CONTENT AND PREVALENCE OF ENVIRONMENTALIST STEREOTYPES IN CANADA: A PSYCHOLOGICAL PERSPECTIVE

by

Elizabeth A. Williams

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Abstract

What are public perceptions of environmentalists in Canada? Stereotypes, beliefs that members of a group possess certain characteristics, are widely understood and communicated within a culture, even amongst individuals who do not believe them to be representative of the group in question (Jackson, 2011). Research suggests that stereotypes of environmentalists are primarily negative and may impede environmental participation (Bashir, Lockwood, Chasteen, Nadolny, & Noyes, 2013; Minson & Monin, 2012). Yet few studies have assessed environmentalist perceptions of their own in-group stereotypes. The current study builds on previous research by including representation from the environmental community and more broadly from the Canadian population (N = 489). This research uses qualitative and quantitative social psychology methods to explore the content and prevalence of environmentalist stereotypes. Participants completed a survey containing established research scales: New Ecological Paradigm, Stereotype Content Model, System Justification scale, and modified scales on pro-environmental identity. Irrespective of their own environmental attitudes or identity, participants listed highly similar and largely positive words in association with environmentalists. When asked to rate public perceptions of environmentalists, participants provided similar moderate ratings on warmth and competence, and low rating for status. Perceptions of competition between environmentalists and the public, in resources, decision-making, and power, were higher amongst non-environmentalists and varied according to political ideology and province of residence. Patterns in the data also suggest that with regards to environmental attitudes and views about society, both non-environmentalists and strong environmentalists are relatively distinct groups, whereas there is high similarity and possibly fluidity between moderate environmentalists and neutral participants (i.e., neither agreed or disagreed to identifying as an environmentalist). Thus, while environmental attitudes and identity were positively correlated, environmental attitudes only partly predicted environmentalist identity. A better understanding of environmentalist stereotypes may contribute to psychology research on inter-group relations and stereotypes, and may offer insight into resistance to environmental initiatives, thereby improving design

for greater public engagement. This information may also help improve understanding of conflict in decision-making processes, and assist in the development of group facilitation and management tools that break down barriers between interest groups, thereby improving collaboration and outcomes in decision-making processes.

Lay Summary

What are public perceptions of environmentalists in Canada? This research, for a Master's dissertation, uses social psychology methods to explore the content and prevalence of environmentalist stereotypes. Stereotypes, beliefs that members of a group possess certain characteristics, are widely understood and communicated within a culture, even amongst individuals who do not believe them to be representative of the group in question (Jackson, 2011). Study participants listed highly similar and largely positive words in association with environmentalists, regardless of their own environmental attitudes. When asked to rate public perceptions of environmentalists, participants provided similar moderate ratings of warmth and competence, and low ratings for status. Perceptions of competition between environmentalists and the public was rated higher amongst non-environmentalists and across some provinces and political ideologies. A better understanding of environmentalist stereotypes may offer insight into resistance to environmental initiatives and conflict in decision-making, thereby contributing to improved public engagement and collaboration.

Preface

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Chapter 1: Introduction

Human societies cannot continue to survive and thrive following the current trajectory of environmental degradation, climate change, species extinction, and toxic pollution, but action has been insufficient to address our ecological crises (UNEP, 2012). There is widespread public awareness and concern about environmental issues, but an equivalent change in pro-environmental action remains elusive (Niester, 2010a; 2010b; Saad & Dunlap, 2000; Thompson, 2012). In Canada and the USA, for example, citizens fail to demonstrate a level of engagement and action in line with their awareness and concerns. Most Canadians (83%) feel water is Canada's most important resource and are concerned about its quality and availability, but nearly half knowingly engage in water-wasting and water-contaminating activities (Niester, 2010a). In the USA over the last decade, uptake rates of pro-environmental actions such as recycling, household energy reduction, the use of cloth shopping bags, and environmental activism have largely remained the same (Morales, 2010). Polls show that while 83% of Americans agree with environmental goals, only 16% self-identify as active participants in the environmental movement (Saad & Dunlap, 2000). Negative perceptions about "environmentalists", i.e., those who take action publicly to protect the environment (Kempton, 2004), may play a role in impeding such change. Recent research suggests that stereotypes and social stigmatization of environmentalists may limit others from associating with them and taking pro-environmental action (Bashir et al., 2013; Minson & Monin, 2012). What then are public perceptions of environmentalists? Is there a shared understanding of an environmentalist stereotype within the political, geographical, and cultural context of Canada specifically? I attempt to answer these questions by exploring public perceptions of environmentalist stereotypes, and how these perceptions vary by region, personal demographics, environmental attitudes, and voting behaviour. I draw on research from environmental psychology as a framework for analysis, honing in on social psychology principles pertaining to intergroup processes and stereotypes. My analysis is based on survey data using qualitative and quantitative methods. This research may contribute to psychology research on inter-group relations and stereotypes, and in particular on social processes in pro-

environmental behaviour. Further, in its applications, this research may offer insight into stakeholder conflict in decision-making processes, and resistance to environmental initiatives, thereby facilitating the design of environmental solutions with greater public support and participation.

1.1 Environmental Psychology and Environmentalism

Across communities, organizations, and disciplines there are myriad approaches and solutions to environmental issues. But overall, solutions have not kept pace with environmental degradation and its effects, and frequently public policy and collective action do not align with majority values and concerns. Many researchers have tackled the discrepancy between values and actions, offering glimpses into the complexity of this gap in a variety of contexts. Understanding and solving these limits cannot be addressed by one discipline or approach alone (Gifford, 2011). Psychologists Zelezny & Shultz argue that in order to make significant pro-environmental progress, collective effort is required across disciplines, thereby "using a broad knowledge base, the most creative ideas, and the most promising strategies" (Zelezny & Schultz, 2000, p. 367). Further, as many environmental problems are indisputably caused by human behaviour, addressing them requires the inclusion of social sciences (Zelezny, Chua, & Aldrich, 2000). Similarly, Gifford argues that while it is important to remove structural barriers to pro-environmental behaviour, these alone are unlikely to be sufficient, and psychological barriers must be considered as part of broader solutions to environmental issues. Many environmental problems are caused by an aggregate of human behaviour that requires macro-level change, but individual level processes at the scale of psychological analysis influence the success or failure of any policy, program, or intervention (Zelezny et al., 2000). Psychology offers a unique approach to many social issues, applying both an understanding of the complexities of contextual relevance, while also rounding out other disciplines and forms of research by providing empirical analysis of social phenomena (Abrahamse, Schultz, & Steg, 2016).

Environmental psychology draws on the traditional roots of psychology in theory, research, and practice, to better understand the interactions and influences between humans and the physical settings. The field considers ways in which built and natural environments change human experience and

behaviour, and ways in which humans affect these environments (Gifford, 2007). As such, the discipline seeks to improve built settings for human well-being, as well as improve human relationships with the natural environment (Gifford, 2007). Thus, within psychology, some researchers focus in particular on human processes in relation to issues such as environmental degradation and climate change. When paired with an explicit goal of promoting and furthering human care for the natural environment, this is sometimes referred to as Conservation Psychology (Clayton, 2009).

1.1.1 Environmentalism

Within psychology, the study of *environmentalism* has been defined broadly as "the processes associated with actions intended to lessen the impact of human behaviour on the natural environment", including psychological constructs such as values, attitudes, motives, and behaviour (Zelezny et al., 2000, p. 367). Accordingly, *pro-environmental behaviour* "consciously seeks to minimize the negative impact of one's actions on the natural and built world (e.g., minimize resources and energy consumption, use of non-toxic substances, reduce waste production)" (Kollmuss & Agyeman, 2002, p. 240). Stern has categorized pro-environmental behaviour into distinct sub-categories that seem to differ in intent and impact: environmental activism (i.e., active participation in rallies and organizations), non-activist behaviours in the public sphere (i.e., support for public policies, and other forms of environmental citizenship), private sphere environmentalism (i.e., purchase, use, and disposal of items that have an environmental impact), and other environmentally significant behaviour (e.g., systemic influences through organizations) (Stern, 2000, in Dono, Webb, & Ben Richardson, 2010). Clear delineations between the sub-categories have not been established empirically, and they are often merged, or only partially considered in study design (e.g., considering only one type of environmental action, such as 'green consumerism') (Dono et al., 2010).

Much of the vast literature exploring environmental engagement has focused on the connections between values and norms, and attitudes, intentions, and behaviour (Owen, Videras, & Wu, 2010). Environmental attitudes, defined as concern for the environment and environmental issues, have been extensively studied in relation to pro-environmental behaviour, with the earliest scales developed in the

1970s (Gifford & Sussman, 2012). Attitudes are a psychological construct often confused with values, and even personal norms, but each is importantly distinguishable and used differently in research and theory. Attitudes are thoughts, feelings, or behaviour intentions about a particular object and can be measured explicitly or implicitly (Breckler, 1984, in Gifford & Sussman, 2012). This object can include a person, place, entity, or idea. In contrast, values are broader than attitudes, and more culturally bound (e.g., equity). Personal norms, on the other hand, are internalized social norms that, through feelings of guilt, influence behaviour (Gifford & Sussman, 2012). Research has shown that attitudes can fluctuate over time, and that they are affected by numerous factors, including demographic factors such as age and income, political and religious factors, personal disposition and values, and experiential factors. Attitude research has also shown that environmental concern is strong worldwide, but does not clearly align with environmental action and vice versa, despite early and persistent expectations to the contrary (Gifford & Sussman, 2012).

The determinants of pro-environmental behaviour are often interrelated, but too complex to summarize in a single framework or diagram (Kollmuss & Agyeman, 2002). Kollmuss and Agyeman outline commonalities in a number of theoretical models from both psychology and sociology that explain some of the complexity in what influences whether or not people engage in pro-environmental actions. They outline three categories of factors: demographic factors, external factors (e.g., institutional, economic, social, and cultural factors), and internal factors (e.g., motivation, environmental knowledge, awareness values, attitudes, emotion, locus of control, responsibilities, and priorities). More recently, Gifford provided an overview of some of the most prominent psychological contributions to date toward an understanding of environmental, and in particular climate-related, inaction, which he refers to as "The Dragons of Inaction" (Gifford, 2011). He organizes the many psychological obstacles into 29 key 'dragons', in seven broad categories: limited cognition about the problem, ideological worldviews that tend to preclude pro-environmental attitudes and behaviour, comparisons with key other people, sunk costs and behavioural momentum, discredence toward experts and authorities, perceived risks of change, and positive but inadequate behaviour change. Each category and sub-category stems from a substantial

body of theory and research, worthy of its own attention. With regards to social barriers in particular, Gifford explains that social norms can both powerfully encourage and discourage pro-environmental behaviour, and that environmental decisions are subject to a sense of social risk, as individuals attempt to manage others' perceptions of their behaviour and character. Additionally, negative views of others, including a lack of trust and a sense that their views threaten personal freedom, can lead to resistance to advocated behaviours. Gifford emphasizes that these and all barriers can differ according to cultural context, and that further research is needed overall to continue to understand the barriers to pro-environmental behaviour.

1.2 Inter-Group Processes and Stereotypes

A wide area of research in psychology on stereotypes, prejudice, and inter-group relations is of growing interest in the exploration of barriers to pro-environmental behaviour. These theories and research are dominated by a social-cognitive approach, explaining and exploring these phenomena as brain functions that process and categorize information about our social (i.e., human) world (Nelson, 2005). Much of this research focuses on group affiliation and intergroup processes, as well as the value-based attitudes, emotions, and stereotypic judgments that elicit prejudice (Jackson, 2011). To date, there are only a small number of studies applying these theories to environmentalist groups.

Most humans (and nonhuman animals) are inclined to form groups, basic social structures that have immense benefits to survival and well-being (Nelson, 2005). Group affiliation can stem from a multitude of factors and similarities, including gender, ethnicity, family relations, power, skills and education (Nelson, 2005). While there are numerous benefits to group affiliation, there are also numerous downfalls (Brewer, 1999; Leyens et al., 2001). Prejudice arises from the preferences and perceptions we have about the groups to which we do and do not belong, in other words, our in-groups and out-groups (Nelson, 2005). Prejudice is a term to represent the variety of responses, positive or negative, that people have to others based on aspects of their identity or group affiliation. Regardless of whether groups are arbitrarily formed, or based on deep-seated values, ideals, or identity, we tend to create stereotypes about these groups, prefer the members of our in-groups and form closer ties to them, while rejecting members

of out-groups and reacting suspiciously to them (Nelson, 2005). While in-group bias may be adaptive from an evolutionary and practical standpoint, it can also lead to negative feelings and sometimes severe negative behaviour toward an out-group, especially when that group is perceived to threaten the in-group's values or well being (Nelson, 2005). Combinations of prejudice, discrimination, and inequality make up sexism, sexualism, racism, ageism, and other forms of negative intergroup processes (Jackson, 2011).

1.2.1 Value-Based Attitudes

Attitudes toward groups can be rooted in our beliefs about how another group upholds or threatens our own deeply held values, ideals, and norms. We develop *symbolic beliefs,* positive or negative perceptions about a group in relation to these values (Jackson, 2011). For instance, we may have very different symbolic beliefs about immigrants depending on how we value diversity as opposed to maintaining traditional cultural values (Jackson, 2011). Negative symbolic beliefs about a group are associated with negative attitudes toward that group (Jackson, 2011). In other words, symbolic beliefs are closely tied to other forms of prejudice, as well as discriminatory behaviour and actions (Jackson, 2011).

1.2.2 Emotions

Research has shown that even when the intellectual basis for prejudice (i.e., judgment) is defeated, heightened or negative emotional reactions to different 'others' may persist (Jackson, 2011). Explanations for these emotional responses include both neurological and social mechanisms. Social neuroscience has shown that exposure to people who are different from our selves, such as people of other ethnicities, often activates areas of the brain that generate feelings of fear and surprise (Jackson, 2011). These responses can be spontaneous and involuntary with no clear explanation and may lead people to "attribute their feelings to the other (e.g., "Something about that person makes me uncomfortable") rather than the self ("Something about my history makes me respond in this way") (Jackson, 2011, p. 12-13). Emotional response to people of a particular group can also be highly connected to dynamics of social life, resulting in different emotions toward the same group based on their relative social status or the social circumstances (Jackson, 2011). Sexism toward women, for instance, can be associated with very

different emotions depending on social standing: Sexism toward women in high-status careers may include feelings of hostility, whereas sexism toward women in supportive roles may include paternalistic emotions (Jackson, 2011). Interestingly, negative prejudice is not only associated with negative emotions toward a group, but also a lack of positive emotion, the latter of which may be associated with more subtle types of prejudice (Nelson, 2005).

