environment within health discourse, as it serves to remind us that human beings are fundamentally organisms within larger natural systems that affect our health, or well-being (Charron, 2012; Forget & Lebel, 2001; Parkes, Panelli, & Weinstein, 2003; VanLeeuwen et al., 1999; Webb et al., 2010). For instance, in addition to its references to the environment (i.e. natural environments, social environments, etc.), the *Ottawa Charter for Health Promotion* cites a stable ecosystem as a prerequisite for health (WHO, 1986).

While the term ecosystem is perhaps more concise and accurate in defining the concept of the biophysical environment and its relationships with well-being, this term does not appear to have gained widespread usage in many contexts where it could be appropriately used. For example, the Canadian government continues to have its federal and provincial/territorial Ministries of the Environment and literature by Papadakis (1998), Pepper (1996) and Switzer (2003) highlight how historical and popular discourses refer to environmentalism, environmental activism, and environmental-non-governmental-organizations when discussing movements, activities, and groups with an ecological focus. What is more, many health-related organizations with a focus on the biophysical environment continue to emphasize the more elusive term environment (e.g. national interest groups such as Canadian Association of Physicians for the

Environment (CAPE) and Canadian Nurses for Health and the Environment (CNHE) (CAPE, 2000; CNHE, 2011).

The continued prevalence of the term environment as opposed to ecosystem in the context of the health sciences is likely attributed in part to the concept of *environmental health*, which is technically defined as a discipline, a theory, a field, and a branch of public health science (Last, 2007). According to the WHO (2013), environmental health addresses:

> ... all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating healthy-supportive environments. This definition excludes behaviour not related to the environment, as well as behaviour related to the social and cultural environment, and genetics. (para. 1).

As this definition notes, the biophysical environment, or the ecosystem, is central to the domain of environmental health. However, unlike the focus of this thesis, environmental health includes humanly constructed settings and appears to de-emphasize the effects of socio-political environments.

Within the health sciences, there is increasing acknowledgement that socio-economic-political environments are almost inseparable from the biophysical environment, not least because social and economic dimensions (i.e. equity, quality of life, and resource management) are integral concepts and outcomes of the management of the biophysical environment (Lebel, 2003; Parkes et al., 2003; Schulz & Northridge, 2004; VanLeeuwen et al., 1999). Therefore, although this study primarily concerns the biophysical environment (or ecosystem), the influence

of other domains of the environment, such as "the social, political, or cultural circumstances in which a person lives, especially with respect to their effect on behaviour, attitudes, etc." (Oxford English Dictionary, 2012) are also acknowledged.

To summarize, this thesis is focused on activism that is directed at the condition of the biophysical environment or ecosystem. These terms are meant to describe the natural and structural elements and processes that are, as VanLeeuwen et al. (1999) note, central to all biological life on earth. In describing the term environment, a connection to human well-being has been emphasized with the identification of the environment as a determinant of health and the domain of environmental health. Although the term environment will generally refer to the biophysical environment in this thesis, the reviewed literature has highlighted the challenges of addressing the biophysical environment without acknowledging the influence of socio-economic-political environments. This section has also identified that while the concise and perhaps more accurate term ecosystem appears to be gaining popularity in the academic literature to refer to the biophysical environment and its processes, it has not overshadowed the more widely accepted, yet sometimes imprecise term, environment. Therefore, within this thesis, my tendency will be to use the term environment, however, the term ecosystem may be used at times, especially when cited literature has employed this term.

2.1.2 Activism. In breaking down the concept of environmental activism, the second term, *activism*, was examined in the literature. This section looks at the concept of activism as it pertains to social movements and social change theory. Different strategies of activism are described and contrasted with related strategies for community organization and social change. The Oxford English Dictionary (2012) contains four entries for this term. The definition most relevant to the study context states that activism is "the policy of active participation or

engagement in a particular sphere of activity; specifically, the vigorous use of campaigning to bring about political or social change". For this thesis, using the search term of activism generated a small body of academic literature (e.g. Lubell, 2002; Shragge, 2003; Switzer, 2003). However, these articles led to the concept of *social action*, which suggested that social action is a synonym for activism. Social action, or activism, is associated in the literature with social movements and is a strategy for community organization and social change (Adamson, Briskin, & McPhail, 1988; Alinsky, 1971; Rothman, 1999; Scully & Creed, 2005; Shragge, 2003; Tarrow, 2011).

Social movements, defined as "collective challenges, based on common purposes and social solidarities, in sustained interaction with elites, opponents, and authorities" (Tarrow, 2011, p. 9) form the impetus behind activism. Shragge (2003) notes, "The relationship between social movements and community organizing is symbiotic. Each contributes to the health of the other" (p. 103). In other words, activism represents a vehicle for creating change within communities, addressing larger social challenges that concern public well-being.

Activism, or social action in particular, is differentiated in the literature from other forms of community organization. For example, in the classic text on the subject, *Strategies of Community Organization: A Book of Readings,* Jack Rothman (1970) identifies social action as one of three forms of community organization. His two other forms of community organization are social planning, defined as a technocratic approach, and locality (or community) development.

Social planning, emphasizing a top-down approach, is clearly distinct from the grassroots nature of activism and community development. In defining community development, Frank and Smith (1999) reveal the overlap between this form of community organizing and activism:

> Community development is the planned evolution of all aspects of community well-being (economic, social, environmental, and cultural). It is a process whereby community members come together to take collective action and generate solutions to common problems... The primary outcome of community development is improved quality of life. Effective community development results in mutual benefit and responsibility among community members. (p. 6)

Even though the concept of collective action (not to be confused with social action) is embedded within this definition of community development and serves to emphasize an action-oriented process of promoting change, there is a central difference between community development and activism that is not captured in this quote by Frank and Smith.

The primary difference between activism and community development is the element of addressing power dynamics. While authors such as Kapoor (2005; 2001) acknowledge the need to address power more explicitly in community development approaches, this transformation also involves deep structural and political change. In reference to the relationship between social action and the community development model, Shragge (2003) observes, "[The] legacy of social action and the struggle for social justice co-exist with the development model in a complex tension..." (p. 132). According to Shragge, Rothman (1999), and Minkler and Wallerstein (1999), the change agenda in community development is focused inward, rather than outward towards the wider social, economic, and political structures of society. For example, community development approaches tend to emphasize consensus building and practices that might reinforce rather than challenge overriding power relations and social values in society (Kapoor, 2001; Rothman, 1999; Shragge, 2003).

In contrast, the strategies of activism involve creating solidarity and opportunities for participation in citizen networks that can exert pressure to create responsiveness in the collective interest. The target of this pressure is generally on governments and businesses with the goal of implementing changes to policy or behaviour, or sometimes, entire system reform (Shragge, 2003; Tarrow, 2011; Zald, Morrill, & Rao, 2005). According to Tarrow (2011), forms of activism can be "brief or sustained, institutionalized or disruptive, humdrum or dramatic..." (p. 7). Specific activist strategies may include citizen protests, rallies, referenda, petitions, and advocacy work.

Mechanisms of activism may also include those activities described as direct action (Rothman, 1999; Shragge, 2003; Tarrow, 2011). Direct action is defined by the Oxford English Dictionary (2012) as "any action that is directly effective, such as strikes, sabotage, or demonstrations... as opposed to constitutional action". According to Hubley and Copeman (2008) in their text *Practical Health Promotion*, direct action involves "working outside the framework of conventional politics and in extreme cases deliberately breaking the law in order to highlight one's cause" (p. 209). In this sense, direct action can be considered a means of achieving social goals that does not rely on electoral politics, diplomacy, negotiation, or arbitration (Oxford English Dictionary, 2012; Rothman, 1970). Direct action, which sometimes takes the form of civil disobedience, can include activities that target individuals, groups, or property. Direct action may therefore include occupations, boycotts, strikes, sabotage, and other forms of resistance designed to obstruct other societal agents and structures (Oxford English Dictionary, 2012; Rothman, 1999; Tarrow, 2011).

Concerning participation in activism, Finkel, Muller, and Opp (1989), who are noted for their work on mass political action theory, identify "relative deprivation, dissatisfaction with

government policies, and alienation from the political system" as key psychological determinants of individual participation in protest (p. 885). However, Finkel et al. note that these determinants, associated with a grievance theory of protest, do not always lead to people participating in activism. Challenges to this grievance theory can be found in Olson's *The Logic of Collective Action* (1965) and Tullock's *The Paradox of Revolution* (1971), whereby the notion of the free-rider problem is identified. The phenomenon of the free-rider is basically this: Individuals, even if they have grievances, may not participate in activism, but can still enjoy the public good if successes are achieved. The rational individual will weigh the costs (e.g. time, financial resources, threat of personal injury) and benefits (e.g. their ability to influence the effort's overall success) of participation in activism (Finkel et al., 1989).

As a result of such criticisms as the free-rider hypothesis, rational choice theory has gained more wide-spread popularity over a grievance theory of protest (Lubell, 2002). However the question of "who participates in activism?" remains a question across the disciplines of sociology, psychology, education, and political science. Elements of rational choice theory within these disciplines has highlighted the significance of factors such as individual motivation, identity, personal/group efficacy, and the larger impact of structures and agencies within society in whether or not people participate in activism (e.g. Bandura, 1986; Davis, McAdam, Scott, & Zald, 2005; Finkel et al., 1989; Lubell, 2002; Shragge, 2003; Tarrow, 2011; Yearley, 2009). Authors such as Lubell (2002) have incorporated rational choice theory into their empirical study of predicting who participates in environmental activism through the use of political science models, such as Collective Interest models, which is discussed in further detail in Chapter 4.

To summarize, within the reviewed literature, it would appear that describing activism and social action in a synonymous manner is appropriate given their common function and

expression of challenging socio-political forces and consisting of activity related to social change to promote well-being. The term social action appears more widespread in the academic literature than activism and is differentiated from other forms of participation in social change. However, within the more popular vernacular, the term activism appears more common, especially when referring to environmental activism (e.g. Lubell, 2002; Switzer, 2003). Consequently, the term activism will predominantly be used within his thesis, although I may use the term social action at times, especially when citing literature that uses this term. The question of participation in activism can be addressed by many different disciplines, and the literature highlights a variety of factors that are involved. Among the concepts reviewed, rational choice theory, which has been used to inform participation in activism, appears to capture sociological factors that are of interest to this study.

2.1.3 Health promotion. The reviewed literature on health promotion suggests that this concept can be quite broadly or narrowly defined, depending on the source. Population health also emerged as a concept related to health promotion. This section provides a general overview of the concepts of health promotion and population health with a particular focus on the WHO's documents on health promotion that, in line with the thesis purpose, emphasize ecological and socio-political dimensions.

The concept of health promotion, with its roots in the discipline of public health, began to emerge in in the health sciences in the 1970s (Butler & Friel, 2006). Together with disease prevention, health promotion became the second pillar, or core function, within the discipline of public health. Broadly speaking, health promotion has been defined as a process for enabling people to take control over and improve their health (Public Health Agency of Canada [PHAC], 2001; WHO, 1986). According to Kegler and Miner (2004), health promotion, with its strong

connection to the social sciences, is related to social, behavioural, economic, environmental elements and norms, and levels of intervention are generally at the community or population level. Regarding the level of intervention, the reviewed health promotion literature contains many references to population health, defined as an approach that addresses the entire range of factors that determine health and, by so doing, affects the health of the entire population (PHAC, 2001).

According to the Public Health Agency of Canada (2001), although both health promotion and population health focus on approaches related to group-level changes, there has been much debate over how these concepts differ and the merits and pitfalls of one approach over the other. This lack of consensus was also noted in the literature review for this thesis, whereby population health is often criticised for under-emphasizing concepts as such as equity and the importance of social change within this health discipline (e.g. Poland, Coburn, Robertson, & Eakin, 1998; Raphael & Bryant, 2002; Robertson, 1998). Furthermore, the concept of population health does not stress who is responsible for this approach, as is the case with the definitions of health promotion, which emphasize people controlling their own health. For the purpose of this thesis, I have chosen to include the PHAC's Integrated Population Health Promotion Model, which illustrates how a population health promotion approach can be integrated into the context of health promotion.

The Population Health Promotion model (Figure 2.1) exhibits a combination of specific indicators on each face of a cube, which represent various forms of health promotion strategies. This model demonstrates how health promotion can encompass a variety of health related issues, can consist of a number of strategies, and can involve everyone from the individual to society. While the PHAC emphasizes that the healthcare sector must continue to play a pivotal role in

health promotion endeavours, they stress that this model is meant to address the importance of other players in the health promotion realm (PHAC, 2001). Some of the underlying assumptions of this model include a need to address social values and structures, as well as the value of multiple strategies of action that involve individuals, as well as the larger sectors of society. Regarding the specific indicators across the faces of the model's cube, Figure 2.1 identifies the key terrain of interest for this thesis: A focus on physical environments, the value of strengthening community action, and target populations of the community and society at large.

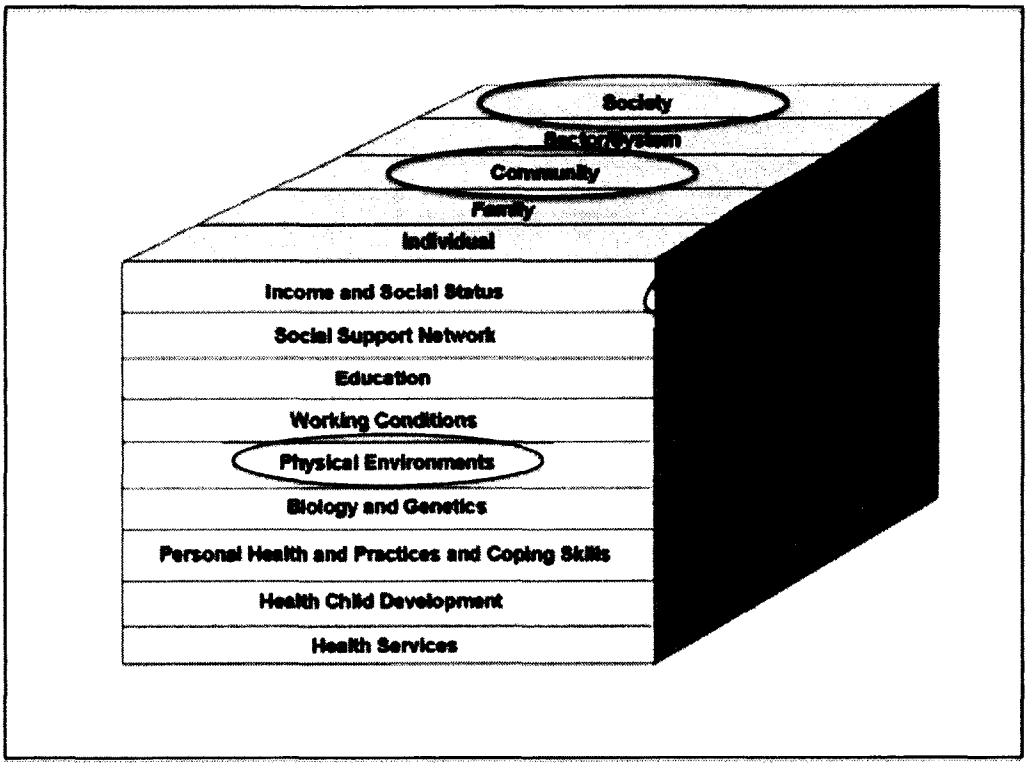

Figure 2.1: Population health promotion model. Source: "An integrated model of population health and health promotion" by the Public Health Agency of Canada (2001).

While PHAC's Population Health Promotion model is useful for illustrating the terrain of interest of this research, it is important to acknowledge that the circles added to Figure 2.1 represent a simplified version of the relationship between health promotion and endeavours to address the biophysical environment as a determinant of health through activism. For example, in identifying "physical environments" as the focus, this has the potential to overshadow the interconnectedness of socio-economic-political environments, which impact other foci in the model (e.g. "working conditions", "personal health and practices and coping skills", etc.). Also, activism as a "strategy for strengthening community action" often involves influencing others to "build healthy public policy", "create supportive environments" and so on. Lastly, while the primary focus of this thesis concerns the target populations of the community and society as a whole, it can also be argued that the target population is "individuals" and "families" who make up "communities", "sectors/systems", and "society".

The PHAC's Population Health Promotion model was highly informed by the pivotal *Ottawa Charter for Health Promotion* (WHO, 1986), which is often considered the best-known declaration of the principles of health promotion to date (Butler & Friel, 2006). As noted in Chapter 1, the perspectives of the Charter contributed significantly to the impetus for this thesis. This document, which was developed and adopted at the first International Conference on Health Promotion, delineated some of the founding ideas regarding the nature of health promotion and launched this domain into worldwide recognition. In summarizing this document, the WHO (1998) offers the following descriptions of health promotion:

> Health promotion represents a comprehensive social and political process. It not only embraces actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental, and

> economic conditions so as to alleviate their impact on public and individual health. Health promotion is the process of enabling people to increase control over the determinants of health and thereby improve their health. Participation is essential to sustain health promotion action. (pp. 1-2)

Specifically, the *Ottawa Charter for Health Promotion* (WHO, 1986) identifies three basic strategies for health promotion:

i) Advocacy: Helping to promote the essential conditions that determine health.

ii) Enabling: Assisting people to reach their fullest health potential, usually accomplished by promoting equity and access to resources.

iii) Mediation: Fostering collaboration and the reconciling of different interests in society in the pursuit of health.

These strategies for health promotion have been reinforced at subsequent WHO conferences on health promotion, such as in the 1997 *Jakarta Declaration on Leading Health Promotion in the 21st Century* and the 2005 *Bangkok Charter for Health Promotion in a Globalized World.*

In reference to the biophysical environment, the *Ottawa Charter for Health Promotion* (WHO, 1986) notes the "inextricable links" between people and their environment, which forms the basis for a socio-ecological approach to health (p. 2). The Charter makes reference to the environmental, or ecological, factors that are fundamental to life, such as a stable ecosystem and sustainable resources. According to the Charter, measures to protect the natural environment and to conserve natural resources must be addressed in any health promotion strategy. The Charter goes on to note that, "the overall guiding principle for the world, nations, regions and communities alike, is the need to encourage reciprocal maintenance – to take care of each other,

our communities and our natural environment..." (WHO, p. 3). This implies the importance of the biophysical environment as a cornerstone of health promotion.

Subsequent WHO documents (i.e. the Jakarta Declaration and Bangkok Charter) lack explicit emphasis on the biophysical environment. The overall determinants of health are identified as important, but the biophysical environment, ecology, and natural resources are not as overtly stated as in the *Ottawa Charter for Health Promotion* (WHO, 1986). However, the social and political elements of ensuring health for all are stressed in later WHO health promotion literature. Within the Bangkok Charter (WHO, 2005), for example, there is a marked recognition of the critical role that civil society can play in the achievement of health and it states, "Progress towards a healthier world requires strong political action, broad participation, and sustained advocacy" (WHO, p. 3). The Bangkok Charter goes on to note that all sectors and settings must advocate for health based on human rights and solidarity. Further to this is the acknowledgement that communities and civil society may be effective at initiating, shaping, and undertaking health promotion, so long as they have the rights, resources and opportunities to enable their contributions to be amplified and sustained. The Bangkok Charter states "well organized and empowered communities are highly effective in determining their own health, and are capable of making governments and the private sector accountable for health consequences of their policies and practices..." (WHO, p. 5).

Despite a shifting socio-ecological emphasis within the health promotion domain, these health promotion charters clearly identify health promotion as an approach that is less concerned with individual-level behaviours and aims more towards broader health objectives, such as community empowerment. However, such objectives, which are clearly tied to social change, can be challenging to fulfil given the nature of conventional health promotion practice.

According to Labonte and Laverack (2000), the practice of health promotion, which is still largely situated in the broader field of public health, is still strongly rooted in a biomedical approach. According to these authors, the conventional practices of health promotion often contain a tension between bottom-up and top-down programming. Similarly, Lebel (2003) notes that endeavours to address the environment and health have often been reductionist, unidisciplinary, and have employed top-down, problem-based approaches. Parkes and Horwitz (2009) identify that health promotion strategies are often "blind to the processes, functions, and populations of local ecosystems" (p. 94), and are therefore likely to miss important ecological and systemic factors that influence the determinants of health.

The discordance between health promotion theory and practice related to balancing socio-ecological dimensions of health, as well as the influence of the top-down, bio-medical approaches, creates challenges for the advancement of the health promotion movement and appears to add further confusion as to what priorities are most significant to health promotion endeavours. However, in his 2011 article, "It's the environment, stupid! Declining ecosystem health is THE threat to health in the 21st century", Trevor Hancock (who was present at the First International Conference on Health Promotion in Ottawa), states:

> ... there is nothing more important for population health promotion and public health professionals today (and in the coming decades) than to join forces with those who are fighting to shift our values, our culture, and our socio-economic systems towards more sustainable—and that also means more equitable—pathways... (p. ii168).

The emphasis offered by Hancock (2011a) demonstrates the value of intersectoral collaboration to solve environmental challenges, or at the very least, for the healthcare sector to heed public

concern with respect to the environment, and the relevance of social engagement to address these concerns.

To summarize, similarities between health promotion and population health are highlighted by models such as the Population Health Promotion model (PHAC, 2001). However, the literature reveals that the specific concept of health promotion is more relevant to this thesis, as it is a domain that emphasizes socio-political-ecological dimensions of health, as well as the empowerment of people (from the individual level to the societal level) in fostering health. Therefore, within this thesis, I will refer to the concept of health promotion rather than population health, unless I am specifically referring to the specific domain of population health.

2.2 Conceptual Connections

In reviewing the literature concerning the biophysical environment, activism, and health promotion, eight additional concepts of interest emerged that formed theoretical connections between the primary study concepts. Each of the eight concepts appeared frequently within the reviewed literature in relation to at least two and sometimes all three of the main study concepts. The relationships between the three main study concepts and eight related concepts are depicted in Figure 2.2. Figure 2.2 responds to the question "How are health promotion and environmental activism theoretically connected" (RQ I) and provides a point of reference for both the conceptual and analytical contributions of this research.

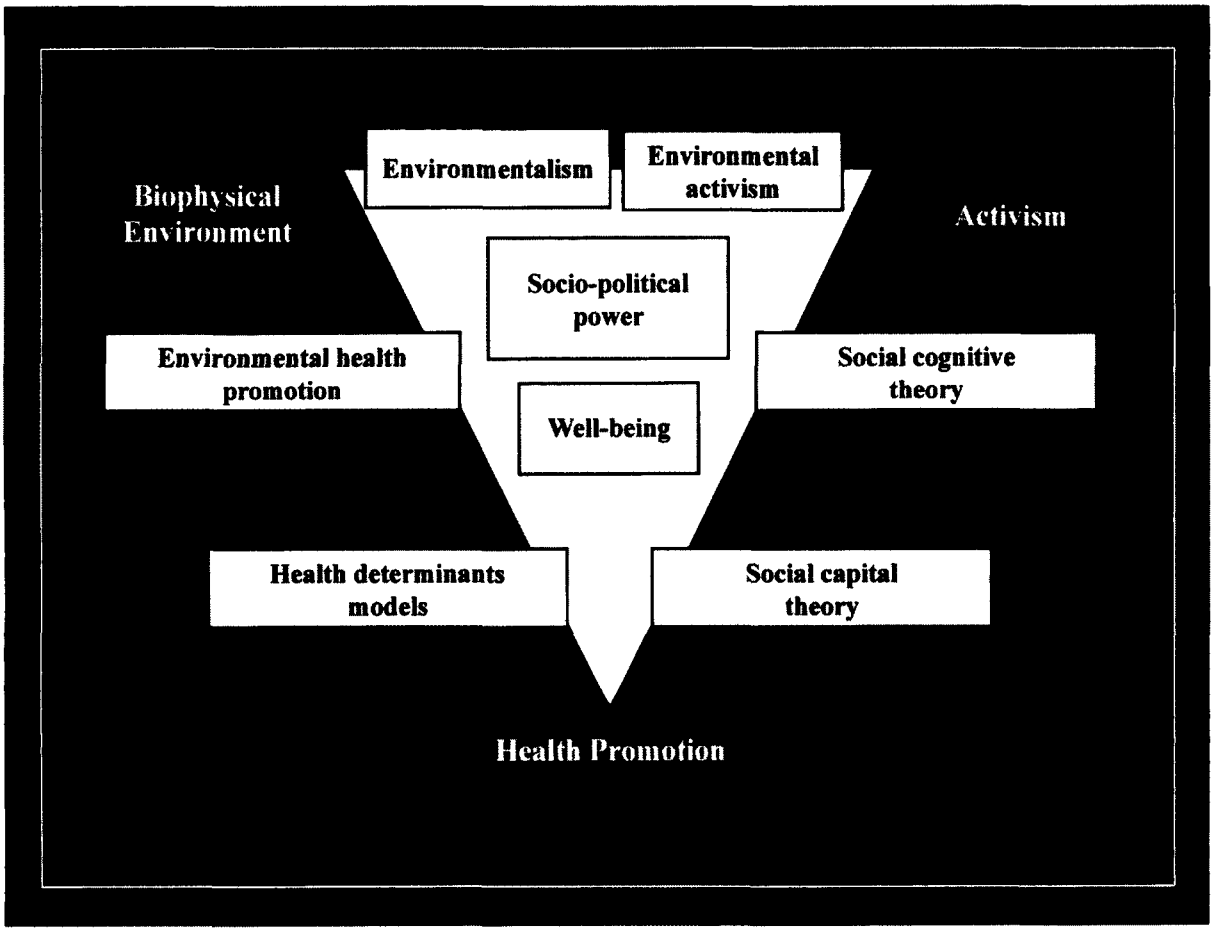

Figure 2.2: Conceptual framework depicting how health promotion and environmental activism are theoretically connected.

Figure 2.2 depicts the three main study concepts of interest as points on a triangle. The six additional concepts appear on the triangle's lines, indicating a theoretical connection between two main study concepts. The two concepts in the middle of the triangle represent ideas that pertain to all three of the main study concepts. The following subsections review literature related to each additional concept in Figure 2.2, beginning with the concepts on the lines of the triangle and concluding with the concepts in the middle.

2.2.1 Environmentalism. Representing a linkage between the concepts of the biophysical environment and activism, *environmentalism* can be defined as "concern for the preservation of the natural environment, especially from damage caused by human influence, and the politics or policies associated with this" (Oxford English Dictionary, 2012). This definition highlights how environmentalism is focused on the natural, or biophysical environment and the reviewed literature did not appear to use this term in reference to situations involving other definitions of the environment. As this definition also alludes, not all environmentalism is necessarily associated with concern for human health (e.g. endangered species protection), which creates a divide between this concept and health promotion. Furthermore, despite their similarity in definition, not all forms of environmentalism are considered environmental activism, just as not all forms of social change are the same as activism (as noted in Section 2.1.2).

Environmentalism is often discussed in the literature with respect to concern for the biophysical environment or more specifically, the element of risk. Risk appears to be a complex term to define given varying definitions that are often discipline-specific and as Hannigan (2006) notes, definitions can also be embedded in culture. Another longstanding aspect of defining risk as it relates to the environment and health concerns whether risk constitutes a real hazard (or danger) or whether it refers to the "probability or chance of suffering an adverse consequence, or of encountering some loss" (Whyte & Burton, 1980, para. 1). Specific to environmental health, which as noted in Section 2.1.1 focuses on human health and is the focus of this research, Khalili (2008) defines an environmental health risk as "the probability that a substance or situation will produce harm under specified conditions. Risk can be assessed with regards to safety, human health, ecology, public welfare, and goodwill" (para. 1). Varying understandings of environmental risk and the real or potential hazards they pose appear significant to the evolution

of the environmental movement, notably the environmental issues of concern, who is involved, and how this movement is perceived by society at large.

The historical literature on environmentalism depicts a movement that has a long, complex history. Papadakis (1998) describes how there is evidence that the ancient Greeks and Romans expressed "... disquiet about the consequences of human action on the natural environment..." (p. 1). Thiele (1999) notes how the roots of environmentalism began to protect "something beautiful and valuable that was 'out there'..." (p. xxvii). This was the emphasis of the environmental movement of the 19th century, which occurred in the wake of the alleged "great transformation", which involved political upheavals, the rapid development of industrial capitalism, and the free-market economy (Papadakis, 1998; Switzer, 2003). There was concern over the observed excesses and wastes of the industrial age, which tied in with the social challenges of the era, such as sanitation (Switzer, 2003). This first wave of environmentalism primarily focused on the conservation of natural lands, but also involved concern for air and water quality (Papadakis, 1998; Switzer, 2003;). Although the reviewed literature on the origins of environmentalism does not strongly emphasize health-related motives, it notes the importance of access to nature for leisure and some concern for health and property damage caused by air pollution (Papadakis, 1998; Switzer, 2003; Thiele, 1999).

In the 20th century, the literature points to the relationship between the environmental movement and larger social movements of Western democracies following the Second World War. Papadakis (1998) notes the 1950s Campaign for Nuclear Disarmament was a central part of mid 20th century environmentalism. Switzer (2003) contends that the societal value of recreation, which was linked with an appreciation for natural spaces, flourished during this same time, but that civil liberties were higher on the political agenda than environmentalism.

However, Tarrow (2011) and Papadakis assert that the civil liberties movement, or the "new left" movement of the 1960s, paved the road for the environmentalism that would ensue over the next two decades.

Other specific events can be tied to the history of environmentalism. Switzer (2003) and Papadakis (1998) point to Rachel Carson's 1962 classic, *Silent Spring*, a book that warned of the destruction of plants and wildlife due to chemical insecticides. The advent of deep ecology in the 1970s, a philosophy proposed by Arne Naess that rejects the notion that humans can be understood as separate from their environment, also popularized a different form of environmentalism (Papadakis, 1998; Pepper, 1996; Switzer, 2003). Earth Day 1970 is also noteworthy, as the first and largest world wide environmental demonstration (Switzer, 2003). The emergence of large-scale interest groups, political parties, and mass social action is definitely a hallmark of today's environmentalism (Papadakis, 1998; Switzer, 2003; Tarrow, 2011). Nevertheless, the last four decades have presented a pluralistic approach towards environmentalism, ranging from individual to mass participation, and diverse issues such as concern over pollution and resource depletion to the protection of natural spaces and species.