1.2.3 Stereotypes

Stereotypes are beliefs about the attributes of members of a group and are highly related to prejudice toward both individuals and groups (Nelson, 2005). From a social-cognitive perspective, stereotypes arise from the way in which we take in, process and use information about the world around us, in other words, the categorization and mental models we have for the complex information in the world (Nelson, 2005). The mental models we sometimes have of people from a given group lead us to expect that all group members have similar characteristics, including interests, personality traits, and typical behaviours (Jackson, 2011). Stereotypes, both positive and negative, are often communicated and widely endorsed within a culture, and even those who do not believe in the accuracy of the stereotypes can typically identify their content (Jackson, 2011). We can see how this is true by considering the perceived interests, personality traits, and typical behaviours of people based on their gender, age, ethnicity, and sexual orientation. These generalizations can be descriptive or prescriptive, attributing characteristics that group members are perceived to have, or describing what characteristics they should have (Jackson, 2011). Further, although some people may seem non-prejudiced and believe stereotypes to be false, stereotypes can still significantly affect their perceptions and behaviours in response to other people and situations (Jackson, 2011). Thus there is a distinction between conscious and unconscious processes, known in the literature as explicit and implicit stereotyping, that contributes to stereotypes, prejudice, and discrimination. Although overt stereotyped attitudes have become increasingly unacceptable in many cultures, many stereotypes are still held covertly, thus continuing to affect attitudes and behaviours (Nelson, 2005).

Stereotypes and related social-psychological barriers can have personal, social, and behavioural implications. Studies show that for stigmatized groups (e.g., racial minorities, women, low-income individuals), stereotype activation impairs cognitive functioning of stigmatized individuals, and undermines their competence in the eyes of others (Croizet, Désert, Dutrevis, & Leyens, 2001; Spencer, Steele, & Quinn, 1999; Steele & Aronson, 1995). For example, field and experimental research has demonstrated that in the face of criticism, students rate female university instructors as less competent than male instructors, whereas after students are praised they rate both groups equally (Sinclair & Kunda, 2000). When faced with criticism, students are more likely to rely on stereotypes and disparage their evaluator, likely motivated by a desire to protect their self-view. Similarly, experimental research has shown that despite identical resume content, ratings of applicant competence and job suitability in real-world settings is significantly affected by perceived social group based on applicant names (i.e., *Are Emily and Greg more employable than Lakisha and Jamal?*) (Bertrand & Mullainathan, 2004). Further, stereotypes perpetuate social divisions as well as in-groups and out-groups (i.e., 'us-them' mentality) (Bigler, Jones, & Lobliner, 1997). This type of social categorization can significantly alter an individual's perception about members of an out-group, limit their willingness to interact with out-group members, and lead to a mental distortion of the information provided by members of that group (Bodenhausen & Lichtenstein, 1987; Judd, Ryan, & Park, 1991; Park & Rothbart, 1982; Rahn, 1993).

1.3 Environmentalism, Inter-Group Processes, and Stereotypes

Caring for the environment and taking action to protect it, environmentalists may seem like the leaders for pro-environmental action. But negative perceptions and an aversion to environmentalists may impede solutions to current sustainability problems. Recent research in psychology suggests that people resist social change because of negative stereotypes about the agents of change. Bashir et al. (2013) conducted a number of studies to explore stereotypes and affiliation with regards to activists, specifically feminists and environmentalists. Samples of university students and American MTurk participants completed a number of tasks, including Free Association questions, Likert-scale ratings, and experimental conditions varying by activist descriptions. Results suggested that there are common negative stereotypes

of activists, who are often perceived as militant and eccentric. Analysis suggested that these stereotypes and social perceptions resulted in participants' reluctance to affiliate with 'typical' activists and to engage in the activities they advocate. Interestingly, this research built on Bashir's earlier research, in which undergraduates at the University of Toronto were assigned to read about and then rate one of three types of environmentalists (Bashir, 2010). Participants rated environmentalists described as being more mainstream more favourably than environmentalists described as having more stereotypical traits (e.g., 'radical'). In subsequent research, Bashir followed up by evaluating perceptions of moral advocates (e.g., activists, whistleblowers, group critics). She found that although their actions were often successful in encouraging change within the group, moral advocates incur the cost of derogation from the group, due to the implied threat of their actions to the group's image and sense of morality (Bashir, 2014).

In a similar vein, people may be adverse to environmentalists because they expect environmentalists will judge them for their values and actions. Minson and Monin (2012) conducted two studies assigning American undergraduate meat eaters to experimental groups in which some participants were asked to rate how vegetarians would rate meat eaters. Participants were asked to complete Free Association and Likert-type measures. Results indicated that more than half of the meat eaters reported negative associations for vegetarians, and that negative ratings were exacerbated when participants were asked to think about how vegetarians would view their meat eating. These results suggest that people that participate in mainstream activities feel judged by morally-motivated minority groups, such as vegetarians (highly associated with environmentalism in this study). When they feel their moral identity is threatened, people are more likely to distance themselves from the threat by describing and rating divergent groups negatively. Minson and Monin argue that "any group departing from the status quo on claims of moral principle runs the risk of giving this impression… that their personal choices are a public condemnation of others' behaviour" (p. 1).

Other perceptions of environmentalists may affect people's willingness to associate or identify with the group, especially through publicly visible pro-environmental behaviour. Specifically, stereotypes about environmentalism as feminine may help explain the gender gap in pro-environmental behaviour,

specifically why women on average report higher levels of environmental concern and engagement than men. Across a range of studies in multiple countries with university samples, MTurk participants, and field participants, researchers have found a cognitive association, across participants and genders, between femininity and pro-environmental behaviour, affecting perceptions of both self and others (Brough, Wilkie, Ma, Isaac, & Gal, 2016). Using both implicit and explicit experimental measures, results indicated that men's (but not women's) preferences for green products and willingness to engage in pro-environmental behaviours were negatively affected by this stereotype. The researchers suggest that masculine branding and affirmation can help overcome reluctance to engage in pro-environmental behaviour (Brough et al., 2016). However, as this research focused largely on green consumerism and social marketing, further investigation of this topic should include participants' perceptions and involvement in other types of pro-environmental behaviour to determine whether this stereotype extends beyond domains often associated with women (i.e., shopping and domestic activities). Broadly, this study contributes to a growing research area pertaining to identity and sustainability. Other studies have found that identity linked products are more likely than neutral products to be recycled than thrown in the waste (Trudel, Argo, & Meng, 2016), and consumer behaviour can be influenced by exposure to green products that trigger a moral sense of self (Mazar & Zhong, 2010).

Importantly, the extent to which people ascribe to environmental norms and act pro-environmentally is highly influenced by their identification with a particular reference group (Goldstein, Cialdini, & Griskevicius, 2008, in Brough et al., 2016). Group identification significantly affects individual values and perceptions of our social and physical environment (Kahan, 2010). Our social connections are a strong emotional motivation to align with the views of others in our group, and these connections help explain why people's responses to environmental messaging can be so varied and polarized (Kahan, 2012; Kahan et al., 2012). For example, the framing of science communication can elicit particular interpretations and reference points for interpreting an issue, and can thus significantly affect the support of individuals in the public. Results of an American mail survey with the public indicated that the strength of participants' self-reported ranking as environmentalists was associated with

their support for issues such as environmental conservation and climate change (Sorensen, Clark, & Jordan, 2015). People who ranked highly as environmentalists responded more favourably to environmental goals when they were framed as environmental quality or ecosystem services, but not to environmental security. In contrast, environmental security was the framing more supported by those who did not self-rank highly as environmentalists. Thus, effective communication, using thoughtful framing appropriate for the intended audience, is important for engagement in public policy, funding, decision-making, and other priorities (Sorensen et al., 2015). Similarly, the sense of morality held by a particular group can influence how they respond to the framing of environmental issues. Research in the USA demonstrated that the level of environmental concern of liberals and conservatives in response to environmental messages depended on the moral terms in which the issues were communicated (Feinberg & Willer, 2013). Specifically, liberals were more responsive to framing in relation to contemporary environmental discourse, whereas reference to purity resonated primarily with conservatives. The authors emphasize that readers may perceive the source of the message as more similar to them depending on the framing used, thus influencing associated environmental attitudes. Self-identity dimensions are also important for understanding other pro-environmental intentions. A study amongst Italian participants indicated that personal identity significantly influenced intention to recycle, when other variables were held constant (Mannetti, Pierro, & Livi, 2004). Specifically, researchers included a measure of participants' perceptions that their identity was similar to the 'identity of typical recyclers'.

Beyond group identification per se, research has shown that self-construal, how an individual perceives and construct their definition of self in relation to others, seems to influence thoughts, feelings, and motivations about the environment. Arnocky, Stroink, and DeCicco (2007) demonstrated that, in comparison to an independent self-construal, an interdependent sense of self as connected to close others predicts resource cooperation. Further, a sense of self that incorporates a connection with all forms of life, a metapersonal self-construal, predicted participants cooperation to share resources, self-reported pro-environmental behaviour, and biospheric environmental concern. As part of a three part attitudinal structure outlined by Stern and Dietz, biospheric environmental concern is characterized by attitudes that

humans are a part of nature and all species have a right to exist (Stern & Dietz, 1994). In comparison, altruistic environmental concerns are those based on the goals or benefits to humans. Arnocky, Stroink, and DeCicco found that an independent self-construal is most highly correlated with egoistic environmental concerns, those relating to concern for self in relation to the environment. Schultz (2001) also found evidence that concern for others, whether humans, plants, or animals, is highly correlated with a cognitive representation of the self that overlaps with others. Drawing on large sample sizes across ten countries, this research has provided substantial evidence for environmental concern divided into these three categories, which appear to stem from distinct underlying values (Schultz, 2001). The three forms of self-construal and environmental concern align in outlining concern for the self, other people, or all living things. Arnocky et al. emphasize that all types of self-construal and environmental concern exist within a given culture, and often within an individual. The predominant construal and concern can be dependent on the contextual factors that make one sense of self and set of attitudes more or less salient (Arnocky, Stroink, & DeCicco, 2007).

From a similar perspective, a person's moral circle, the in-group with whom they grant moral concern, provides motivation for pro-environmental behaviour across various contexts, including behavioural intentions, support for environmentally beneficial policies, and monetary allocation to pro-environmental initiatives (Bratanova, Loughnan, & Gatersleben, 2012). Specifically, the larger the moral circle, the more participants felt a moral imperative toward the environment (i.e., 'natural entities'). As a framework for delineating in- and out-groups, the moral circle can expand and contract in ways that influence decisions about the treatment of others (Laham, 2009, in Bratanova, Loughnan, & Gatersleben, 2012). Interestingly, individuals with larger moral circles are more likely to express moral concern for out-group members (Reed & Aquino, 2003, in Bratanova, Loughnan, & Gatersleben, 2012). Further, the moral circle tends to expand across an individual's lifespan (Bloom, 2004, in Bratanova, Loughnan, & Gatersleben, 2012), and across human history (Singer, 1981, in Bratanova, Loughnan, & Gatersleben, 2012b). The authors suggest that, unlike specifically targeting values and identity that are subject to psychological resistance, the moral circle offers more flexibility as an approach to promoting pro-

environmental behaviours that affect a wide range of human and beyond-human entities (Bratanova, Loughnan, & Gatersleben, 2012).

Though group identities and social circles can be relatively stable, Owen, Videras, and Wu (2010) demonstrate that identity is contextual and is influenced by community characteristics. When controlling for individual pro-environmental behaviours, political views, and socio-economic characteristics, they found that people were much more likely to self-identify as strong environmentalists in communities where there was a high proportion of the population with post-graduate degrees, or significant community support or rejection of environmental values and behaviour, especially when community political engagement was high. The authors explain that this pattern of results may be explained both by a tendency for people to self-identify with a prominent group that shares their values, and by a tendency to self-identify with characteristics that are more salient due to their distinctiveness in comparison to a prominent group. Thus, polarized communities, either supportive or dismissive of environmental values and initiatives, have more self-claimed environmentalists than moderate communities. Interestingly, Owen et al.'s research also suggests that pro-environmental behaviours do not determine identity as an environmentalist, but that community composition is an important component in understanding environmental identity and behaviour (Owen et al., 2010).

Pro-environmental action can occur regardless of identity or values, for any number of motivational or structural reasons, but identity can also have a significant impact on environmental behaviour (Whitmarsh & O'Neill, 2010). Results of a postal survey from the UK public indicated a strong relationship between environmental identity, defined using a Pro-Environmental Self-Identity Scale (described in methods below), and intention to engage in a wide range of pro-environmental behaviour, including intentions for waste reduction, carbon offsetting, water and energy conservation, and eco-shopping and eating (Whitmarsh & O'Neill, 2010). However, intentions to engage in pro-environmental travel and political behaviours were not significantly predicted by identity. Overall, analysis indicated that identity more strongly predicted intentions for pro-environmental behaviour than attitudes or values, even when structural constraints were taken into account (e.g., income). Other research indicates that the

strength of the impact that group identification has on pro-environmental behaviour may depend on the visibility of that behaviour, and the desirability of the social identity associated with either participating or abstaining (Brick, Sherman, & Kim, 2017). American participants completed surveys measuring environmental identity, visibility of behaviours, and self-reported environmental behaviour. Controlling for behaviour difficulty and effectiveness, as well as personal attitudes and political identity, results indicated that as the pro-environmental behaviour was more visible the more influenced it was by level of environmentalist identity. As the authors summarize: *When an environmentalist considers a pro-environmental behavior such as carrying reusable grocery bags, being observed by others may motivate signaling the valued group membership and may increase behavior ("green to be seen"). When an anti-environmentalist considers a pro-environmental behavior that signals an unwanted social identity, being observed may lead to less behavior ("brown to keep down").*

Identity serves to both differentiate oneself from others, and align with the social groups to which one belongs (Whitmarsh & O'Neill, 2010). But identity is multi-dimensional, and includes the navigation of personal and social aspects that are associated with many social categories (e.g., gender, race, age, etc.) (Owen et al., 2010). Social context can significantly influence how the self and others are perceived as part of various groups. Whichever identities are most salient can have significant implications for individual attitudes and behaviour in a given context (Owen et al., 2010). One study provides evidence that individual behaviour change can result from subtle changes to group context (Rabinovich, Morton, Postmes, & Verplanken, 2011). This context can heighten salience of group membership or inter-group differences, and in these cases people are especially likely to stereotype themselves in line with an in-group (as a group member rather than an individual) and act according to in-group values and norms. British public and university students, completed surveys with experimental manipulations of out-group comparisons. Results indicated that participants reported shifting values, self-identity, and environmental intentions depending on whether the comparison group was understood to be generally more or less pro-environmental than the in-group. Specifically, in comparison to a group that is perceived to be less environmental, participants reported both stronger pro-environmental behaviour intentions and actual

behaviour, as well as a stronger inclusion of environmental values as central to their self. In contrast, in relation to a more environmental out-group, participants reported lower scores on all these measures, and completely disengaged on actual behaviour.

1.4 The Current Study

Irrespective of individual environmental attitudes, social context and perceptions of environmentalists appear to significantly affect pro-environmental behaviour and engagement. Some research suggests that perceptions of environmentalists are primarily negative and may impede environmental participation (e.g., Minson & Monin, 2012; Bashir et al., 2013). Importantly, many past studies assessing perceptions of activist and environmentalist groups have included limited information about in-group perceptions. Bashir et al. (2013) acknowledge that their studies did not consider participants' own identity as activists, recommending that future research might examine the effect of participants' identity in relation to their perceptions of stereotypes. The current study builds on previous research by intentionally including representation from the environmental community and by using a cross-sectional design (at a single point in time) with naturally occurring groups in the Canadian population (c.f. Hine, Kormos, & Marks, 2016). As stereotypes are mental models communicated and endorsed within a culture, and environmentalism encompasses significant historical, geographical, and political nuances, this study of social perceptions is situated within a specific cultural context. This research explores the prevalence and content of environmentalist stereotypes, and considers how perceptions vary according to environmental attitudes, self-identity as an environmentalist, and demographic variables such as age, gender, and province of residence. It is hypothesized that there are identifiable stereotypes of environmentalists amongst the Canadian public and that those stereotypes include more positive characteristics than suggested previously in related research.

Chapter 2: Research Methods

To establish the existence and content of common stereotypes of environmentalists, and how they vary within the Canadian population, this study drew on research methods used in social cognitive psychology, particularly the area of stereotypes, prejudice, and intergroup dynamics. Participants from the Canadian public completed survey questions about the following topics: perceptions of environmentalists; beliefs about Canadian society; environmental attitudes and identity; and demographic information. Quantitative analysis (parametric statistics) and qualitative analysis were used to answer research questions. This research incorporated a between-subjects design of naturally occurring groups, a large sample size and triangulation of study methods. The following specific research questions and hypotheses were pursued:

Research Questions

1. What are the words and themes about environmentalists commonly identified by the public in Canada?
2. Are there common stereotypes of environmentalists in Canada? If so, what is the content of those stereotypes?
3. How do perceptions of environmentalist stereotypes vary according to individual differences? Are there significant differences depending on:
(a) Participant self-identification as an environmentalist (b) Participant environmental attitudes (c) Participant political affiliation, and other personal and demographic variables
4. What is the relationship between environmental attitudes and: (a) Identity as an environmentalist? (b) Reluctance or embarrassment to be identified as having strong environmental values?

Table 1. Research questions

Hypotheses

1. There are words and themes commonly identified among the general public in Canada. Participants who self-identify as environmentalists are more likely than non-environmentalists to identify positive words in the Free Association task.
2. There is clear content of stereotypes of environmentalists commonly identified among the general public in Canada. These stereotypes include both negative and positive attributes.
3. The content of environmentalist stereotypes will not differ significantly across any of the following variables:
(a) Stereotype content will not differ significantly as a factor of self-identity as an environmentalist. (b) Environmental attitudes are not predictive of the content of environmentalist stereotypes. (c) The pattern of content for environmentalist stereotypes will not differ across age or gender. However, urban (vs. rural) participants, and those with left-leaning political affiliation (vs. right-leaning) will identify a more favourable view of environmentalist stereotypes[a], and will report stronger environmental identity.
4. Environmental identity will only partly predict environmental attitudes, and vice-versa. Environmental identity will negatively correlate with embarrassment to be identified as having strong environmental values.

Table 2. Research hypotheses

[a] i.e., higher values for warmth, competence, and status; lower values for competition on the Stereotype Content Model

2.1 Participants & Recruitment

2.1.1 A Canadian Context

The sample for this research was recruited from the general public in Canada, with a particular focus on British Columbia (BC). From a practical standpoint, as this research project is housed within a graduate program at the University of British Columbia, participant recruitment is especially feasible through the researcher's (and supervisory committees') existing networks within the province of BC. Additionally, British Columbia is reputed to have a higher-than-average proportion of environmentally-minded citizens with associated lifestyles, as reflected in policies (e.g., BC carbon tax; Vancouver's Greenest City Initiative), a high concentration of careers and non-profit funding for environmental and conservation initiatives, and a prominent history of environmental activism especially in relation to logging in Clayoquot Sound on Vancouver Island and Haida Gwaii on the north coast of the province (sometimes known as "the Queen Charlotte Islands") (e.g., McKenzie, 2002). Known for dramatic

mountain and coastal landscapes, large iconic mammals such as orca and spirit bears, BC has also seen a high concentration of recent national tensions regarding the proposed development of oil (bitumen) pipelines from the oil sands in Alberta. Polls have shown approximately 50% of British Columbians in opposition to the Kinder Morgan TransMountain pipeline expansion proposed for the south coast (Vanderklippe, 2011), and 60% in opposition to the proposed Enbridge Northern Gateway construction in the north ("Your insights on the Northern Gateway pipeline", 2013). Opposition to Northern Gateway (NG) in particular resulted in unprecedented coalitions of organizations throughout the province, including statements of official opposition from numerous municipalities, organizations, and over 130 First Nation bands on unceded traditional territories (Elias & Blundell, 2013; *Save the Fraser*, n.d.; Tait, 2010). A high level of public engagement in anti-pipeline activities was evident: Public rallies were numerous and well attended; and 96% of written submissions to the Joint Review Panel, the national body responsible for reviewing the project, were in opposition to NG (Shearon, 2013).

The conflict over Northern Gateway has become a defining environmental issue not just in BC, but also for Canada (c.f. Le Billon & Vandecasteyen, 2013). Resource extraction and tar sands development in particular are a source of contention over national interests, not least of which are energy distribution, jobs, and climate change commitments. Initial response to public outcry over the project included the vilification of project opponents by then Conservative Minister of Natural Resources, Joe Oliver, stating in an open letter (Oliver, 2012): *"Unfortunately, there are environmental and other radical groups that would seek to block this opportunity to diversify our trade. Their goal is to stop any major project no matter what the cost to Canadian families in lost jobs and economic growth… These groups threaten to hijack our regulatory system to achieve their radical ideological agenda..."* This response coincided with a period that, for many, felt like a hostile dismantling of environmental protection and environmentalism across the country, as the federal government initiated audits of many environmental organizations, weakened regulatory processes and legislation for water, species-at-risk, fisheries and other domains, and dismantled major national oversight committees (Dupuis, 2013; Weber, 2015). Approval of Northern Gateway was eventually overturned with the election of a new Liberal government; however

many pipeline proposals remain in place across the country, leading many to question how the government intends to meet climate targets and if the country will ever break its reliance on fossil fuel development (Boutilier & Campion-Smith, 2016). While there are countless regional and national environmental issues across the vast Canadian landscape, few in recent years have garnered the public engagement, contention, and media attention elicited by proposals for oil sands pipelines.

2.1.2 Research Sample

To better understand perceptions of environmentalists in this context, this research sought community members who represent diverse perspectives and experiences. As compared to student samples, community samples are thought to improve the external validity of findings (Henrich, Heine, & Norenzayan, 2010). The representation of various ages and demographic characteristics was intended to reflect the diversity of the Canadian population and to offer statistically appropriate representation between study conditions based on individual differences including environmental attitudes, geographic location, and political affiliation. In order to ensure adequate sampling to compare participants according to varying attitudes and identities, people who participate in the environmental movement and are likely to identify themselves as environmentalists were targeted for recruitment. These included people who are members of environmental organizations or who are employed in environmental careers, such as working for an environmental consulting firm, or in an Environmental Department at a University.

Data collection was conducted both in-person and online from July to October 2016. A total of 489 eligible participants completed a research survey and provided sufficient information for inclusion of their responses in analysis. Participants who were 18 years or younger, who neither lived in Canada nor were Canadian citizens, were not eligible to complete the survey, as outlined on the consent page prior to participation. Their responses were excluded from analysis. The results from participants who did not complete an adequate portion of the survey were also removed from analysis (further details below in *Chapter 3: Data Cleaning*).

2.1.3 Pilot and In-Person Recruitment

A pilot run of the survey with ten graduate students and faculty at the University of British Columbia and Simon Fraser University in June 2016 resulted in minor modifications to survey instructions and format. During these pilots, participants spent on average 12 to 15 minutes in total to review the consent form and complete the survey. One of these completed surveys was included for analysis in the final data (final in-person survey count = 15), as requested by one of the UBC pilot participants.

Fourteen in-person surveys were collected on July 13 and 16 on Salt Spring Island in British Columbia in public settings outside a coffee shop and at the public market. Salt Spring Island was selected as a community known to include a large proportion of environmentally-minded individuals, evidenced for example as a community within the electoral district that has repeatedly elected the leader of the federal Green Party, Elizabeth May.

Outside of a coffee shop, with permission from management, a study table was set up on Wednesday, July 13 from noon to 3pm. Signage at the table invited people to participate in a research study and included the UBC logo. It read: "Seeking diverse public perspectives for a 10-minute research survey. Enter to win $50". This sampling strategy yielded limited foot traffic, attention, and only two participants. There were approximately 60 people in the vicinity as patrons of the café and surrounding businesses, but they were not approached directly.

Next individuals were directly approached at the public market on Saturday, July 16 between noon and 5pm and asked if they would be interested in participating in a research study. Approximately 30% of people approached agreed to participate in the study. A few of the people who did not participate asked for email contact to complete an online version at a later date; however they did not follow up. Potential participants were told that participation was voluntary and would involve completing a series of short questionnaires about environmental values and beliefs. They were also informed that the survey would take approximately ten minutes to complete and that they were invited to enter a prize draw for $50. Interested participants were presented with the consent cover letter, which described the potential

risks and benefits of participation in greater detail, and which indicated that they could withdraw participation at any time without consequence, prior to submission of their responses. Because participation is anonymous, once responses were submitted it was not possible to remove them from the results. Participants had as much time as needed to consider and discuss any questions about the information just read. Participants were then provided with study materials, a clipboard and pen for completion of the survey at the site of recruitment. After receiving the study materials, participants were provided with time and space to complete the survey before the researcher returned. Participants were then provided with an entry for the prize draw, which included an option to receive additional information by email about study findings, as well as some small chocolates as a thank you for their participation. All identifying information was kept separate from submitted surveys, and thus responses were anonymous. Participants were given the option to take a copy of the consent letter, as well as the debrief note. The debrief note details the specific purpose of the study, provides more information about the study rationale and expected findings, and lists contact information for the researchers and the UBC Office of Research Ethics.

In-person recruitment at the start of the study period provided an immediate sense of participant response to the surveys, particularly the length and content, before wider distribution. Due to the success of online study recruitment, further in-person recruitment was not pursued.

2.1.4 Online Recruitment

Participants were also recruited online via email and social networking sites using a snowball method, and directed to an online version of the survey created with FluidSurveys through UBC Surveys[1]. Though probability sampling (every member of the population has an equal chance of selection) is ideal to maximize the external validity of the study results, it is not always feasible. Non-probability sampling, including snowball method, can be a desirable research method for determining whether a psychological phenomenon exists, or to identify situational or underlying processes in relation to the phenomenon of

[1] This data is housed on Canadian servers and thus subject to Canadian privacy laws.

interest, especially when methodological flaws are clearly outlined (Hine et al., 2016). This recruitment method was used to obtain a sample from diverse geographical regions in Canada, and that includes a large proportion of environmentalists (for comparison to the general public, as per research questions). The researcher emailed contacts from her existing personal and professional networks, including environmental networks. Emails invited contacts to complete the survey and to share it amongst their connections both broadly in the public, and in the environmental field or environmental movement (i.e., employees and citizens) in Canada. Recruitment material clearly indicated that the researcher had no expectations of participation from their contacts, that they would not know if contacts declined to participate, and that survey submissions are anonymous. The researcher also shared the online link and information about the survey via social media sites, including Facebook, LinkedIn, and Twitter. In consideration of the "Draft BREB Guidelines for Research using Social Networking Sites" (Ruiz, 2012), this information did not identify any individual participants, but did provide a notice and link for anyone wishing to participate, with the option to pass on the invitation to others[2]. Recruitment materials (e.g., emails) and scripts for these methods requested that when sharing the link participants not share information about their own participation, detailed information about the questions in the survey, or the contact information of potential participants. The materials suggested that when sending invitations via email, participants might copy and paste study information (i.e., not forwarding) and use blind carbon copy (i.e., bcc).

Recruitment material for the online survey indicated that study researchers were seeking a diversity of perspectives amongst the Canadian public in response to questions about environmental values and beliefs. The content indicated that participation is voluntary, confidential, and anonymous, and would involve completing a series of short questionnaires. Participants were informed about the amount of time involved ("approximately 15 minutes" – extended due to observed completion time in-person on Salt Spring Island) and the opportunity to enter a prize draw. Participants had access to the online survey,

[2] Some participants chose to comment on these Internet sites about their own participation.

which mirrored the in-person surveys, at their own convenience, at the time and location of their choosing. Upon accessing the online link, the first page of the survey presented the consent cover letter, which described the potential risks and benefits of participation in greater detail, the purpose of the research, and asked that they contact the researchers if they have any further questions (contact information provided). The form indicated that submission of the survey implied consent. Upon consent, participants proceeded through an additional nine pages of instructions, survey questions, and information. Upon submission of the survey, or withdrawal of participation as applicable, participants were directed to a second survey link with the option to provide their contact information to be entered in the prize draw for $50, and/or to receive a copy of the consent letter and information about study results, once available. Contact information was collected separately from survey responses in order to ensure anonymity of survey data. Contact information was provided by 302 people through this online survey, for one or both of the reasons mentioned above. Participants were also provided with a short debriefing summary to explain the purpose of the study, and it also provided them with the option to pass on the survey link to their contacts via email or social media.

Given the nature of the online snowball recruitment method used in this study it is not possible to report on response rate. However, as recorded through UBC Surveys, 657 people accessed the survey link for this study, with a completion rate of approximately 72% and an average completion time of 20 minutes, 28 seconds (20.00.28). Incomplete responses included no responses whatsoever, to only partial completion of the survey. It is unclear whether some people may have accessed the survey, but later returned to the link to complete the survey as a new user. Further, there were 49 occasions of survey access from countries outside of Canada. Some of these individuals would not be eligible to complete the survey, as outlined on the consent form prior to survey participation. Of participants whose data was included in the final analysis (N=489), the following referrals were recorded through UBC Surveys: 5 through LinkedIn; 222 through Facebook; 29 through email; and 15 in-person surveys. There were 218 referrals listed directly through UBC Surveys, which unfortunately does not provide details informative about the recruitment method amongst these participants.