An emphasis on sustainability issues and the pursuit of social justice as it relates to the environment is key in the literature on contemporary environmentalism (Papadakis, 1998; Switzer, 2003; Tarrow, 2011; Thiele, 1999). Thiele (1999) relates the importance of environmentalism to social movements when he notes: "Environmentalism may constitute the most enduring and important social movement of the twentieth century, a movement whose importance, in all probability, will increase over the coming decades and centuries" (p. xvii). Davis et al. (2005) also stress the link to activism when they note that environmentalism concerns organized attempts to change attitudes, values, and perceptions about the relationship

between human beings, society, and nature. As with other forms of activism, Thiele observes that community-based environmentalism goes hand in hand with civil and economic rights. Indeed, there are many similarities and links between the larger social justice movement and the environmental movement, which include the pursuit of well-being and justice within society (Masuda, Poland, & Baxter, 2010; Tarrow, 2011). In his book, *Modern Environmentalism: An Introduction*, Pepper (1996) emphasizes that environmental degradation and social injustice are intricately linked. More recently, the connection between health, the environment, and social equity is being stressed in the literature on environmental injustice (Masuda et al., 2010; Poland et al., 2011).

2.2.2 Environmental activism. *Environmental activism*, defined by the Oxford English Dictionary (2012) as, "activism with the aim of protecting the natural environment, especially from the harmful effects of human activity" is clearly a fundamental concept to this thesis. In the conceptual framework of Figure 2.2, environmental activism is not represented as a corner of the triangle, or a main study concept. Rather, it is presented as a linkage between the two concepts of the biophysical environment and activism because of the prevalence of health promotion literature that addressed either the biophysical environment or activism, but not necessarily environmental activism directly. Within the reviewed literature, environmental activism has often been nested in the larger domain of environmentalism.

Within the specific literature concerning environmental activism, there are important points worth noting. For example, Switzer (2003) states, "Whatever the tactic and strategy, environmental activists are a fixture in the political process, with varying degrees of success and power" (p. xiii). Within this literature, these tactics and strategies are described as a pattern of political participation that has become the hallmark of labour unions, social welfare groups, and

to a lesser extent, business interests. Governmental lobbying, advocacy, litigation, and media engagement are frequently cited forms of environmental activism, along with citizen initiatives, coalition building, referenda, and circulating petitions (Lubell, 2002; Papadakis, 1998; Switzer, 2003). Demonstrations, boycotts, and direct action related to government or industrial environmental policy and practices are also identified as forms of environmental activism (Rothman, 1999; Switzer, 2003). Kegler and Miner (2004) also note how community activists have been very successful in using political and social action (i.e. activist) methods in issues concerning the biophysical environment. They note how these interventions can, for example, lead to the closing of a pollution-producing plant, keep hazardous waste facilities out of a community, or facilitate obtaining government funding for remediation of a contaminated site.

2.2.3 Health determinants models. Another concept of interest relating to both the biophysical environment and health promotion, were *health determinants models* (Figure 2.2). A health determinants model posits that factors such as events, characteristics, or other definable entities brings about changes in health conditions, or other defined characteristics (Last, 1988). As noted in Section 2.1.1, the biophysical environment has been defined in relation to its importance in sustaining life on this planet (VanLeeuwen et al., 1999). Section 2.1.3 identified the significance of the biophysical environment in relation to the promotion of health (WHO, 1986). According to the reviewed literature, health determinants models are key to health promotion theory and practice and the biophysical environment is a central health determinant in these models (Evans & Stoddart, 1990; WHO, 1986).

The history of health determinants models arose from a long history of theories and models regarding the nature of human health and illness, whereby the environment is often a central concept. Several examples of such models emerged as especially pertinent during the

literature review. The ecological model (or the health triad), for instance, was one of the first descriptive models of human health that consisted of the host, the agent, and the environment. This 19th century model clearly demonstrates that the environment, despite its broad definition, is related to health (Kreuter, De Rosa, Howze, & Baldwin, 2004; Tulchinsky & Varavikova, 2009; VanLeeuwen et al., 1999). From the ecological model of health arose another model, presented by J. N. Morris (1975) in his book *Uses of Epidemiology.* This model, referred to by VanLeeuwen et al. (1999) as a "socioecological model" (p. 206), incorporated personal behavioural factors, social and physical environments, and the multifactorial nature of both infectious and non-infectious diseases (Morris, 1975; VanLeeuwen et al., 1999).

In the 1990s, Evans and Stoddart built on these preceding models by developing a model that centered on additional health-related factors, which were collectively referred to as the determinants of health. This model addressed the physical environment and other factors that influence health, such as the social, economic, and political environments. It also incorporated feedback loops to represent the non-linear relationship between health, its determinants, and health interventions (i.e. healthcare) (Evans & Stoddart, 1990). Within this model, environmental determinants of health are often distinguished from the social determinants of health. In the current health discourse, related models of health that centre on Evans and Stoddart's original determinants of health model have arisen (e.g. The Mandala of Health model, Community Ecosystem model, Butterfly Model of Health for an Ecosystem Context) and a basic health determinants model similar to the original appears to remain quite popular (PHAC, 2001; VanLeeuwen et al., 1999).

Regarding the biophysical environment as a determinant of health, the reviewed literature repeatedly points to particular environmental challenges, which are worth noting in this review.

These issues include safe, sustainable sources of drinking water; clean air; cleaner, safer, and more sustainable fuels; preservation of biodiversity; safe community food systems; and a reduction in exposure to toxic substances (Charron, 2012; Parkes et al., 2003; PHAC, 2003; UN, 2010). Add to this awareness of planetary changes, such as transformations in the stratosphere and global climate change (Butler & Friel, 2006; Cole, Eyles, Gibson, & Ross, 1999; Parkes et al., 2003). Focusing on human morbidity and mortality, adverse health outcomes related to the biophysical environment include cancer, birth defects, neurological problems, respiratory illness, and gastrointestinal ailments (PHAC, 2003; Tulchinsky & Varavikova, 2009).

While not technically a health determinants model, a related example of a recent approach towards understanding health and its relationship to the environment is presented in the academic literature in relation to such terms as ecosystem health, ecosystem approaches to health, and ecohealth (Charron, 2012; Connell, 2010; Rapport & Mergler, 2004; Webb et al., 2010). This approach, informed by the *Ottawa Charter for Health Promotion* (WHO, 1986) and recognized as a Canadian Milestone in Population and Public Health Research (Webb et al., 2010) has been included under this section, as it exemplifies a way of understanding the connection between social and environmental determinants of health. Parkes et al. (2003) stress that endeavours to address health and the environment require an understanding of concepts such as ecosystems, sustainability, and equity. Further to this, Parkes et al. emphasize the complex interrelationships that concern health and the environment (or the larger ecosystem). Similar ideas are highlighted by Lebel's (2003) description of ecosystem approaches to health that aim to "... achieve lasting improvements in human health by maintaining or improving the environment... its proponents work for both people *and* [italics added] the environment" (p. xii). According to Lebel, the objective of ecosystem approaches to health is to find the optimum

balance between human health and environmental protection in all endeavours, be they research-related, health-related interventions, community development strategies, and so on. This approach does not ignore social and economic aspirations, but emphasizes the ability of humans to thrive in our environment through sustainable, rather than harmful means.

2.2.4 Environmental health promotion. Another concept that pertains to the biophysical environment and health promotion is the specific domain of *environmental health promotion*, which Parker, Baldwin, Israel, and Salinas (2004) suggest has gained some prominence in recent years, largely due to an awareness of biophysical environmental stressors in communities and in the world at large. Howze, Baldwin, and Kegler (2004) define environmental health promotion as "any planned process employing comprehensive health promotion approaches to assess, correct, control, and prevent those factors in the environment that can potentially harm the health and quality of life of present and future generations" (p. 433). As noted in Section 2.1.1, environmental health generally refers to a distinct discipline, theory, field, and/or branch of public health science that encompasses the assessment and control of physical, chemical, and biological environmental factors that can potentially affect health (Last, 2007; WHO, 2013). While environmental health promotion and the broader domain of environmental health share much in common, the former is not necessarily a subset of the latter. According to Parker et al. (2004), environmental health promotion reveals the overlap between the more traditional forms of public health (i.e. risk assessment, monitoring, epidemiology) and the more sociological nature of health promotion.

Regarding the interface between the biophysical and socio-political environment, Parker et al., (2004) stress the benefit of adopting a socio-ecological framework in environmental health promotion endeavours, as emphasized in the *Ottawa Charter for Health Promotion* (WHO,

1986) and recommended by McLeroy, Bibeau, Steckler, and Glanz (1988). This perspective, as noted in Section 2.2.3, is nested within a larger health determinants model and revolves around the interaction of the social and physical environment. The literature about contemporary environmental health promotion measures indicates that interventions may target systems or policies not commonly considered within the purview of the health sector (Kegler & Miner, 2004; Kreuter et al., 2004; Schulz & Northridge, 2004).

The literature review highlighted that environmental health promotion interventions may encompass many strategies ranging from biomedical approaches that emphasize epidemiology to the WHO health promotion strategies of advocacy, enablement, and mediation. Concerning the latter, WHO (1998) and Schulz and Northridge (2004) identify direct political action and the mobilization of communities towards common political goals related to health as forms of environmental health promotion. Kegler and Miner (2004) and Bandura (1986) note the importance of policy advocacy through interventions that increase public awareness of the importance and urgency of an issue, mobilize grassroots support for a policy, and place issues on the political agenda. Kreuter et al. (2004) mention the need for greater public participation in decision-making concerning environmental health and identify community organizing and advocacy as appropriate health promotion strategies. Coalition building is also cited as a promising intervention strategy, which Kegler and Miner describe as a method for building social capital through creating structures for community dialogue, leadership, skill sharing, and idea exchanges. The aforementioned strategies appear to overlap to a large extent with the activities of environmental activism, although the literature does not tend to label these endeavours in this manner or make explicit connections to activism.

2.2.5 Social cognitive theory. In reviewing literature on health promotion and activism, specific social theories emerged that examine the nuances behind human behaviour in social circumstances. Given the context of this thesis, one notable theory that pertains to both health promotion and activism is *social cognitive theory*. Popularized by Albert Bandura in the early 1960s, this theory reflects an interactional model of causation to analyse human motivation, thought, and action (1986). This perspective is also closely tied to the sociological concept of agency, which according to Barker (2005) describes the capacity of individuals to act independently and to exert free will.

Social cognitive theory as described by Parker et al. (2004) offers a useful point of reference when considering both activism and health promotion as mechanisms for social change. Parker et al. (2004) describe how social cognitive theory can serve as a framework for understanding and addressing the underlying determinants of behaviour and methods for promoting change. According to Bandura (1986), "In the social cognitive view, people are neither driven by inner forces nor automatically shaped and controlled by external stimuli" (p. 18). Rather, human functioning is attributed to the reciprocal determinism of one's behaviour, personal factors like cognition, and environmental (i.e. social and physical) events (Bandura, 1986; Parker et al., 2004). Specifically, social cognitive theory addresses the significance of the value individuals and groups place on a certain outcome, behavioural capabilities (i.e. the knowledge and skills needed to perform a certain function), methods for behaviour change (i.e. factors that can contribute to effective change, like observational learning and reinforcement), and sources of efficacy (i.e. mastery experiences, vicarious experiences, social persuasion, and affective states) (Bandura, 1986; Goddard, Hoy, & Hoy, 2004; Parker et al., 2004). Many of these qualities also inform rational choice theory, as noted in Section 2.1.2.

In addition to an emphasis on social change, factors such as the influence of external stimuli, personal knowledge and values, and self/collective efficacy also appear in health promotion literature (e.g. Hubley & Copeman, 2008; Simons-Morton, Haynie, & Noelcke, 2009; WHO, 1986). In his frequently cited article "Health Promotion By Social Cognitive Means", Bandura (2004) specifically notes the connection between his theory and health promotion. In reference to activism and social cognitive theory, the literature suggests how these same factors, notably personal and group efficacy, inform the circumstances that lead to activism (e.g. Shragge, 2003; Switzer, 2003). Bandura (1989) also explicitly observes that, "Conditions combining high self-efficacy and environmental unresponsiveness tend to generate resentment, protest, and collective efforts to change existing practices..." (p. 450). Bandura's perspectives on who participates in social change, such as activism, are highly useful in identifying theoretical connections to health promotion.

2.2.6 Social capital theory. Another social theory that pertains to both health promotion and activism is *social capital theory*. The concept of social capital has diverse definitions and different emphases, but all stress the notions of networks, norms, trust, participation, cooperation, and solidarity. Social capital theory dates back to the 1970s and is often associated with the theoretical work of Pierre Bourdieu, James S. Coleman, and Robert D. Putnam (Hawe & Shiell, 2000; Health Canada, 2006; van Kermende, 2003). Coleman (1988), Putnam (2001), and van Kermende (2003) describe how the idea of social capital arose from two different intellectual streams, those of sociology and economics, to determine non-economic factors that explain the success of certain outcomes often attributed to economic processes (i.e. health). Regarding health, as noted in Section 2.2.4, the reviewed literature suggests that high levels of social capital are often correlated with health, well-being, and other positive outcomes

involving social change (Campbell, 2000; Kegler & Miner, 2004; Parker et al., 2004; van Kermende, 2003).

Given its emphasis on social processes to promote positive outcomes, social capital theory shares much in common with health promotion and activism. For example, the WHO (1998) defines social capital as representing the degree of social cohesion that exists in communities and notes that it "...refers to the processes between individuals that establish networks, norms, and trust, and facilitate(s) co-ordination and co-operation for mutual benefit" (p. 19). Researchers of health promotion (e.g. Kegler & Miner, 2004; Parker et al., 2004) often define social capital in terms of both networks (webs of relationships that link one another) and norms (expectations groups have for behaviour). In their review of social capital and health promotion, Hawe and Shiell (2000) suggest that although the relational properties of social capital are important (e.g. trust, networks), the political aspects of social capital warrant further recognition. In this sense, not only does social capital involve a network of social relationships that provide access to resources (i.e. the norms of reciprocity) and trust, it also involves social and civil participation (i.e. community and political activities) (van Kermende, 2003). Also related to the domain of activism, Putnam (2001) writes that social capital as the series of relationships, networks and norms can facilitate collective social action (Putnam, 2001). Health Canada (2006) also notes the importance of social capital theory, notably the relevance of collective efficacy to this theory, which also relates to social cognitive theory.

2.2.7 Socio-political power. The first concept of interest that pertains to all three of the main thesis concepts in Figure 2.2 concerns *socio-political power.* In the context of this thesis, I am using the term socio-political power to denote social, economic, and political forces that impact society's well-being. Socio-political power can also be related to the concept of

structure and agency, which relates socialization against autonomy in the shaping of human behaviour. Agency was briefly addressed in Section 2.2.5, however; structure can be understood as the recurrent patterned arrangements that impact the choices and opportunities available to an individual (Barker, 2005). When considered in the context of the three concepts of biophysical environment, activism and health promotion, socio-political power highlights the issue of power differentials within society and reflects the inter-connectivity between environmental and social determinants of health.

Many issues regarding the interplay between the biophysical environment, well-being, and socio-political power can be noted in the literature on wicked problems. Rittel and Webber (1973) used the phrase "wicked problems" to describe complex social-environmental issues, which were characterized by their elusive nature, involving a constellation of complex social and political forces, some of which change during the process of solving the problem (Brown et al., 2010, p. 4). Whereas tame problems can be more easily solved using existing modes of inquiry, wicked problems tend highlight the limits of our present system (Brown, 2008; Brown et al., 2010). Brown et al. (2010) state, "since wicked problems are part of the society that generates them, any resolution brings with it a call for changes in that society" (p. 4).

Butler and Friel (2006) also offer a commentary on the relevance of socio-political power in relation to the main thesis concepts (and wicked problems) when they note, "all social movements and scientific disciplines are subject to powerful institutional and natural forces that shape their social, economic, political and environmental milieu" (p. 1694). Similarly, Kreuter et al. (2004) note that solving complex public health problems, such as those concerning the biophysical environment, is a social and political process, as much as it is a scientific endeavour. Kreuter et al. observe how socio-political circumstances involving conflicting scientific evidence

concerning environmental problems and how to solve them, competing interests (e.g. economics), and the effects of such factors as political borders, etc., create problems concerning the biophysical environment and well-being.

The notion of environmental injustice, which was briefly introduced in Section 2.2.1, is also relevant to discussions of socio-political power and its relationship to the main study concepts. Environmental injustice largely describes how the effects of biophysical environmental degradation are often experienced inequitably, resulting in poorer well-being for particular populations that lack power (Poland et al., 2011). Addressing environmental injustice involves an emphasis on equity and social justice, which are also acknowledged by the *Ottawa Charter for Health Promotion* (WHO, 1986) as fundamental conditions and resources for health, along with peace, shelter, education, food, income, a stable ecosystem, and sustainable resources. Butler and Friel (2006) emphasize that the conditions and resources for health depend on the equitable distribution of environmental and ecological resources, which is often impacted by socio-political power. Environmental justice is also affected by the distribution of negative externalities, such as locations for waste management or industrial projects, which is also influenced by socio-political power. In reference to addressing environmental injustice from a health promotion context, Masuda et al. (2010) write, "We believe that health promotion can and should draw on the rich history of scholarship and activism of environmental justice" (p. 454). Further to this, Masuda et al. note the similarity between the theoretical and value-based approaches of health promotion and social justice.

Hancock (2011b), Parker et al. (2004), and Schulz and Northridge (2004) all emphasize the need for health promotion endeavours to address social inequities caused by power imbalances as it relates to environmental problems. These authors cite strategies that advocate

for the creation of structures and processes that actively work to dismantle existing inequities so as to foster greater economic, political, and social equity. For example, Parker et al. (2004) state that existing power structures must be targeted, and that the knowledge and methods developed by health promoters to advance social change can and should be used. Parker et al. (2004) also identify that health promotion endeavours must involve "...achieving changes to redress imbalances of power and privilege while at the same time increasing the community's ability to work together to solve problems borne of the imbalance of power and privilege" (p. 500). Specifically, Hubley and Copeman (2008) note that advocacy as a means of addressing power imbalances is necessary for most aspects of health promotion work, but that this is also the most difficult area of health promotion action, as it can involve "controversy, risk, exposure to criticisms, reprisals and– in the case of direction action– even imprisonment..." (p. 210).

In addition to the emphasis on power within the health promotion literature, sociopolitical power is also a consistent theme in the literature on activism. For example, Shragge (2003) notes that activism, "... is the story of building opposition to the dominant social structures, challenging power..." (p. 76). Shragge, along with Tarrow (2011), Rothman (1999), and Minkler and Wallerstein (1999), note that activism is often rooted in conflict models that exist to face power inequalities head on. As noted in Section 2.1.2, activism differs from other forms of social change activities because of its emphasis on socio-political power. Rothman (1999) observes how the strategy of community development tends to assume that the common interest of those involved overrides differentials of power, income, and wealth and that as long as the outcome of a project is achieved, differentials of power need not be addressed. Despite a growing effort to bring participatory approaches to community development, this approach is still dominated by organizations (e.g. government or non-governmental organizations) and their

service-oriented strategies (Kapoor, 2005). As a result, community development endeavors for social change have been criticized for being more vulnerable to the power relations of the organizations involved in their projects (Rothman, 1999; Shragge, 2003).

Masuda et al. (2010) and Papadakis (1998) note that the environmental movement has provided opportunities to challenge socio-political power, notably assumptions about economic growth and industrial development, and is drawing attention to differing types of cultural values and knowledge, which serves to re-balance power within societies. Schulz and Northridge (2004) note the importance of environmental justice groups as key players in the promotion of health. They note that the mobilization of and sustained action by local environmental groups, with support of the larger public, may be successful in reducing environmental disparities by advocating for local and federal policy changes. Schulz and Northridge also note that public mobilization may provide the infrastructure to continue activism for social and economic equality, which in turn, influences health. Similar criticisms of environmentalism have been noted in the reviewed literature, whereby large-scale, mainstream environmental organizations are challenged for succumbing to societal power dynamics, and minimizing opportunities for mass participation (Switzer, 2003).

The value of collective activism as it relates to socio-political power and the main thesis concepts was also apparent in the reviewed literature. In his classic book on fostering social change, *Rules for Radicals: A Pragmatic Primer for Realistic Radicals*, Saul Alinsky (1971) writes, "change comes from power, and power comes from organization. In order to act, people must get together... " (p. 113). Alinsky stresses the basic principle that in order to be the most effective change agents, it is vital to achieve a critical mass of support. Shragge (2003) and Bandura (1986) also note how people throughout history have joined together for mutual aid, to

reduce power imbalances, and to demand social justice.

With reference to the collective and individual impact of involvement in activism, Adamson et al. (1988) state:

> Collective action can reshape our lives and the world around us; it can also change the way we see ourselves—not as individuals struggling in isolation to survive, but as part of a collective of shared interest and vision. This can be a transformative and empowering experience and demonstrates in practice the limits of individualism. Changing society is a way of changing ourselves... (p. 155)

Further to this, and explicitly identifying the physical environment, Bandura (1986) also notes:

> Rapidly changing conditions, which impair the quality of social life and degrade the physical environment, call for wide reaching solutions to human problems and greater commitment to shared purposes. Such changes can be achieved only through the mutual effort of people who have the skills, the sense of collective efficacy, and the incentives to shape the direction of their future environment. (p. 451)

According to Tarrow (2011), a revival of the collective element of activist efforts has become increasingly vital, as organizations and coalitions for social change appear to be moving away from mass mobilization to involving only key representatives in forms of action. It has been argued that this shift has contributed significantly to the weakening of social movements (Shragge, 2003). Shragge (2003) emphasizes that to influence policies and practice through activism, a collective voice ensures a greater chance of success.

2.2.8 Well-being. In examining the literature on the biophysical environment, activism, and health promotion, the second concept that appears relevant to all three main concepts is that of *well-being*. According to the reviewed literature, well-being differs slightly from the concept of health. This is reflected in the WHO's definition of health, which defines health as "... a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (2003, para 1).

Well-being is also cited in relation to wellness, a concept that has marked similarities and differences to the concept of health as well. Similar to the WHO's definition of health, wellness has been described in the literature as a balance between different aspects of one's being and bears a resemblance to Evans and Stoddart's (1990) determinants of health (National Wellness Institute [NWI], 2013). According to Dr. Bill Hettler of the National Wellness Institute, a not-for-profit organization that provides resources for health promotion professionals, there are six aspects of one's being, which comprise physical, social, intellectual, spiritual, emotional, and occupational wellness. A balance of wellness in all aspects of one's being has been referred to as producing a state of well-being (NWI, 2013).

In contrast to certain definitions of health and wellness, well-being tends to include a reference to happiness, satisfaction, personal agency, and its application towards entities such as a community. For example, the Oxford English Dictionary (2012) defines well-being as "The state of being or doing well in life; happy, healthy, or prosperous condition; moral or physical welfare (of a person or community)....". The American Centres for Disease Control and Prevention (CDC) (2013), while noting a lack of consensus on a single definition, state that well-being describes satisfaction with life, fulfillment, and positive functioning. Further to this, the CDC states, "health enables social, economic and personal development fundamental to well-

being" (para. 5).

The *Ottawa Charter for Health Promotion* (WHO, 1986) also notes the following after defining health promotion: "To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment" (WHO, 1986, p. 1). This quote articulates the connections between environments and aspects of well-being. In addition to this, the Charter concludes, "Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being" (WHO, 1986, p. 1). This second quote particularly highlights the significance of well-being as being rooted in subjective states and personal action, which is relevant to both health promotion and activism.

Tarrow (2011) also notes that the pursuit of well-being within society, as well as justice, are significant to both the larger social justice and environmental movements, which are related to activism and the biophysical environment. In addressing mechanisms behind social change, such as activism, Frank and Smith (1999) also observe that the well-being of a community (i.e. environmental, economic, social, and cultural) is the objective of these efforts. Lubell (2002), whose research methods concerning the study of environmental activism are examined more closely in Chapter 4, also defines well-being as being the primary purpose behind activism.

2.3 Summary and Boundaries of Literature Review

The literature review for this thesis was mostly conducted prior to June 2012, which is when the associated fieldwork research was initiated. This timing enabled the development of a literature-informed thesis conceptual framework that guided the remainder of the research. The literature review presented in this chapter was therefore bounded by answering the question

"how are health promotion and environmental activism theoretically connected" (RQ I). Answering this question led to the identification of three main thesis concepts and eight conceptual connections that were presented in Figure 2.2.

Although this chapter covers an extensive body of literature, this literature review does not introduce all of the concepts that surfaced and became more salient as the research process progressed. One example of this is the collective interest model, an empirical approach towards examining who participates in political protest behaviours (Lubell, 2002). CI models are further examined in Chapter 4, as they relate to the thesis' methodology.

Another important example of a concept that emerged during the process of the fieldwork is that of *dominant discourses*, which relates to particular terminology that was used to describe the main thesis concepts (e.g. environment vs. ecosystem). The Oxford English Dictionary (2012) defines discourse as, "The body of statements, analysis, opinions, etc., relating to a particular domain of intellectual or social activity, esp. as characterized by recurring themes, concepts, or values; (also) the set of shared beliefs, values, etc., implied or expressed by this..." noting the frequent use of a modifier, as in the phrase "dominant discourse". Further to this definition, the Oxford English Dictionary also notes that discourse is, "The action or process of communicating thought by means of the spoken word... Also: the words exchanged by this means; speech. In later use also: the written representation of this; communication in written form...".

Definitions of discourse also appear highly discipline-specific in the reviewed literature, especially within the realms of linguistics, semiology, and sociology. For example, Chalaby (1996) writes that discourse has too often been reduced to linguistics or semiotics and used as a synonym for language, which overshadows its sociological significance as an entity in its own right. According to Fairclough (2013), the concept of discourse is challenging to define independently and is most usefully understood by analyzing the sets of relations that it involves through processes such as discourse analysis. However, discourse as a concept must not be confused with critical discourse analysis, which refers to a specific research methodology (Fairclough, 2013). The literature on critical discourse analysis provides insight into the concept of dominant discourses. Van Dijk (1996) describes "dominance" in this context as relating to social power, which is defined in terms of "the control exercised by one group or organisation (or its' members) over the actions and/or the minds of (the members of) another group, thus limiting the freedom of action of the others, or influencing their knowledge, attitudes or ideologies..." (p. 84). Hannigan (2006) notes that it is difficult to talk about discourse without bridging in a discussion of power. Although a critical discourse analysis is not included in this research, the relevance of dominant discourses as it relates to this study's main concepts and research questions is examined in further detail in Chapter 6.

Acknowledging the boundaries of this literature review, it has served as an inductive process to provide a conceptual foundation to address RQ I, which is also useful in the investigation of RQ II and III. Now, informed by the ideas presented in this review and in the thesis conceptual framework Figure 2.2, the study context is next explored, which describes the particular place and pressure of interest of the chosen case study, and provides the backdrop for this study's fieldwork.

Chapter 3: Study Context

In the preceding chapter, a review of literature was presented to begin to address research question I (RQ I). This chapter provides an overview of the study context in reference to the chosen case study that will be used to inform RQ II and III. In this chapter, the study context is described in terms of *place* (i.e. the communities of Haida Gwaii, BC) as well as the particular *pressure* of interest (i.e. opposition towards the Enbridge Northern Gateway Project). Where relevant, links have been made to concepts identified in the thesis conceptual framework.

3.1 Haida Gwaii, BC

The region of Haida Gwaii (formerly known as the Queen Charlotte Islands) is an archipelago off the coast of the Canadian Western province of British Columbia (BC). This region, located approximately 100 kilometres from the mainland, consists of over 200 islands, large and small, totaling over 10 000 square kilometres (Council of the Haida Nation, 2012). The two main islands of Haida Gwaii are Graham Island to the north and Moresby Island to the south (see Figure 3.1 for a map of Haida Gwaii). This region is home to three municipal towns (Masset, Port Clements, and Queen Charlotte), two modern Haida villages (Old Massett and Skidegate), and several unincorporated villages and settlements (e.g. Sandspit, Tlell). The entire land of Haida Gwaii and its surrounding waters are regarded as the traditional territory of the Haida Aboriginal peoples and a strong, proud, indigenous presence is apparent on these islands (Council of the Haida Nation, 2012).

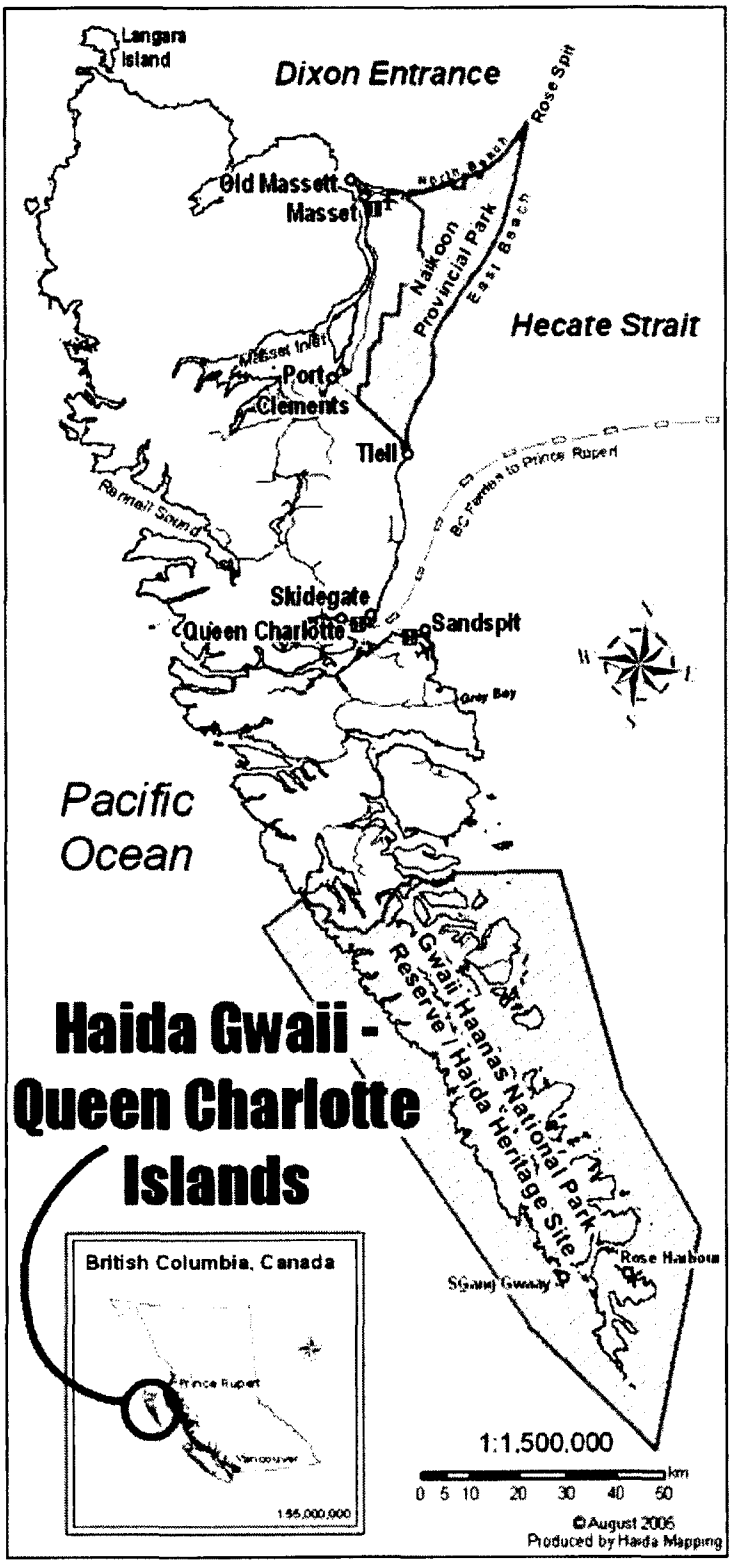

Figure 3.1: Map of Haida Gwaii, BC. Source: Haida Mapping (2005).