The winner of the $50 prize was drawn on November 2nd, 2016 and prize money was allocated via Interac E-transfer on that date. Because the goal of recruiting is to obtain a representative sample, this small form of compensation can be considered beneficial to increase the response rate and reduce response bias. Nevertheless, this compensation may have resulted in a slightly higher response rate from participants in the lower half of the socioeconomic spectrum of our intended sample.

2.2 Measures & Procedure

Research materials consisted of an eight-page survey (nine-page online) that included questions about perceptions of environmentalists, beliefs about Canadian society, environmental attitudes, and demographic information (Table 3, Appendix A). The majority of study questions were drawn directly from published psychological scales with established validity and reliability.

Independent Variables for Analysis	**Operationalized as**
Self-Identity as an Environmentalist	• Pro-Enviro Self-Identity • Enviro Identity Questionnaire
Environmental Attitudes	• New Ecological Paradigm • (System Justification)
Personal Demographics	• Age • Gender • Politics • Province • Municipality/Region
Dependent Variables for Analysis	**Operationalized as**
Stereotype Content	• Stereotype Content Model

Table 3. Conceptual summary of research design for quantitative analysis

The survey opened with a Free Association task, followed by: the Stereotype Content Model; the revised New Ecological Paradigm (NEP) scale, combined with the Pro-Environmental Self-Identity scale; and the System Justification scale (SJ). These scales were counter-balanced to reduce order effects, in other words, to reduce the likelihood that study outcomes are influenced by the order of the series of scales (Sarafino, 2005). Counter-balancing of these sections of the survey resulted in six versions of the paper survey, administered at random to any individual participant (Table 4). Similarly, online participants received a random order of the same scales. Survey participants then completed demographic questions and additional questions measuring their environmental participation and identity. An

additional scale, in development within the CHAN's research group at UBC, was included to measure relational values. Finally, the survey closed with a comments section for participants who wished to include notes about the survey content or topic. Results of the Free Association task were evaluated through qualitative analysis. For the remainder of the study measures, the significance of group differences and study effects were analyzed using statistical software (SPSS) to complete recognized statistical tests, including correlations, t-tests, and analyses of variance (ANOVAs).

Survey Version						
2.1	1	2	3	4	5	6
2.2	1	2	4	3	5	6
2.3	1	4	3	2	5	6
2.4	1	4	2	3	5	6
2.5	1	3	2	4	5	6
2.6	1	3	4	2	5	6

Table 4. Varying order of survey scales, 2, 3 & 4 counter-balanced

Scales:

1. *Free Association*
2. *Stereotype Content Model*
3. *New Ecological Paradigm & Pro-Environmental Self-Identity*
4. *System Justification*
5. *Demographics & Environmental Identity*
6. *Relational Values, modified and in development*

2.2.1 Free Association

All versions of the survey, both in-person and online, commenced with a Free Association task in which participants were asked: *Off the top of your head, list five words that come to mind when you think of: people who have strong environmental values and who take actions to protect the environment*. Free Association tasks are open-ended survey questions and can be used to identify traits associated with a group (e.g., Bashir et al., 2013). Rather than counter-balancing this item across versions of the survey, it was consistently the first task so as to elicit responses relatively unaffected by the content of the rest of the survey, particularly any suggestion of potential stereotypes of environmentalists. It is common for open-ended questions to appear before closed-ended (e.g., Likert-scale) questions in a survey as they are the most broad and the question structure does not restrict the participant to a particular point of view (Sarafino, 2005). As such, participants responding to open-ended questions may provide information not

yet considered by the researchers, information that can be especially useful for relatively unexplored research topics (Sarafino, 2005). A Free Association task was used for example by Minson & Monin (2012), who asked undergraduates to generate words that they associate with vegetarians, and by Bashir et al. (2013), who asked American participants via Amazon's Mechanical Turk to generate traits characteristic of 'typical' feminists and 'typical' environmentalists. Unlike Bashir et al., instructions in the task for the current research did not include the term 'environmentalist' so not to limit responses to the term itself and its connotations. The broader definition used in this study was intended to elicit responses that relate to people who hold particular values and take particular actions, especially as identification as an environmentalist can be highly variable between individuals and across situations. However, for the purposes of this thesis dissertation, 'environmentalist' is used to refer broadly to the study group of interest, that is: *people who have strong environmental values and who take actions to protect the environment*.

2.2.2 Stereotype Content Model

The Stereotype Content Model (SCM), created by Fiske and colleagues (Fiske, Cuddy, Glick, & Xu, 2002), describes traits and beliefs about social groups. The scale has been used extensively with populations worldwide to study stereotypes, resulting in a well established and reliable research tool, and comparisons of stereotypes across diverse social groups in a variety of societal contexts (Cuddy et al., 2011). By measuring perceptions of Warmth, Competence, Status, and Competitiveness, the SCM provides a picture of both the stereotype content and relative social structure for a group.

Cuddy et al. (2011) argue that stereotypes originate in a human need to identify friends and foes, and to navigate social hierarchies and competition for resources. According to the Stereotype Content Model (SCM): (1) stereotype content varies along dimensions of Warmth (e.g., good-natured; sincere), and Competence (e.g., confident; intelligent); and (2) stereotypes are closely linked to social structure, measured through perceived Status, and Competition between groups. This approach has demonstrated that group stereotypes are multi-dimensional and multi-valent, often containing both relatively positive (or proficient) and relatively negative (or inferior) evaluations. Mapping the dimensions of Warmth and

Competence provides four quadrants in which to compare perceived traits of social groups in somewhat predictable ways (see Fiske et al., 2002). Groups perceived to be high in Warmth and low in Competence are typically liked but not respected (e.g., traditional women; elderly), whereas groups perceived to be low in Warmth and high in Competence (e.g., Asian Americans and other "model minorities" in the USA; non-traditional women such as career women and feminists) are typically seen as 'threateningly competent and untrustworthy' (Cuddy et al., p. 4). Thus, social structure is shown to link to stereotype content, wherein "perceived Status predicts Competence stereotypes and perceived Competitiveness predicts (lack of) Warmth stereotypes" (Cuddy et al., p. 2).

In this study, participants were asked to rate on a five-point scale (1 = *not at all* to 5 = *extremely*) the extent to which they believe each SCM item (e.g., sincere) is characteristic of *people who have strong environmental values and who take actions to protect the environment* (Table 5). Additional characteristics associated with environmentalists, identified in past research and literature about environmentalists, were included in this study as scale items in the SCM[3]. These items are of particular interest because of their relevance to the group of interest, as indicated in related research. This selection included some of the most frequently mentioned words listed by American participants on Amazon Mechanical Turk to describe 'typical' environmentalists, including: unhygienic, eccentric, over-reactive, forceful, irrational (Bashir et al., 2013). Similarly, the list included some words listed by American undergraduate participants as associated with vegetarians (often described as 'environmentalists'), including: judgmental, self-righteous, and immoral (Minson & Monin, 2012). In survey design, these additional characteristics were tentatively categorized into the existing SCM constructs for Warmth, Competence, and Status (Table 5). In addition to measuring Warmth, Competence, and Status, this study included three questions from the SCM to measure Competition between the target group and other

[3] It is important to note that while these additional items are of particular interest in this study, the modification of an existing scale can sometimes compromise the established reliability and validity of its original content. Reliability values are reported for both the original and modified scale components during analysis, but interpretation of results may not be directly comparable to other studies using the original SCM scale.

groups, rated on a five-point scale (1 = *strongly disagree* to 5 = *strongly agree*). As common in studies using this scale, instructions for all sections of the SCM indicated: "*We are not interested in your personal beliefs, but in how you think the general public in Canada view these individuals on average*". This social distancing reduces social desirability concerns as participants can be reluctant to honestly share their own views in prejudice research. Further, the intent of this research was not to measure individual beliefs, but how participants perceive a cultural stereotype of a particular group (Cuddy et al., 2011; Fiske et al., 2002).

Traits & Predictors (Composite Scores)	**Original Items**	**Added Items**
Warmth	Friendly, well-intentioned, trustworthy, warm, good-natured, sincere	Forceful, aggressive, immoral, judgmental, self-righteous
Competence	Competent, confident, capable, intelligent, skillful	Irrational, over-reactive
Status	Prestigious, economically successful, well-educated	Unhygienic, eccentric, high status
Competition	As viewed by Canadians in general, if these individuals get special consideration (such as preference in decision processes), this is likely to make things more difficult for the general public. As viewed by Canadians in general, resources that go to these individuals are likely to take away from resources of the general public. As viewed by Canadians in general, the more power these individuals have, the less power the general public are likely to have.	N/A

Table 5. Original and added items on the Stereotype Content Model

2.2.3 New Ecological Paradigm (Revised) and Pro-Environmental Self-Identity

The revised New Ecological Paradigm (NEP) is a self-report measure of Environmental Attitudes (EA) containing both positively and negatively worded items (i.e., balanced scale to increase reliability) (McIntyre & Milfont, 2016). The scale measures the degree to which people view humans as separate or a part of nature (ecological worldview) (Dunlap, Van Liere, & Mertig, 2000). More specifically, subscales on the NEP indicate participants' beliefs regarding: limits to growth; anthropocentrism; the fragility of

nature's balance; exemptionalism, and the possibility of an eco-crisis (Hawcroft & Milfont, 2010). Although the scale comprises these five facets, only a single overall average for the 15-items is typically used in research as it is often shown to have stronger reliability than the separate subscales (McIntyre & Milfont, 2016). The NEP is used widely across disciplines and cultures as a valid and reliable indicator of environmental attitudes (Hawcroft & Milfont, 2010). It is the most commonly used measure of EA (McIntyre & Milfont, 2016). However, a meta-analysis of NEP scale use across 69 studies, 139 samples, and 58,279 participants, indicates that there is wide variation in how the scale has been used and modified. These variations are concerning as they significantly affect how participants score on the scale, thus limiting the accuracy and comparability of results across studies (Hawcroft & Milfont, 2010). These variations include: the wording of scale items; the number of questions; the response format, such as the type of Likert scale provided; text, questions, or other context presented before or after the NEP scale questions; sample size and composition; reporting details of sampling and analysis; and so on. To maximize scale reliability, the comparability of NEP results across studies, and control for other factors that may affect results, this research adheres to most of the recommendations for standardized use of this scale, as outlined by Hawcroft and Milfont. Specifically: the use all 15 items on the revised NEP Scale; the use a 5-point Likert response format (1 = *strongly disagree* to 5 = *strongly agree*); reported details about the scale variation used, sample characteristics and scale analysis, to provide context and interpretation of results (p. 151). Wording on three scale items (10, 11, and 15) varies from that presented in Dunlap et al.'s 2000 revision of the scale. Used in the present research is the wording: *Human destruction of the natural environment has been greatly exaggerated* (compared to: The so-called "ecological crisis" facing humankind has been greatly exaggerated); *The earth has only limited room and resources* (compared to: The earth is like a spaceship with very limited room and resources); *If things continue on their present course, we will soon experience a major ecological disaster* (compared to: If things continue on their present course, we will soon experience a major ecological catastrophe).

Appended to the NEP for the purposes of this study is the Pro-Environmental Self-Identity scale (PESI), developed as a reliable measure of participants' identification as an environmentalist (Whitmarsh

& O'Neill, 2010). This scale has been used in conjunction with the NEP as it is considered to measure a construct separate from pro-environmental values. Arguing that there is still much to be done to investigate pro-environmental identity, Whitmarsh and O'Neill suggest that further research expand the pro-environmental identity scale to include various aspects of self-, social, and role identities, for example (p. 313). For the purposes of this research, modest modifications to the original four-item scale resulted in the six-item scale outlined in Table 6**.** Specifically, these modifications break apart the double-barrel question about friends and family, and add a third social/role question about co-workers as attitudes and experiences may differ in each of these social contexts. Additionally, the term 'environmentally-friendly' is updated to 'environmentally conscious', arguably a more current term. As with the NEP, participants were asked to indicate their agreement with each statement on a five-point scale (1 = *strongly disagree* to 5 = *strongly agree*).

Included between the NEP and PESI was a question asking participants to respond either to a simple math problem (in-person surveys), or to select a specific number in the Likert-scale (online surveys), explaining: "We would like to check that you are still paying attention". This question was included to control for participant fatigue, wherein participants lose interest in the task and no longer pay attention to their responses, thus creating false responses and unreliable data (Sarafino, 2005).

Original 4-item Scale	**Modified 6-item Scale**
I think of myself as an environmentally-friendly consumer	I think of myself as an environmentally **conscious person**
I think of myself as someone who is very concerned with environmental issues	I think of myself as someone who is very concerned with environmental issues
I would be embarrassed to be seen as having an environmentally- friendly lifestyle (scoring reversed)	I would be embarrassed to be seen as having an environmentally **conscious** lifestyle (scoring reversed)
I would not want my family or friends to think of me as someone who is concerned about environmental issues (scoring reversed)	I would not want **my *family*** to think of me as someone who is concerned about environmental issues (scoring reversed)
	I would not want **my *friends*** to think of me as someone who is concerned about environmental issues (scoring reversed)
	It is important to me that *co-workers* (work or school) think of me as someone who is concerned about environmental issues

Table 6. Original and modified Pro-Environmental Self-Identity scal

2.2.4 System Justification

The System Justification (SJ) scale (Kay & Jost, 2003) measures the tendency to defend the status quo. This scale is included primarily as a distracter scale to make the study purpose vague and reduce the likelihood of participant effects. In this way including this scale is intended to reduce participant bias (demand characteristics) that may occur if participants guess the specific study purpose and try to respond accordingly (Sarafino, 2005). Additionally, high values on this scale have also been shown to correlate with a low commitment to environmental action when such action is perceived to threaten the status quo (Feygina, Jost, & Goldsmith, 2010). Given that this study evaluates perceptions of environmentalists, as possible agents of disruption to the status quo, inclusion of this scale may provide an interesting dimension for analysis. Participants were asked to indicate their agreement with each of eight statements on a five-point scale (1 = *strongly disagree* to 5 = *strongly agree*).