The region of Haida Gwaii is internationally recognized for its abundant and distinct flora and fauna and unique and diverse ocean and terrestrial ecosystems (i.e. Gwaii Haanas National Park, Haida Heritage Site, and Marine Conservation Area Reserve). The ocean ecosystems in particular provide essential marine habitat and marine resources, which sustain the social, cultural, environmental, and economic health of the islands' inhabitants (Ritchie, 2012; Saxifrage, 2012). The significance of ocean ecosystems is nested in humankind's connection to water (and its systems) and as Parkes and Horwitz (2009) state, "For humans, water is meaningful for everything from physiology to spirituality. Water is arguably human society's principal natural resource, and its distribution and abundance lies at the basis of human settlement..." (p. 96).

More specific to coastal ecosystems, Doney et al., (2012) describe the ecological and cultural importance of these systems, noting how they provide a "wealth of free natural benefits that society depends upon, such as fisheries and aquaculture production, water purification, shoreline protection, and recreation" (p. 12). Nature-based tourism, such as sport-fishing, is also becoming more prevalent in Pacific coastal communities, which is contributing added social and economic benefits (Wood, Butler, Sheaves, & Wani, 2013). Stephenson, Berkes, Turner and Dick (2014) also note that from a historical and cultural standpoint, it is especially important to recognize the relationship between Aboriginal peoples and coastal resources, notably Aboriginal rights concerning the use and management of these resources, such as salmon and herring stocks, which have been traditionally abundant in Haida Gwaii.

As backdrop for a discussion on health promotion, the biophysical environment, and activism, a table of basic demographic and socio-economic data for Haida Gwaii has been provided in Table 3.1. These data provide an overview of Haida Gwaii as a region with several

characteristics that are different from the rest of the province of BC regarding certain socio-economic health determinants.

Table 3.1

Demographic and Socio-Economic Data for Haida Gwaii, BC vs. Province of BC

Indicator	Haida Gwaii	Province of BC
Population[a]	4370	4 400 057
% Aboriginal population[b]	38.96	4.28
Gender[a]		
% Male	51.2	49.0
% Female	48.5	51.0
Life expectancy at birth[c]	76.3	82
Infant mortality (per 100 births)[c]	13.9	3.7
% of 18 year olds without high school diploma[c]	69.9	27.9
Average family income[c]	57 598	80 511
Income dependency[c]		
% Forestry	14	7
% Mining	0	3
% Construction	4	8
% Government Transfers	18	15
% Tourism	11	6
% Public Sector	33	26

[a]Source: Statistics Canada (2012), based on 2011 Census Data
[b]Source: Statistics Canada (2012), based on 2006 Census Data
[c]Source: BC Vital Statistics (2011)

The data presented in Table 3.1 indicate that Haida Gwaii residents face a shortened life expectancy and higher infant mortality rates when compared to the rest of the province. Furthermore, data in Table 3.1 related to socio-economic determinants of health also indicate that Haida Gwaii has a lower rate of average family income and percentage of adults without a high school diploma. These data highlight some of the health promotion challenges on the islands and suggest potential challenges related to economic stability and consequently health and well-being.

For the islands' residents, health services, including health promotion initiatives and programs, are largely provided by a combination of provincial health services and services with an Aboriginal mandate. Haida Gwaii is under the jurisdiction of Northern Health, one of five provincial health authorities in BC. Northern Health operates two hospitals and public health units, as well as mental health and addictions services, home and community care services, long-term care facilities, and an array of outreach programming (Northern Health, 2013). Through such arrangements as the Health Services Transfer Agreement with Health Canada and more recently, the Tripartite First Nations Health Plan and the creation of the First Nations Health Authority[6], Haida Gwaii's comparatively large Aboriginal population also receives additional community health promotion services and programs. The Haida Health Centre in Old Massett and the Skidegate Health Centre and Haida Health Hub in Skidegate are examples of such service organizations in this region, both of which are continually expanding their services and rising to identified health challenges (First Nations Health Authority, 2014; First Nations Leadership Council, Government of Canada, & Government of British Columbia, 2007; Haida Health Centre, 2011; Haida Health Hub, 2011).

It could be argued that despite the potential health disparities between Haida Gwaii residents and the rest of the province of BC, the levels of social capital on Haida Gwaii may contribute to overall well-being in ways that are not apparent in the data of Table 3.1. For example, the Haida Nation has a reputation for fostering social cohesion across the islands, as evidenced by the creation of the Council of the Haida Nation, a powerful political entity unto itself (Council of the Haida Nation, 2012). Haida Gwaii residents are also known for a lifestyle

[6] In acknowledgement of the health disparities that exist between Aboriginal and non-Aboriginal peoples in BC and in Canada, the First Nations Health Authority (FNHA) was created to reform the way health care is delivered to BC Aboriginal peoples to close these gaps and improve health and wellbeing. Since October 1, 2013, the FNHA has taken over and assumed responsibilities from Health Canada. The FNHA is the first and only provincial health authority of its kind in the nation (FNHA, 2014).

that emphasizes sustainable local food harvesting as part of the maintenance of well-being, which involves a network of social relationships that provide access to resources that may offset some of the challenges associated with having less income (Saxifrage, 2012).

Evidence of social capital and aspects of social cognitive theory, as described by Parker et al. (2004), can also be noted in Haida Gwaii's history of successfully defeating industrial expansion. For example, in 1985, after a decade of land-use planning, negotiations, and court cases, logging persisted on the pristine Haida Gwaii island of Athlii Gwaii, or Lyell Island. Fed-up with this continued logging, the Haida worked closely with environmentalists to network, build relationships, and draw a line across Haida Gwaii to stop all logging to the south of Moresby Island, including Athlii Gwaii (Pynn, 2010). The protest culminated with a blockade of the road on Lyell Island, where 72 Haida people were arrested. The first to be arrested were Haida elders and the images of elderly people in traditional regalia being taken away by police officers for protecting their land raised awareness and support for the campaign across Canada (Vernon, 2010). High levels of social persuasion meant that by the time of the blockade, the Sierra Club BC, a prominent environmental non-governmental organization, along with over 150 organizations, were active on the campaign to protect South Moresby. On July 11, 1987, the Canadian and BC governments signed a memorandum of agreement creating what is today the 1495-square kilometre Gwaii Haanas National Park Reserve and Haida Heritage Site (Pynn, 2010; Vernon, 2010).

Ecosystem protection and Aboriginal rights went hand-in-hand during this campaign and the legacy of this environmental activism created a powerful precedent that exemplifies what Bandara (1986) describes as a mastery experience in the context of social cognitive theory. In this sense, Athlii Gwaii provided a mastery experience for the activists involved by providing an

opportunity to develop self-efficacy through participating in protest and developing skills for effective activism. The stand taken at Athlii Gwaii for ecosystem protection and for Haida title to the land and waters served as a catalyst for much action, such as the 2007 land-use plan that protects about 50% of Haida Gwaii (and calls for ecosystem-based management over the rest); on-going marine use planning for the waters surrounding the islands; and the Giving the Name Back with Respect Ceremony, where the name of Haida Gwaii was readopted for this region (Vernon, 2010). The history of activism concerning Athlii Gwaii provides a backdrop against which a series of new pressures are occurring, including the Enbridge Northern Gateway Project (ENGP).

3.2 The Enbridge Northern Gateway Project

Enbridge, a Canadian corporation involved in the transportation, generation, and distribution of energy sources (e.g. crude oil, condensate, natural gas), has proposed a 5.5 billion dollar pipeline/terminal project that has been the source of much controversy (Brown, 2012; ForestEthics, 2010; Pipe Up Against Enbridge, 2012). This project, reflecting the company's biggest undertaking to date, would span from central Alberta to the coast of BC. The purpose of the ENGP is to provide petrochemicals extracted from Alberta's oil sands (also known as tar sands) to a primarily Asian market. The 1177 km twin pipeline would carry bitumen, which is extremely viscous crude oil that has been separated from the oil sands, from Bruderheim, Alberta, to a marine terminal in Kitimat, BC. It would also transport condensate, used to thin petroleum products for pipeline transport, from west to east. These products would be transported via tanker vessels to and from the marine terminal (Enbridge, 2011; ENGP Joint Review Panel, 2012b) (see Figure 3.2 for a map of the ENGP's pipeline and tanker routes).

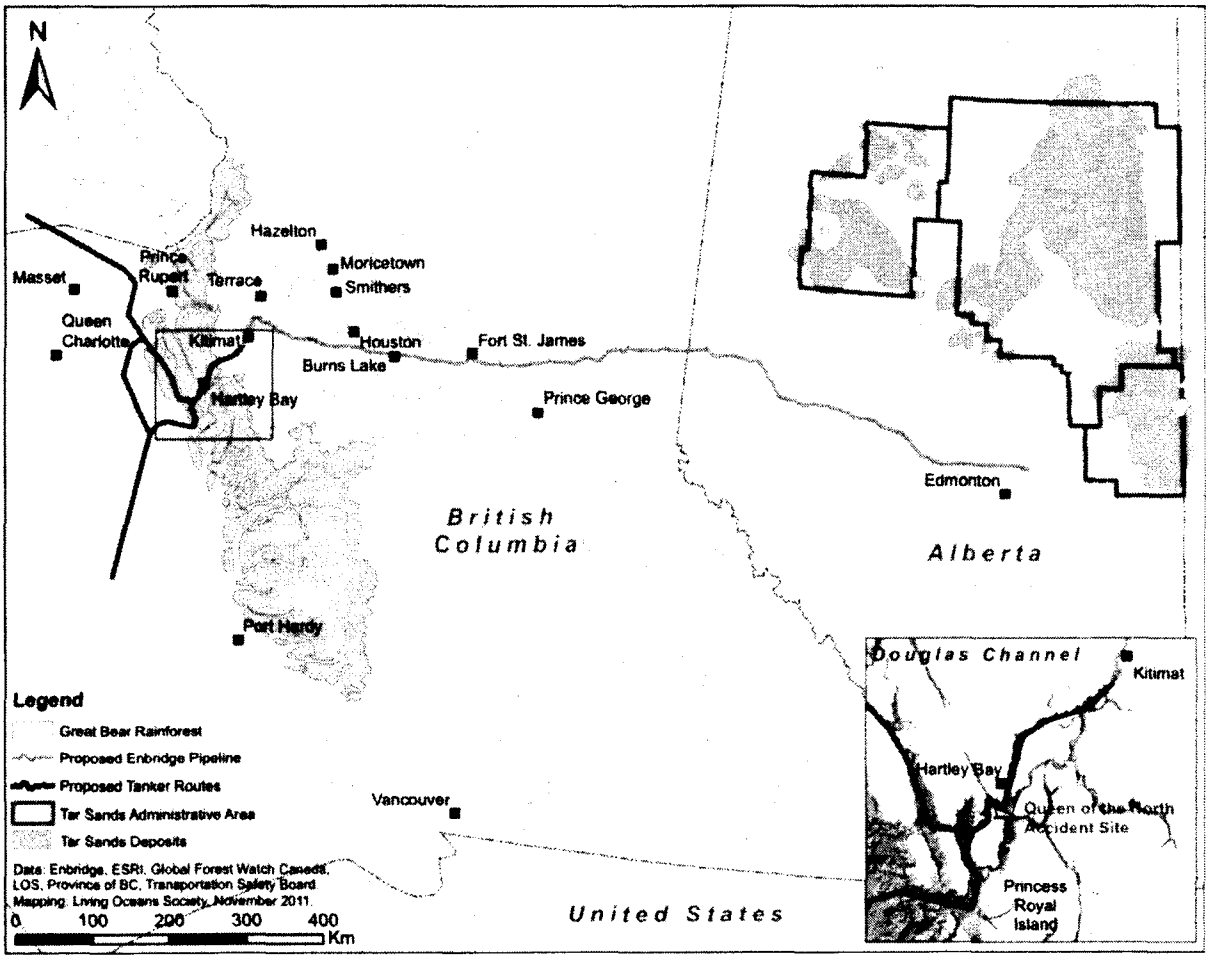

Figure 3.2. Map depicting the proposed Enbridge Northern Gateway pipeline and proposed tanker traffic routes. Source: Living Oceans Society (2011).

According to the Canadian federal government, when a project has the potential for significant adverse environmental effects or there is a high degree of public concern, it may be referred for a joint review panel (JRP) process. This procedure basically consists of the federal government appointing a panel to assess the environmental effects of the proposed project under specific federal government statutes. In terms of roles and responsibilities of the JRP process, the Minister of the Environment holds the statutory responsibilities, the Canadian Environmental

Assessment (CEA) Agency holds the administrative responsibilities, and the National Energy Board (NEB) has the regulatory responsibilities for interprovincial and international natural gas, oil, and commodity pipelines, as well as environmental assessments for these projects (NEB and the Minister of the Environment, 2012).

Table 3.2 provides a brief timeline of key events concerning the review process for the ENGP. It is noteworthy to highlight that amidst the review process, the Conservative Party of Canada passed Bill C-45 (Omnibus Bill), which resulted in significant legislative changes that altered the JRP process[7] (Press, 2012). These changes were not well received by opponents of the ENGP, who argued that the new legislation weakened the environmental assessment process and was an inappropriate use of political power (Goodine, 2012). Two particular differences exist between the current JRP process and the process prior to Bill C-45. First, whereas before the JRP panel would make the final decision on whether or not to approve the project under the *National Energy Board Act*, now this responsibility is given to the Governor in Council (NEB and the Minister of the Environment, 2012). Secondly, the current legislation gives the Chairperson of the NEB the authority to impose time limits on the JRP process.

[7] The passage of Bill C-45 occurred in the midst of fieldwork for this thesis. Implications of this change are discussed in Chapter 6.

Table 3.2

Timeline of Key Events: Enbridge Northern Gateway Project (ENGP) Review Process

Year	Review Process
September 2006	Minister of Environment initially refers ENGP's environmental assessment to a review panel, but Enbridge requests that the regulatory review process for the project be delayed indefinitely.
June 2008	Enbridge writes to federal regulators indicating that it is resuming activity on the ENGP and requests that the environmental assessment process be started again.
November 2008	Enbridge publicly re-announces its intentions to proceed with the ENGP.
December 2009	National Energy Board (NEB) and the Canadian Environmental Assessment Agency (CEA) issue a Joint Review Panel (JRP) Agreement for the review of the ENGP, a document detailing the responsibilities of the panel and the procedure to be followed under federal law
January 2010	Government appoints panel to conduct review of the project. Citizens submit over 2000 comments to the NEB regarding the terms of reference for this assessment.
May 2010	ENGP's environmental impact assessment report, a thousand-plus page collection of information produced by Enbridge that describes the project, potential problems, and mitigation strategies, is submitted to the JRP.
End of summer 2010	As per the JRP process, the panel holds preliminary public meetings where written and oral information is submitted on behalf of the project's proponents and opponents. Following these meetings, the panel determines that Enbridge must compile extra information regarding the risk assessment of the project, largely relating to the potential for ecological damage and how this would be managed so as to mitigate any negative impact on human/ecosystem health.
January 2012	Enbridge submits additional information regarding risk assessment and public hearings begin. The public can participate in three capacities: file a letter of comment, provide an oral statement at scheduled hearings, or become an intervener (e.g. may submit written evidence, ask questions regarding the evidence of others, be questioned on their evidence, participate in cross-examination and make a final argument at the hearings).
December 2012	Bill C-45 is passed by the Senate, which contains several amendments to a variety of existing statutes (e.g. *Canadian Environmental Assessment Act, 2012*), as well as the creation of new statues (e.g. *Jobs, Growth, and Long-term Prosperity Act)* that directly affect the JRP process.
August 2012*	Minister of the Environment and NEB announce amendments to JRP Agreement to comply with new statutes resulting from Bill C-45. Federal Environment Minister Peter Kent and NEB Chair, Gaétan Caron, issue a letter to the JRP overseeing the ENGP with a firm deadline of December 31, 2013 to decide the fate of the project.
June 2013	JRP hearings conclude.
December 2013	JRP recommends approval of the ENGP with 209 conditions. Report is submitted to the Governor in Council, who makes the final decision and by order, whether the NEB should issue a certificate of approval

Source: CEA Agency, 2013; Enbridge, 2013; ENGP Joint Review Panel, 2012a; Goodine, 2012; NEB and the Minister of the Environment, 2009; 2012. *Field research for this thesis begins July 2012 and ends September 2012.

3.3 Opposition Toward the Enbridge Northern Gateway Project

The proposed ENGP has generated opposition from environmental and non-governmental organizations, Aboriginal Nations, select politicians, celebrities, and the public at large (ForestEthics, 2010; Hoekstra, 2012; Ritchie, 2012). This section describes the nature of this opposition in general, prior to focusing on the specific nature of opposition in the context of Haida Gwaii. At the heart of much of the opposition is concern that the project will adversely affect the biophysical environment, which will ultimately impact human health in significant ways.

Concerned parties cite several potential problems from the ENGP that relate to the biophysical environment. Opponents of this project state that the ENGP will increase oil sands development (up to an estimated 30%), a process that has been criticized for being highly resource intensive and polluting to surrounding environments. Degradation from the installation of the ENGP's pipelines, a pipeline spill, or a tanker accident akin to the 1989 *Exxon Valdez* disaster have also been cited as concerns regarding this project given that the proposed project is slated to cross over 700 waterways and create an immense volume of tanker traffic (>200/year) (Brown, 2012; ForestEthics, 2010). As bitumen is considered highly toxic, opponents are particularly concerned about the possibility of introducing this substance into the environment (Pipe Up Against Enbridge, 2012).

The Royal Society of Canada Expert Panel, commissioned by the federal government in 2004, supported concerns regarding a tanker mishap. This panel undertook an independent review of the 1972 Government of Canada moratorium banning oil tanker traffic from the North and Central Coast of BC, specifically the Dixon Entrance, Hecate Strait, and Queen Charlotte Sound. The panel concluded that the moratorium on tankers should be maintained, though the

current federal government has chosen to proceed with the JRP process, disregarding the moratorium (Pipe Up Against Enbridge, 2012). The government's disregard for the moratorium was highly controversial, especially because Canada's Marine Weather Hazards Manual considers the Hecate Strait to be the fourth most dangerous body of water in the world (cited in Vanderklippe & Thompson, 2012).

Despite Enbridge's record of over 610 pipeline leaks in less than ten years and concerns that the ENGP could result in a pipeline or tanker mishap (Pipe Up Against Enbridge, 2012), proponents of this project say that the construction and operation of the ENGP will deliver sustainable economic and social benefits to local communities in Alberta and BC ("a lasting legacy of local investment, tax revenue and jobs for the North" [Enbridge, 2012]). Others distrust Enbridge's promises, and say that the potential benefits are not worth the environmental risks (CoASt, 2012; ForestEthics, 2010; Pipe Up Against Enbridge, 2012; Saxifrage, 2012). The proposed ENGP continues to be a source of much opposition, prompting questions about how such projects affect the environment, human health, and who determines/influences whether projects like this become a reality. Debate and activism concerning this project continues in regional, national, and international contexts but has particular characteristics at the local scale of Haida Gwaii that are relevant to understanding the case-study of this thesis.

3.4 Haida Gwaii and Opposition to the Enbridge Northern Gateway Project

Haida Gwaii has been notably active and at the forefront of opposition towards the ENGP. Many residents have expressed their grave concern that an oil spill from the proposed extensive supertanker traffic would have devastating and long lasting effects on the region's overall well-being. Indeed, Haida Gwaii represents a territory where the people, both Aboriginal

and non-Aboriginal, are closely connected to their ecology, from relying on local food systems to the outdoor tourism and fishing industries (CoASt, 2012; Council of the Haida Nation, 2012; Ritchie, 2012; Saxifrage, 2012). While commercial fishing and sport-fishing tourism comprise a valued part of the Haida Gwaii economy, personal consumption of marine foods is vital and the phrase "When the tide goes out, the table is set" (as quoted in Grams et al., 1996, p. 1567), is a common Haida Gwaii expression.

The Haida Gwaii communities of Masset, Queen Charlotte, Port Clements, and Sandspit, along with the Council of the Haida Nation and Skidegate and Old Massett Band Councils, have all voiced strong opposition to the proposed ENGP, as evidenced by activism in the form of well-attended demonstrations, the creation of local coalitions (i.e. CoASt), and considerable participation in the JRP process (CoASt, 2012; Haida Gwaii Observer, 2010; Ritchie, 2012; Saxifrage, 2012). What is more, in February 2012, the Skeena Queen Charlotte Regional District (SQCRD) to which Haida Gwaii belongs became the first district to make official proclamations against the project (i.e. Skeena Queen Charlotte Enbridge/Tanker Resolution). It was resolved that the SQCRD would oppose any expansion of bulk crude oil/bitumen tanker traffic in the Dixon Entrance, Hecate Strait, and Queen Charlotte Sound (Ritchie, 2012).

Furthermore, the Coastal First Nations Declaration, signed in March 2010, enlisted the Council of the Haida Nation, Old Massett Band Council, and Skidegate Band Council, along with several other coastal First Nations, in opposition to tanker traffic and pipeline infrastructure from Alberta oil sands. The declaration reads: "Therefore, in upholding our ancestral laws, rights and responsibilities, we declare that oil tankers carrying crude oil from the Alberta Tar Sands will not be allowed to transit our lands and waters" (Coastal First Nations Declaration, 2010, para. 5).

John T. Jones, elected Chief Councillor of Old Massett who was arrested at Lyell Island, publicly stated that the threat of Enbridge and supertankers must be kept in mind and he has declared, "If we need to go to the line again, we'll go to the line" (cited in Vernon, 2010, para. 15). Guujaaw, former president of the Council of the Haida Nation who was also at the forefront of the fight for the protection of Gwaii Haanas and took part in the blockades, stated:

> There comes a time when a people got to do what a people got to do and when the stakes are your land and your culture, losing is not an option. A people armed with the truth are a people with conviction that over-rides fear. A generation at a crossroad chose to stand (cited in Vernon, 2010, para. 18).

Haida Gwaii's opposition to the ENGP is considered to be a timely example of a community participating in widespread activism due predominantly to concerns over a perceived threat to their health. At the time of writing, the pipeline and terminal have not been constructed and the project is fresh in the minds of the region's citizens.

3.5 Summary

This chapter provided an overview of the study context in describing the chosen case study of Haida Gwaii, BC, a remote Canadian archipelago, and its opposition towards a controversial petrochemical project, the Enbridge Northern Gateway Project. Haida Gwaii, consisting of a collection of communities with a strong Aboriginal presence, is a place where the people are highly connected to the marine and terrestrial ecology. This chapter described much of the controversy surrounding the ENGP and as Table 3.2 has indicated, the fieldwork for this study occurred in the midst of the JRP process. Haida Gwaii's opposition to the ENGP, rooted in concern for the biophysical environment as a determinant of health and historically bound in

environmental activism, presents a case that is explicitly linked to the main concepts of this thesis. The following chapter describes how this case study is used to further explore the connections between health promotion and environmental activism.

Chapter 4: Methodology

This chapter builds upon the literature review and the study context overview to provide the remaining details that inform this thesis' methodology. In this chapter, the philosophical underpinnings of this research are addressed along with a justification for the case study approach. The reasoning behind the choice to use a collective interest model and how this model was used to develop a preliminary thesis analytical framework are also provided. Following this, five study hypotheses related to research question III (RQ III) are articulated, along with details concerning quantitative data collection methods, such as instrument design and the specifics of fieldwork (e.g. additional permits and protocols, sampling, distribution). Details concerning supplementary qualitative data collection are also provided and the methods of data analyses are also introduced in this chapter.

4.1 Philosophical Underpinnings: Critical Realism

Building on the brief introduction in Chapter 1, this section describes the ontological and epistemological perspectives of this thesis, highlighting their appropriateness to the research context and the methodological implications. This thesis began by noting a call for more theoretical, social, and empirical research to understand environmental activism and its relationship to health promotion. Examining this issue from only one methodological orientation seemed to limit the capacity to explore a complex puzzle, which appears to involve the intricate interplay of structure and agency relationships, as well as an identified need for concrete, policy and practice-based answers to address the growing global health concern of the biophysical environment as a health determinant. As noted, this thesis also responds to a call for quantitative

and case study approaches. This thesis therefore adopts a philosophical orientation that values both empiricism, as well as the social dimensions of human existence.

Critical realism, popularized in the social sciences by Roy Bhaskar (1986), provided a basis from which to explore the research questions that was consistent with my ontological and epistemological preferences. As an ontological stance, critical realism does not impose the polarity that universal truths are either completely objective (e.g. positivism) or entirely subjective (e.g. post-modernism) but rather, as DeForge and Shaw (2011) succinctly state, "a critical realist worldview is said to offer researchers a middle-ground" (p. 85). A critical realist perspective integrates realism, or empiricism, with social matters such as structure, agency, and the relationship between them (Bhaskar, 1989; Frauley & Pearce, 2007). More specifically, a critical realist approach posits that social phenomenon (e.g., human behavior, interpersonal relations, social conditions) are largely determined by forces that are not directly observable; however, theoretically-informed empirical research can be useful as a means to continually refine our conceptualizations of underlying social structures. Hence, critical realism is well suited to community health sciences due to its ontological stance that an independent reality exists and can be learned through a combination of direct experience and theoretical abstraction, and its acknowledgement of conventionalism (i.e. that social principles exist and are dynamic through space and time) (DeForge & Shaw, 2011).

Furthermore, critical realism is also credited for having an explicitly emancipatory axiology (Bhaskar, 1986). In other words, the value base for a critical realist involves "transformation from unwanted, unneeded and/or oppressive sources of determination to wanted, needed and/or liberating ones" (Hartwig, 2007, cited in DeForge & Shaw, 2011, p. 86). As this study concerns social change and socio-political power dynamics, it is fitting that the

philosophical underpinnings of this research be grounded in such a value base. The relevance of critical realism to the study's questions is further reinforced by Frauley and Pearce's (2007) description that "...inherent to critical realism is a concern with both social structure and social action and their articulation" (p. 4).

This thesis contains a prominent empirical component, which is particularly useful for answering RQ II and III and informing their policy and practice-based implications. The use of a case study to articulate the research issue also highlights the social dimension of this thesis' epistemology, as it reflects the challenges of a particular community with respect to structure and agency. Critical realism is congruent with social frameworks, which is relevant given the application of a collective interest (CI) model in this study. In reference to critical realism and frameworks, Proctor (1998) explains, "... ideas are social concepts that have an ontological basis but are understood via a particular, socially predisposed framework" (p. 361). The analytical framework for this study, presented in Section 4.3, is informed by a CI model, the health sciences, and social theory (i.e. the literature review and conceptual framework introduced in Chapter 2). The resulting framework facilitates an investigation of environmental activism and its predictors in a way that emphasizes both the social and empirical dimensions of the research questions.

The critical realist stance of this thesis is fully portrayed in Chapter 6 where the reviewed literature is integrated with the empirical results from the statistical analyses and additional qualitative insights regarding the case-study. These results are then related to the thesis analytical framework, whereby the framework is amended given the findings. In this discussion chapter, the empirical component of this study is explicitly nested in social research approaches

and social dimensions, in keeping with Frauley and Pearce's (2007) notion that empirical observations are most accurately understood when examined through their social context.

4.2 Case Studies as a Research Method

One of the approaches towards fulfilling the research purpose of this thesis has been to employ a case study, identified in the previous chapter as the case of Haida Gwaii, BC, and opposition towards the Enbridge Northern Gateway Project (ENGP). While definitions of case study research are highly variable in the literature, for the purpose of this thesis, *case study* is understood to be a detailed and intensive analysis of a setting that is concerned with the complexity and particular nature of the case itself (Bryman, 2008).

In his textbook on case study research design and methods, Yin (2003) identifies that case studies are useful for "how" or "why" research questions that involve a set of contemporary events, over which the investigator has little or no control. Black (1999) adds, "Case studies allow the researcher the opportunity to pursue issues to a greater depth in more realistic situations" (p. 47). The approach of a case study to address health promotion in the environmental context is also promoted by such authors as Kegler and Miner (2004), who stress the practicalities and benefits of honing in on specific communities with specific environmental health concerns. The use of a case study was therefore determined to be a suitable approach for providing a specific, relevant context to address RQ II and III while facilitating a manageable scope for empirical work.

For this thesis, a case study was required that was congruent with the themes presented in the thesis conceptual framework of Figure 2.2. Notably, a case study was sought that would reflect a timely, regional example of environmental activism, which was situated in a context that

involved a community's desire to promote their health through their activist efforts. At the time of this thesis, one of the most high profile and relevant issues that appeared in the Canadian media concerning the environment and health was the proposed ENGP. As noted in the previous chapter, opposition to this project was particularly notable on the islands of Haida Gwaii, and the timeline presented in Table 3.2 highlights the timely nature of the JRP process and the fieldwork of this research.

4.3 A Model of Collective Interest

In keeping with the purpose of the research and chosen methodological orientation, a largely empirical approach was used that involved a model of collective interest. This statistical approach was chosen to explore the themes of the thesis conceptual framework in the context of the chosen case study. In other words, while RQ I focused on identifying theoretical connections between health promotion and environmental activism, RQ II moves this inquiry into examining how a CI model, informed by these theoretical connections, can be used to understand the practice of environmental activism from a health promotion perspective in the case study context. In this section, I will present a brief history of CI models and explain why and how an amended CI model has been used and incorporated into a suggested analytical framework to address the research questions of this study.

4.3.1 History and applications of collective interest models. The CI model was identified while conducting the literature review for this thesis as it appeared to be built upon concepts that were similar to those of the thesis conceptual framework. The CI model, originally developed by Finkel et al. (1989), was used to explain why people participated in mass political protest in the Federal Republic of Germany in the 1980s, or rather, predictors of this behaviour.

The precursors of the CI model, the personal influence model and the collective rationality model, were both heavily informed by the grievance vs. rational choice theory debate, which was briefly presented in Section 2.1.2. These empirical models, often presented as equations, were designed around an expected value framework, whereby it is hypothesized that people participate in social and political action (i.e. activism) when the subjective expected value of participation is greater than for non-participation (Finkel et al., 1989). Factoring in all of these elements, the free-rider challenge (also presented in Chapter 2) was also incorporated into the CI model. According to Finkel et al. (1989), the purpose of the CI model is "to incorporate the demand for the public good into an individual's utility calculus without violating the logic of free-riding..." (p. 886).

Lubell and colleagues (2002; Lubell, et al., 2006; Lubell, Zahran, & Vedlitz, 2007) were the first to respond to the call for further empirical study of collective environmental activism by using a CI model to examine collective social action in environmental contexts, identifying key predictors of this activity (Lubell, 2002; Lubell et al, 2006; 2007). Specifically, Lubell and colleagues have used a CI model to study activism around issues such as air pollution and climate change, as well as general environmental activism in the United States of America (Lubell, 2002; Lubell et al., 2006; 2007).

As a statistical approach, recent applications of a CI model present a framework for identifying predictors of activism, which forms the dependent variable (DV). According to Lubell (2002), the CI model can be represented by the following equation:

$$\text{Environmental Activism } (EA^{8}) = [V * (p_g + p_i)] - C + B$$

The items on the right of the equation represent categories of independent variables (IVs). The specific independent variables of each category may differ depending on the context of the CI model's application. However, in its general sense, each category involves descriptions of people's behaviours, attitudes, and demographic features and these categories have been found to be significant predictors of whether or not one participates in activism (Lubell, 2002). The five categories of predictors are as follows:

i) V is representative of the perceived value of the collective good produced by successful activism (also understood as the Perceived Problem Severity).

ii) P_g represents the likelihood that the group participating in activism will be successful and denotes Group Efficacy.

iii) P_i is the influence of the individual's personal contribution on the probability of success, or Personal Efficacy.

iv) C symbolizes particular costs associated with participation in activism, which Lubell (2002) describes as predominantly related to an individual's demographics influencing "the availability of money, time, and civic skills necessary for effective participation" in activism (p. 437). Lubell included the demographic characteristics of age, gender, level of education, income, and ethnicity as variables in his work with the CI model. According to Lubell's research, generally more educated and higher

[8] Lubell (2002) refers to this as EV, although for clarity of abbreviation, EA will be used in this thesis.

income individuals were more likely to participate in environmental activism because presumably, they incurred less costs associated with this activity (e.g. educated citizens may have more civic skills, higher income citizens may be able to financially afford to spend more time engaging in activism). Lubell et al. (2006; 2007) noted mixed results concerning age and ethnicity. Knowledge of the environmental threat and previous experience with activism (which Lubell described in terms of social capital) were also included as costs of environmental activism, as these individuals were likely to feel more effective in their activism and see participation in this activity as less costly in terms of personal resources.

v) B symbolizes particular benefits associated with participation in activism and are generally identified by Lubell and colleagues (Lubell, 2002; Lubell et al., 2006; 2007) as the influence of environmental, social, and political values, as well as psychological, social, and material benefits. Lubell (2002) notes that citizens are more likely to receive the benefits of environmental activism if they have high levels of environmental values, which are often supported and reinforced by their political affiliations.

Table 4.1 provides a summary from the work of Lubell (2002) and Lubell et al. (2006), which presents CI model categories and some of the specific variables within these categories. This table indicates the expected direction of influence for each independent variable on the dependent variable of environmental activism in these particular study contexts.

Table 4.1

*Summary of Collective Interest (CI) Model Variables Influencing Environmental Activism**

Collective Interest Variables	Selective Benefit	Selective Cost
• V – Perceived problem risk/severity (+) • V - Economic importance (+) • P_i - Personal efficacy (+) • P_g - Government efficacy/trust (+) • P_g - Industry trust (+/-) • P_g - Citizen efficacy (+)	• Politically conservative values (e.g. Republican) (-) • Environmental values (+)	• Income (+) • Education (+) • Age (+/-) • Female (+) • Minority (+/-) • Environmental knowledge (+) • Social capital (+)

*Adapted from Lubell, 2002, p. 435 and Lubell, Vedlitz, Zahran, & Alston, 2006, p. 151. The signs in parentheses indicate the expected direction of influence for each IV on the DV of environmental activism. The expected direction of influence in different study samples has sometimes varied (e.g. age, minority status).

In addition to honing in on environmental activism, which further defined some of the independent variables in the CI model equation, Lubell and colleagues (2002; Lubell et al., 2006; 2007) employed some mathematical differences in their use of this model, as compared to their predecessors, Finkel et al. (1989). Lubell and colleagues employed the use of ordinary least squares regression and ordered probit models in their statistical analysis, but did not report using other multiplicative or logarithmic strategies to generate their results. They noted that the multiplicative structure of the model made it sensitive to rescaling, which created challenges in determining which independent variables were most important. Lubell and colleagues were satisfied with the heuristic, as opposed to algebraic, use of the CI model equation in deriving conclusions about what influences participation in activism. What is more, according to Lubell et al. (2006), Finkel later concluded that no existing operationalization of the CI model strictly adhered to its original algebraic form.

4.3.2 Thesis application of a collective interest model. In reference to RQ II, a CI model offers an empirical approach to understanding environmental activism from a health

promotion perspective by identifying predictors of environmental activism. Identifying predictors of environmental activism through the use of a CI model appeared to be an appropriate strategy for this study given the model's similarities to the themes in the thesis conceptual framework. Alternative empirical strategies that relate to the thesis conceptual framework were not encountered in the literature review. A CI model is not the only strategy for empirically examining predictors of activism (see Section 4.6 for further discussion on other statistical approaches); however, it was the only model of its sort to be located that empirically and specifically addresses *environmental* activism (i.e. Lubell, 2002; Lubell et al., 2006; 2007).

What makes a CI model particularly appropriate for this thesis is that it consists of logical categories of interest that are congruent with the themes in the thesis conceptual framework. Of most importance, is that the CI model was designed to investigate social change through the mechanism of activism, but also emphasizes such concepts as collectivity, individual and group efficacy, socio-political power aspects, well-being, and the influence of demographics. While the subject of health promotion has not been explicitly incorporated into CI models discussed in the literature, the model inherently contains a connection to health promotion by emphasizing dynamics that are significant to health promotion theory and practice, such as some of the concepts presented in Figure 2.2. Table 4.2 depicts how the CI model's five categories can be broken down into specific independent variables that relate to the study context, and provides greater clarity regarding the connections between the CI model and the thesis conceptual framework (Figure 2.2).

Table 4.2

Independent Variables (IVs) Influencing Environmental Activism from a Health Promotion Perspective: Informed by a Collective Interest (CI) Model and the Thesis Conceptual Framework

CI Model Category		Specific IVs, Described in the Environmental Context from a Health Promotion Perspective	Links to Thesis Conceptual Framework
V	Perceived problem severity	• Belief that human health is related to the condition of the environment* • Concern that environmental threat will negatively affect the environment • Perceived likelihood that an environmental disaster will result from the threat • Level of opposition to the environmental threat • Use of the environment for recreation and employment • Concern for local economic prosperity	• Environmental activism • Environmentalism • Health determinants models • Environmental health promotion • Socio-political power • Well-being
p_g	Group efficacy	• Group influence to prevent the environmental threat • Trust in elected government • Trust in formal consultation processes* • Trust in corporate/industry responsibility	• Environmental activism • Environmentalism • Social capital theory • Socio-political power • Well-being
p_i	Personal efficacy	• Personal influence over the political system • Personal influence to prevent the environmental threat	• Health determinants models • Social cognitive theory • Socio-political power • Well-being
C	Costs of participation	• Age • Knowledge of the environmental threat • Previous experience with activism* • Gender • Level of education • Ethnicity* • Work status* • Income	• Environmental activism • Environmentalism • Health determinants models • Social cognitive theory • Socio-political power • Well-being
B	Benefits of participation	• Duration of residency* • Environmental values • Political views related to social issues* • Political views related to economic issues*	• Environmentalism • Social capital theory • Socio-political power • Well-being

Note: IVs are largely based on the work of Lubell and colleagues (2002; Lubell et al., 2006; 2007). Asterisks denote IVs that were specifically created or modified for the study context. In these instances, IVs are either new to the CI model or represent a different ways of addressing the variable.

While the work of Lubell and colleagues (2002; Lubell et al., 2006; 2007) has served as a reference for much of the use of a CI model in this study, it is significant to note some initial differences between their work and this research. For example, the independent variables for this study were adapted to suit the study context resulting in three additional IVs and 5 modified IVs (denoted with an asterisk in Table 4.2). The three new IVs include:

i) Belief that human health is related to the condition of the environment: Related to the category of Perceived Problem Severity, this IV was included to specifically capture the sentiment that the environment is an important determinant of human health, which is central to this research.

ii) Work status: Included under the category of Costs, this IV was thought to be related to demographics and pertains to, as Lubell (2002) noted, the availability of money, time, and civic skills necessary for effective participation in activism.

iii) Duration of residency: Included under the category of Benefits, this IV was though to be related to this category, as people who have lived somewhere for more time may incur greater psychological, social, and material benefits from participating in environmental activism related to their community.

The five modified IVs include:

i) Trust in formal consultation process: Included under Group Efficacy, this variable pertains to the IV Lubell (2002) identified as Government Efficacy/Trust and was re-worded to be more specific to the research context involving the JRP process.

ii) Previous experience with activism: Included under Costs, this variable pertains to the IV Lubell (2002) identified as Social Capital, which he described as previous participation in activism. This IV was re-worded to be more specific.

iii) Ethnicity: Included under Costs, this variable pertains to the IV Lubell (2002) identified as Minority Status. This IV was re-worded to place particular emphasis on ethnicity, rather than the quantitative value of people in a particular ethnic group.

iv) Political views related to social issues: Included under Benefits, this variable was originally listed as either Republican/Democrat political party affiliation (Lubell, 2002). This variable was re-worded to capture sentiments regarding political views related to social issues that mirror American political party platforms (e.g. views on civil rights).

v) Political views related to economic issues: Included under Benefits, similar to political views on social issues, this variable was re-worded to capture sentiments regarding political stances related to economic issues, rather than the American political parties Lubell (2002) identified.

Another difference between this research and Lubell and colleagues' (2002; Lubell et al., 2006; 2007) work was that they investigated not only the act of environmental activism, but often included the intention to participate in this form of action, whereas this study only involves one dependent variable. Furthermore, I do not employ the exact same statistical regression tests used by Lubell and colleagues (see Section 4.6). As Lubell and colleagues made adaptations to the model originally proposed by Finkel et al. (1989) to suit their work, the CI model has been adapted according to the research context of this study.

4.3.3 Preliminary analytical framework. The information presented in Table 4.2 highlights the relationships between the independent variables of the CI model and the themes of the thesis conceptual framework of Figure 2.2. Based on these links, a preliminary analytical framework to guide this study and analysis of environmental activism from a health promotion perspective was developed for this study. The preliminary thesis analytical framework

illustrated in Figure 4.1 depicts the integration of the thesis conceptual framework with core components of a CI model, including the process of examining predictors of environmental activism from a health promotion perspective. This preliminary analytical framework is used to capture the critical realist stance of this thesis and to guide the analysis of quantitative data obtained from the case study context, with a view to answering RQ III. The strengths and weaknesses of this preliminary analytical framework are addressed in Chapter 6, informed by the outcomes of the analytical process and findings.

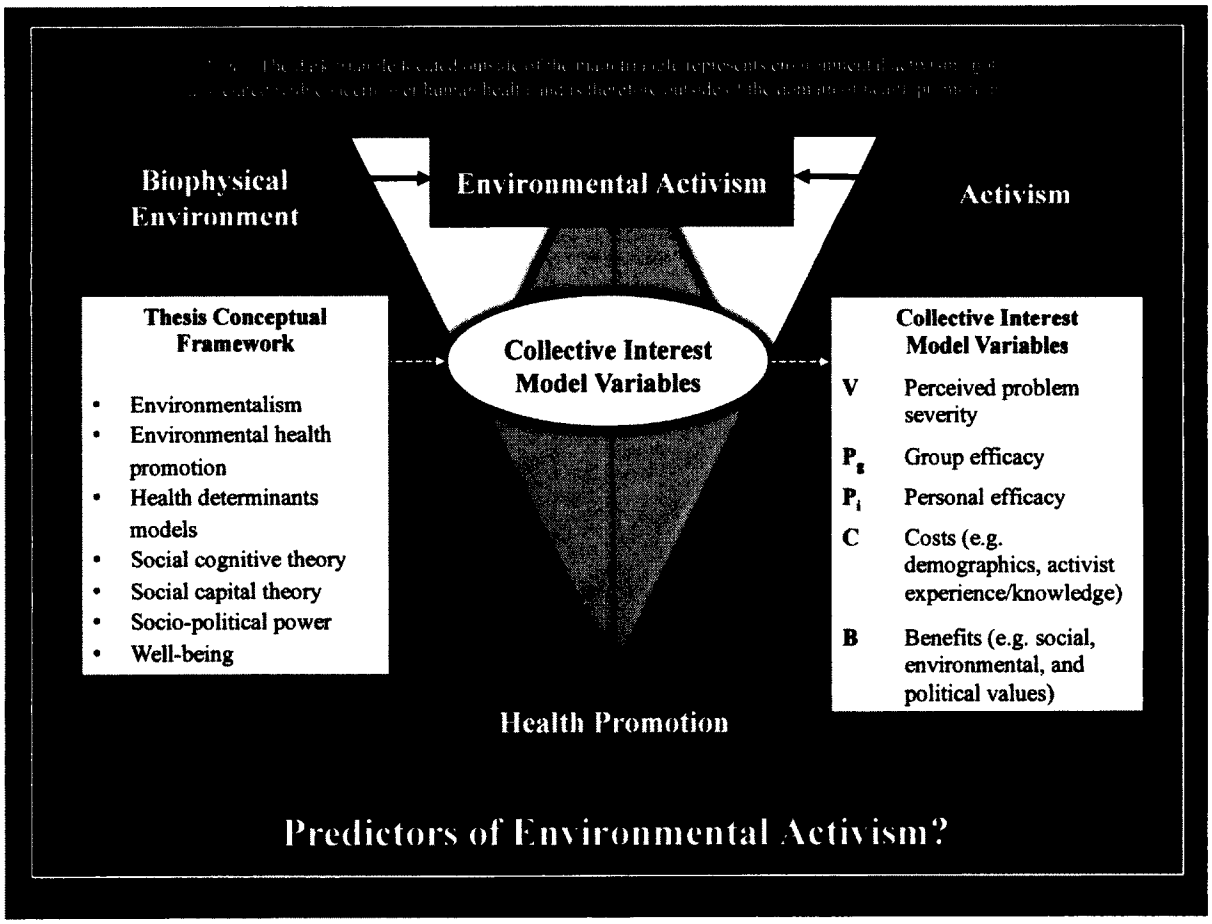

Figure 4.1: Preliminary Analytical Framework. Exploring predictors of environmental activism from a health promotion perspective through the lens of the collective interest model.

4.4 Empirical Hypotheses

To provide further structure to RQ III, I developed empirical hypotheses regarding predictors of environmental activism, which are largely informed by the findings of Lubell and colleagues (2002; Lubell et al., 2006; 2007). Through their regression statistical analyses, Lubell and colleagues (2002; Lubell et al., 2006) identified that variables that corresponded with the CI model categories tended to be significant predictors of activism in their study contexts. Table 4.1 provided a summary of some of the specific results that Lubell and colleagues obtained in their research.

Five hypotheses, based on the reviewed literature (notably the work of Lubell and colleagues [2002; Lubell et al., 2006; 2007]), were generated for this study that involve testing to see if additional categories of the CI model enhance the predictive ability of V, or the category of Perceived Problem Severity. In other words, taking it as a given that people who regard the environment as an important determinant of health will participate in environmental activism, how can a CI model best be used to predict environmental activism? Table 4.3 presents these initial study hypotheses[9].

For this study, the research hypotheses do not necessarily relate to individual predictors of activism amongst a list of independent variables. Rather, the hypotheses for this study were largely generated around the CI model categories themselves. Although all the categories in the CI model are thought to be relevant to the study of health and the environment, the category of Perceived Problem Severity (V) is of particular interest to this research as it contains the independent variables that most directly address the environment as a determinant of human

[9] One change was made to the fourth hypothesis during the course of this study, which is addressed in Chapter 5, Section 5.1.4. This change arose from the results of a factor analysis that was conducted during the preliminary data analysis phase that revealed a more contextually appropriate, slightly different grouping for the categories of Costs and Benefits.

health. Therefore, this study's hypotheses are related to testing different logistic regression models, mostly related to the category of V, to determine which configuration of categories can most accurately predict the outcome of environmental activism in the study context.

Table 4.3

Initial Empirical Study Hypotheses, Framed by Research Question Three (RQ III)

RQ III	Hypotheses
"What is revealed about participation in environmental activism when an adapted model of collective interest, informed by health promotion perspectives, is used to analyze a specific case study[a] concerning perceived threats to the environment and health?"	1. Concern for the biophysical environment as a determinant of health (reflected by the perceived severity of the environmental threat or V) is a significant predictor of participation in environmental activism.
	2. Considering V, the contribution of perceptions regarding group efficacy (P_g) contributes to the accurate prediction of participation in environmental activism.
	3. Considering V, the contribution of perceptions regarding personal efficacy (P_i) contributes to the accurate prediction of participation in environmental activism.
	4. Considering V, the contribution of the effects of selective costs and benefits[b] (i.e. the material, social, or psychological consequences) citizens may incur from involvement in environmental activism contributes to the accurate prediction of participation in environmental activism.
	5. Considering V, the contribution of all CI model categories increases the accurate prediction of participation in environmental activism.

[a] Case study refers to Haida Gwaii, BC, and opposition towards the Enbridge Northern Gateway Project.
[b] As defined by Lubell (2002) p. 435 and Lubell, Vedlitz, Zahran, & Alston (2006) p. 151.

4.5 Quantitative Data Collection

The following sections describe the quantitative data collection methods that were used to inform the empirical hypotheses of this study. Instrument design, or in this case, a 25-question long questionnaire, is described. Information about the requisite research permissions and protocols is provided in this section, as well as the details concerning population sampling and questionnaire distribution.

4.5.1 Instrument design. To obtain the quantitative data needed to statistically test the hypotheses of this study, a survey (or questionnaire) was selected as the instrument for data collection. For quantitative research in the social sciences, surveys are useful instruments for gaining information about the strength of people's attitudes, perceptions, views, and opinions (Black, 1999; Bruce, Pope, & Stanistreet, 2008). A survey was also the mechanism for data collection used by Lubell (2002) and Lubell and colleagues (Lubell et al., 2006; 2007) to gather their data for use with the CI model. While Lubell (2002) was able to use secondary data for his initial study, subsequent studies with his colleagues (2006; 2007) required the development of a specific survey, as they were interested in the CI model as it related to specific issues (i.e. air quality in 2006 and global climate change in 2007).

For the chosen case of Haida Gwaii and opposition towards the ENGP, a study-specific survey was developed for primary data collection. This adapted study-specific survey was necessary since attempts were unsuccessful to locate either an existing, appropriate survey to use for data collection, or an existing data set containing all the necessary information about the variables of interest to this research. Informed by Black's (1999) description of a logical approach towards instrument design, a study-specific survey was developed. Black describes this process as moving from theoretical knowledge of a subject, to the identification of the concepts and constructs of interest, to the development of a set of relevant questions. These first steps have been captured in the preceding sections of this thesis.

To further assist in the instrument design of this thesis, a copy of the survey used by Lubell, Zahran, and Vedlitz in their 2007 study was obtained (M. Lubell, personal communication, February 24, 2012). While Lubell and his colleagues' approach was greater in scope and scale than required for the purposes of this thesis, the strategy of using an existing

instrument, amended through a logical approach, addresses the issue of measurement error, or more specifically, construct validity and reliability (Black, 1999). Lubell's survey consisted of 108 items, predominantly Likert-type scales, to statistically measure a cross section of perceptions and attitudes related to environmental activism and the CI model variables of interest (Lubell et al., 2007). The study by Lubell and colleagues employed this instrument in a national telephone survey of adults, where $N = 1092$. The survey shared by Lubell affirmed the use of Likert-scale items for this study and provided some structure for how to word particular questions related to these topics.

For this study, the Lubell survey was amended into a more concise, contextually appropriate, 25-closed question survey. One question specifically addressed the dependent variable: self-reported activities carried out to oppose the proposed ENGP, or environmental activism (see Section 5.2). This question provided the dichotomous outcome for the DV, but was also able to capture for interest's sake data related to participation in specific types of activist activities. The remaining 24 questions of the survey were structured around the CI model's categories and the IVs presented in Table 4.2, or more specifically, 24 covariates of interest. Each covariate or IV was supported by the literature and theoretical framework presented in Chapter 2. These resulting questions provided an array of discrete and continuous data that could be used to predict the outcome of participation in environmental activism amongst Haida Gwaii residents in opposition to the proposed ENGP.

The inclusion criteria for the survey are presented in Table 4.4. As this study is concerned with identifying differences amongst groups of people who are already opposed to the proposed ENGP, an evident inclusion criterion for the survey was opposition towards this project. This survey was also restricted to adults (i.e. greater than 18 years of age), which was in

line with the work of Lubell (2002) and Lubell et al. (2006; 2007) to limit the complexities of including minors for both logistical (i.e. consent) and analytical (i.e. additional confounding variables) reasons. The other inclusion criterion, residency, was meant to acknowledge a connection to land and home and a personal relationship with the local resources and economy, which is relevant to both the CI model variables and the case study of Haida Gwaii. Other details regarding inclusion criteria are summarized in Table 4.4.

Table 4.4

Inclusion Criteria for Survey Participation

Criterion	Definition/Rationale
Opposed to the Enbridge Northern Gateway Project (ENGP)	• Based on self-reported feelings of opposition, or concern, regarding the proposed ENGP. • This study is only concerned with the attitudes and behaviours of people who are *already opposed* to the ENGP and seeks to predict the outcome of environmental activism of individuals with in this sub-population of Haida Gwaii residents.
>18 years of age	• Based on self-reported age. • This study follows the approach by Lubell and colleagues (2002; Lubell et al., 2006; 2007) and only examines the attitudes and behaviours of adults.
Haida Gwaii residency	• Based on self-reported residency, exceeding 6 months over the last year (based on survey date). • This study applied BC Ministry of Health residency requirements for Medical Services Premiums as the criteria for inclusion. These criteria acknowledge the migratory nature of northern populations due to seasonal employment and facilitate a large enough sample for statistical analyses (Province of BC, 2011).

The survey was designed to be a self-completed questionnaire that would be available in print-form and in an identical on-line format, hosted through the University of Northern British Columbia (UNBC) secure server, using LimeSurvey, Version 1.92. Similar to the Lubell survey,

the survey questions generally consisted of Likert-scale questions or required a categorical selection. Occasionally, Likert scales were reversed within the questionnaire to provide greater internal consistency (i.e. a measure of reliability when different survey items relate to one characteristic, such as IVs that relate to one category). Efforts were made to use simple, precise language, acknowledging that particular concepts (i.e. the environment, political viewpoints) can be challenging to describe at lower literacy levels. The survey was designed to take the respondent no longer than 20 minutes, a maximum time frame for questionnaires recommended by Bruce et al. (2008).

A small pilot test of the instrument was conducted to examine the validity and reliability of the survey and to identify amendments. Following an initial pilot of ten print surveys to individuals who met the inclusion criteria, the instrument was refined and amendments were made to the wording and formatting of the survey to provide clarity. The final survey scored a Grade 8 on the Flesch-Kincaid Grade Level, a feature available through Microsoft Word. While the Flesch-Kincaid Grade Level could not be lowered through subsequent revisions, suggestions from the survey participants regarding specific wording were included and generated more contextually understood questions. A final copy of the survey is provided in Appendix I, along with the formal information cover sheet for consent purposes and the abridged participant recruitment information sheet. Challenges and issues concerning how the survey performed in the study context are discussed in Chapter 5.

4.5.2 Permissions and protocols. In addition to receiving approval from the UNBC Research Ethics Board prior to data collection (see Appendix II), two other explicit measures were taken to obtain additional permissions required for this research. Prior to data collection, upon the recommendation of a fellow UNBC colleague, Haida Gwaii resident, and member of

the Haida Nation, the Council of the Haida Nation was contacted via email (R. Russ, personal communication, April 17, 2012). This communication, which initially occurred during the proposal development stages of this thesis, was intended to communicate the desire to conduct research on the traditional territory of the Haida people.

Although this case study does not focus solely on the Haida people, it follows a growing protocol to acknowledge research conducted on un-ceded indigenous traditional territory. In the email communications that followed with the Council of the Haida Nation, no concerns, nor objections, were communicated regarding this thesis. The only recommendation given was to obtain a research permit from the Old Massett Village Council (OMVC), which is required for all research conducted in the old Massett traditional territory (V. Crist, personal communication, July 28, 2012). This permit was obtained without challenges through the OMVC's Economic Development branch (Permit # OM-1213-011). Neither the Council of the Haida Nation, nor the OMVC indicated that additional permissions or protocols were required to conduct the research.

4.5.3 Sampling and distribution. This research involved the distribution of the study survey to a non-probability sample of Haida Gwaii residents who met the inclusion criteria as per see Table 4.4. Given the research questions, hypotheses, and approaches, it was determined that random sampling was not required for this study to generate meaningful results. Statistical support and advice for this aspect of the research was received from UNBC professor and thesis committee member, Dr. Peter MacMillan. The decision not to undertake random sampling was informed by two issues. First, this study's aim was not to generate statistical inferences that reflect the Haida Gwaii population as a whole. The goal was to test predictors, based on previous literature and research, within a sub-population of Haida Gwaii residents; those concerned by the proposed ENGP. Secondly, to conduct random sampling in such a small sub-

population would likely be very time consuming and render it particularly challenging to obtain a large enough sample size for logistic regression analysis.

Between July and September 2012, the study survey was made available to a convenience sample of Haida Gwaii residents either online (through the UNBC secure server), or in person (through public venues and events). These approaches to data collection have been supported in the literature (e.g. Bryman, 2008) and were affirmed as contextually-appropriate choices by the pilot sample who tested the survey. As principal researcher, I conducted the majority of participant recruitment and survey collection, with the help of a research assistant (see Research Assistant Confidentiality Contract, Appendix III). A target of 300 completed surveys was set, acknowledging the overall Haida Gwaii population of ~4300 people. Furthermore, in their discussion of regression analyses, Tabachnick and Fidell (2007) suggest a straightforward rule of thumb for determining sample size based on the ratio of cases to IVs (i.e. $N \geq 50 + 8m$, where m is the number of IVs for testing multiple correlation and $N \geq 104 + m$ for testing individual predictors). For this thesis, setting a target of $N \geq 300$ would satisfy both rules of thumb, where $m = 24$ (see Section 4.1 for further information regarding sample size and ratio of cases to IVs). In addition to setting a target sample size, elements of quota sampling[10] were also considered throughout the data collection process for ethnicity and gender to produce a sample that was similar in ethnicity and gender to the overall Haida Gwaii population (see Table 3.1).

The online survey was promoted through an article that appeared in the August 2, 2012 edition of *The Observer*, one of the prominent sources of local media on Haida Gwaii. Furthermore, the online survey's link was shared via email with members of the Council of the Haida Nation; CoAST; the OMVC; the Skidegate Band Council; and the social networking

[10] Quota sampling represents a form of non-probability sampling whereby the researcher strives to obtain a target sample of a subgroup of the population through a nonrandom selection mechanism until the desired number of participants, or cases, is obtained (Bryman, 2008).

Facebook group, the Sea 2 Sands Conservation Alliance (a group of concerned citizens who oppose the proposed ENGP).

The survey was offered in person in the communities of Masset, Old Massett, Port Clements, Queen Charlotte, Sandspit, Skidegate, and Tlell (see Figure 3.1 for a map of Haida Gwaii). Survey distribution occurred either door-to-door, or at public venues, such as local Canada Post Offices, as well as local grocers and farmers' markets. Other larger public venues for data collection included the well-attended Haida Gwaii events of Skidegate Days, the Edge of the World Music Festival, and Haida Heritage Days, where surveys were offered through crowd circulation.

Efforts were made to spend an equal amount of time in each data collection site, based on the community's population, and to survey an array of neighbourhoods when going door to door so as to provide a relative cross section of the island's inhabitants. However, there was no question on the survey concerning the participant's location of residence acknowledging that it is not uncommon for Haida Gwaii residents to be transient between the island's communities, such as living in a different community than their worksite. Furthermore, this study was not specifically concerned with particular regional variations related to the outcome of the DV.