2.2.5 Demographic Questions and Environmental Identity Questionnaire

Demographic questions were included to indicate how representative the sample is of the Canadian population, and how participant data compares to other research. Specifically, past studies on strong environmental values, actions, and identity suggest correlations based on factors including age, gender, and political affiliation. Further, demographic details about participants facilitated analysis of possible differences in perceptions of environmentalist stereotypes, as per research questions. Details requested in the survey included: language, ethnicity, municipality and region (i.e., city, town/village, rural), province, and whether participants were born in Canada. Most questions were formatted as open-ended.

Appended to this section were questions about environmental identity and participation in the environmental movement used for national polling in the USA (Kempton, 2004; Saad & Dunlap, 2000). Questions from the Environmental Identity Questionnaire (EIQ) were modified for a Canadian sample, and to elicit responses to specific (vs. vague) questions about participation in environmental communities and activities (Table 7). As these questions most explicitly refer to the term ‘environmentalist’ and participation in an environmental group, central to the topic of interest in this research, the questions were

situated at the end of the survey to minimize influence on other research measures. Participants were asked to respond to each item on a five-point Likert-scale (1 = *strongly disagree* to 5 = *strongly agree; and: 1 = never, 2 = rarely; 3 = sometimes; 4 = very often; 5 = consistently.*

Original Scale Question	Modified Scale Question
Do you consider yourself to be an environmentalist	I consider myself to be an environmentalist
Do you agree with goals of the environmental movement	**I am part of a group of people or community with strong environmental values**
Are you an active participant in the environmental movement	I participate in the environmental movement
Do you belong to a national or international environmental organization	I participate as a member of a national or international environmental organization
Do you belong to any environmental groups or organizations in your local community, region or state	I participate as a member of an environmental group or organization in my community, municipality, or province
	I participate in rallies and/or protests in support of environmental issues

Table 7. Original and modified Environmental Identity Questionnaire

2.2.6 Relational Values Scale

Added to the questionnaire were revised questions from the Relational Values Scale (in development), intended to measure aspects of environmental values that may not be evaluated in the NEP and similar scales (Klain, Olmstead, Chan, & Satterfield, 2016). The authors define social-ecological relational values broadly as "values linking people and ecosystems via tangible and intangible relationships as well as principles, virtues and notions of a good life" (p. 1, draft). Relational Value questions were appended to the NEP on in-person surveys (n = 15) and as the last scale on all online surveys (n = 474). Revisions to the draft scale included, for example, modification of double-barreled items. This scale was included in the current study to supplement data collected in other studies. Data from this survey provides a contrasting population from those already sampled. Tangential to the central research questions of this thesis, analysis and discussion of the data from this scale are not included in this thesis document, but may later be compiled in a separate report or article.

2.2.7 Comments

The final page of the survey included an open-ended space with the instructions: *"If you have any comments you would like to share about the questions or topics in this survey, please list them here"*. This opportunity was presented prior to survey submission and thus prior to additional information about the study purpose in the debriefing summary. Comments collected from this question were intended to provide some insight into participants' overall response to the research topic and survey design, as well as any additional comments, issues, or questions not captured in other sections of the participation process.

Study measures in relation to research questions and hypotheses are outlined in Table 8.

Research Questions	Measures	Hypotheses
1. What are the words and themes about environmentalists commonly identified by the public in Canada?	Free Association (Qualitative Analysis)	There are words and themes commonly identified among the general public in Canada. Participants who self-identify as environmentalists are more likely than non-environmentalists to identify positive words in the Free Association task.
2. Are there common stereotypes of environmentalists in Canada? If so, what is the content of those stereotypes?	Stereotype Content Model	There is clear content of stereotypes of environmentalists commonly identified among the general public in Canada. These stereotypes include both negative and positive attributes.
3. How do perceptions of environmentalist stereotypes vary according to individual differences? Are there significant differences depending on:	DV: SCM	The content of environmentalist stereotypes will not differ significantly across any of the following variables:
(a) Participant self-identification as an environmentalist	IV: PESI & EIQ	Stereotype content will not differ significantly as a factor of self-identity as an environmentalist.
(b) Participant environmental attitudes	IV: NEP	Environmental attitudes are not predictive of the content of environmentalist stereotypes.
(c) Participant political affiliation, and other personal and demographic variables	IV: Demographic Variables, SJ	The pattern of content for environmentalist stereotypes will not differ across age or gender. However, urban (vs. rural) participants, and those with left-leaning political affiliation (vs. right-leaning) will identify a more favourable view of environmentalist stereotypes[a], and will report stronger environmental identity.
4. What is the relationship between environmental attitudes and: (a) Identity as an environmentalist? (b) Reluctance or embarrassment to be identified as having strong environmental values?	NEP, PESI, EIQ	Environmental identity will only partly predict environmental attitudes, and vice-versa. Environmental identity will negatively correlate with embarrassment to be identified as having strong environmental values.

Table 8. Overview of research questions, hypotheses and measures

[a] i.e., higher values for warmth, competence, and status; lower values for competition on the Stereotype Content Model

Chapter 3: Data Cleaning and Participant Demographics

3.1 Data Cleaning & Missing Data

Data cleaning for quantitative analysis commenced by exporting the survey data from UBC's online survey tool to an excel file, followed by adding to the spreadsheet the data from the in-person survey collection. Records were removed (n = 5) for participants who did not fit study criteria (i.e., Canadian citizen OR live in Canada; >18 years of age). Next, missing data were examined on a per-participant basis. Records were removed for participants who completed the survey but did not provide any demographic information (n = 48). Most of these participants also did not sufficiently complete the rest of the survey, and fourteen of these records were from participants who only completed the Free Association task. Importantly, an additional 123 deleted online records contained zero responses on the survey and are likely records of potential participants accessing the research link but not proceeding with the survey, at least at that time. An analysis of missing numeric variable per participant (i.e., not including open-ended responses) revealed that amongst the 489 participants retained for analysis, 87% were not missing any numeric data, and 99.2% were not missing more than 3 data points. Four participants were missing 6, 9, 22, and 28 data points, respectively. Because most of this missing data was on only one scale, the Stereotype Content Model, and these participants completed most of the open-ended questions, their data was retained for related analyses. Retained participants (N = 489) were missing, on average, 0.30 data points.

An analysis for each quantitative variable indicated that missing data was very low, ranging from 0 to 1.2% per variable. The exception was that missing variables for the revised relational values scale were as high as 3.9% for a given item. The scale was altered after data collection began, and thus the 15 in-person participants completed a different version of the scale and are not included in the data for this scale.

All participants except one correctly responded to the question assessing their attention during the survey. The records for this participant still indicated thoughtful responses throughout the survey,

evidenced by consistent responses throughout the scales, expected responses on reverse-scored items, and detailed responses to demographic questions at the end of the survey when participant fatigue might be expected. Thus, no participant records were removed in relation to the question assessing attention.

The 489 participant records were then exported to SPSS for further data cleaning and analysis. The quantitative data were examined for errors and outliers. An analysis of frequencies and histograms demonstrated that values for all variables fell within the acceptable range of response options. Data transformation was completed for reverse-scored items, and total scores for scales and subscales were calculated. In preparation for analysis, open-ended demographic questions (i.e., gender, age, years lived in Canada, ethnicity, municipality, language) were summarized into categories emerging from the data, as summarized in Participant Sample, below. Where applicable (e.g., gender), these categories were coded into numeric variables to facilitate quantitative analysis and, specifically, group comparison.

Words elicited from the Free Association task were organized and analyzed as described in the *Qualitative Analysis* section below.

3.2 Participant Sample

The participant sample resulting from the recruitment described above included broad representation of the Canadian population across a variety of demographic stratifications, with some over- and under-representation on certain factors, described below.

3.2.1 Location, Age, and Gender

As expected, the majority of study participants reside in the province of British Columbia, representing 325 participants (66.5%) (Figure 1). The majority of the remaining sample was drawn from three other provinces: 76 from Manitoba (15.5%); 36 from Alberta (7.4%); and 34 from Ontario (7%). In contrast, according to Canada Census, the same provinces represent the following percentage of the national population: BC 13.1%; MB 3.6%; AB 11.7%; ON 38.5%. Distribution by province is compared to Canada census data in Table 9 (*Population by year, by province and territory*, 2016).

Most participants reported residing in a city (n = 315; 64.4%) as compared to a town or village (n = 91; 18.6%) or a rural setting (n = 82; 16.8%). Similarly, according to the 2011 Canada census, 19% of

the national population was living in a rural area, defined as follows: "The rural population… refers to persons living outside centres with a population of 1,000 AND outside areas with 400 persons per square kilometer" (*Population, urban and rural, by province and territory*, 2011). Nearly all sample participants from towns, villages, or rural settings reside in either Manitoba or BC (Table 9).

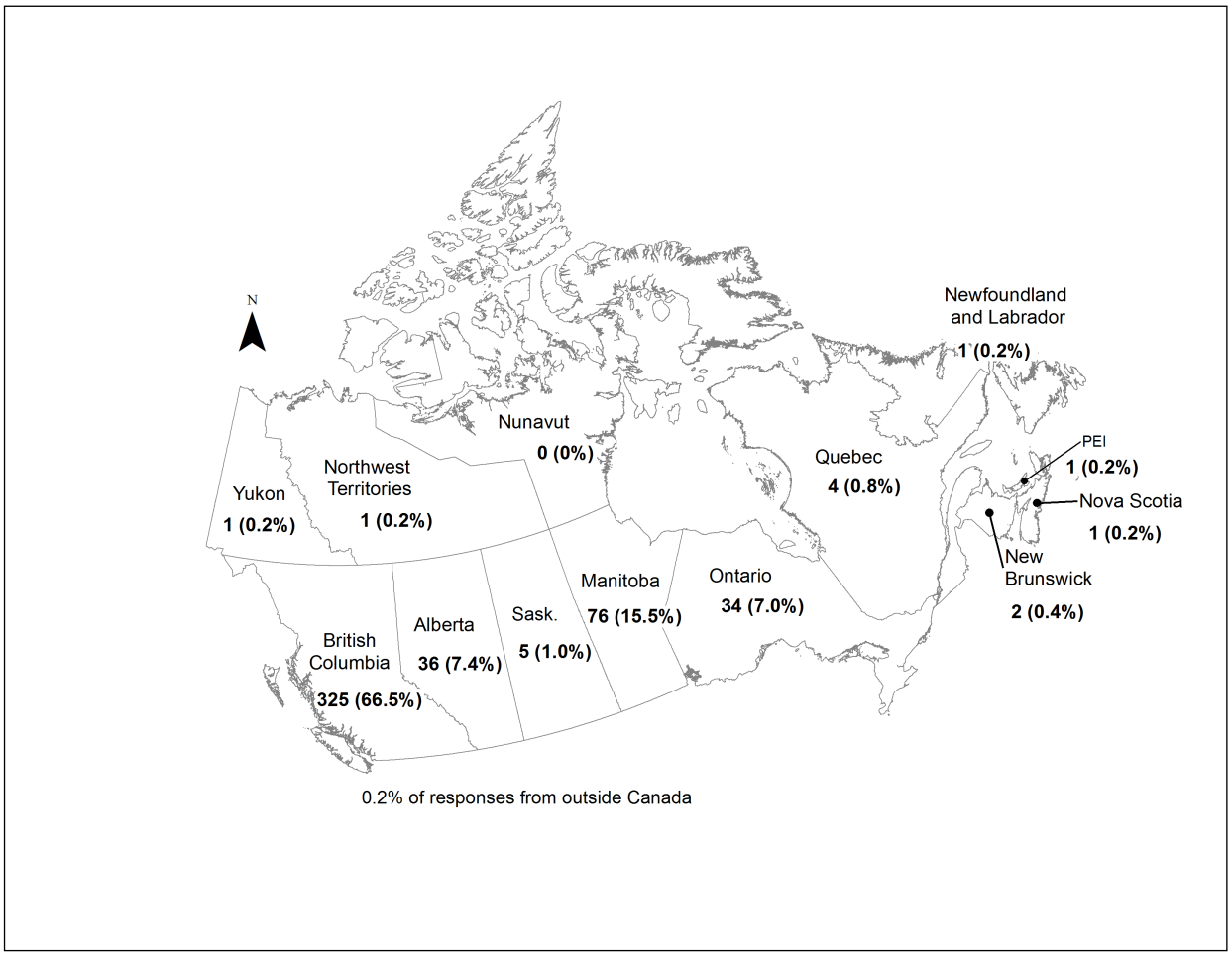

Figure 1. Frequency and percent of participant sample by Canadian province and territory

(Map source: Canada Boundary, 2001)

When asked to list the municipality (or regional district) in which they live, participants listed 132 individual locations. Notably, the question was left open-ended to allow for diversity across urban and rural residences; however some municipalities and regions offered in response to this question are overlapping or nested hierarchically within one another. For example, two people listed neighbourhoods in Winnipeg (e.g., Transcona and St. Vital), rather than Winnipeg proper. Similarly, in an example from

BC's north coast, it is unclear whether all people who listed the Skeena Queen Charlotte Regional District live outside of the municipality of Prince Rupert or other municipalities within the district, unless they indicated a rural dwelling on an adjacent survey question. Summaries provided here do not include re-coding for these overlaps and thus totals are of exact responses only. Analysis for the purposes of this survey use higher-level location data, by Canadian province, or by Development Region within BC. Further, despite some apparent overlap in categorization, the majority of responses yield residential locations that can be distinctly organized, and/or are geographically disparate. Those summarized here are of the greatest frequency. A total of 59 of municipalities or regional districts listed are outside of British Columbia, represented in descending frequency: Winnipeg 49 (10%); Calgary 18 (3.7%); Toronto 13 (2.7%); Edmonton 8 (1.6%); and Ottawa 7 (1.4%). The remaining 54 locations were listed at a frequency of 5 (1%) or less.

Wherein 66.5% of the study sample resides in BC, participants from this province listed a total of 73 individual municipalities or regional districts. Those most frequently listed are: Vancouver 86 (17.6%); Port Alberni 31 (6.3%); Nanaimo 25 (5.1%); Prince Rupert 22 (4.5%); Victoria 15 (3.1%); Salt Spring Island 15 (3.1%); North Vancouver 8 (1.6%); Courtenay 7 (1.4%); and Surrey 7 (1.4%). The remaining 64 locations have a frequency of 5 (1%) or less. Given that such a large portion of the sample is represented throughout BC, further analysis of the geographical distribution may be informative. A significant portion of the total national sample resides in two Development Regions within BC: Vancouver Island: 28.6%; and Mainland/South West: 25.2%. Notably, the percent of the sample residing in each of these regions is most similar to the percent residing outside of BC (33.54%). The North Coast of BC represents 6.1% of the total national sample, whereas other Development Regions in the province are each inhabited by less than 3% of total participants (Table 9, Figure 2).

	Census Portion 2016 (%)	Frequency	Percent	# Districts/ Municipalities listed	Municipal Name Missing	City	Town/ Village	Rural
Outside of BC	**86.9**	**164**[a]	**33.54**[a]	**59**	**6**	**127**	**19**	**17**
Newfoundland and Labrador	1.5	1	0.2	1		1	0	0
Prince Edward Island	0.4	1	0.2	1		1	0	0
Nova Scotia	2.6	1	0.2	1		0	1	0
New Brunswick	2.1	2	0.4	2		1	1	0
Quebec	22.9	4	0.8	2		4	0	0
Ontario	38.5	34	7.0	14	1	30	2	2
Manitoba	3.6	76	15.5	18	5	57	7	12
Saskatchewan	3.2	5	1.02	5		4	0	0
Alberta	11.7	36	7.4	12		28	6	2
Yukon	0.1	1	0.2	1		0	1	0
Northwest Territories	0.1	1	0.2	1		0	1	0
Nunavut	0.1	0	0.0	0		0	0	0
(outside Canada)	N/A	1	0.2	1		1	0	0
Within BC	**13.1**	**325**[a]	**66.46**[a]	**73**	**9**	**188**	**72**	**65**
Cariboo		3	.6	3				
Kootenay		3	.6	3				
Mainland/ Southwest		123	25.2	15				
Nechako		4	.8	3				
North Coast		30	6.1	7				
Okanagan		13	2.7	9				
Vancouver Island		140	28.6	33				
Total	**100**	**489**	**100.0**	**132**		**315**	**91**	**82**
							488	

Table 9. Frequency and percent of sample by municipality type, province, and BC development region, compared to Canada Census data
[a]*Includes missing values*

(Canada Census data: *Population by year, by province and territory*, 2016)

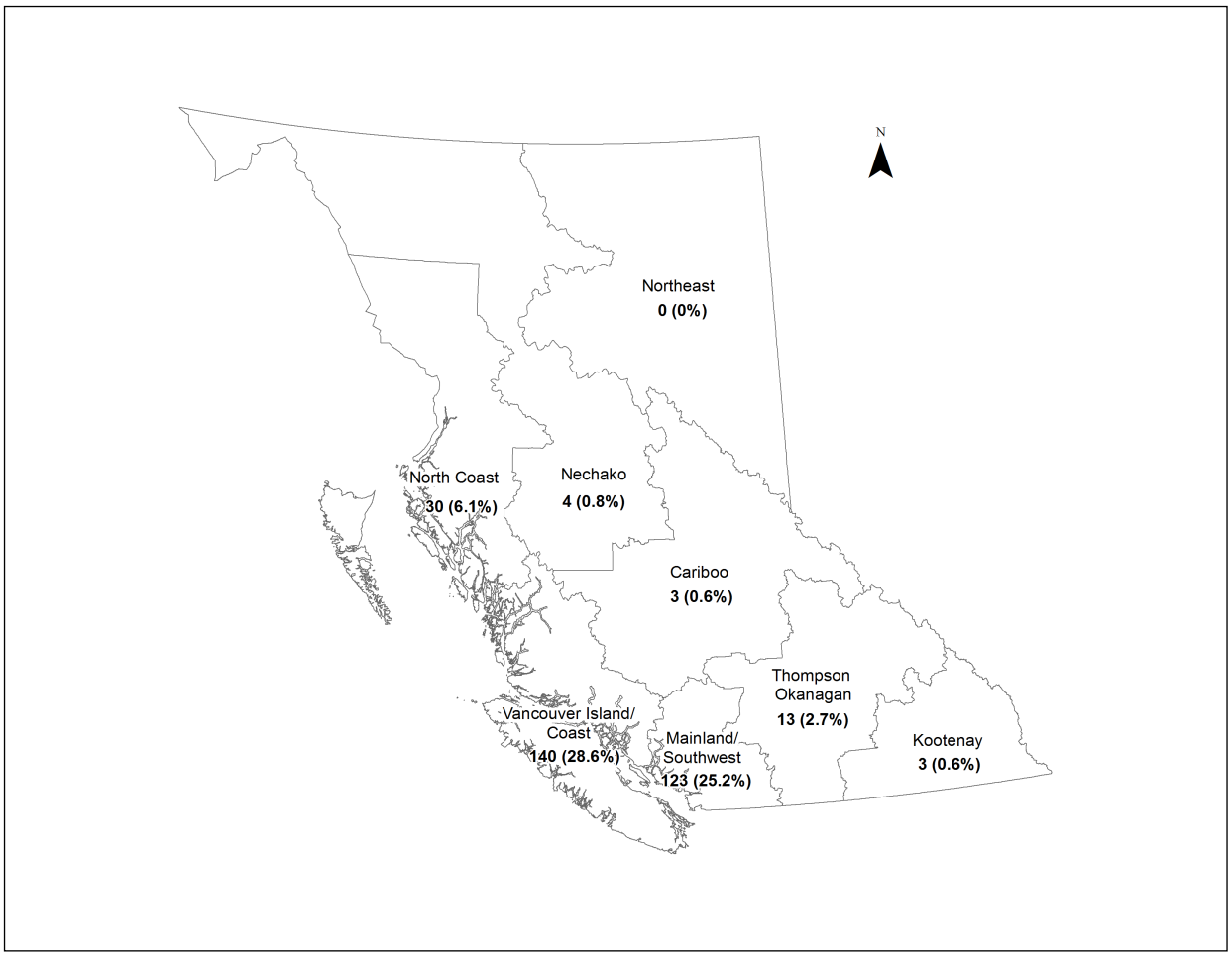

Figure 2. Frequency and percent of participant sample by BC development region

(Map source: *Development regions (economic regions) of British Columbia*, 2006)

A total of 384 participants (78.5%) were born in Canada, which is similar to national averages (81.6% in 2001: *Proportion of foreign-born population, by province and territory: 1991 to 2001 censuses*, 2005). Predictably, participants born in Canada listed more years in Canada on average (M = 43.86, SD = 15.99) than those who were born elsewhere (M = 24.85, SD = 21.22): $t(483) = 9.9$, $p < .001$. Participants born abroad represented 23% of the sample in cities, 21% in towns and villages, and 15% in rural areas. No relationship was found between participants who were or were not born in Canada and province of residence. No significant differences were found on any study scales based on whether participants were born in Canada, therefore this variable was not included in further analysis.

Across the entire sample, participants have lived in Canada for an average of 39.79 years (*SD* = 18.88). Analysis of years in Canada by 5 groups representing the largest subsamples across BC Development Regions and Canada, indicated 3 homogenous subsets: (1) Main/South (*M* = 27.13, *SD* = 17.07), (2) NorthCoast (*M* = 42.07, *SD* = 16.74), the rest of BC (*M* = 43.52, *SD* = 15.18), and all other provinces (*M* = 37.06, *SD* = 15.03), and (3) Vancouver Island Development District (*M* = 53.11, *SD* = 16.89), $F(4, 481) = 43.98$, $p < .001$. ANOVAs and post-hoc tests (Hochberg) showed that there are significant differences in both years in Canada and age, depending on region type. Participants living in cities list fewer years in Canada (*M* = 35.52, *SD* = 18.22) and are younger on average (*M* = 40.99, *SD* = 14.84) than participants living in towns/villages (years in Canada *M* = 45.90, *SD* = 18.38, age *M* =50.73, *SD* = 16.57) or rurally (years in Canada *M* = 49.34, *SD* = 16.70, age *M* = 53.46, *SD* = 15.94), $F(2, 482) = 25.56$, $p < .001$, and $F(2, 481) = 19.34$, $p < .001$, respectively. Across the entire sample, the correlation between age (*M* = 44.90, *SD* = 16.22) and years in Canada (*M* = 39.79, *SD* = 18.89) was predictably high, $r = .83$, $p < .001$.

Participants' ages spanned a range of 74 years, from 19 to 93 years, with an average of 44.9 (*SD* = 16.22). The pattern of ages was somewhat bi-modal, wherein the largest frequency of participants were 35 and 64 years of age, but skewed more strongly toward the younger ages (Figure 3**).** The mean age of participants in the Vancouver Island development region (M = 57.84, *SD* = 12.26) was significantly higher than both the rest of BC, and Canada, $F(4, 480) = 48.84$, $p < .001$(post hoc: Hochberg). Similarly, the mean age of participants from BC Main/South (M = 35.94, *SD* = 11.80) was significantly younger than the rest of the BC sample, but not Canada, *M* = 40.40, *SD* = 13.81 (where North Coast *M* = 45.13, *SD* = 13.44, and Other BC *M* = 47.14, *SD* = 13.28).

In the total sample, responses to an open-ended gender question (Rainbow Health Ontario, 2012) were as follows: 322 female (65.8%); 161 male (32.9%); 1 agender; 1 transmale; 1 masculine; 3 not specified. Thus, 2/3 identified as female, a proportion that remained consistent across sub-groupings of the sample, including by province and type of residence (i.e., city, town/village, rural). Although Canada census lists the national population as 50.4% female (*Population by sex and age group*, 2016), a

disproportionate sampling of female participants is not uncommon for both research participation and for environmental participation (Zelezny et al., 2000). No significant differences were found between females and males in age or length of time in Canada (t-tests).

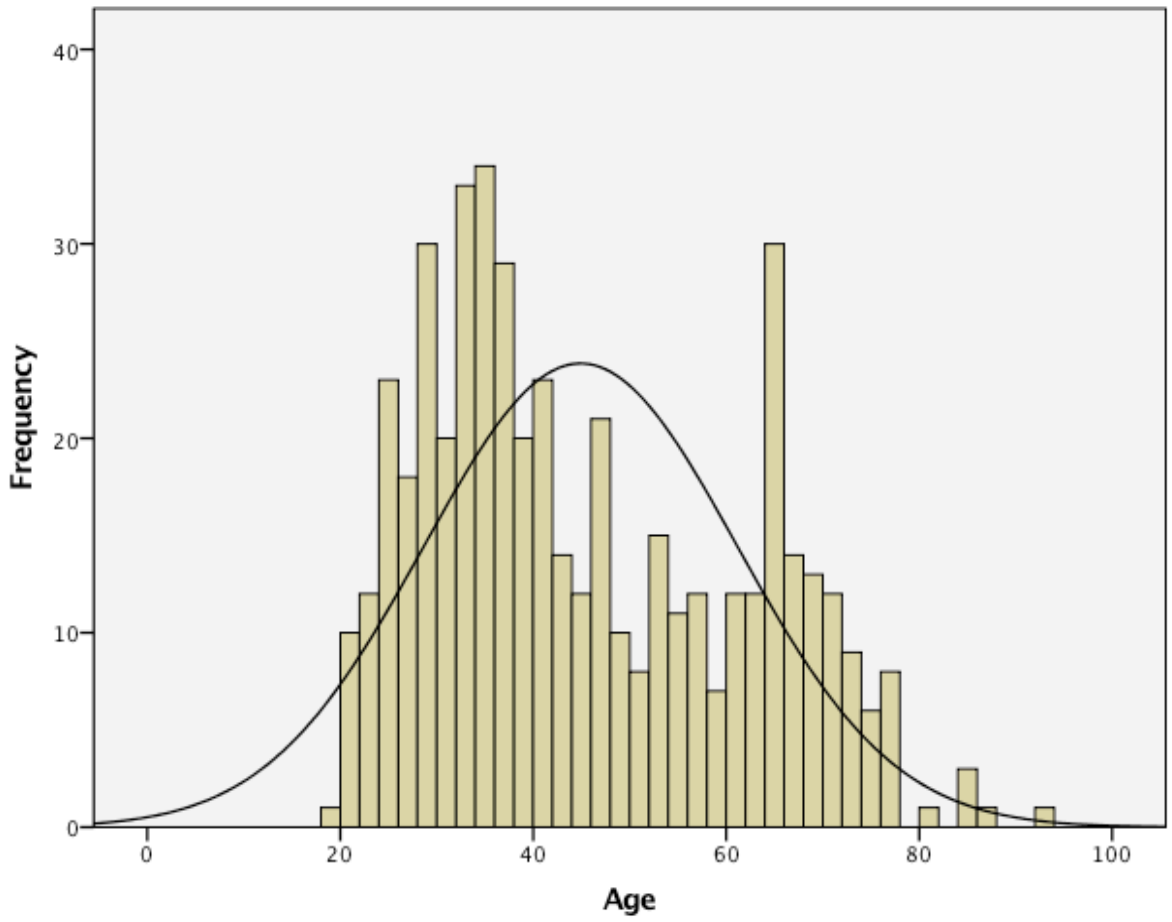

Figure 3. Frequency of participant age

3.2.2 Ethnicity

When asked about ethnicity, some participants (8.79%) listed one descriptor, including: 'mixed' (n = 9), and 'Canadian' (n = 34). In contrast, the remainder of participants listed a combination of multi-faceted descriptors for ethnicity, including for example 'Canadian' and at least one other descriptor (n = 31). Thus most participants are counted in more than one category in the summary provided (i.e., most

categories are not mutually exclusive). Categories were created here based on the frequencies of responses provided and not based on predetermined categories. Thus, grouping is based on inductive categorization and does not necessarily suggest similarity between ethnicities listed. The largest proportion of participants self-defined as white or Caucasian (43.10% of the total sample) and/or specified European origins (47.2% of the total sample, including: British Isles, French, other European nations). Represented here as a separate category, 1.60% specifically indicated French-Canadian or Quebecois. A total of 5.1% of the sample specified an Asian or Mid-East ethnicity, and 5.7% listed First Nations, Metis, Native, or similar. There were 3.90% of sample participants that listed ethnicities fairly unique from the rest of the sample, and/or that may not be as clearly linked to a particular geographic location. These were indiscriminately grouped together. These included, for example: African, Australian, Mennonite, Jewish, Latino. Comparatively, in the 2011 Canadian census: a total of 32.16% identified as Canadian for ethnicity (including 0.59% as Quebecois); 33.70% as other North American; 61.36% as European; 15.25% as Asian or Middle-Eastern; and 5.59% First Nations ethnicity (Table 10).

Despite the ethnic diversity indicated here, 480 participants listed English as the language they use most day-to-day, whereas an additional four participants (i.e., total n = 484) listed English as at least one of the languages they use most day-to-day. Participants were required to be fluent in English in order to participate in the study. In 2011, "while 20.6% of Canadians (6.8 million people) reported a mother tongue other than English or French, only 6.2% of Canadians spoke a language other than English or French as their sole home language; 63.5% of the population whose mother tongue was neither English nor French reported speaking English at home" (Linguistic characteristics of Canadians, 2015).