To engage prospective participants face-to-face, individuals were asked if they were interested in participating in a brief, voluntary survey for individuals who were already opposed to the proposed ENGP. If they met this initial criterion, they were provided with an information sheet for consent purposes (Appendix I). With the client's verbal consent, they were able to commence the survey in written form. If the participant preferred, they were offered the option of having the researcher or assistant read the questions aloud (verbatim, providing minimal clarification, only as needed) and record their responses. Surveys were generally completed on

site; however, occasionally prospective participants would want to take the survey away for completion and preferred not to use the online version of the survey. Under these rare circumstances, arrangements were made on a case-by-case basis to arrange the survey's return to the researcher.

Data collection continued until the target of greater than 300 completed surveys were obtained (N=303, 273 paper surveys and 30 online surveys), which reflects approximately 7% of the overall Haida Gwaii population of 4370 (see Table 3.1 for overview of Haida Gwaii demographics). Efforts to obtain a quota sample that would reflect the gender and ethnicity of the Haida Gwaii population were relatively successful and the final sample consisted of percentages similar to Table 3.1 for Aboriginal/non-Aboriginal, as well as male/female populations. The demographics of the sample and discussion of ethnicity coding is addressed in Chapter 5 (Section 5.1 and 5.2).

4.6 Quantitative Data Analyses Methods

This section provides an overview of the major data analyses methods that were used to generate the quantitative results that are presented in Chapter 5. In other words, this section describes how the survey data collected on Haida Gwaii was analyzed with respect to the research purpose, questions, and hypotheses. Data analysis methods for this component were statistical and primarily related to the construction of logistic regression models, aided by IBM SPSS Statistics software (version 20). Descriptive statistics were also obtained to present an overall picture of sample characteristics.

Prior to the major data analysis that involved logistic regression techniques, a factor analysis was conducted to investigate whether the study questionnaire was capturing categories

that were comparable to the CI model's five categories. Tabachnick and Fidell (2007) recommend factor analysis as a strategy to investigate whether a study's data collection instrument is capturing the appropriate categories of interest, or factors. Congruence with the CI model's categories was anticipated given that the study's instrument was a modified form of a survey used with the CI model. Even so, a factor analysis was deemed an appropriate way to determine which groups of independent variables might be meaningfully analyzed together in the logistic regression analysis, and to assess whether slight grouping amendments could be made, if necessary. Although a factor analysis could have been useful at the pilot phase of the survey, the pilot sample of ten did not provide adequate data to test the survey instrument in this way. The results of the factor analysis are presented in Section 5.1.4.

The process of logistic regression model construction followed the factor analysis. According to Tabachnick and Fidell (2007), logistic regression is useful for predicting a discrete outcome (such as a dichotomous DV) from a set of variables that may be continuous, discrete, or a mix of data types. Lubell and colleagues (2002; Lubell, et al., 2006; 2007) employed statistical techniques such as ordinary least squares regression and ordered probit models. However, authors such as Hosmer and Lemeshow (2000), Pampel (2000), and Tabachnick and Fidell advise that logistic regression has come to replace other methods as the data analytic tool of choice when the equation to be estimated has a dichotomous dependent variable. Furthermore, as predictor variables for logistic regression need not be normally distributed, linearly related, or of equal variance within each outcome group, this method may be more appropriate than methods such as ordinary least squares regression, discriminant analysis, multiway frequency analysis, and multiple regression analysis given the use of non-probability sampling in this study (Tabachnick & Fidell, 2007).

According to Tabachnick and Fidell (2007), prior to the construction of a logistic regression model, one must ensure that particular issues are dealt with beforehand to ensure that data meets certain assumptions for statistical testing. The issues include: ratio of cases to variables, missing data, adequacy of expected frequencies, and multicollinearity. Details concerning these mechanisms to ensure that statistical assumptions are met are described in Chapter 5.

For this study, either sequential or direct logistic regressions were employed, depending on the hypothesis. Sequential logistic regression allows one to analyze predictors in a chosen order, rather than all at once, and allows one to see if the inclusion of additional predictors strengthens the model's predictive ability or not (Hosmer & Lemeshow, 2000; Munro, 2005). Direct logistic regression is used when no assumed order of importance exists among predictors and they are entered simultaneously (Tabachnick & Fidell, 2007).

For comparing the results of different models related to each study hypothesis, likelihood ratio tests were used where the SPSS omnibus tests of model coefficients provided a chi-square statistic that was assessed for statistical significance (the differences between each sequence's -2 log likelihood block is compared, results where $p < .05$ indicates improved predictive capabilities with the new model) (Kleinbaum & Klein, 2002; Tabachnick & Fidell, 2007). The overall correct percentage rate, as well as sensitivity and specificity of each model, was also assessed as a means of comparing models. While sensitivity and specificity are perhaps most often used for comparing the results of diagnostic tests, the use of these predictive values can be useful in establishing how accurate a model is at correctly identifying the dichotomous classification in a logistic regression (Hosmer & Lemeshow, 2000). Wald statistics and B coefficients were used to assess individual IVs ($p < .05$).

Information on the predictive value of each IV in the CI model was provided to highlight particular findings that may be statistically lost when analyzing categories of IVs. Although these findings do not necessarily inform the study hypotheses, they were included as a point of interest. Tabachnick and Fidell (2007) support the use of a combination of logistic regression approaches and note that this can be informative when possible predictors are thought to have theoretical significance, but may not statistically stand out in combination with other variables.

In the next chapter, the results of these analyses are presented, including findings regarding the predictive ability of the CI model with respect to the research hypotheses. The details of this analysis explore both the utility of the CI model and its categories, as well as individual predictors of environmental activism in the case study context as discussed in Table 4.2.

4.7 Supplementary Qualitative Data: Fieldnotes, feedback, and comments

In addition to the quantitative survey data, two types of qualitative data contributed to the development of the research. These qualitative data included researcher fieldnotes and spontaneous feedback and comments arising from those who participated in the survey. These qualitative data are not considered to be part of a comprehensive mixed-method study. Rather, given the philosophical underpinnings of this study, these two types of qualitative data and the complementary insights they offer, provided a minor but valuable contribution to fulfilling the research purpose by: informing the research questions, providing a responsive approach to the research process, and capturing learning and insights that occurred throughout the fieldwork. Research insights arising from this supplementary data are presented in Chapter 5, Section 5.4,

and discussion of how these data informed the research process and purpose are provided in Chapter 6.

4.7.1 Researcher Fieldnotes. During the fieldwork for this thesis, I kept a journal of fieldnotes, or written records of my observations and conversations related to this research. The taking of fieldnotes, described as a key form of data collection common in social research contexts (Thorpe, 2008), was employed in this study to capture the social nuances that may have been lost given this thesis' predominantly empirical methods. Mulhall (2003) also states that the taking of fieldnotes, "acknowledges the importance of context and the construction of knowledge between researcher and 'researched'..." (p. 306). In keeping with this, taking fieldnotes provided an important mechanism to capture my reflections on the research questions and process, as well as reflections on participant comments and observations.

Acknowledging the criticism that fieldnotes can, as Wolfinger (2012) states, "reflect the author's tacit beliefs" (p. 93), I endeavored to be conscientious in my note taking (i.e. taking notes after each day of data collection, highlighting experiences, reflections, and challenges). My journal of fieldnotes was where I could elaborate further on my reflections concerning the comments and stories that were shared with me. Using a constant comparative method as described by Hewitt-Taylor (2001), I regularly re-read my fieldnotes looking for topics that frequently arose so as to identify major themes. The themes and insights from the fieldnotes contributed to my analysis and interpretation of the survey data and also the additional qualitative data arising from participant feedback on the survey.

4.7.2 Survey feedback and comments. In addition to fieldnotes, another form of data collected during the fieldwork for this study included supplementary qualitative data obtained in the form of feedback from survey participants. The decision to include and pay attention to this

feedback (rather than excluding it from the research) was a responsive approach to the survey participants' voiced concerns about strict quantitative methods that could not accommodate additional perspectives. This section describes the rationale behind the inclusion of this qualitative data, how these data were collected, and how the qualitative data were managed to provide the insights that are presented in the following chapter.

Early in the collection of quantitative survey data, many participants expressed a preference for having the survey read to them and providing their answers verbally. This was particularly apparent when offering the survey to self-identified Aboriginal participants, who often vocalized a desire to have a conversation about the topic rather than answering questions read from a clipboard. Nápoles-Springer and Stewart (2006) support this observation noting how open-ended conversations can be less intimidating than surveys or questionnaires, which is especially significant amongst those who have been historically marginalized in research, such as Aboriginal peoples.

Often, participants would complete the survey and engage me in conversations about the survey questions, the general topic of the proposed ENGP, and how this relates to life on Haida Gwaii. During these conversations with participants, efforts were made by me and my research assistant not to provide personal opinions regarding the ENGP during data collection so as not to risk influencing participant responses. These feedback comments, conversations, and interactions provided valuable insights into these research questions, as well as the research process in general. As noted, several participants also stated that they wanted to elaborate on the survey questions or have particular comments included in the finished thesis.

Given that the inclusion of participant qualitative data into this study was incorporated after the main data collection instrument was already finalized and in use, there were no specific

amendments made to the study questionnaire. Rather, when conducting surveys face-to-face, participants were notified verbally that if they felt strongly about including comments beyond the survey questions, they could write their comments on the margins of the instrument (i.e. either participants wrote these comments themselves or they were recorded verbatim by the surveyor). These data, which amounted to 105 participant comments, were entered into a Microsoft Excel for Mac (version 14.1.2) spreadsheet. However, not all quotes were typed verbatim. As I often heard very similar comments, I began to record only some comments verbatim (i.e. the first representative quote) and began a frequency tally to indicate similar types of comments. These comments were then organized according to the themes I had identified in my fieldnotes using the constant comparative method. In the following chapter, findings from this basic textual analysis of the participant comments are as a tallied summary.

4.8 Summary

This chapter described the philosophical underpinnings and methodological approaches of this research, which address a call for quantitative and case study research on the social dimensions of environmental activism and health, notably the use of a model of human behaviour related to environmental activism. A model of collective interest, originally developed by Finkel et al. (1989) and later adapted by Lubell (2002), was presented as a strategy for investigating environmental activism, given its apparent connection to health promotion theory. This chapter describes a 25-question survey that was developed to gather data for use with the CI model and the associated statistical analyses. Together, the CI model and the thesis conceptual framework were integrated to form a preliminary thesis analytical framework (Figure 4.1) that would inform the analyses of this investigation. This chapter also delineated the

hypotheses associated with RQ III, as well as the data collection and analysis methods for both the quantitative and supplementary qualitative data obtained. The following chapter presents the results obtained from data analyses.

Chapter 5: Results

In this chapter, I present the results obtained from the fieldwork described in Chapter 4. Specifically, the details of quantitative data management (e.g. data entry, screening, cleaning, assumption testing, factor analysis), descriptive statistics, the logistics of data analysis, and supplementary qualitative data as per Section 4.7 are provided. Chapter 5 builds on the theoretical connections presented in the preceding chapters, presenting results that are especially relevant to research questions (RQ) II and III. Chapter 5 continues to address RQ II by demonstrating how a model of collective interest can statistically inform who participates in environmental activism in the case study context. The results presented in this chapter also directly address RQ III by presenting statistical data related to the hypotheses regarding predicting who participates in environmental activism against the Enbridge Northern Gateway Project (ENGP) on Haida Gwaii and supplementary qualitative data that further informs the research questions.

5.1 Quantitative Data Management

This section describes the data set preparations for the presentation of descriptive statistics and major data analyses (i.e. logistic regression model construction). Data cleaning and screening processes are described along with measures to ensure that data met typical modeling assumptions (e.g. sample size, ratio of cases to independent variables, multicollinearity, absence of outliers) and specific logistic assumptions (e.g. binary outcome variance, lack of perfect separation). Also presented are the results of the factor analysis used to test for congruency between the CI model variables and their categories presented in Chapter 4 and the survey

responses' groupings. This was done to inform the management of independent variables in the logistic regression model construction.

5.1.1 Data entry, coding, and re-coding. Throughout the data collection process, I entered survey data into a Microsoft Excel for Mac (version 14.1.2) spread sheet, which prepared the data for subsequent transfer into the IBM SPSS Statistics program (version 20). Appendix I contains a copy of the final survey, which informs the following descriptions of data entry and coding. Likert-scale question responses were entered numerically (1-7) and other questions with ordinal responses (questions 22 and 25) were numerically coded, beginning with the number 1. Other questions with non-ordinal categorical responses (questions 21, 23, and 24) were also numerically coded, starting with the number 1. For questions 14 and 15, if the respondent had participated in any of the six pre-defined activist activities (or "Other", as defined by the respondent), they were coded with dummy variables[11] of 1 for participation and 0 for no participation. The response of "N/A" was interpreted as no participation in any of the activities. For questions 14 and 15 regarding activist activities, data was also coded in two new columns with the dichotomous coding of 1 for participation in any activist activity and 0 for no participation in activist activities. Descriptive data concerning specific activist activities appears in Section 5.2, but as the details of this data were not relevant to the multivariate analyses of this thesis, they were not transferred to SPSS.

For question 23, which concerns ethnicity, the decision was made to collapse the original four response categories into two groups, "Aboriginal" and "Non-Aboriginal". This decision was made for two reasons. First, observations of the raw data revealed inconsistencies of participant responses, suggesting that alternative classifications may have been clearer and more

[11] Dummy variables refer to re-categorized discrete variables into dichotomous ones to facilitate statistical linear relationships (Tabachnick & Fidell, 2007).

appropriate. Secondly, further research (e.g. Canadian Press, 2013; Crowley & Coates, 2013) and insight obtained from discussions with Haida Gwaii residents occurring after survey development, suggested that regarding ethnicity, of most interest to this particular Canadian context would be to examine the differences between Aboriginal and non-Aboriginal populations (see Chapter 6 for further discussion).

The approach taken to collapsing the original four categories of ethnicity into two categories was as follows: All participants who identified as "First Nations" (n=116), "Métis" (n=14), "Haida"[12] (n=7), and "Inuit" (n=1 under "Other") were re-categorized under the new category of "Aboriginal"[13] (n=138). "Caucasian" respondents (n=146) and the remaining "Other" respondents (n=17, e.g. "mixed background", "Asian", "Latin American", "Canadian", etc.) were amalgamated for a total of 163 "Non-Aboriginal" participants. While this re-classification is not ideal, it presents a logical approach towards obtaining meaningful statistical results that speak to this issue.

Following data entry into Excel, the entire data set was visually inspected for completeness and possible incorrect values. The data set was then transferred into SPSS, where the remaining data analysis was conducted. In SPSS, reverse Likert-scale questions were re-coded (questions 16, 17 and 20) to create a uniform scale where 1 represented greater likelihood of environmental activism and 7 represented less likelihood of EA. Following the data transfer and re-coding into SPSS, the data set was again inspected for completeness and possible incorrect values, as indicated by inspection of univariate descriptive statistics (e.g. frequency values, outliers, etc.).

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[12] Conversations with participants in the field revealed that many Haida people view themselves as a distinct legal and cultural entity and prefer not to be categorized as "First Nations".

[13] "Aboriginal" was selected as the new category name, based on the definition provided in Section 35 of the *Canadian Constitution Act, 1982*, which includes First Nations (Indian), Métis, and Inuit peoples (Aboriginal Affairs and Northern Development Canada, 2013).

5.1.2 Missing data. According to Tabachnick and Fidell (2007), no firm guidelines exist for how much missing data can be tolerated for a sample of a given size (although they note that less than 5% is often acceptable in large data sets). However, missing data must clearly be managed, accounted for, and efforts must be taken to ascertain if this data is missing at random (Tabachnick & Fidell).

The first step in accounting for missing data was to identify that the data set for this thesis contained a total of 2.89% of missing data, which included two types of missing data: blank responses and the selected response of "N/A". To differentiate between types of missing data, the frequencies and percentages of blank versus "N/A" entries for each variable were obtained to observe any remarkable differences between these two types of missing data. Overall, blank entries were quite low and did not exceed 2.31% for any variable. This was anticipated given that reviewing surveys for completeness was a part of the surveying process. Whenever possible, when blank entries were noted, participants were encouraged to complete the question, or if they preferred not to, they were asked to explicitly select "N/A", which was an option for all questions.

As "N/A" entries accounted for the majority of overall missing data, these data were examined more closely to determine how they should be managed. By examining the frequency of this type of "N/A" missing data for each question, it was apparent that data were not missing randomly throughout the data set. "N/A" missing data were clustered around four questions, each of which exceeded 5% and included questions regarding: Perceived fairness of the Joint Review Panel (JRP) process (10.56%), political views on social issues (10.23%), political views on economic issues (9.24%), and income (14.52%) (see Table 5.1). This finding is not surprising for questions such as income. For other questions, it suggests ambiguous wording of the survey

question or the identification of a sensitive question, for example, political leanings or trust in government/corporate processes.

Table 5.1

*Characteristics of Participants with Complete vs. "N/A" Type Missing Data**

Variable and Characteristic of Outcome		Complete %	Missing %	χ^2	*p*
Question 9 (*n* = 299)	EA	79.0	53.1	10.587	**.001**
Perceived fairness of JRP process	No EA	21.0	46.9		
Question 17 (*n* = 300)	EA	77.0	71.0	0.551	.458
Political views (social issues)	No EA	23.0	29.0		
Question 18 (*n* = 297)	EA	78.1	60.7	4.239	**.040**
Political views (economic issues)	No EA	21.9	39.3		
Question 25 (*n* = 298)	EA	79.1	61.4	6.590	**.010**
Personal annual income	No EA	20.9	38.6		

* Variables with >5% "N/A" type missing data
Note: χ^2 = 1 *df*, **bold** = $p < .05$, JRP = Joint Review Panel, EA = Environmental Activism

Deletion of the four variables with high percentages of "N/A" type missing data was considered, although this was not desirable given that each independent variable was theoretically significant to the analysis. Therefore, as suggested by Tabachnick and Fidell (2007), variables with greater than 5% of "N/A" type missing data were analyzed to see if this outcome was related to other variables (i.e. in this case, the outcome of the dependent variable). "N/A" type missing data were re-coded as 99 to facilitate further analysis, as suggested by Bryman (2008). Given that these variables represented discrete data, chi-square tests and crosstabulation were used to test if there was a relationship between participants with/without "N/A" type missing data and the DV outcome of environmental activism concerning the ENGP. These analyses revealed three statistically significant results for three of the four questions, suggesting that people who responded "N/A" on these three questions were less likely to have participated in environmental activism in opposition to the ENGP (see Table 5.1). This finding

is addressed in the overall interpretation of the logistic regression analysis and is also explored in greater detail in the discussion of Chapter 6 (notably regarding wording of the survey questions), where the limitations of this study are addressed.

Despite the aforementioned strategy for dealing with variables with particularly high proportions of "N/A" type missing data, another strategy was needed to ensure that as many cases, or respondents, as possible would be included in the logistic regression analysis. Otherwise, cases with any missing values are excluded from regression analysis in SPSS, which would have resulted in the exclusion of 128 of 303 cases. According to Tabachnick and Fidell (2007), a common and conservative method of dealing with missing data is to substitute the variable mean. This was conducted through an SPSS function, whereby all missing values were replaced with the mean of nearby points[14] for that independent variable. While SPSS output generated after this strategy suggested a slightly reduced variance for those questions with a higher proportion of missing data, this difference was considered relatively marginal and allowed for the inclusion of all 303 cases in the sample.

5.1.3 Multicollinearity. Another factor that must be addressed prior to major data analyses is the issue of multicollinearity, or when variables may be too highly correlated with one another (Tabachnick & Fidell, 2007). To check for multicollinearity among the variables, an iterative process was used to calculate the variance inflation factor (VIF) for each independent variable. Using the SPSS linear regression function, testing for collinearity was conducted. According to O'Brien (2007), the strategy of using VIFs as a diagnostic tool for multicollinearity often employs the popular rule of thumb that VIFs greater than four denote the presence of multicollinearity. None of the independent variables in this study demonstrated VIFs greater

[14] Replaces missing values with the mean of valid surrounding values. The span of nearby points is the number of valid values above and below the missing value used to compute the mean (IBM Corporation, 2011).

than four; therefore, none of these variables were excluded from the major data analysis due to multicollinearity.

5.1.4 Factor analysis. Prior to logistic model construction, the study's data set was also analysed using factor analysis strategies to confirm which independent variables would be most appropriately analysed together in the logistic regression analysis. To test for the appropriateness of factor analysis, using SPSS functions, Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) statistic were used. The result of the Bartlett's test was statistically significant at 0 ($p < .05$), which confirmed that the study's variables produced an appropriate correlation matrix. The KMO statistic, a measure of sampling adequacy that examines correlation coefficients, was .687. Tabachnick & Fidell (2007) state that KMO values greater than .6 are desirable for an appropriate factor analysis.

Using principal axis factoring[15] as its extraction method and orthogonal varimax[16] as its rotation method, a factor analysis was run in SPSS using all the study's 24 independent variables. Five factors were extracted and as recommended by Tabachnick and Fidell (2007), factor loadings greater than .3 were used for inclusion of a variable in interpretation of a factor. Six of the 24 independent variables did not load on any factor (i.e. factor loading < .3). Results of this factor analysis, which are presented in Table 5.2, suggest many similarities with the categories proposed in the CI model, especially concerning the category of Perceived Problem Severity (V), Group Efficacy (P_g), and Personal Efficacy (P_i), which supports analyzing these variables together in the logistic regression. The results were less congruent with respect to the

[15] Also referred to as common factor analysis, this method seeks the least number of factors that can account for the common variance (correlation) of a set of variables (Tabachnick & Fidell, 2007).

[16] This commonly used rotation solution yields results that make it as easy as possible to identify each variable with a single factor (Tabachnick & Fidell, 2007).

categories of Costs (C) and Benefits (B), although for the combined categories of C and B, five out of nine factor loadings greater that .3 loaded on Factor 2.

Table 5.2

Collective Interest (CI) Model Categories Compared With Factor Analysis Categories of Independent Variables

	CI Model Category and Associated IVs	Factor Loadings	Factor
Perceived problem severity (V)	• Belief that human health is related to the condition of the environment*	.948	1
	• Concern that environmental threat will negatively affect the environment	.692	1
	• Perceived likelihood that an environmental disaster will result from the environmental threat.	.541	1
	• Level of opposition to the environmental threat	.332	1
	• Use of the environment for recreation and employment	.782	1
	• Concern for local economic prosperity	--	--
Group efficacy (P_g)	• Group influence to prevent the environmental threat	--	--
	• Trust in elected government	.598	5
	• Trust in formal consultation processes*	.437	5
	• Trust in corporate responsibility	.544	5
Personal efficacy (P_i)	• Personal influence over the political system	.492	3
	• Personal influence to prevent the environmental threat	.692	3
Costs of participation (C)	• Age	.912	4
	• Knowledge of the environmental threat	.469	3
	• Previous participation in activism*	--	--
	• Gender	--	--
	• Level of education	-.727	2
	• Aboriginal status*	.673	2
	• Work status*	--	--
	• Income	-.304	2
Benefits of participation (B)	• Duration of residency*	.562/.558	2/4
	• Environmental values	.447	1
	• Political views related to social issues*	.385	2
	• Political views related to economic issues*	--	--

Note: Asterisks denote variables that are specifically tailored to this study context to reflect the explicit interest in health promotion and environmental activism dynamics, as well as the case study context (see Chapters 2 and 3).

Based on the results of this factor analysis three variables were re-assigned, informed by the thesis conceptual framework of Figure 2.2:

iii) Knowledge of the environmental threat: Combined with other Factor 3 variables, or variables concerning Personal efficacy (P_i), which is congruent with the literature on social cognitive theory discussed in Section 2.2.5.

iii) Previous participation in activism: Did not load on any factor. These variables were also grouped with variables concerning Personal efficacy (P_i), since this was also consistent with readings on social cognitive theory, presented in Section 2.2.5.

iii) Environmental values. Combined with other Factor 1 variables, or variables concerning Perceived problem severity (V), which is congruent with the literature on environmentalism discussed in Section 2.2.1.

Concerning the remaining nine variables in categories C and B, a new category was created for this analysis called Demographic Effects (D). The creation of this new category reflects the results of the factor analysis as presented in Table 5.2 and supports a criticism of the categories of C and B that Lubell and colleagues had also acknowledged (2002; Lubell, et al., 2006; 2007). This criticism is that one person's benefit may be another's cost and vice versa. Lubell and colleagues noted that the categories of C and B, which largely included demographic features, were meant to reflect the material, social or psychological consequences bestowed onto the participant. Therefore, the variable of age, which was considered a cost in the CI model initially described in Chapter 4, might also be considered a benefit in practical terms. For example, one who is older may have more experience with activism, but one who is younger may have more opportunities and so forth. Table 5.3 presents the revised organization of the independent variables used for the analysis of the survey.

Table 5.3

Amended CI Model Used in Logistic Regression Model Building Process

Category	Independent Variable
Perceived problem severity (V)	1. Belief that human health is related to the condition of the environment 2. Concern that environmental threat will negatively affect the environment 3. Perceived likelihood that an environmental disaster will result from the environmental threat 4. Level of opposition to the environmental threat 5. Concern for local economic prosperity 6. Environmental values 7. Use of the environment for recreation and employment
Group efficacy (P_g)	1. Group influence to prevent the environmental threat 2. Trust in elected government 3. Trust in formal consultation processes 4. Trust in corporate responsibility
Personal efficacy (P_i)	1. Personal influence over the political system 2. Personal influence to prevent the environmental threat 3. Knowledge of the environmental threat 4. Previous participation in activism
Demographic Effects (D)	1. Age 2. Gender 3. Level of education 4. Aboriginal status 5. Work status 6. Income 7. Duration of residency 8. Political views related to social issues 9. Political views related to economic issues

The factor analysis, combined with relevant insights from the literature review and study context resulted in an amended CI model that was better suited to the particular features of this case study. The amended model has four categories, as compared to the five categories of the original CI model described in Chapter 4, Section 4.3. This information informs the logistic regression analyses in Section 5.3.

5.1.5 Ratio of cases to independent variables. Tabachnick and Fidell (2007) and Hosmer and Lemeshow (2000) emphasize the importance of cases-to-IVs ratio when conducting logistic regression to generate meaningful results. This is ultimately a question of sample size as well, which depends on a number of issues such as desired power, effect size and alpha level. These authors note the complexities and lack of consensus on determining adequate sample sizes and cases-to-IVs ratios for logistic regression, but suggest two guidelines that can be used in the absence of more sophisticated techniques. As noted in Section 4.5.3, Tabachnick and Fidell (2007) recommend two simple rules of thumb for assessing sample size and the ratio of cases to IVs: Where m is the number of IVs, they propose $N \geq 50 + 8m$ for testing multiple correlation and $N \geq 104 + m$ for testing individual predictors. These rules of thumb assume a medium sized relationship between the IVs and the DV, $\alpha = .05$, and $\beta = .20$. Hosmer and Lemeshow (2000) pose the "rule of 10" (p. 347), or ten events per IV, as an appropriate guideline when determining and appropriate ratio of cases to IVs.

Given that neither cases, nor IVs needed to be excluded from the data set due to logistical reasons, the data set for this study was fixed at 303 cases and a maximum of 24 independent variables. The suggested guidelines to satisfy minimum requirements for cases-to-IVs were met for this study (i.e. 50 + 8[24]= 242; 104 + 24 = 128; 10 x 24 = 240). As this study also involves examining groups of IVs in most of the logistic regression model building processes (i.e. CI model categories as outlined in Table 5.3), this further reduces the ratio of cases to independent variables.

5.2 Descriptive Statistics

Following initial empirical data management, descriptive statistics were compiled to present an overall picture of the survey respondents. This section commences with a brief overview of the demographic features of the respondents. Of the 303 respondents, the approximate mean age of participants was 45 years of age at the time of data collection (standard error of the mean [*SEM*] 0.883, range of 18 – 82 years of age). The average number of years residents had lived on Haida Gwaii was 25 (*SEM* 1.110), although the mode of residency was 1 year. Similar to the Haida Gwaii population statistics described in Section 3.1, 50.8% of respondents identified themselves as female and 49.2% identified themselves as male; 45.9% of respondents were classified as Aboriginal and 53.8% were classified as non-Aboriginal.

Regarding education, 85.1% of respondents had as a minimum a high school diploma, which was also the mode for this question. Of the 67.7% of respondents who indicated they were employed (including self employment), 23.8% stated they worked part-time and 43.9% stated they worked full-time. Concerning income, the greatest proportion of respondents reported they made less than $20 000 last year (30.3%) while the mean was reported to be ~$30-40 000/year (3 = ~$30-40 000, M = 3.31, *SEM* 0.130). Lastly, the majority of respondents identified slightly to the liberal side of the political spectrum concerning political views on both social and economic issues, based on the survey's Likert scale (M = 3.18, *SEM* 0.101 for social issues; M = 3.50, *SEM* 0.090 for economic issues; where 4 = neutral).

Based on the factor analysis findings of Section 5.1.4, survey responses for the three categories of V, P_g, and P_i are displayed in tabular format to provide an overview of the survey respondents' attitudes (Tables 5.4 – 5.6):

Table 5.4

Survey Responses: Perceived Problem Severity (V) (N = 303)

Independent Variable	Survey Question	Highest Response[a] (%)	Mean (*SEM*)
Belief that human health is related to the condition of the environment	Q#12: *"The environment (e.g. air, water, land, plants, animals) is important for my health."*	1 (93.4)	1.17 (0.047)
Concern that environmental threat will negatively affect the environment	Q#10: *"I am concerned that the proposed Enbridge Northern Gateway Project would affect the Haida Gwaii environment (e.g. air, water, land, plants, animals)."*	1 (88.1)	1.26 (0.053)
Perceived likelihood that an environmental disaster will result from the environmental threat.	Q#13: *"There would be an environmental disaster from the proposed Enbridge Northern Gateway Project."*	1 (74.2)	1.54 (0.067)
Level of opposition to the environmental threat	Q#3: *"I am opposed to the Enbridge Northern Gateway Project."*	1 (88.1)	1.22 (0.041)
Environmental values	Q#5: *"I have strong environmental values."*	1 (69.6)	1.56 (0.062)
Use of the environment for recreation and employment	Q#11: *"The environment (e.g. air, water, land, plants, animals) is important for my recreation and/or employment."*	1 (89.4)	1.25 (0.054)
Concern for local economic prosperity	Q#16: *"It is important to have a strong local economy."*	1 (76.6)	1.53 (0.070)

[a] 1 = Strongly Agree, 4 = Neutral, 7 = Strongly Disagree. Note that some Likert scales were adjusted from the survey presented in Appendix I to provide for uniform reporting, as per Section 5.1.1.