Information provided with regards to ethnicity and language is to provide a picture of the research sample relative to the Canadian population, but not included as variables for analysis.

Ethnicity	Category Description	N	Percent of Sample	Canada Census 2011[a]
Mixed	Details not provided	9	1.80%	
Canadian	34 reported just 'Canadian', whereas 31 listed Canadian in addition to other descriptors	65	13.30%	32.16% Canadian 33.70% Other NAmerican *General NA origins (North American) & responses not included elsewhere (Maritimer, Manitoban)*
White / Caucasian	White/Caucasian frequently listed, though not always clearly linked to a particular geographic origin	211	43.10%	
British Isles	Many people included part of British Isles (Scotland, Ireland, England, Wales, Anglo, Celtic)	120	24.50%	34.53%
French	French, often listed with other European ethnicities, in contrast to category below	13	2.70%	15.45%
Franco-CDN / Quebecois	Specified as, for ex: Quebecois or French-Canadian, Franco-Manitoban	8	1.60%	0.59% Quebecois *Quebecois and other French Canadian included as subcategories in 'Other N American', above*
European	Nations other than the British Isles, for ex: Polish, German, Ukrainian, Czech, Italian, Dutch, Slavic	98	20.00% (47.2% includes: British Isles, French, & other European)	61.36% European *Census includes all European, including British Isles, French, all other countries, & Jewish*
First Nations	For ex: Cree, First Nations, Metis, Cree, Aboriginal, Native	28	5.70%	5.59%
Asian & MidEast	For ex: Asian, Arabic, Japanese, Indian (East Asian), Persian	25	5.10%	15.25%
Other Ethnicities	Frequency too low overall for separate categories here (ex: Mennonite, Latino, Jewish, Australian, African)	19	3.90%	

Table 10. Frequency and percent of participant sample by inductive ethnic categories, compared to Canada Census data

[a]*Canada Census data includes single and multiple ethnic origin responses (42.05% report multiple ethnicities)*

(Canada Census data: *National household survey: Ethnic origin, 2011*)

3.2.3 Political Profile

Participants were asked for which political parties they usually vote in federal elections. As they were asked to indicate all responses that apply, any individual participant can be counted in multiple categories (Table 11). Supporters of the New Democrat Party (NDP) are the best represented in the sample (58.9%), followed by Liberals (44.8%); Greens (37.4%); Conservatives (9.4%); none (7.0%); other (1.8%); and Bloc Quebecois (0.2%). Feedback from pilot and in-person data collection indicated that some participants indicated that they did not vote for any of the parties as they are not Canadian citizens and thus not eligible to vote in Federal elections (though many are permanent residences). Of 34 non-voters, 22 were not born in Canada. Of voters, province-by-province support for the Liberal and NDP parties was highly similar, followed by the Green party. This trend is noticeably different for BC, the largest portion of the sample, which represents nearly 70% of support for NDP and Green parties across the sample. Within BC, more than 61% of participants have voted NDP, and approximately 40% have voted Liberal, and Green respectively.

Compared to 2015 voting results in the last federal election, this research sample represents a much higher proportion of NDP and Green voters in particular, and notably a much lower proportion of Conservative voters (Table 11). These skews are not surprising given the networks targeted for participant recruitment, as there is a high correlation between environmental values and participation in the environmental movement, and support for centre-left political parties (Hoffarth & Hodson, 2016). Additionally, whereas the research question in this survey asks that participants select all federal parties for which they vote/ have voted at any time, support for a political party in a given election can be inflated by current events and strategic voting. Thus, while informative, it is not a direct comparison.

When considering gender, the ratio of female to male voters for each party reflects the approximate ratio of the sample overall (i.e., 2:3; 66% - 71% female: 34% - 29% male). There were two exceptions in which male voters were relatively more represented: Conservative voters (39.1% male) and those who indicated that they do not vote federally (52.9% male). Comparing participants who vote and do not vote for a given party, t-tests indicated that there were some significant differences in age.

Participants who voted for the Liberal party (M = 41.66, SD = 14.42) were younger than those who have not (M =47.55, SD = 17.13), $t(483) = 4.04$, $p < .001$. Those who voted NDP were older (M = 46.92, SD = 16.80) than those who did not (M = 42.00, SD= 14.93), $t(487) = -3.33$, $p < .001$. Lastly, people who did not vote (M = 35.94, SD = 11.55) were younger on average than those who did (M = 45.58, SD = 16.33), $t(483) = 3.38$, $p < .001$. No age differences were found for voters and non-voters of either the Green or Conservative parties.

FEDERAL POLITICAL PARTY	Total N	Total %	**CAN Vote 2015 %**	F	F %	M	Est	QC	ON	MB	SK	AB	Nth	Int	BC	BC / Total 489 %	X/ BC 326 %	**BC Vote 2015 %**
Liberal	219	44.8	39.5	155	70.8	63	3		21	40	2	23	2		128	58.4	39.3	35.1
Green	183	37.4	3.4	130	71.0	52	2	3	12	27	1	12			126	68.9	38.7	8.2
Conservative	46	9.4	31.9	28	60.9	18	1		4	9		9			23	50.0	7.1	29.9
NDP	288	58.9	19.7	189	65.6	95	3	3	21	37	4	18	2		200	69.4	61.3	26
Bloc	1	0.2	4.7	1	100.0			1								0.0	0.0	0
Other	9	1.8	0.7	6	66.7	3				1		3			5	55.6	1.5	0.7
None	34	7.0	*31.7*[a]	16	47.1	18				6		1		1	26	76.5	8.0	*30.1*[b]

Table 11. Voting history by gender and province, compared to 2015 federal election votes

[a]*Based on voter turn-out in the 2015 election (i.e., 31.7% = the percentage of Canadians who did not vote)*
(Voter turnout at federal elections and referendums, 2017)

[b]*Based on voter turn-out in the 2015 election (i.e., 30.1% = percent of BC who did not vote):*
(Report on the 42nd general election of October 19, 2015, 2016)

(Elections Canada data*: Forty-second general election 2015: Official voting results*)

Chapter 4: Results

4.1 Qualitative Analysis

A total of 2417 responses[4] were collected from the Free Association task, in which study participants listed five words that came to mind when asked to think about *people who have strong environmental values and who take actions to protect the environment*. After accounting for duplicates, there were 519 unique words. Words were alphabetized and edited for consistency, such as spelling and plural vs. singular forms of words. Across the entire sample, the ten most commonly listed unique words (before coding) and their frequencies are as follows: caring (104); activist (99); committed (77); environmentalist (69); green (60); hippy (57); passionate (56); dedicated (43); intelligent (41); and educated (33).

The word list was reviewed for emerging patterns in order to code for meaning, and create inductive thematic categories (Seamon & Gill, 2016). Frequencies by each code and thematic category were obtained overall. Two examples are listed in Table 12 of the analysis hierarchy from participant words (i.e., raw data), to coding, to thematic category.

Thematic Category	Meaning Code	Example Words (alphabetical order)
Positive Traits	Caring	Altruistic, Care, Caring, Compassionate, Concerned, Considerate, Empathetic, Generous, Gentle, Giving, Helpful, Kind, Loving, Nice, Selfless, Thoughtful
Negative Traits	Irrational	Bat-shit Crazy, Biased, Myopic, Childish, Close-minded, Delusional, Irrational, Misinformed, Naïve, Nut-job, Romanticization, Single-minded, Unrealistic

Table 12. Sample hierarchy for qualitative analysis

Frequencies were also calculated for four subgroups within the sample based on participants' self-rating as an environmentalist (Enviro Rating) in response to the statement: *I consider myself to be an environmentalist* (item 11, part 5). Overall, this measure facilitates comparison between four groups in the qualitative analysis both because it clearly delineates separate groups, and because responses are highly

[4] Some participants did not provide five words each, resulting in 28 missing words in total.

correlated with both participants' total Enviro ID score and NEP score (as per quantitative analysis, below).

Inductive analysis of the 2417 word responses yielded 81 codes and seven thematic categories overall (Table 13). Categories used are: Labels, Traits (Positive, Negative, and Ambiguous), Other Associations, Political, and Uncategorized. Labels are words that are both commonly used as nouns in relation to environmentalists, and can be used in the sentence: "(s)he is an (*activist*)", or, "(*activists*) are organizing the meeting". In contrast, the words categorized as Traits are typically adjectives and can be used in the sentence: "(s)he is (*smart*) and (*cooperative*)". Many of the codes that are listed as either negative or positive correspond with the ratings used by Minson and Monin (2012), including self-righteous, opinionated, annoying and arrogant as negative traits, and dedicated, caring, thoughtful, and conscious/aware as positive traits. A number of codes are less clearly positive or negative and thus, based on a conservative interpretation of the data, are listed as ambiguous traits. Further some codes are not assigned a rating at all, as is the case for all categories other than the Traits. Other Associations is a broad category that includes: locations, organizations, occupations, environmental issues, ethnicities, and activities such as recycling and biking. This category also includes various ideologies, including spirituality, science, and sustainability, as well as various words related to nature, including words like bear, animal, mountain, water, and forest. Words in this category included 92 instances of individual names from communities, organizations, government, or who are otherwise identifiable. The most common of these were David Suzuki (26), a prominent Canadian environmental scientist and long-time television host, and Elizabeth May (8), a lawyer and the leader of the federal Green Party. The Political category included any codes pertaining to policy, political leaning, and political parties, and included 7 instances of the word *politics*. Lastly, there are 10 unique words in Uncategorized that are vague in intended meaning or do not clearly fit in one of the thematic categories.

Thematic Categories	Definition	Codes
Labels	Primarily Nouns (e.g., Activist)	22 codes
Other Associations	Includes: Locations, Occupations, Individual Names, Environmental Issues	20 codes
Politics	Political parties, political orientations, policy	9 codes
Uncategorized Words	Do not distinctly fit in a category - meaning unclear	(10 words)
Personality Traits	Primarily Adjectives	
o Positive Traits	(e.g., Dedicated)	15 codes
o Negative Traits	(e.g., Irrational)	6 codes
o Ambiguous Traits	(e.g., Idealistic)	9 codes

Table 13. Thematic category definitions for qualitative analysis

Across the entire sample, many of the most frequent codes are positive traits, regardless of environmentalist rating (Table 14). These include: dedicated, caring, and ethical. Activist was one of the top eight codes across all subgroups.

Despite varying sample sizes, the calculation of the percent of responses in each thematic category facilitates comparison between subgroups (Table 15, Figure 4). Overall, as Enviro Rating increases (i.e., non-environmentalist to strong environmentalist), responding with Labels decreases, and the use of Traits increases. Further, with increasing Enviro Rating, the proportion of negative traits decrease, while the proportion of positive traits increase, supporting study hypothesis one. Positive traits represent the largest thematic category across the entire sample at 52.9% of all words provided in the Free Association task.

	Total Sample	Non-Enviro (1&2)	Neutral (3)	Enviro (4)	Strong Enviro (5)
Most Frequent Meaning Codes	Dedicated (299), Caring (233), Smart (151), Ethical (126), Aware (109), Activist (98), Name (92), Nature (90), Strong (86), Admirable (81)	Dedicated (24), Ethical (10), Environmentalist (10), Hippy (10), Activist (9), Nature (9), Green (7), Caring (7), Science (6), Strong (6)	Dedicated (76), Caring (32), Ethical (27), Smart (26), Activist (26), Aware (22), Hippy (21), Name (21), Nature (20), Green (18)	Dedicated (144), Caring (140), Smart (82), Ethical (61), Aware (59), Nature (50), Name (47), Activist (42), Strong (44), Admirable (40)	Dedicated (55), Caring (54), Smart (38), Ethical (28), Admirable (26), Aware (24), Name (22), Activist (21), Strong (18), Future-oriented (19)
N	**489**	**42**	**111**	**237**	**99**
Total Words	**2417**	**207**	**547**	**1171**	**492**

Table 14. Qualitative analysis codes of highest frequency for each Enviro Rating category

Thematic Categories	Total Frequency	Total Percent	Non-Enviro 1&2	Neutral 3	Enviro 4	Strong Enviro 5	Example Codes
Label	**416**	17.2%	29.5%	20.7%	15.3%	12.8%	Environmentalist, Activist, Hippy, Green, Tree-Hugger, Conservationist, Vegetarian/Vegan, Protestor, Radical
Other Association	**408**	16.9%	15.0%	18.3%	17.6%	14.4%	Name, Nature, Recycling & Composting, Science, NGO, Sustainability, First Nations, Occupation (i.e., career)
Politics	**54**	2.2%	2.4%	2.7%	1.9%	2.4%	Liberal, Progressive, Political, Left-Wing, Green Party, NDP, Conservative
Uncategorized	**10**	0.4%	0.5%	0.5%	0.4%	0.2%	(Words include: Specific, Support, Frustration)
Positive Traits	**1278**	52.9%	35.3%	44.8%	56.6%	60.4%	Dedicated, Caring, Smart, Ethical, Aware, Strong, Admirable, Action, Leaders
Negative Traits	**106**	4.4%	11.6%	6.9%	2.9%	2.0%	Irrational, Opinionated, Aggressive, Over-reactive, Unethical, Annoying
Ambiguous Traits	**145**	6.0%	5.8%	6.0%	5.3%	7.7%	Future-oriented, Counter-culture, Idealist, Margins, Sensitive, Privileged, Eco-minded
Traits Total	*1529*	63.3%	*52.7%*	*57.8%*	*64.8%*	*70.1%*	
Total Frequency	**2417**		**207**	**547**	**1171**	**492**	
N	**489**		**42**	**111**	**237**	**99**	
Total Percent		100.0%	100.0%	100.0%	100.0%	100.0%	

Table 15. Frequencies and percentages of each thematic category and Enviro Rating

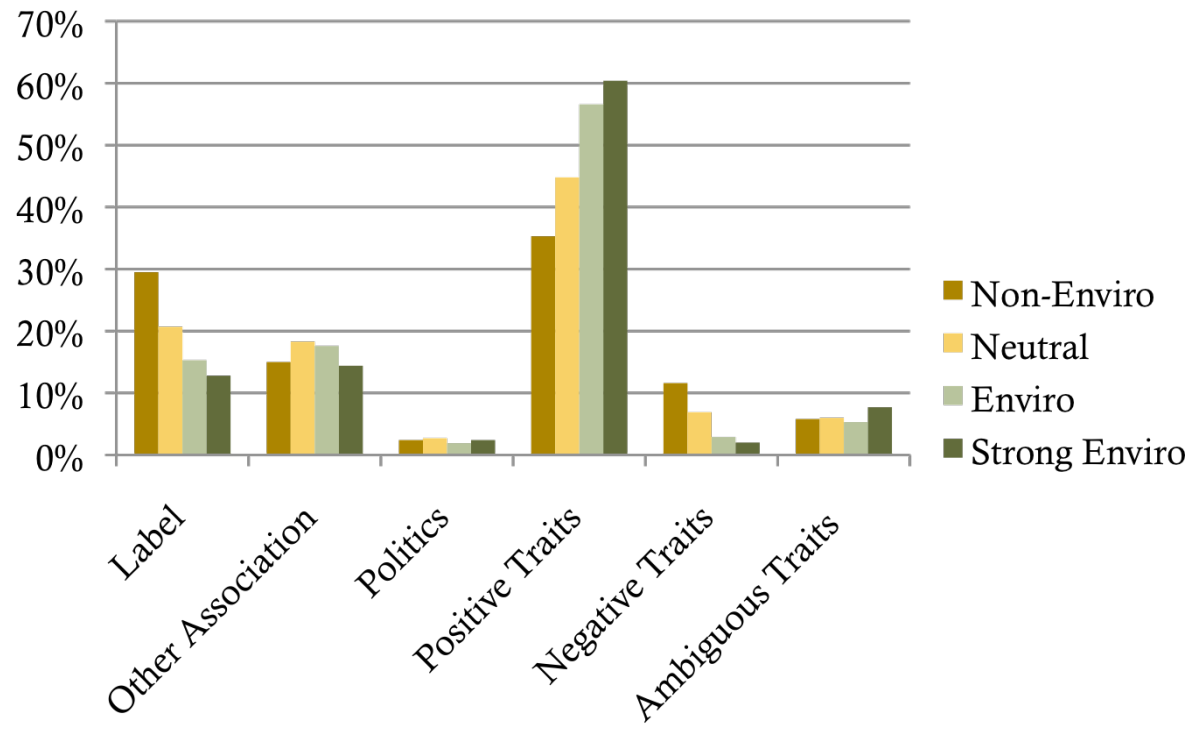

Figure 4. Histogram of percentages for each thematic category and Enviro Rating

4.2 Quantitative Analysis

An overview of the following analyses and results is outlined in Table 20 at the end of this section.