Table 5.5

Survey Responses: Group Efficacy (P_g) (N = 303)

Independent Variable	Survey Question	Highest Response[a] (%)	Mean (*SEM*)
Group influence to prevent the environmental threat	Q#20: *"Haida Gwaii residents as a group can influence whether or not the Enbridge Northern Gateway Project is built."*	1 (44.9)	2.42 (0.099)
Trust in elected government	Q#7: *"I trust my elected government (e.g. federal, provincial, municipal) to make decisions that are best for me and my loved ones."*	7 (40.3)	5.54 (0.094)
Trust in formal consultation processes	Q#9: *"I believe that the Joint Review Panel process is fair."*	7 (38.6)	5.53 (0.087)
Trust in corporate responsibility	Q# 8: *"I trust the Enbridge corporation to make decisions that are best for me and my loved ones."*	7 (84.5)	6.62 (0.066)

[a] 1 = Strongly Agree, 4 = Neutral, 7 = Strongly Disagree. Note that some Likert scales were adjusted from the survey presented in Appendix I to provide for uniform reporting, as per Section 5.1.1.

Table 5.6

Survey Responses: Personal Efficacy (P_i) (N = 303)

Independent Variable	Survey Question	Highest Response[a] (%)	Mean (*SEM*)
Personal influence over the political system	Q#6: *"I believe that I can influence the political system."*	3 (21.4)	3.63 (0.111)
Personal influence to prevent the environmental threat	Q#19: *"I can influence whether or not the Enbridge Northern Gateway Project is built."*	7 (20.1)	3.96 (0.122)
Knowledge of the environmental threat	Q#4: *"I know a lot about the proposed Enbridge Northern Gateway Project."*	1 (25.1)	2.71 (0.086)

[a] 1 = Strongly Agree, 4 = Neutral, 7 = Strongly Disagree. Note that some Likert scales were adjusted from the survey presented in Appendix I to provide for uniform reporting, as per Section 5.1.1.

Concerning participation in activist activities (items 14 and 15), 88.4% of the respondents reported they had participated in some form of activist activity in the past, as defined by the six pre-defined activities or indicating an activity in the "Other" category. Regarding the proposed

ENGP, 76.2% of respondents reported they had participated in at least one activist activity. Figure 5.1 provides further details regarding participant responses to questions 14 and 15.

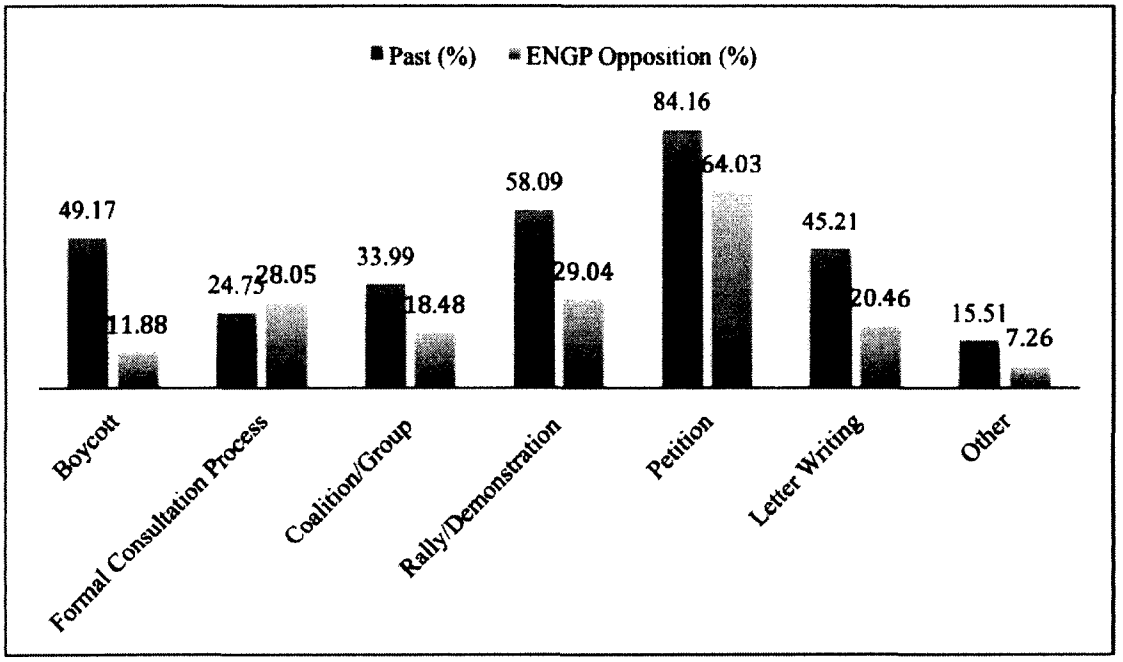

Figure 5.1: Self-reported activist activities amongst Haida Gwaii, BC, residents ($N = 303$, ENGP = Enbridge Northern Gateway Project, JRP = Joint Review Panel Process).

Activities described by survey respondents in the "Other" category included participating in blockades and other forms of direct action and civil disobedience; using social media to share information about the ENGP/activist activities (e.g. Facebook, Twitter), engaging friends, family, and colleagues on issues concerning the ENGP; and becoming directly involved in political processes (e.g. canvassing, running for leadership positions, presentations to elected boards/officials).

5.3 Logistic Regression Analyses

This section describes the results of the logistic regression analyses. The results of these models are structured around the five study hypotheses that were identified in Section 4.4. Also, the results of a binary logistic regression with all 24 un-amalgamated independent variables are included for comparative sake (i.e. full model), recognizing that this was not a part of the original study hypotheses. Section 5.3 concludes with a summary of the results for each study hypothesis indicating how well each model performed, including the constant-only model and the full model with all IVs entered separately.

Statistical significance was set at $\alpha = .05$. For comparing the results of different logistic regression models, likelihood ratio tests were used, as well as the Wald statistic for individual independent variables, also $\alpha = .05$. The overall correct percentage rate, as well as sensitivity and specificity of each model, has also been provided from the SPSS classification table as a means of comparing models.

5.3.1 Logistic regression models and study hypotheses. This section provides an overview of the results, specifically related to the identified study hypotheses. Informed by the factor analysis of this study, independent variables of the four categories Perceived Problem Severity (V), Group Efficacy (P_g), and Personal Efficacy (P_i) were used to create a new aggregated category in SPSS (i.e. the sum of each case's Likert scale responses). For the newly named category of Demographic Effects (D), which has replaced the categories of Costs and Benefits, variables were not amalgamated given the heterogeneity of data in this category (e.g. discrete and continuous). Regarding the statistical results generated from this CI model's application, it is important to stress that issues of causality cannot be made, as regression analysis only implies that the relationships are correlational (Tabachnick & Fidell, 2007).

Hypothesis 1: Concern for the biophysical environment as a determinant of health (reflected by the perceived severity of the environmental threat or V) is a significant predictor of participation in environmental activism. A direct binary logistic regression was performed using the category of V, or Perceived Problem Severity. The results of this analysis revealed that the category of V had a B coefficient of -0.144 (*SE* [standard error] 0.037), suggesting that high levels of perceived problem severity were associated with environmental activism against the ENGP in the study context. The logistic regression modeling revealed that analyzing the category of V alone produced a small statistically significant improvement over the constant-only model (χ^2 = 20.943, p = .000, df = 1, N=303). The overall correct prediction rate for the model with V alone was 77.2% compared to 76.2% in the constant-only model. The model accurately predicted 98.7% of environmental activism, however it only accurately predicted 8.3% of those who did not participate in these activities.

Non-amalgamated V variables were also examined in a direct logistic regression to see which independent variables of this category were most likely predictive of environmental activism (χ^2 = 30.409, p =.000, df = 7, N=303). These results revealed two statistically significant variables.

i) Level of concern that the ENGP would affect the Haida Gwaii environment (χ^2 = 4.745, p = .029, df = 1). The B coefficient of -0.402 (SE 0.185) suggested that low levels of concern were associated with less likelihood of environmental activism against the ENGP in the study context.

ii) Self-reported level of environmental values (χ^2 = 4.437, p = .035 df = 1). The B coefficient of -0.285 (SE 0.135) suggested that low self-reported levels of environmental

values were associated with less likelihood of environmental activism against the ENGP in the study context.

Hypothesis 2: Considering V, the contribution of perceptions regarding group efficacy (P_g) contributes to the accurate prediction of participation in environmental activism. When a sequential logistic regression was performed using the category of P_g as the second block and V as the first block, the results of this analysis revealed that with the addition of P_g variables as a category, there was no statistically significant improvement over the model with only V (χ^2 = 0.699, p = .403, df = 1, N=303). The overall correct prediction rate, sensitivity, and specificity all remained the same. This result suggests that P_g variables as a group did not add to the model's ability to predict environmental activism against the ENGP in this context.

P_g variables were also examined individually in a direct logistic regression. The results of this analysis were also non-significant (χ^2 = 6.820, p = 0.146, df = 4, N=303). However, the variable concerning trust in corporate responsibility had a significant Wald statistic (χ^2 = 5.725, p = 0.017, df = 1) and a B coefficient of 0.282 (SE 0.118), suggesting that as trust in corporate responsibility increased (i.e. trust in the Enbridge corporation), the probability of participation in environmental activism against the proposed ENGP decreased.

Hypothesis 3: Considering V, the contribution of perceptions regarding personal efficacy (Pi) contributes to the accurate prediction of participation in environmental activism. Another sequential logistic regression was performed using the category of P_i as the second block and V as the first block. The result was statistically significant (χ^2 = 8.407, p = .004, df = 1, N=303) and a suggested a marginal improvement to the model's predictive ability (77.9% compared to 77.2% with only V). With the inclusion of P_i variables as a group, the model's

sensitivity was slightly lower, but comparable at 97.4% (vs. 98.7% with only V). Specificity almost doubled at 15.3% (vs. 8.3%).

Non-amalgamated P_i variables were also examined in a direct logistic regression, which revealed a statistically significant result (χ^2 = 100.740, p = .000, df = 4, N=303). These results revealed two statistically significant variables:

i) Level of level of knowledge regarding the ENGP (χ^2 = 8.174, p = .004, df = 1). The B coefficient of -0.337 (SE 0.118) suggested that low levels of concern were associated with less likelihood of environmental activism against the ENGP in the study context.

ii) Past participation in environmental activism (χ^2 = 43.186, p = .000, df = 1). The B coefficient of 3.987 (SE 0.607) suggested that past participation in activism was associated with a greater likelihood of environmental activism against the ENGP in the study context.

Hypothesis 4: Considering V, the contribution of the effects of select demographic factors (D) contributes to the accurate prediction of participation in environmental activism. Another sequential logistic regression was performed with V as block 1 and each demographic independent variable (D) entered into the second block. For the categorical variables of gender, Aboriginal status, and work status, the last indicator was the reference category (i.e. males, Aboriginal, and unemployed). The results of this analysis were statistically significant (χ^2 = 27.793, p = .010, df = 13, N=303); however the model's predictive ability dropped from 77.2% to 76.9% (compared to 76.2% in the constant-only model). Sensitivity dropped to 94.8% compared to V alone, but specificity increased to 19.4%.

As with the variables for categories V, P_g and P_i, a direct logistic regression was conducted with the independent variables of category D. Of the nine independent variables in this category, the following were statistically significant:

i) Level of Education ($\chi^2 = 6.139$, $p = .013$, $df = 1$; B 0.230, SE 0.093). Higher levels of education were associated with a greater likelihood of environmental activism against the ENGP in the study context.

ii) Work Status. Full time work status ($\chi^2 = 6.069$, $p = .014$, $df = 1$; B 1.336, SE 0.543), part-time work status ($\chi^2 = 9.572$, $p = .002$, $df = 1$; B 1.793, SE 0.580), and retired work status ($\chi^2 = 6.003$, $p = .014$, $df = 1$; B 1.731, SE 0.706) were all associated with a greater likelihood of environmental activism against the ENGP in the study context.

Hypothesis 5: Considering V, the contribution of all CI model categories increases the accurate prediction of participation in environmental activism. For this final hypothesis, sequential logistic regression was performed with V as the first block, followed by blocks of the three other categories in a hierarchical manner, based on highest overall correct predictive percentage (i.e. D, P_i, P_g). With all four categories in the sequential regression, a statistically insignificant result was obtained ($\chi^2 = 0.385$, $p = .535$, $df = 1$, N=303), but the overall correct percentage increased to 78.9% with a sensitivity of 94.8% and a specificity of 27.8%. Given the statistically insignificant result of this analysis and the earlier finding of the lack of influence of P_g, this category was omitted from the logistic regression model's analysis. With the category P_g excluded, the model then generated a statistically significant result ($\chi^2 = 8.888$, $p = .003$, $df = 1$, N=303) and an overall correct prediction percentage of 78.5%, a sensitivity of 94.4% and the same rate of specificity (27.8%).

5.3.2 Full model with all 24 independent variables. Although it was not directly related to the initial study hypotheses, binary logistic regression was performed with the 24 un-amalgamated independent variables of the model. The results of this analysis revealed that this full model with no categories provided a statistically significant improvement over the constant-only model (χ^2 = 129.866, p = .000, df = 28, N=303). The correct prediction rate rose to 86.5%, surpassing all other models tested and the constant-only model. This model had a 96.1% correct prediction rate for environmental activism in the study context and had the highest rate of correct prediction for no environmental activism (55.6%) compared to all other models in this study. However, when all 24 independent variables were entered simultaneously, the Wald test revealed that only three variables were actually predictive of environmental activism against the ENGP in the study context. These three variables, which were already identified as statistically significant in the previous analyses included:

i) Level of concern that the ENGP would affect the Haida Gwaii environment (χ^2 = 4.026, p = .045, df = 1; B -0.552, SE 0.275.

ii) Level of level of knowledge regarding the ENGP (χ^2 = 3.956, p = .047, df = 1; B -0.275, SE 0.138).

iii) Past participation in environmental activism (χ^2 = 35.153, p = .000, df = 1; B 4.011, SE 0.676).

Table 5.7 provides an overview of the results for each independent variable in this analysis, including Wald statistics and B coefficients.

Table 5.7

Logistic Regression Output for All Independent Variables: Predicting Environmental Activism In Opposition to the Proposed Northern Gateway Project (N=303) (Continued on next page)

Variable	B (SE)[a]	Wald[b]	*p*	Exp(B)[c] (95% CI)
V – Perceived Problem Severity				
Belief that human health is related to the condition of the environment	0.756 (0.420)	3.242	.072	2.130 (0.935-4.853)
Concern that environmental threat will negatively affect the environment	-0.552 (0.275)	4.026	**.045**	0.576 (0.336-0.987)
Perceived likelihood that an environmental disaster will result from the environmental threat	-0.267 (0.170)	2.480	.115	0.765 (0.549-1.068)
Level of opposition to the environmental threat	-0.283 (0.263)	1.159	.282	0.754 (0.451-1.261)
Concern for local economic prosperity	-0.144 (0.159)	0.817	.366	0.866 (0.634-1.183)
Environmental values	0.007 (0.199)	0.001	.973	1.007 (0.681-1.488)
Use of the environment for recreation and employment	-0.212 (0.262)	0.652	.419	0.809 (0.484-1.353)
P_g – Group Efficacy				
Group influence to prevent the environmental threat	-0.036 (0.108)	0.110	.740	0.965 (0.781-1.192)
Trust in elected government	0.057 (0.137)	0.174	.676	1.059 (0.809-1.385)
Trust in formal consultation processes	-0.102 (0.131)	0.604	.437	0.903 (0.698-1.168)
Trust in corporate responsibility	0.109 (0.183)	0.357	.550	1.116 (0.780-1.596)
P_i – Personal Efficacy				
Personal influence over the political system	-0.202 (0.120)	2.863	.091	0.817 (0.646-1.033)
Personal influence to prevent the environmental threat	-0.112 (0.111)	1.010	.315	0.894 (0.719-1.112)
Knowledge of the environmental threat	-0.275 (0.138)	3.956	**.047**	0.759 (0.579-0.996)
Previous participation in activism	4.011 (0.676)	35.153	**.000**	55.177 (14.655-207.747)
D – Demographic Effects				
Age	0.003 (0.020)	0.027	.870	1.003 (0.965-1.043)
Gender[d]	0.245 (0.404)	0.369	.543	1.278 (0.579-2.820)
Level of education	-0.052 (0.131)	0.156	.693	0.949 (0.734-1.228)
Aboriginal status[e]	0.034 (0.522)	0.004	.949	1.034 (0.371-2.879)

Table 5.7

Logistic Regression Output for All Independent Variables: Predicting Environmental Activism In Opposition to the Proposed Northern Gateway Project (N=303) (Continued)

Variable	B (SE)[a]	Wald[b]	*p*	Exp(B)[c] (95% CI)
D – Demographic Effects				
Work status[f]	--	8.474(5)	.132	--
Work 1 (Homemaker)	-0.487 (1.027)	0.225	.635	0.614 (0.082-4.598)
Work 2 (Retired)	2.020 (1.038)	3.785	.052	7.535 (0.985-57.626)
Work 3 (Student)	-0.571 (1.114)	0.263	.608	0.565 (0.064-5.018)
Work 4 (Part-time)	1.082 (0.807)	1.797	.180	2.950 (0.607-14.345)
Work 5 (Full-time)	0.766 (0.765)	1.003	.317	2.152 (0.480-9.645)
Income	-0.007 (0.095)	0.005	.945	0.993 (0.825-1.196)
Constant	0.777 (2.017)	0.148	.700	2.174 (--)

Note: **Bold = $p < .05$**

[a] Parameter estimate and standard error

[b] Denotes $\chi^2 = B^2/SE^2$, 1 df unless otherwise indicated by parentheses

[c] Denotes odds ratio

[d] Reference category = Males

[e] Reference category = Aboriginal

[f] Reference category = Unemployed

5.3.3 Logistic regression model summaries. The results of the logistic regression analyses performed for this study are amalgamated in Table 5.8 to portray how each model compares to each other. These results are discussed in Chapter 6.

Table 5.8

Environmental Activism On Haida Gwaii, BC, in Opposition to the Northern Gateway Project: Predictive Ability of Full and Partial Models (N = 303)

Model	Model p^a	Overall Correct %	Sensitivity (EA) %	Specificity (No EA) %
Constant Only	—	76.2	100	0
V	**.000**	77.2	98.7	8.3
V and P_g	.403	77.2	98.7	8.3
V and P_i	**.004**	77.9	97.4	15.3
V and D	**.010**	76.9	94.8	19.4
V, D, P_i, P_g	.535	78.9	94.8	27.8
V, D, P_i	**.003**	78.5	94.4	27.8
Full Model[b]	**.000**	86.5	96.1	55.6

Note: **Bold = $p < .05$**, V = Perceived problem severity, P_g = Group efficacy, P_i = Personal efficacy, D = Demographic effects

[a] Comparison of likelihood ratio tests with constant-only model.

[b] All independent variables entered simultaneously rather than in categories.

5.4 Supplementary Qualitative Findings

As noted in Section 4.7, supplementary data was obtained through my fieldnotes and participant feedback and comments related to the survey. However, due to the extemporized inclusion of this data and the time constraints of graduate work, these data were not given the same analytical emphasis as the quantitative data. However due to their relevance to interpreting the survey findings, a constant comparative method as described by Hewitt-Taylor (2001) was used to analyze these data to provide a basic categorization and frequency analysis (Table 5.9). This table presents 16 categories of responses and represents a total of 105 participant statements that elaborate on the survey questions concerning the proposed ENGP and Haida Gwaii.

Table 5.9

Supplementary Qualitative Data: Haida Gwaii Residents Sentiments Towards the Proposed Enbridge Northern Gateway Project (ENGP) (Continued on next page)

Category and *Representative Quote*[a]	Frequency
Importance of food harvesting on Haida Gwaii *"The sea is my garden... and my livelihood!"*	22
Non-participation in Canadian political system *"I don't believe in the (Canadian) governmental system..."*	11
Corporate influence over federal government's support for the ENGP *"They've already decided to build the ENGP... If that's what big business wants, then the government will support it regardless of what the people want..."*	10
Greater trust in Member of Parliament (MP – New Democratic Party) vs. trust in Prime Minister (PM – Conservative Party of Canada) *"I trust Nathan Cullen (local MP) but I don't trust Stephen Harper (PM)..."*	9
Importance of Haida influence over construction of the ENGP *"The Haida as a First Nation will have the biggest influence over whether or not (the ENGP) goes through..."*	9
Federal government influence over fairness of Joint Review Panel (JRP) process *"The JRP process may be fair, but that doesn't mean that the federal government will listen to their decision if they say vote against (the ENGP)..."*	9
Trust in local government vs. federal/provincial government *"I have more trust in local governments than in the federal or provincial ones..."*	6
Resulting social problems during ENGP consultation process *"This issue is stirring up things, creating social problems... It divides a community, creates stress, fear of job losses..."*	6
Creation of social capital during ENGP consultation process *"This issue is uniting us, the Haida and everyone else!"*	5
Importance of solidarity amongst all First Nations to oppose the ENGP *"All Nations would have the biggest influence (over whether or not the ENGP goes through)..."*	4
Previous participation in environmental activism on Haida Gwaii *"I was there during Lyell Island in the '80s... We'll defend our island again..."*	4
Health effects of engaging in activist work *"The time out to do activist work on this issue has affected my health. It takes a lot of time, which takes me away from my family, recreation, food collection, etc. It's stressful!"*	3

Table 5.9

Supplementary Qualitative Data: Haida Gwaii Residents Sentiments Towards the Proposed Enbridge Northern Gateway Project (ENGP) (Continued)

Category and *Representative Quote*[a]	Frequency
Importance of leadership in activism against the ENGP *"This issue (the ENGP) needs to have strong group leadership... We can be more successful in stopping (the ENGP) if we are guided by strong leaders"*	3
Conditional opposition to ENGP: Oil refinery in Kitimat *"If they built an oil refinery in Kitimat, it would change my views on the ENGP..."*	2
Definition of "environmental disaster" *"The term 'environmental disaster' is a very subjective term... What I consider a disaster in my home is probably a lost less than the JRP thinks a disaster would be..."*	1
Conditional support for a strong local economy *"A strong local economy is important, but it depends on what is supporting the local economy... Not all types of jobs are good for our island..."*	1

[a] Denotes first verbatim quote obtained for this category.

5.5 Summary

In this chapter, results obtained from the fieldwork described in Chapter 4 were provided including the specifics of data management, descriptive statistics, and the logistics of data analyses for the 303 study surveys that were completed by Haida Gwaii residents. Details concerning the factor analysis and logistic regressions performed were provided, which inform the amendments made to the CI model for this study, as well as the study hypotheses. The supplementary qualitative data provided added insight into the research questions by offering additional perspectives on the research process and the case study context. In the following chapter, these results are synthesized and discussed to present a final picture of the study's findings.

Chapter 6: Discussion

The overarching purpose of this study was to explore the connections between health promotion and environmental activism, which was endeavored through inductive and deductive means. The three research questions (RQ) identified in Chapter 1 were chosen to guide this process in a sequential manner (i.e. from the theoretical to the empirical or the sociological macrocosm of Chapter 2 to the case study microcosm of Chapter 3). In this final chapter, the research questions, which are now addressed in reverse order to highlight a micro to macro perspective, are addressed through a discussion and synthesis of findings. The critical realist stance of this study is emphasized throughout this chapter, informed by the literature review, case study context, survey findings and supplementary qualitative findings which combine to enable reflection on the wider social implications of the study (Bhaskar, 1989). Informed by the study findings, the thesis analytical framework of Figure 4.1 is revisited, and the potential limitations and strengths of this research and study design are identified and discussed. This chapter concludes with suggested directions for further research and recommendations for practice and policy, based on this study's findings.

6.1 Research Question III: Discussion and synthesis of findings

What is revealed about participation in environmental activism when an adapted model of collective interest, informed by health promotion perspectives, is used to analyze a specific case study concerning perceived threats to the environment and health?

In the preceding chapter, statistical results were presented from the analyses of survey data that was obtained from Haida Gwaii residents who were opposed to the Enbridge Northern Gateway Project. In this section, ten overall findings related to the results of Chapter 5 are now

framed in both a case study specific and more general sense, using the thesis analytical framework generated from Chapters 2 and 4 to guide this discussion. Results are also compared to the findings of Lubell (2002) and Lubell, et al. (2006; 2007), whose prior work with the CI model forms the most suitable body of literature for comparison.

i) Perceptions of the biophysical environment as an important determinant of health are strongly associated with, but do not guarantee, the practice of environmental activism. This finding is based on the results obtained for the first study hypothesis, which focused on the CI model category of Perceived Problem Severity (V) (i.e. respondents who had high levels of V were equated to respondents who perceived the biophysical environment as an important determinant of health). This category consisted of information regarding Haida Gwaii residents' sentiments towards the ENGP, as well as overall attitudes/values about the environment and its connection to health. The statistically significant logistic regression modeling that informed this finding suggested that perceived problem severity (or overall attitudes about the biophysical environment as a determinant of health) was predictive of environmental activism in opposition to the ENGP (77.2% overall prediction rate vs. 76.2% for the constant only model).

Although this model was very effective at correctly predicting who had participated in environmental activism against the ENGP based on their responses (98.7% sensitivity), there was a marked tendency of this model to over-predict activism amongst people who had not engaged in this activity (8.3% specificity). The overall findings are congruent with the work of Lubell and colleagues (2002; Lubell, et al., 2006; 2007) who also found that the category of Perceived Problem Severity was significant to the prediction of environmental activism; however, information regarding sensitivity and specificity was not reported on in these studies. The responses to the questions in the category of Perceived Problem Severity as summarized Table

5.4 demonstrate high levels of concern, knowledge, values, and awareness regarding the importance of the environment as a determinant of health. Therefore, with the addition of other variables in the logistic regression modeling (i.e. P_i, D), it becomes evident why, despite high levels of concern for the environment as a determinant of health, only some people were participating in environmental activism against this project.

ii) High levels of concern over a perceived environmental threat and self-reported environmental values are associated with the practice of environmental activism. To explore which elements regarding concern for the environment as a determinant of health were most significant to the outcome of environmental activism, an analysis was conducted that examined only the variables in the category of Perceived Problem Severity. These results suggested that only two variables in isolation were important in the prediction of environmental activism in the case study context: (i) level of concern that the environmental threat would adversely affect the environment and (ii) self-reported environmental values.

These findings are congruent with elements of social cognitive theory, which emphasize the influence that one's values can have on one's behaviours. Mondros and Wilson (1994) and Bandura (1986) observe that activists often come from groups (e.g. families, service groups, clubs, educational institutions) that have values and beliefs about society and social conditions that legitimate activism (i.e. their norms condone activism), which supports why self-reported environmental values would be a significant predictor. Social cognitive theory also supports the idea that the value that is placed on outcomes (i.e. that an ENGP-related disaster would affect the environment and consequently heath) is strongly tied to behaviours (i.e. environmental activism) (Bandura, 1986; Goddard, Hoy & Hoy, 2004; Parker et al., 2004).

iii) Overall perceptions of group efficacy do not appear to help in predicting who will participate in environment activism among those who are concerned about the biophysical environment as an important determinant of health. This finding is based on the results obtained for the second study hypothesis, which focused on the CI model category of Group Efficacy (P_g). This category consisted of information regarding feelings of trust towards elected government, formal government consultation processes (i.e. the JRP process), corporate industry, and collective citizen action. The results of this logistic regression modeling indicated that perceptions of group efficacy as a whole are unrelated to participation in environmental activism.

The finding concerning group efficacy differs in part from previous results concerning this category. In his 2002 study, Lubell found that this category, which involved measurements of government and citizen efficacy, was not related to environmental activism. In subsequent studies, Lubell (2002) and Lubell et al. (2006; 2007) began to define group efficacy in terms of citizen-government relationships and citizen-citizen relationships. The definition of P_g was also expanded to begin to include environmental group trust, as well as expected reciprocity, industry and government trust.

In the results of a 2006 study on air quality activism, Lubell, Vedlitz, Zahran, and Alston reported results concerning P_g, which suggested that environmental group trust and expected reciprocity were the most significant predictors of activism. In Lubell, Zahran, and Vedlitz's (2007) study involving collective action and citizen response to global climate change, their results also suggested differences between types of group efficacy. Although this 2007 study was much more complex than the preceding studies, involving three dependent variables (i.e. policy support, political participation, and environmental behaviours), Lubell and colleagues noted that the differences across dependent variables for group efficacy measures suggested a

shift from a vertical (or top-down) "citizen government" framework to a more horizontal or "bottom up" community framework, or in other words, greater likelihood of citizen-citizen engagement resulting in activism than citizen-government relationships. This observation is congruent with the literature on social capital theory (e.g. Kegler & Miner, 2004; Parker et al., 2004; WHO, 1998).

Examining the survey responses for group efficacy questions (Table 5.5) helps to appreciate why this category was statistically non-significant, and hence, unrelated to the outcome of participation in activism. Table 5.5 depicts how there was more variability in responses for the P_g category compared to the category of Perceived Problem Severity. Although 44.9% of respondents indicated that they agreed "very strongly" that Haida Gwaii residents as a group could influence whether or not the ENGP would be built (1 = "very strongly agree" on the 7 point Likert scale, as per Section 5.1.1), by calculating the mean response, the result suggested a more neutral stance (2.42 on the 1-7 Likert scale). Similar observations were noted with the questions regarding trust in elected government and the JRP process suggesting that both citizen-government relationships were not viewed as very efficacious in influencing the outcome of the ENGP. I also suggest that given changes to Canadian legislation regarding the environmental assessment process (i.e. the passage of the Omnibus Bill), which occurred in the midst of the JRP process and the data collection for this thesis (Press, 2012), this further created a climate of distrust towards government and its processes.

iv) Although overall attitudes regarding group efficacy do not appear to help with the prediction of environmental activism, low levels of trust in corporate responsibility appear to be linked to the practice of environmental activism. A logistic regression examining only the variables concerning group efficacy was conducted to examine if any individual variable was

statistically significant to the prediction of environmental activism. These results demonstrated that level of trust in corporate responsibility, in this case, trust in the Enbridge Corporation, appeared to be an accurate predictor of environmental activism. These findings are congruent with the work of Lubell and colleagues (2002; Lubell, et al., 2006; 2007) who found that low levels of corporate trust were associated with participation in environmental activism.