4.2.1 Measures

4.2.1.1 Stereotype Content Model

To explore the pattern of responses for both the original and added SCM items, means and standard deviations were calculated for each (Table 17). There were strong relationships across most individual items (correlations sig at 0.01 level, 2-tailed), however some items were less strongly and consistently correlated across all items. The items confident, prestigious, well intentioned and sincere were the most inconsistently correlated items overall, only correlating with some other items and at varying strengths. Of the added items, forceful and high status showed inconsistent correlations with other scale items. However, for all those mentioned here, except forceful, the items were significantly correlated (at 0.01 level) with all other items in the corresponding trait or predictor composite score (e.g., prestigious highly correlated with all other items in Status).

Means were calculated for both the original and revised composite totals (i.e., including the added items, reverse-scored where appropriate) per trait and predictor (Table 17). There was a full range of responses across the 5-point Likert scale for all scale items. Reliability analysis for the original scale traits and predictors resulted in high values (Cronbach's alpha = .82 to .88), except for Status (Cronbach's alpha = .55) (Table 19). One item stood out across the scale, where reliability would increase from .82 to .85 if confident were deleted from the Competence trait. This pattern mirrors the low correlation between confident and other scale items, described in the paragraph above. Arguably, this item could be interpreted as either a positive or negative personality attribute, which may partly explain the inconsistent results. Regardless, with the inclusion of the added scale items, reliability values for revised Warmth and Competence traits did not yield higher reliability than original trait totals. However reliability increased (Cronbach's alpha = .62) for the Status predictor, though the addition of the term eccentric seemed to decrease reliability. Caution is advised in interpreting the increase in reliability for Status given the

original trait included only three items, and the modification doubled the items to six. Given the limited increase in reliability, the original SCM traits are used here for analysis. This also facilitates better comparison of these results to other research using this scale.

Across the entire sample, a paired sample t-test revealed that there was no difference in perceived Warmth (M = 3.23, SD = .64) and Competence (M = 3.25, SD = .62) traits of environmentalist stereotypes. Warmth and Competence were strongly and significantly correlated, r = .60, p < .001, and strongly correlated with the social structural predictors (Table 16). The correlation between Status (M = 2.48; SD = .67) and Competition (M = 3.21; SD = .90) was r = -.24, p < .001.

	Competence	Warmth
Status	.40	.41
Competition	-.35	-.41

Table 16. Correlations (r) between traits and predictors on the Stereotype Content Model, p < .001

SCM Items, Traits, & Predictors	N	Mean[b]	Std. Deviation
COMPETENCE	**479**	**3.25**	**0.62**
COMPETENCE.REVISED	***477***	***3.17***	***0.62***
Competent	485	3.07	0.81
Confident	487	3.77	0.80
Capable	483	3.08	0.83
Intelligent	485	3.32	0.84
Skillful	486	3.01	0.83
Irrational[a]	*484*	*2.70*	*1.08*
Over-reactive[a]	*486*	*3.36*	*1.08*
WARMTH	**480**	**3.23**	**0.64**
WARMTH.REVISED	***477***	***3.06***	***0.56***
Friendly	485	2.98	0.90
Well-Intentioned	488	4.00	0.88
Trustworthy	486	3.03	0.89
Warm	488	2.80	0.79
Good Natured	485	3.00	0.88
Sincere	486	3.60	0.85
Forceful[a]	*486*	*3.71*	*0.92*
Aggressive[a]	*487*	*3.26*	*1.04*
Immoral[a]	*484*	*1.57*	*0.80*
Judgmental[a]	*487*	*3.62*	*1.02*
Self-Righteous[a]	*487*	*3.56*	*1.07*
STATUS	**481**	**2.48**	**0.67**
STATUS.REVISED	***473***	***2.71***	***0.57***
Prestigious	484	2.09	1.00
Economically Successful	485	2.16	0.93
Well Educated	486	3.19	0.84
Unhygienic[a]	*485*	*2.23*	*1.10*
Eccentric[a]	*483*	*3.13*	*1.06*
High Status[a]	*485*	*2.19*	*0.94*
COMPETITION	**483**	**3.21**	**0.90**
Comp1.SpecialConsideration	485	3.31	0.97
Comp2.Resources	485	3.21	0.99
Comp3.Power	483	3.10	1.05
Valid N (listwise)	452		

Table 17. Descriptive statistics across the participant sample for items, traits, & predictors on the Stereotype Content Model

[a]*Added items, used for revised totals (reverse-scored for calculation of total averages, where appropriate)*

[b]*Means are across a five-point scale (1 = not at all to 5 = extremely) in which participants were asked to rate the extent to which they believe each SCM item is characteristic of people who have strong environmental values and who take actions to protect the environment*

4.2.1.2 New Ecological Paradigm

There was strong reliability for the overall NEP scale score (Cronbach's alpha = .85), but most subscales yielded relatively low reliability (Cronbach's alpha = .47 to .75), suggesting the subscales are not as useful for this analysis (Table 19). This is consistent with most research studies that use the NEP total score rather than subscales (Hawcroft & Milfont, 2010).

4.2.1.3 Enviro ID (PESI + EIQ) and Enviro Rating

An aggregate score named Enviro ID was created to represent participants' self-identification as environmentalists. This Enviro ID score includes the 6 items modified from the Pro-Environmental Self-Identity scale (PESI) and the 6 items modified from the Environmental Identity Questionnaire (EIQ). Included in the EIQ is participants' self-rating as an environmentalist (Enviro Rating) in response to the statement: *I consider myself to be an environmentalist* (item 11, part 5).

There was a significant positive relationship between all items on the PESI, $18 < r < .62$, $p < .001$, and on the EIQ, $.45 < r < .75$, $p < .001$. The three PESI questions on embarrassment (items 34, 36, 37) were significantly inter-correlated, $.39 < r < .71$, $p < .001$, but the least correlated with other scale items. Data patterns do not support the hypothesis that embarrassment to be identified as having strong environmental values would significantly negatively correlate with Enviro ID. There was no correlation between general embarrassment about environmentalism (item 34) and participation in rallies and protests (item 16, part 5), nor between embarrassment with family (item 36) and participation with a national or international environmental organization (item 14, part 5). There were significant positive correlations between embarrassment questions and all other scale items, $.12 < r < .39$, $p < .01$. Notably, the item rating the importance of co-workers (work or school) seeing the participant as being concerned about environmental issues (item 33) is more highly correlated with all other items on both scales than with questions about embarrassment. Similarly, Enviro Rating on the EIQ is significantly positively correlated with embarrassment questions, $.21 < r < .26$, $p < .001$, but more strongly correlated with all other scale items, $.46 < r < .67$, $p < .001$. Across the 12 Enviro ID items, Enviro Rating is most strongly correlated with the question about being very concerned about environmental issues (item 35), $r = .67$, $p < .001$.

Reliability on each the PESI and EIQ were comparable (Cronbach's alpha = .77 and .87 respectively) and strong at .87 in aggregate (Table 19). Removing the three questions individually about embarrassment were most likely to maintain or increase score reliability (Cronbach's alpha = .87 to .88); however, given significant correlation scores with Enviro Rating and the modest difference in reliability, these three items were retained for the aggregate Enviro ID score. The Enviro ID score is used throughout analysis with other scales and demographics.

Based on Enviro Rating alone, 69% of the study sample agreed that they are environmentalists (agree + strongly agree) (Table 18). Post-hoc tests (Hochberg) in relation to the Enviro ID score indicated that Enviro Rating scores are distinct between all ratings, except participants who strongly disagreed or disagreed to identifying as environmentalists. In other words, these two groups can be considered in aggregate for analysis and thus 4 groups for Enviro ID are used in ANOVA tests, below and qualitative analysis, above.

	Frequency	**Percent**
Strongly Disagree	10	2
Disagree	31	6.3
Neutral	111	22.7
Agree	237	48.5
Strongly Agree	99	20.2
Total	488	99.8
Missing	1	0.2
Total	489	100

Table 18. Participant responses to: "*I consider myself to be an environmentalist*" (Enviro Rating)

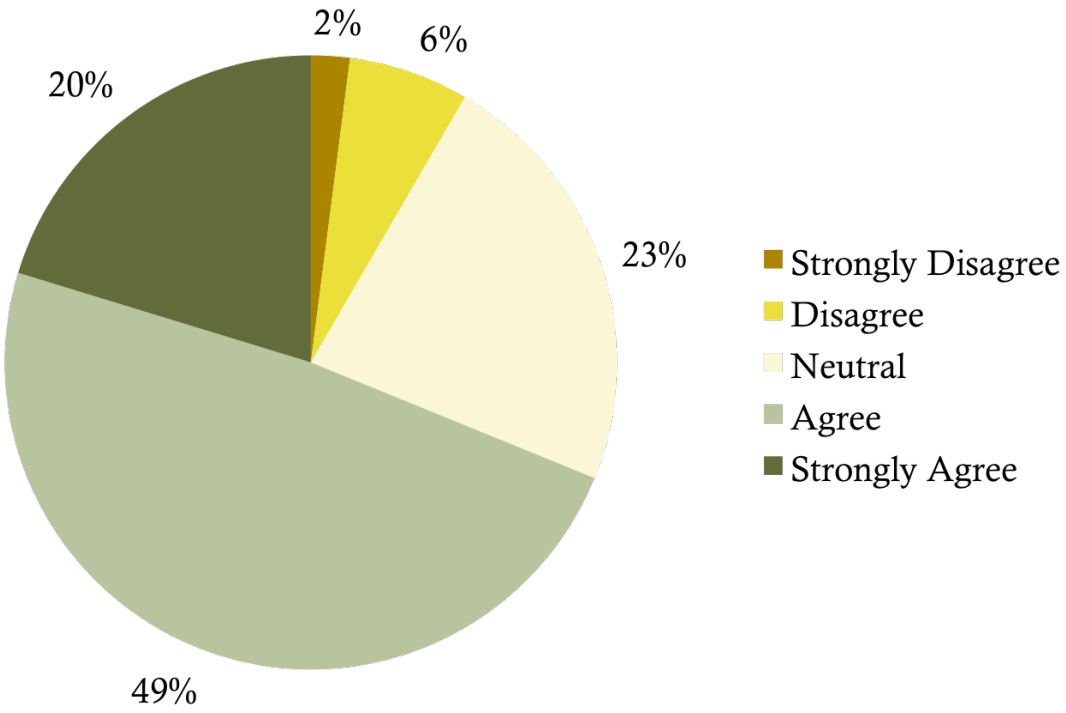

Figure 5. Pie chart of participant Enviro Rating by percent

4.2.1.4 System Justification Scale

Analysis of the SJ scale indicated strong reliability across the entire scale (Cronbach's alpha = .81) (Table 19). The one exception was item 4, *Canada is the best country in the world to live in* (Cronbach's alpha if deleted = .82). For consistency and comparability with other studies using the SJ scale, and because of the minimal increase in reliability, this item was retained in the analysis.

Scale	M	*SD*	N	Reliability: Cronbach's Alpha
SCM Competence	3.25	.62	479	.82
SCM Warmth	3.23	.64	480	.83
SCM Status	2.48	.67	481	.55
SCM Competition	3.21	.90	483	.88
SCM Competence Revised	3.17	.62	477	.82
SCM Warmth Revised	3.06	.56	477	.82
SCM Status Revised	2.71	.57	473	.62[b]
NEP Limits to Growth	3.75	.76	485	.58
NEP Anti-Anthropocentrism	3.99	.75	488	.59
NEP Nature's Balance	3.97	.68	485	.55
NEP Exemptionalism	3.93	.64	483	.47
NEP Eco Crisis	4.36	.66	482	.75
NEP TOTAL	4.00	.53	468	.85
SJ TOTAL	2.68	.64	480	.81
Pro-Enviro Self-Identity (6)	4.21	.53	485	.77
Without Embarrassment (3)	3.93	.66	486	.74
Embarrassment Qs Only (3 - reversed)	4.49	.61	488	.77
Enviro Identity Questionnaire (6)	3.01	.87	484	.87
Enviro ID (12) TOTAL[a]	3.61	.62	480	.87

Table 19. Descriptive statistics and reliability scores for survey scales
[a]*Includes, in aggregate, Pro-Enviro Self-Identity and Enviro Identity Questionnaire (12 items)*
[b]*Indicates an increase in reliability over the original scale*

4.2.2 Stereotype Content Model Compared to Other Scales and Demographics

To address hypotheses two and three, a variety of statistical tests were conducted