Lubell et al. (2006; 2007) suggested in their studies that people would be more likely to participate in activism if they believe their government would be responsive. In line with this perspective, the purpose of activism is to influence government into taking proactive measures to facilitate a desired outcome (i.e. changes in policy and practice). However, in the case study context, this was not the case. Trust in the JRP process and in government was found to be statistically *insignificant* in the prediction of environmental activism against the ENGP. In other words, to be congruent with Lubell and colleagues, one may have expected a statistically *significant* result associating low levels of trust in the JRP process and government with low levels of participation in environmental activism against this project. This finding suggests that the goal of environmental activism may consist of outcomes that are unrelated to influencing government to make desired changes.

v) The addition of overall perceptions regarding personal efficacy appear to contribute marginally to accurately predicting who participates in environmental activism among those who are concerned about the biophysical environment as an important determinant of health. This finding is based on the results obtained for the third study hypothesis, which focused on the CI model category of Personal Efficacy (P_i). This category consisted of questions regarding Haida Gwaii residents' sentiments about their personal ability to influence the political system/outcome of the environmental threat (i.e. ENGP), level of knowledge about the perceived

threat, and pervious participation in environmental activism. The statistically significant logistic regression modeling that informed this finding suggested that when attitudes regarding perceived problem severity are accounted for, the addition of overall attitudes regarding personal efficacy are marginally effective at helping to predict environmental activism (77.9% overall prediction rate vs. 77.2 % for the V only model). The results of this analysis also suggested that the addition of these variables would help to correctly identify those individuals who did not participate in environmental activism (i.e. specificity increased to 15.3% from 8.3% with the V only model). These results are fairly consistent with the results of Lubell and colleagues (2002; Lubell, et al., 2006; 2007) who tended to find that personal efficacy was statistically significant in prediction of environmental activism, although Lubell et al.'s (2006; 2007) studies are difficult to draw direct parallels to given that there were multiple dependent variables (i.e. behaviours and intentions) and personal efficacy was not always a significant variable for every dependent variable.

The results of the study survey for questions concerning personal efficacy (Table 5.6) may help to inform the results obtained from this analysis. For example, for all of the questions in this table, the average responses were in the neutral range. What is more, the responses to question 19 concerning personal influence to stop the ENGP suggested that participants did not feel very empowered to influence the outcome of this project (i.e. most participants indicated that they "strongly disagreed" they could influence this outcome). These types of responses would be more likely to be associated with people who did not participate in environmental activism, thereby increasing the specificity rate. Overall, these findings are also congruent with the reviewed literature on social cognitive theory, which suggest that knowledge increases our behavioural capabilities (Bandura, 1986; Parker et al., 2004).

vi) Regarding sentiments about personal efficacy, personal levels of knowledge regarding the perceived environmental threat and previous involvement in environmental activism are associated with participation in environmental activism. A logistic regression examining only the variables concerning personal efficacy was conducted. These results identified that two variables were statistically significant: i) personal level of knowledge regarding the perceived environmental threat (i.e. ENGP) and ii) previous involvement in environmental activism. These findings are consistent with the Lubell (2002) study that found personal environmental knowledge to be a significant predictor of environmental activism. Lubell et al.'s (2006; 2007) studies also found that personal environmental knowledge was generally a significant predictor. Regarding the significance of previous participation in environmental activism, this is congruent with social cognitive theory that cites factors such as mastery experiences and reinforcement to be significant to behavioural capabilities (i.e. participation in activism). What is more, Mondros and Wilson (1994) add that the experience of personal oppression, or to have felt personally effective in activism before, is associated with participation in activist efforts.

vii) The addition of demographic effects appears to contribute only marginally to accurately predicting who does **not** ***participate in environmental activism among those who are concerned about the biophysical environment as an important determinant of health.*** This finding is based on the results obtained for the fourth study hypothesis, which focused on the CI model category of Demographic Effects (D). This category consisted of nine questions regarding the demographic information of Haida Gwaii residents. The statistically significant logistic regression modeling that informed this finding suggested that when attitudes regarding perceived problem severity are accounted for, the addition of these demographic variables may

be marginally effective at helping to predict environmental activism, but only in identifying those people who did *not* participate in this activity. In this case, specificity increased to 19.4% from 15.3% with the V + P_i model or 8.3% with the V only model. However, the overall prediction rate fell to 76.9% from 77.2 % with the V only model.

The increase in specificity with the addition of demographic variables appears to be a logical finding, given the literature on social health determinants (i.e. income and education) and their influence on such activities as civil engagement (Schultz & Northridge, 2004; Van Kemenade, 2003). For example, as lower income and education levels have often been associated with less participation in environmental activism (e.g. Lubell, 2002; Lubell, et al., 2006; 2007) and the sample of Haida Gwaii respondents tended to have lower income and education levels (i.e. the majority made less than $20 000 a year and the most common response to the education question was a high school diploma), the addition of these demographic variables to the predictive model was adding variables suggestive of non-participation.

viii) Regarding demographic effects, higher levels of education, retired work status, and employment (part-time or full-time) are associated with participation in environmental activism. A logistic regression examining only the demographic variables was conducted. These results indicated two statistically significant variables: level of education and work status (retired or employed), which appears consistent with the aforementioned reference to social determinants of health. Compared to other applications of the CI model by Lubell and colleagues (2002; Lubell, et al., 2006; 2007), these results are consistent with respect to education. However, Lubell and colleagues did not incorporate the variable of employment. As the literature reveals that many Haida Gwaii residents are employed by industries such as fisheries and tourism, which rely on the natural environment (e.g. CoASt, 2012; Council of the

Haida Nation, 2012; Royal Society of Canada, 2004), this suggests why employment may be predictive of environmental activism in the case study context.

Regarding individual demographic variables, the work of Lubell and colleagues (2002; Lubell, et al., 2006; 2007) has demonstrated that the addition of these variables often produces mixed results, which I believe speaks to the complexity of the relationship between environmental activism and socio-economic and political determinants of health. For example, Lubell's 2002 study found that education, those who were younger, people who identified as ethnically white, and those with Democratic political affiliations were more likely to engage in environmental activism. However, in their 2006 study on air quality activism, Lubell and colleagues found that people who identified as non-white were more likely to participate in activism (education level remained a significant variable, as well as the male gender). The results of Lubell and colleagues' 2007 study on global climate change also found education to be a significant predictor, but noted income and greater age to be significant, which was contrary to earlier findings. Their 2007 study suggested mixed responses regarding ethnicity, depending on which of the three dependent variables related to environmental activism were being considered (i.e. policy support, political participation, environmental behaviours), suggesting a complex relationship between ethnicity and the various aspects of how environmental activism an be enacted.

ix) With the exception of sentiments regarding group efficacy, the addition of all CI model categories (i.e. overall sentiments regarding the importance of the biophysical environment as an important determinant of health, personal efficacy, and demographic effects) contributes to the accurate prediction of who participates in environmental activism. This finding is based on the results obtained for the final study hypothesis, which focused on all

the CI model categories (i.e. V, P_g, P_i, and D), analyzed in a hierarchical manner, based on their highest overall correct predictive ability (i.e. V, Pg, Pi, D). As noted in Chapter 5, the inclusion of the P_g category in this model generated a statistically non-significant result, but upon its removal, the model produced a significant result with an overall correct prediction rate of 78.5% (the highest rate of all the CI model categories or combination of categories). The specificity rose to 27.8% (compared to 19.4% with V and D). The results of this modeling were perhaps expected, given that the inclusion of subsequent variables tends to increase the overall correct prediction rate, as well as the specificity rate.

The analysis for this hypothesis represents the last sequential logistic regression that used V, or the importance of the biophysical environment as a determinant of health, as the main category of interest or as its first block. In this sense, the logistic regression models of this study used the other CI model categories of variables to enhance the predictive ability of category V. The use of sequential logistic regressions that used V as a first block revealed that attitudes concerning the environment as a determinant of health were a significant predictor of environmental activism in the case study context. The value of adding other categories of the CI model (excluding group efficacy) is to enhance the model's ability to accurately predict who did not participate in environmental activism. What the preceding paragraphs have suggested is that the addition of variables concerning personal efficacy and demographic effects appears to increase specificity by introducing variables that are associated with non-participation.

x) All the individual variables of the CI model together, without regard to categories of hierarchies, appears to be most accurate way of predicting who actually participates in environmental activism and who does not. As noted in Chapter 5, this finding was not based in a study hypothesis. As a matter of interest, I ran a logistic regression model with all 24

individual variables and found that the overall predictive value was higher than for all other models I had tested (86.5%). I also noted that the specificity for this model was higher than all other models I had tested as well (55.6%). This model's sensitivity also exceeded the full-categorized model (96.1% compared to 94.4% with the V, P_i, D model). Only three individual variables appeared to be significant predictors of environmental activism when using this approach, which was congruent with the statistical findings of previous models generated in this study (i.e. level of concern over the environmental threat, level of knowledge regarding the environmental threat, and previous participation in activism). However, these results again suggest that despite high levels of concern, knowledge, and experience with environmental issues and activism, one will not necessarily participate in environmental activism, as evidenced by the specificity rate of this model.

RQ III Summary. To address RQ III as a whole, the models generated for this study reveal that those variables that best predict environmental activism are linked with the sentiment that the environment is an important determinant of health. This was determined by the overall statistical significance of the V category, or Perceived Problem Severity, as well as the statistical significance of specific variables within this category. Among those who feel strongly about the environment as a determinant of health, additional variables that involve the social determinants of health, social capital theory, and social cognitive theory appear useful to further identify who actually participates in environmental activism. Some of these additional variables include one's level of personal knowledge regarding the environmental issue, previous experience in activism, level of education, and work status.

The use of an amended CI model to reveal predictors of environmental activism in the study context also presented some ambiguous and unanticipated findings. For example, in

contrast to some of the theory on social capital, group efficacy as a whole was not found to be statistically useful in the prediction of environmental activism in this context. However, distrust for corporations (in this case, the Enbridge Corporation) was found to be a significant predictor of environmental activism. The possibility of exploring group efficacy as citizen-citizen and citizen-structure (i.e. government, industry) dynamics may be a useful strategy given Lubell and colleagues' (2002; Lubell, et al., 2006; 2007) suggestion to approach group efficacy in this manner. Another somewhat surprising finding given the high profile opposition of Aboriginal groups to the ENGP and the strength and successes of Haida-led environmental activism, was that Aboriginal status was not found to be a significant predictor of environmental activism in the study context. However, as reported by Lubell and colleagues, the category of ethnicity has produced mixed results in their studies to date.

One of the most marked findings related to the use of an amended CI model to predict environmental activism in the study context was that every logistic regression model tended to over-predict who was actually participating in this behaviour. Even the model with the highest specificity level was still only able to accurately predict approximately half of those who participated in activism against the ENGP. These results reveal that it is still challenging to correctly identify who participates in environmental activism despite knowledge of factors that are associated with this behaviour. This sheds light on the fundamental question of how useful CI models are in the study of health promotion and environmental activism, which is discussed in the following section.

6.2 Research Question II: Discussion and synthesis of findings

How can a model of collective interest be used to understand the practice of environmental activism from a health promotion perspective?

The findings of this study suggest that a CI model, amended to incorporate a health promotion perspective, appears to have some utility in providing structure to understanding particular health promotion dynamics related to the question of participation in environmental activism. Although the CI model has not been explicitly linked to the domain of health promotion within the literature, it emphasizes important concepts of this field, such as the importance of well-being, social change, individual and group efficacy, socio-political power, and the influence of demographics. However, regarding the mechanism of *how* the CI model can be used to understand environmental activism from a health promotion perspective, I assert that the results of this study have raised the question of potential limitations in a empirical approach alone when addressing the complex questions concerning the practice of environmental activism and how this relates to the promotion of health. What is more, as an empirical strategy, there were particular methodological and statistical issues that may have affected the validity of the results obtained. The following section discusses these findings in greater detail.

According to Lubell (2002), models of collective interest exhibit the potential to move the study of environmental activism beyond models of individual behaviour to investigating collective dynamics. Lubell also identifies how CI models can examine sentiments towards perceived environmental threats, socio-demographics, and personal environmental values, addressing why these particular variables seem to matter and how they contribute to individual decision-making regarding participation in activism. For the context of this thesis, these benefits of the CI model were apparent and I believe that the study of environmental activism was

advanced with the explicit integration of health promotion dynamics with a CI model. Therefore, a model of collective interest can be used to understand environmental activism from a health promotion perspective through the direct integration of this perspective into an analytical framework, which highlights those aspects of the CI model that are already in line with a health promotion perspective.

Without the framework of an amended CI model, a health promotion-focused empirical investigation of who participates in environmental activism could have been a much more complex process. As Kegler and Miner (2004) note, health promotion encompasses many social, behavioural, economic, and environmental aspects. Coupled with many indirect theoretical connections between health promotion and environmental activism, it was advantageous that a completely new approach was not required for the empirical study of these concepts.

Beyond these conceptual benefits, however, there appear to be some challenges and limitations related to the use of a CI model in understanding the practice of environmental activism from a health promotion perspective. For example, the CI model's categories (i.e. Perceived Problem Severity, Group Efficacy, Personal Efficacy, Costs and Benefits, or in the case of this study, Demographic Effects) and organization of variables within these categories have presented some theoretical and statistical challenges that were noted in Section 5.1.4. What is more, the CI model categories only constitute a part of the theoretical basis that makes up the complex domain of health promotion. Other aspects of health promotion, notably structural elements that involve healthcare service delivery and biomedical facets (e.g. Hubley & Copeman, 2008) or additional theories related to persuasion, change, and communication (e.g. Hosein, Parks, & Schiavo, 2009; Petty, Barden, & Wheeler, 2009) are overlooked when examining environmental activism using the CI model as a lens.

The linear nature of the CI model, represented as one pathway from health promotion through the CI model variables to environmental activism in the preliminary thesis analytical framework of Figure 4.1, also limits the utility of the CI model. This linear approach did not necessarily facilitate the ability to explore the nuances behind the indirect connections presented in Figure 2.2, nor the potential influence of aspects concerning discourse, which arose in Chapter 2 and in the fieldwork of this research (see Section 6.3 regarding discourse). What is more, as noted, there appeared to be a tension with using the CI model in the case study context, as this approach did not include the addition of other, perhaps relevant perspectives related to the subject of this thesis, such as the health effects of participating in activist work. This tension, which was described in Section 4.7, led to the inclusion of supplementary qualitative data that was included in Section 5.4.

Additional factors that may influence the utility of the CI model to understand the practice of environmental activism also relate to the particular design and methods employed in this study. As indicated in Chapter 5, the results of the logistic regression analyses demonstrated specificity rates that were very low for all of the models that were generated (8.3 - 27.8% for the models involved in the hypotheses, 55.6% for the full model). In other words, the predictive models that were generated by using the amended CI model categories were very likely to inaccurately predict that people would participate in environmental activism based on their responses to the other study questions. While these results can lead to certain inferences regarding the study hypotheses, from a strictly statistical standpoint, this high degree of predictive error suggests these models are not very accurate in their predictive ability in this context (Hosmer & Lemeshow, 2000).

Another aspect that could have affected how the CI model performed, which ultimately affects how the model can be used to understand environmental activism in the study context, involved the survey tool that was developed for this study. While a benefit of the CI model was that it could be contextually tailored to the case study context in terms of the variables of interest, the survey could have performed with greater reliability. This was evidenced by the significant proportion of "N/A" type missing data for four questions. The results of the factor analysis also demonstrated that the survey developed for this study was not in complete agreement with the CI model categories used by Lubell and colleagues (2002; Lubell, et al., 2006; 2007), notably because 25% of the variables did not load on any category.

Despite some of the identified challenges and issues raised above, the CI model is still potentially a useful approach. The value of this approach appears to be best expressed in the model's ability to empirically analyze predictors of environmental activism that relate to specific, but limited, health promotion perspectives. Additional discussion concerning the application of the CI model in this particular study and reflections on the study design are addressed in Section 6.5.

6.3 Research Question I: Discussion and synthesis of findings

How are health promotion and environmental activism theoretically connected?

This study provides a range of support for the direct and indirect relationships and theoretical connections that exist between health promotion and environmental activism, often through the addition of supplementary concepts, which highlight a domain of commonalities concerning purpose, tactics, and theory. The theoretical connections between health promotion and environmental activism are also noted through the similarities both concepts share with

elements of a collective interest model, as presented in Chapter 4, and addressed in Section 6.2. The review of the literature presented in Chapter 2, supported by my experience in the field, also suggests that these connections may be impacted by dominant and differing discourses related to health and the environment, which are inherently related to issues of structure and agency. As noted in Section 2.3, discourse refers to not only words but also bodies of statements, analyses, and opinions related to particular intellectual or social domains.

To review the main findings associated with the thesis conceptual model of Figure 2.2, the most direct theoretical connection between health promotion and environmental activism is their shared foundation and motivation as efforts to improve human well-being. This connection was salient in the *Ottawa Charter for Health Promotion* (WHO, 1986) and continues to be reinforced in subsequent health promotion literature (e.g. Hancock, 2011b). Another direct theoretical connection between health promotion and environmental activism are the effects of socio-political power, which are strongly emphasized in the literature on health promotion, the biophysical environment, and activism (e.g. Butler & Friel, 2006; Hancock, 2011a; Kreuter et al., 2004; Parker et al., 2004).

The indirect connections between health promotion and environmental activism are perhaps more abundant and complex. Indirect connections, which are emphasized in Figure 2.2, can be understood by first examining environmental activism as its two separate components: the environment (specifically, the biophysical environment) and activism. This was conducted to widen the scope of relevant literature when scarce literature connecting the original two concepts was found. By breaking down environmental activism into its component parts, a substantial amount of additional literature was then discovered, revealing six additional indirect connections. This finding indicates that separating environmental activism into its component

parts assists with developing a theoretical understanding of the links between health promotion and environmental activism.

Regarding the effect of discourse on the links between health promotion and environmental activism, I noticed in the early stages of this study that managing terminology would be challenging in the development of a thesis conceptual framework. For example, during the literature review, I observed that different words, or combinations of words, were used by different structures to communicate similar and sometimes identical concepts (e.g. environment vs. ecosystem, activism vs. social action, health promotion vs. population health, etc.). Differing discourses were particularly noticeable as they related to structures concerning health vs. structures related to the environment and the fieldwork related to this study both validated and challenged the choices of terminology that were ultimately used in the frameworks of this thesis.

For example, in the literature concerning environmentalism, defining environment as it relates to the natural world was relatively straightforward when one examined the literature by Papadakis (1998), Thiele (1999), and Switzer (2003). However, in the health promotion domain, defining the term environment highlighted an existing tension in the discourse of this field, whereby environment has come to mean so many different entities that it is challenging to operationalize the term in academic or practice-policy based contexts. Adding to this complexity, health promotion authors such as Schultz and Northridge (2004) specifically assert that trying to distinguish the biophysical environment from the socio-political environment is a difficult, complex task and limits an understanding of the interrelated nature of these concepts. According to Charron, (2012), Rapport and Mergler (2004) and Webb et al. (2010), terms such as ecosystem and ecohealth can help to encompass the connections between social and environmental determinants of health. The tension involving environmental discourse is perhaps

the most substantial factor that muddles an understanding of environmental activism in the context of health promotion.

The effects of differing discourses as they relate to the literature and the fieldwork of this research was also noted when the term social action was identified as a synonym for activism. Although the term social action was much more common in the literature, especially as it relates to health promotion (e.g. Rothman, 1999; Shragge, 2003; Tarrow, 2011), the relative obscurity of this term outside of the literature meant that the term activism was used in the frameworks of this thesis for its more common prevalence in the realm of environmental discourse (e.g. Switzer, 2003) as well as popular discourse (i.e. amongst survey participants in the case study context).

The differing discourses that were encountered during the literature review and the fieldwork of this study have highlighted some of the challenges involved in forming conceptual links between the concepts of health promotion and environmental activism. Further to this, I suggest that despite health promotion theory that stresses the importance of grassroots activism (e.g. Butler & Friel, 2006; Kegler & Miner, 2004; WHO, 1989) and the biophysical environment as a vital determinant of health (e.g. Hancock, 2011a; Parkes & Horwitz, 2009; WHO, 1989), particular dominant discourses involving health and the environment impact the ability for this to translate into environmental activism.

For example, the findings of this thesis have noted a tension within the discourse of health promotion that maintains an emphasis on highly regulated structures, centralized biomedical mandates, and the importance of trained professionals to carry out these mandates (e.g. Hancock, 2011a; Laverack & Labonte, 2000). Themes emerging from the literature review were reinforced during the fieldwork when, upon learning of the health promotion focus of this study, participants would inquire why I was not surveying only health promotion professionals.

This often prompted a discussion of the importance of individuals in promoting their own health and the health of their loved ones, whereby the connection to activism seemed to become more evident to the participants.

To illustrate this tension further, one can also examine the domain of environmental health, which has a very precise definition within the traditional domain of public health and health promotion (WHO, 2011). From this standpoint, this discourse of environmental health is more in line with a biomedical approach, which has been criticized for overlooking the socio-political dimensions of health (Yuill, Crinson, & Duncan, 2012). However, the reviewed literature on environmental health *promotion* emphasized interventions that may target systems or policies not commonly considered within the purview of the health sector and identified activist-like tactics (i.e. coalition building), but did not name them as such (e.g. Kegler & Miner, 2004; Kreuter et al., 2004; Schultz & Northridge, 2004). In this sense, the discourse of environmental health is distanced from the domain of activism despite these commonalities.

Given these complexities and the potential discrepancies between particular health promotion theory and policy involving aspects such as environmental health promotion, it is therefore understandable, why environmental activism is not more prevalent in health promotion literature. Structural dynamics and centralized mandates, coupled with health promotion discourse that views the environment as everything from socio-political circumstances to our ecosystem, obscures a place for environmental activism in the domain of health promotion. This study has also identified reasons why health promotion literature does not necessarily name tactics that involve moving beyond the healthcare sector to address imbalances in power that affect the natural environment as activism. As noted by Hubley and Copeland (2008), activism often involves controversy, exposure to criticism, and reprisals. The additional tension involving

the distinction between health and environment as separate entities also suggests why, as Hancock (2011a; 2011b) observes, the domain of health promotion appears to frequently pass the responsibility of ecological issues that impact human health to the environmental sectors of our society and its associated structures.

6.4 Analytical Framework Revisited

The preliminary thesis analytical framework presented in Figure 4.1, Section 4.3, was intended to provide a visual depiction of the similarities between the ideas presented in the thesis conceptual framework and the elements of a model of collective interest. In essence, the thesis analytical framework illustrates the critical realist perspective of this research by summarizing key theoretical connections of a highly social nature between health promotion and environmental activism and integrating these main findings with the empirical perspective of the CI model in addressing the research questions. Having used this analytical framework to link the key theoretical connections of this study with the empirical component of this investigation, I have noted particular minor amendments necessary for the framework to be congruent with some of the findings identified during the research. A revised thesis analytical framework is presented in Figure 6.1 and a description of the four amendments made to this diagram follow the presentation of the diagram:

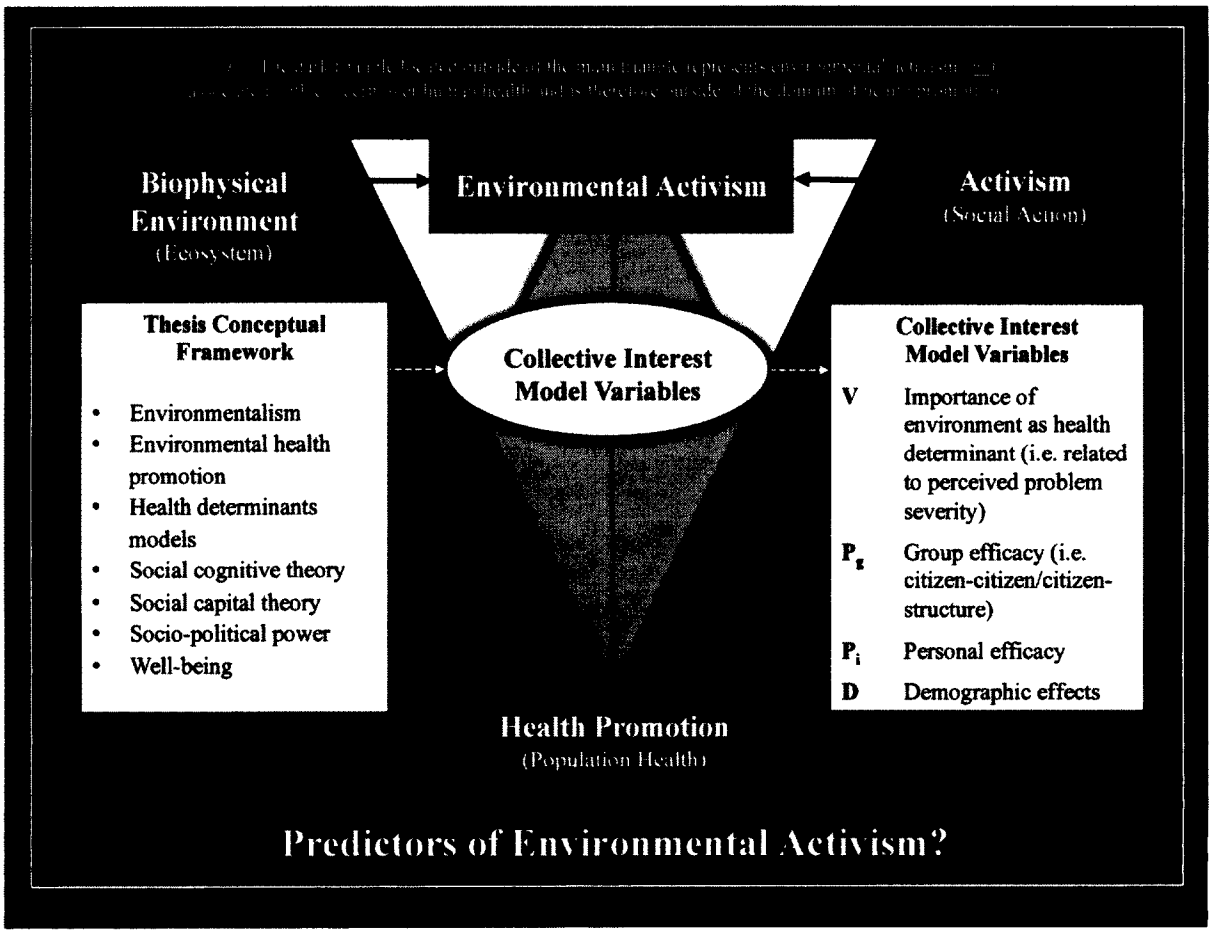

Figure 6.1: Final Analytical Framework - Exploring participation in environmental activism through the lens of the collective interest model, from a health promotion perspective

i) The addition of key alternate terms that describe the main three thesis concepts of interest (i.e. ecosystem, social action, and population health). As identified in Section 6.3, the influence that this alternate terminology had on the ability to find appropriate references linking together the concepts of health promotion and environmental activism was vital. By including these additional terms, this also speaks to the dominant discourse of academia, health sciences, ecological sciences, and community/grassroots organizing.

ii) The renaming of the category Perceived Problem Severity to Importance of Environment as Health Determinant. This was conducted to be congruent with the health promotion focused nature of this study, which viewed variables concerning perceived problem severity as inherently connected to feelings towards the environment as a determinant of health.

iii) The specification of Group Efficacy as pertaining to citizen-citizen dynamics and citizen-structure (i.e. government, corporations) dynamics. As per the discussion in Section 6.1 concerning the category of Group Efficacy, this was added to stress the different types of relationships that pertain to group efficacy so that the effect of each type of dynamic does not overshadow the other.

iv) The amalgamation of the Costs and Benefits category into Demographic Effects. As noted in Section 5.1.4 concerning the factor analysis, even Lubell and colleagues (Lubell et al., 2006; 2007) acknowledged the confusing nature of these categories in observing that one person's benefit may be another's cost and vice versa.

6.5 Reflections on Study Design

This thesis is the result of an ambitious attempt to address the question of how health promotion and environmental activism are connected through both inductive and deductive means. In this section, I address my reflections on the study design, acknowledging that to a large extent, I have only been able to partially answer my research questions. The following discussion will identify particular strengths and limitations of my approaches.

6.5.1 Limitations. Although efforts were taken to conduct research that was rigorous and ethical, I acknowledge that this study had particular limitations that must be identified.

These limitations were largely related to the complexity of the subject matter, the overall study design, the particular use of the CI model, data collection and analysis specifics, the effects of my positionality, as well as the socio-political/historical climate where this research was conducted.

First, as identified in Chapter 1, researchers such as Lubell (2002) have been emphasizing the call for further empirical study on the subject of environmental activism, which accounted for the empirical focus of this thesis. Before empirical work could be conducted, it was evident that theoretical (i.e. inductive) work was needed to make a case for drawing connections between health promotion and environmental activism in the first place. However in retrospect, and compounded by the characteristics of the local demography (i.e. appreciation for qualitative approaches, potential need for a lower literacy level with research instrument), a qualitative approach may have been more appropriate as a foundational piece of research for this topic rather than empirical methods. What is more, the desire to conduct both inductive and deductive research for this study may have resulted in an approach that was quick to narrow its focus on one dimension of this issue, such as suggesting that environmental activism was a health promotion activity.

The desire to examine health promotion's connection to environmental activism required examining an array of literature from several disciplines (i.e. health promotion, political science, psychology, sociology, etc.), which limited the comprehensiveness of this review. Additional literature concerning rational choice theory, which informs the CI model, and the effect of dominant discourses would have been beneficial to understanding the connections between the main study concepts. Furthermore, as my perspective was concerned with situating environmental activism as an approach towards the promotion of health, other possible

connections between these concepts were not addressed in building the conceptual framework of Figure 2.2. An example of this could be the potential of environmental activism to be a detriment to personal health promotion due to the stress involved in this activity. It was not until the fieldwork of the case study that I began to conceptualize these concepts in this manner.

Concerning the CI model itself, most limitations of this method pertained to its empirical nature and the instrument design, which was not always well received by the study participants. Many participants from the case study fieldwork vocalized disapproval with the quantitative nature of this study, preferring to inform the research through qualitative approaches. This criticism could have been addressed through the addition of open-ended questions on the study survey, although the framework of the CI model itself often limited the scope of responses, with its predefined variables of interest. The effort to include some qualitative input was clearly minimal, but ethically, I felt it was necessary to include these perspectives even if they their generalizability was limited (see Table 5.9). In other words, the study design of this thesis has clearly only allowed for the examination of a small piece of the health promotion/environmental activism puzzle and if anything, has generated many more questions and areas for further research.

The review of the literature has also not revealed a widespread, consistent use of the CI model, or the use of this model in a health promotion context, which is a clear limiting factor of this research. Therefore, any potential shortcomings of this model related to validity or generalizability would also apply to this study. Examples of such issues related to the CI model could include the original rationale for the CI model categories, variables within these categories, and the heuristic use of the model.

As noted in Section 4.3.2, although the work of Lubell and colleagues (2002; Lubell, et al., 2006; 2007) highly influenced the work of this thesis, there were marked differences between the thesis study context and methodology and the work of Lubell and colleagues including the scope of the study, the particular environmental focus of interest, specific data collection and analysis approaches. Given the specific nature of the dependent and independent variables, their mechanism of analysis, and the slight differences between this study and other studies involving the CI model, a limitation of this study may be the inability to draw direct comparisons regarding its findings.

Also, given the fact that the survey used for this study was study-specific, there were also limitations regarding this tool (see Section 4.5.1). Although the survey was adapted from an existing instrument, there were several notable differences that may have affected the quality of the data collected. For example, the survey used for this study was much shorter than the original 108-question tool, which would have been burdensome and unattractive to potential respondents of this study. For this research, many questions were omitted for the sake of brevity and the chosen data collection method of a self-administered survey. As the questions for this study were developed to suit the study context (i.e. the case of Haida Gwaii and the proposed ENGP), many of the original questions were re-worded as well.

Even though the survey was tested with a small group of participants and re-worked to improve the clarity of wording, the Flesch-Kincaid Grade Level remained at 8, which limited the ability of some participants to comprehend the questions. Problems with this instrument were encountered in the field when it was discovered that the wording of particular questions was perhaps unclear (e.g. questions 17 and 18 regarding politics and question 23 regarding ethnicity), possibly accounting for high rates of "N/A" responses on particular questions. Although none of

these variables had statistically significant values, I remain curious as to why participants chose "N/A" for their responses and how this relates to the larger research questions. Other evident survey amendments would include changing "I" to "we" as the more appropriate pronoun for items regarding collective/group focus.

Although the factor analysis presented in Section 5.1.4 revealed that the survey was performing fairly well given the CI model categories, the scattered factor loading for the original categories of Costs and Benefits (and the resulting creation of the category, Demographic Effects) also suggests a possible limitation of this study. Furthermore, amongst respondents, the ratio of people engaging in activism vs. people not engaging activism could have been more balanced, which might have generated more accurate models regarding specificity (Hosmer & Lemeshow, 2000). As noted in Section 5.3 and in the preceding discussion, although the models generated in this study were quite sensitive, they suffered from low levels of specificity, rendering every model problematic in the correct identification of people who did not participate in environmental activism. However, further sampling may not have rectified this situation, as the same ratio of activists vs. non-activists may have prevailed in the study context.

Other statistical limitations may have included the ratio of cases to variables when all 24 independent variables were analyzed in the logistic regression. Although this ratio was deemed acceptable as per Section 4.1.5, this likely resulted in higher parameter estimates and standard errors, which influences the reliability of the results (Hosmer & Lemeshow, 2000; Tabachnick & Fidell, 2007). Tabachnick and Fidell (2007) note this potential limitation in logistic regression, as there is no real comparable form of adjusted R^2 as with multiple regression.

Further limitations of this study may include the effects of my positionality on the research process, as well as my sentiments regarding the case study. For example, although I

have strived to be objective in this study, I am emotionally connected to the research issues given my opposition to the ENGP, my work as a health promotion practitioner, and my self-identification as an environmental activist. The effects of this bias may have influenced the direction of my literature review, as well as the synthesis of the research findings, although I strove to use my fieldnotes as a reflective tool to deconstruct some of the thoughts and feelings I was having regarding this research and my experiences in the field.

Furthermore, I have become more familiar with the socio-political and historical climate of conducting research on Haida Gwaii. To be more specific, the extensive amount of research that has been conducted on Haida Gwaii, some of which has been revealed to be conspicuously unethical (e.g. see Baird, Solanki, and Askren, 2008), appears to have influenced how the islands' residents feel about having research conducted in their communities (i.e. a cautious or even distrusting attitude). Despite my efforts to reassure certain Haida Gwaii residents of the legitimacy of this study, some residents would not complete my survey, suspecting that I was employed by the oil and gas industry, or even the Enbridge Corporation. I believe that this may have influenced the results of my study and is therefore a limitation to the validity of the findings.

6.5.2 Strengths. Notwithstanding the identified limitations of this study, I believe that the strengths of this thesis primarily lay in the effort to address an identified research gap, the novel approach of the CI model's application, and the appropriate and timely nature of opposition on Haida Gwaii related to the ENGP. The introduction of this thesis identified a research gap concerning the interface between the health promotion and environmental activism. This particular gap appears to be part of a broader research gap that involves the place of activism within the health promotion domain, as well as other endeavours to address the

biophysical environment as a determinant of human health. This study speaks to the place of activism in the health promotion domain, as specifically noted in the literature review, and the case study fieldwork further supported the significance of the biophysical environment as a valued determinant of health.

Furthermore, the existing literature called for more empirical approaches towards examining the issue of environmental activism. This thesis strived to address this call by applying the CI model to a new context (i.e. the case study of Haida Gwaii and the ENGP) and in doing so, incorporate a new element: the perspective of health promotion. Through the integration of this health promotion perspective, a space was then created to discuss predictors of this behaviour and how it relates to specific health promotion theory (i.e. determinants of health, social cognitive theory, social capital theory). I believe that this unique merger of examining environmental activism through a health promotion perspective has identified and responded to a gap in the literature, while also adding new richness to existing domains.

Another strength of this study pertains to the data collection methods related to the survey. As noted in Section 5.2, the representativeness of the Haida Gwaii sample demographics was quite comparable to the overall population. Furthermore, the case study sample was able to capture a significantly large group of residents who were engaging in environmental activism, thereby supporting the use of the CI model and the assertion that Haida Gwaii's residents are actively opposed to this project.

An added strength of this study pertains directly to the timely and specific nature of this study concerning the potential construction of the ENGP. Given that this study was conducted amidst the Joint Review Panel hearings and the fate of this project was still undetermined, this issue was fresh in the minds of the islands' residents. What is more, this study involved the

examination of a particular project, as suggested by Kegler and Miner (2004), rather than a broad environmental health issue such as air quality, which could have generated more elusive findings.

6.6 Directions for Further Research

This study was an attempt to contribute to a small body of literature and research that examines the relationship between health promotion and environmental activism, two concepts that appeared to have a theoretical connection. This connection was explored in this thesis, providing a theoretical basis for connecting these two ideas. Through the use of a case study, the issue of environmental activism was further explored in relation to an analytical framework that integrated theoretical concepts related to health promotion with an empirical model of collective interest. In addition to providing some useful insight into why this issue warrants exploration, and the merits and pitfalls of a novel approach towards examining particular connections (i.e. the CI model, with an emphasis on health promotion), this study has also revealed several directions for further research.

For example, given the complexity of defining important concepts that pertain to this study, one area for further research might involve further examination of this issue from a strictly theoretical perspective. As noted, the subject matter of this thesis spans many disciplines and involves many concepts. Also, the varied definitions and terminology related to such concepts as health promotion, the environment, and activism presented a challenge from the start in attempting to connect the concepts of health promotion and environmental activism. The opportunity to more comprehensively examine the literature pertaining to health promotion and environmental activism across a variety of disciplines may illuminate a greater theoretical

justification for the most appropriate discourse to adopt when discussing these concepts. What is more, further consideration of the theoretical and philosophical perspectives employed in this research, such as the rational choice theory that informs the CI model and the underpinnings of critical realism, could prove to be beneficial in the study of health promotion and environmental activism.

A more thorough review of the literature across a variety of disciplines would provide a greater opportunity to explore the connections between the two major study concepts, which may support or challenge the results of the thesis conceptual framework of Figure 2.2. For example, more investigations concerning the theoretical connections between environmental activism and health promotion may reveal other dimensions of this connection that were not explored in this thesis, such as the concept of environmental activist burn-out, which can affect ones health (e.g. Downton & Wehr, 1998; Verhulst & Walgrave, 2009).

Another aspect that was not explored in great enough detail in this study, which has theoretical and practical significance, involves the lack of participation in environmental activism by people who are highly concerned about the potential environmental threat. While the results of the CI modeling suggested some possible connections, such as those with less education appearing less likely to participate in environmental activism even if they were highly concerned about the issue of the ENGP, these dynamics could have been explored much more comprehensively through additional theoretical and empirical approaches. Strategies may have included the quantitative testing of additional variables in logistic regression modeling or incorporating open-ended questions or qualitative interviews to explore the additional reasons why one may not participate in environmental activism even if they are concerned about an issue.

Further to this, an opportunity exists to further explore the issue of environmental activism from a health promotion perspective by using the CI model with slight modifications, mostly tailored to provide a more standardized approach to its use. By noting the limitations in Section 6.5.1 and establishing a reliable, simplified, standardized tool that could be used in a variety of contexts for the study of environmental activism from a health promotion perspective, the CI model could be used to validate or challenge assumptions regarding the question of who participates in activism and why. These findings could then be used in the development of recommendations regarding practice and policy related to health promotion and environmental activism.

Another area for further research involves the methodology of this thesis. As I have identified, there is an apparent need for qualitative research that can delve into the experience of environmental activism from a health promotion perspective. As noted in Section 4.7, many participants were eager to provide additional perspectives on the subject of environmental activism related to the ENGP and how this relates to their health. The quotes presented in Section 5.4 suggest that improved data collection and analysis using appropriate, rigorous qualitative approaches could have provided much additional insight into the quantitative and theoretical findings of this thesis. For example, an open-ended question at the end of the survey may have provided the opportunity to formally include qualitative perspectives. The chance to conduct in-depth interviews with a sub-sample of this thesis' survey respondents could have also provided this added insight. Therefore, for future research, I suggest that the issue of environmental activism from a health promotion perspective be explored wherever possible from both quantitative and qualitative methods, ideally mixed-method studies that allow for the findings to be cross-validated.

6.7 Recommendations for Practice and Policy

In addition to providing a theoretical contribution to the academic literature on the subject of health promotion and environmental activism, the results of this study can begin to influence certain elements of health promotion practice and policy. The recommendations provided in this section, revealed through the literature review and subsequent work with the case study fieldwork and the thesis analytical framework, have been articulated with health promotion structures in mind, such as national and regional health authorities, their facilities, as well as community-based health service organizations. More specifically, these recommendations are geared towards health promotion policy-makers, as well as those involved in program planning, education, and front-line health promotion services.

i) Support a socio-ecological determinants of health model. One of the most evident recommendations that can be offered from this study is to encourage health promotion practitioners and policy-makers, including those who work in fields related to health and the environment, to foster a socio-ecological view of health. This perspective, as emphasized in the *Ottawa Charter for Health Promotion* (WHO, 1986), maintains that there is an inextricable link between people, their health and the natural environment. In addition to being endorsed by central health promotion documents and organizations, this approach fosters a greater appreciation for the biophysical environment as a determinant of health and emphasizes the influence of socio-political dimensions and its effect on well-being.

For example, by supporting socio-ecological determinants of health models, this can help to increase the public's knowledge regarding the biophysical environment as a determinant of health, which can then help to support a greater understanding of ecological issues that may affect health. The reviewed literature on social cognitive theory has demonstrated that levels of

personal knowledge and values impact one's behavioural capabilities (e.g. Bandura, 1989; Hubley & Copeman, 2008; Simons-Morton et al., 2009), which could influence participation in activism. This finding was also affirmed in the empirical results of this study, which demonstrated that high self-reported levels of knowledge, concern, and environmental values regarding the ENGP was associated with environmental activism. Practitioners and policy makers can also help to ensure that the public is receiving accurate and constructive information, which may for those who are interested facilitate evidence-informed activism that is focused on issues of legitimate socio-ecological concern. Supporting socio-ecological determinants of health models can also focus attention on the general importance of education and employment. These sociodemographic factors associated with the behaviour of environmental activism in this study, as well as other studies that have used the CI model (e.g. Lubell, 2002; Lubell et al., 2006; 2007), are closely linked with core elements of the social determinants of health and reinforce the contemporary relevance of the socio-ecological premise of the Ottawa Charter (WHO, 1986).

ii) Advocate for environmental activism, when appropriate. Acknowledging that health promotion literature has clearly identified activism as a legitimate strategy within this discipline (e.g. Howze et al., 2004; Kegler & Miner, 2004; Poland et al., 2011; WHO, 1997), I suggest that it is appropriate for health promotion institutions, practitioners, and those involved in policy directives to advocate for environmental activism in certain contexts. As noted in the previous recommendation, not all activist endeavours concerning the biophysical environment are based in issues that are scientifically sound. However, with an enhanced socio-ecological perspective towards understanding health and well-being, coupled with the precautionary principle, which emphasizes the duty to prevent harm by all possible means even if all the evidence is not in (Canadian Environmental Law Association, 2012), practitioners can assist the public to discern

which issues warrant activism. This can be accomplished through providing credible information to the public or by role modeling activism through personal and institutional channels.

As noted in the CI model investigations of this thesis, previous involvement in activism is associated with continued activism, which is also supported by elements of social cognitive theory concerning mastery experiences (e.g. Bandura, 1986; Goddard, Hoy, & Hoy, 2004; Parker et al., 2004). By endorsing appropriate environmental activism, practitioners and policy makers can help to foster social capital by supporting a culture that understands how to participate effectively in activism and the value of activism as a vehicle for change (Campbell, 2000; Kegler & Miner, 2004; Parker et al., 2004; van Kermende, 2003).

iii) Stimulate a precise and conceptually appropriate discourse related to health promotion and environmental activism. Insights obtained from reviewing the literature and engaging with the public during the case study fieldwork for this thesis suggest that the dominant discourses of structures related to health and the environment complicate an understanding of how health promotion and environmental activism are related. For example, regarding terminology, the word *environment* continues to be such an elusive term that modifiers such as *biophysical* or *natural* must be added to convey what the term *ecosystem* suggests. The similarly elusive term *social action*, while prevalent within the health promotion literature, appears to be poorly understood outside of this domain. The term *activism* appears to provide a more concise and more widely comprehended word that inherently describes the same concept. Promoting a consistent and precise spoken and written discourse through these two subtle shifts in vocabulary (i.e. ecosystem instead of environment and activism instead of social action) could contribute greatly to our understanding of these concepts (and how they relate to one another). In turn, this

can affect how the field of health promotion and the public at large perceive the relationship between health promotion and environmental activism.

Given the recognition of discourse as a body of statements, analysis, opinions and shared beliefs and values, there is the opportunity for health promotion policy-makers and practitioners to shift the dominant discourse of this field to support more opportunities for the public to be involved in grassroots health promotion related to the environment as a determinant of health. At present, health promotion continues to be largely understood as a concept that is the responsibility of the healthcare sector and its associated structures and agencies despite a clear definition that health promotion is the responsibility of everyone, not just the healthcare sector (e.g. Hancock, 2011a; 2011b; WHO, 1986). Those working in the field of health promotion, as well as other sectors involving health and the environment, can stimulate awareness that this concept can be viewed in much more holistic ways that redistribute power so as to foster greater successes in the outcome of health promotion.

This process is already commencing within some organizations, such as Northern Health, the regional health authority that Haida Gwaii belongs to. Within this health authority, academics with an expertise in ecosystem approaches to health from the University of Northern British Columbia are teaming up with Northern Health to create policy and practice-informing documents such as position statements on the environment as a context for health (Northern Health, 2012). This document emphasizes a socio-ecological approach to the determinants of health, as well as discourse that supports grassroots, bottom-up initiatives to address well-being.

6.8 Conclusions

Within this thesis, I endeavoured to connect health promotion with environmental activism, given an apparent theoretical connection between these concepts and a gap in the literature. The primary connections that were established between health promotion and environmental activism was their mutual goal of promoting human well-being, with an emphasis on addressing the effects of socio-political power in accomplishing this objective. This thesis also provided an opportunity to stress the growing body of literature that regards the biophysical environment (or ecosystem) as a vital determinant of health and activism as a valuable component of heath promotion practice. Responding to RQ I, the inductive theoretical connections between health promotion and environmental activism were summarized and depicted in the thesis conceptual framework of Figure 2.2.

Through the use of a study-specific survey and the framework of a contextually amended CI model, a largely empirical approach was taken to address RQ II and III. The logistic regression modeling that was employed for this thesis was predominantly built around the notion that participants who viewed the environment as a significant determinant of health would be more likely to participate in environmental activism. Specific significant variables that may be predictive of environmental activism in the study context included: levels of knowledge/concern about the environment as a determinant of health, knowledge/concern over the specific ecological issue, and distrust in corporations. Past participation in environmental activism, education, employment, and retirement were also significant predicators.

While the statistical analyses confirmed that the amended CI model was very accurate in predicting activism among those who had participated in this activity, additional categories of variables were added to this modeling to increase the model's specificity. Unfortunately, only

marginal improvements could be made to this model's accurate predictive ability by adding CI model category variables of personal efficacy and the effect of certain demographic information. The findings of this modeling generated a rich field for further inquiry, as the question remained, "Why do some people who are very concerned about an environmental issue and view the environment as a determinant of health not participate in environmental activism?"

The findings of this thesis have suggested that the connections between health promotion and environmental activism are of sufficient importance to warrant a range of theoretical and methodological avenues for further research. The thesis conceptual framework (Figure 2.2) and final thesis analytical framework (Figure 6.1) represent a first step towards increasing our understanding of health promotion and environmental activism from a critical realist stance, but they are far from complete or comprehensive frameworks to understand this complex subject. Nevertheless, despite the challenges and limitations of this study and the societal factors that may have contributed to the challenge of this investigation (i.e. the effect the dominant discourses of structures related to health and the environment), this thesis has provided a solid step towards fostering an appreciation for environmental activism from a health promotion perspective. The suggested recommendations for practice and policy related to the findings of this thesis also provide the opportunity for this appreciation to be realized.

Regarding knowledge translation and exchange of the results of this study with the local communities of Haida Gwaii, the intent is to consult with the Council of the Haida Nation and the Old Massett and Skidegate Band Councils. Although the focus of this research did not solely pertain to the Haida Nation, I believe that consultation with these long-standing parties reflects the most appropriate structures for ascertaining which results to share publicly and channels for

dissemination. Therefore, the next steps of this research process will include communication with these parties and the development and enactment of a plan to share the research findings.

As a final note, it is significant to document that during the preparation of this thesis, despite what has been called unprecedented public disapproval for the Enbridge Northern Gateway Project, the Joint Review Panel decided to recommend that the federal government approve this project (CBC, 2013). Although 209 conditions have been placed on this approval, which include developing a plan for researching heavy oil cleanup and conducting emergency response exercises, this news was a tragic blow to many residents of Haida Gwaii. Gwaii Edenshaw, a prominent Haida carver known for his recent contribution to the newly erected Legacy totem pole said, "The Panel's recommendation doesn't reflect our values. This whole project is absurd from start to finish – it's totally destructive. We will not allow oil supertankers through our waters and we're not backing down" (CoASt, 2013).

The results of this study have provided new insights into the ways in which Haida Gwaii residents view the environment as a determinant of heath and how this relates to their concern over the ENGP and experiences with environmental activism, as exemplified by the Athlii Gwaii, or Lyell Island standoff. These case-study specific findings suggest that much more activism against the ENGP may be yet to come given the statistically significant variables identified in this study's analyses. The broader findings of this study suggest that the nexus of health promotion and environmental activism is a fertile terrain for future research.

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Appendix I – Information Sheets and Survey

UNBC UNIVERSITY OF NORTHERN BRITISH COLUMBIA

RESEARCH PROJECT
Survey Information Sheet

This survey asks questions about attitudes and behaviours regarding the **Enbridge Northern Gateway Project**.

You can participate in this VOLUNTARY survey if you are:

- ✓ Opposed to the Enbridge Northern Gateway Project
- ✓ 18 years of age or older
- ✓ A resident of Haida Gwaii for at least 6 months of the last year

The survey will ask you 25 questions about:

- Your attitudes/behaviours regarding health, the environment, activism, and the Enbridge Northern Gateway Project.
- Your demographic information (e.g. age, gender, income, etc.)

Other important information:

- This survey is for a Masters degree in Community Health at UNBC.
- This survey will take approximately 20 minutes to complete.
- You don't have to finish this survey if you change your mind.
- If you decide not to finish the survey, your data will not be used and destroyed.
- Benefits of filling out this survey? You get to share your opinions.
- Risks of filling out this survey? None.
- Survey results are anonymous. Your identity will not be revealed in any way. Survey data will only appear in a research thesis and associated publications.
- Data will be kept in a locked filing cabinet at UNBC and a password-protected computer. Data will be destroyed after 5 years.
- For questions/concerns, contact Jessica Madrid, Student/Researcher, at madridj@unbc.ca or (250) 617-8785 (cell phone) or Dr. Margot Parkes, Supervisor, at parkesm@unbc.ca or (250) 960-6813.
- For complaints about this research project, contact the UNBC Research Ethics Board at reb@unbc.ca or 250-960-6735.

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RESEARCH PROJECT
Cover Sheet for Print Survey

Researcher: Jessica Madrid, BScN, MSc Community Health Candidate
School of Health Sciences, University of Northern British Columbia
4-339, 3333 University Way, Prince George B.C., V2N 4Z9
(250) 617-8785 or madridj@unbc.ca

Supervisor: Dr. Margot Parkes, MBChB, MAS, PhD
Canada Research Chair in Health, Ecosystems & Society
(250) 960-6813 or parkesm@unbc.ca

Type of Project: MSc Community Health Thesis

What is the purpose of this research?
The purpose of this study is to improve our understanding of the factors that drive participation in collective environmental activism by examining the attitudes/behaviours of Haida Gwaii, BC, residents who are *opposed to* the proposed Enbridge Northern Gateway Project (NGP).

Who can participate in this survey?
Individuals at least 18 years of age who are *opposed to* the proposed Enbridge NGP and have lived in the Haida Gwaii region for at least 6 months of the last year.

What am I being asked to do?
To complete a survey, which will ask questions about your demographic information, as well as your attitudes/behaviours regarding health, the environment, activism, and the proposed Enbridge NGP. This survey will take approximately 20 minutes to complete.

Are there any potential benefits or risks to participating?
Potential benefits are the opportunity to share your sentiments about health, the environment, and the Enbridge NGP. There are no apparent risks to participating in this survey.

How will my confidentiality and anonymity be addressed?
Your survey results will be anonymous. The data will appear in the final research thesis and associated publications, but your identity will not be revealed in anyway. Only Jessica Madrid (researcher/student) and her thesis committee will have access to the survey data. All survey data will be kept in a locked filing cabinet at UNBC and will be destroyed after 5 years.

Your participation in this research is entirely VOLUNTARY. If while completing the survey you change your mind and no longer wish to participate, you may do so without any penalty and your data will be destroyed. By handing in the completed survey, you are consenting to participate in this research. For questions, concerns, or to receive a copy of the research results, please contact Jessica Madrid at madridj@unbc.ca or (250) 617-8785 (cell phone). You may also contact her supervisor, Dr. Margot Parkes, at parkesm@unbc.ca or (250) 960-6813. Please direct any complaints concerning this research project to the UNBC Research Ethics Board at reb@unbc.ca or 250-960-6735.

UNBC UNIVERSITY OF NORTHERN BRITISH COLUMBIA

SURVEY
Haida Gwaii, BC, & Opposition Towards the Proposed Northern Gateway Project

Before beginning this survey, please make sure you have read over the attached cover sheet. This survey will take approximately 20 minutes of your time. Please complete the survey and hand back to me when you are finished.

START OF SURVEY

1. What year were you born? 19____

2. How many years have you lived in Haida Gwaii? _____ (round to nearest year)

For the following statements, please *circle* the number that best reflects your belief:

3. I am opposed to the Enbridge Northern Gateway Project.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

4. I know a lot about the proposed Enbridge Northern Gateway Project.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

5. I have strong environmental values.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

6. I believe that I can influence the political system.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

7. I trust my elected government (e.g. federal, provincial, municipal) to make decisions that are best for me and my loved ones.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

8. I trust the Enbridge corporation to make decisions that are best for me and my loved ones.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

9. I believe that the Joint Review Panel process is fair.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

10. I am concerned that the proposed Enbridge Northern Gateway Project would affect the Haida Gwaii environment (e.g. air, water, land, plants, animals).

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

11. The environment (e.g. air, water, land, plants, animals) is important for my recreation and/or employment.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

12. The environment (e.g. air, water, land, plants, animals) is important for my health.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

13. There would be an environmental disaster from the proposed Enbridge Northern Gateway Project.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

14. Have you ever participated in the following activities for *any* issue that is of concern to you? (Check all that apply)

- ☐ Boycott (e.g. refuse to buy or do business)
- ☐ Formal citizen consultation process (e.g. Joint Review Panel)
- ☐ Joined a citizen's coalition/group to address a specific concern
- ☐ Public rally or demonstration
- ☐ Signed a petition
- ☐ Written a letter to an elected representative, the media, or a company
- ☐ Other _____
- ☐ N/A

15. Have you participated in any of the following activities *in opposition* to the proposed Enbridge Northern Gateway Project? (Check all that apply)

- ☐ Boycott (e.g. refuse to buy or do business)
- ☐ Formal citizen consultation process (e.g. Joint Review Panel)
- ☐ Joined a citizen's coalition/group to address a specific concern
- ☐ Public rally or demonstration
- ☐ Signed a petition
- ☐ Written a letter to an elected representative, the media, or a company
- ☐ Other _____
- ☐ N/A

For the following statements, please *circle* the number that best reflects your belief:

16. It is important to have a strong local economy.

NO strongly disagree			*neutral*			*YES strongly agree*	
1	2	3	4	5	6	7	N/A

17. How would you best describe your political views on social issues?

very conservative (e.g. pro "religious/ traditional" family values)			*neutral*			*very liberal* (e.g. pro "civil rights")	
1	2	3	4	5	6	7	N/A

18. How would you best describe your political views on economic issues?

very liberal (e.g. spend taxpayers' dollars on gov't programs, etc.)			*neutral*			*very conservative* (e.g. pay down the deficit, spend less taxpayers' dollars, etc.)	
1	2	3	4	5	6	7	N/A

19. I can influence whether or not the Enbridge Northern Gateway Project is built.

YES strongly agree			*neutral*			*NO strongly disagree*	
1	2	3	4	5	6	7	N/A

20. Haida Gwaii residents as a group can influence whether or not the Enbridge Northern Gateway Project is built.

NO strongly disagree			*neutral*			*YES strongly agree*	
1	2	3	4	5	6	7	N/A

21. What is your gender? (Check one)

☐ Female ☐ Male ☐ Other

22. What is the *highest* level of education you have completed? (Check one)

- ☐ Elementary or some high school
- ☐ High school graduate
- ☐ Trade or vocational certification
- ☐ Some college or university
- ☐ College diploma
- ☐ University undergraduate degree
- ☐ University post-graduate degree
- ☐ N/A

23. What is your *ethnic* background? (Check one)

- ☐ Caucasian (White)
- ☐ First Nations
- ☐ Metis
- ☐ Other _____
- ☐ N/A

24. What is your *primary* working status at present? (Check one)

- ☐ Homemaker
- ☐ Retired
- ☐ Student
- ☐ Employed part-time (including self-employed)
- ☐ Employed full-time (including self-employed)
- ☐ Unemployed
- ☐ N/A

25. What was your estimated annual *income* last year? (Check one)

- ☐ Less than $20 000
- ☐ $20 000 - $30 000
- ☐ >$30 000 - $40 000
- ☐ >$40 000 - $50 000
- ☐ >$50 000 - $60 000
- ☐ >$60 000 - $70 000
- ☐ >$70 000 - $80 000
- ☐ >$80 000 - $90 000
- ☐ >$90 000 - $100 000
- ☐ Greater than $100 000
- ☐ N/A

END OF SURVEY

Appendix III – Research Assistant Confidentiality Agreement

UNBC

Research Assistant Confidentiality Agreement

This study, *Health Promotion & Environmental Activism: A Model of Collective Interest, the Northern Gateway Project, and Haida Gwaii, BC* is being undertaken by Jessica Madrid, MSc Community Health Candidate, at the University of Northern British Columbia.

The study has 6 research objectives:

1. To synthesize literature that discusses activism, environmentalism, the biophysical environment as a determinant of health, and social theory (i.e. social cognitive theory and social capital theory) and how this relates to health promotion.

2. To investigate the current and historical climate of activism related to health and the environment in the region of Haida Gwaii through a review of relevant documents and literature.

3. To develop and implement an appropriate tool, informed by the collective interest model, which can be used to gather empirical data from a sample of Haida Gwaii residents that will address their attitudes/behaviours regarding health, the environment, and activism as it relates to the Enbridge Northern Gateway Project.

4. To statistically analyze the quantitative data obtained through the use of the tool, and to relate the findings to the identified hypotheses and reviewed literature/documents.

5. To integrate the results of the analysis with the reviewed literature.

Data from this study will be used in statistical analysis and will be used, stored, and destroyed according to the UNBC Research Ethics Board application that has been approved.

I, Jay Myers agree to:

1. Keep all the research information shared with me confidential by not discussing or sharing the research information in any form or format (e.g. disks, tapes, transcripts) with anyone other than the Principal Investigator(s);

2. Keep all research information in any form or format secure while it is in my possession;

3. Return all research information in any form or format to the Principal Investigator(s) when I have completed the research tasks;

4. After consulting with the Principal Investigator(s), erase or destroy all research information in any form or format regarding this research project that is not returnable to the Principal Investigator(s) (e.g. information sorted on computer hard drive).

Research Assistant: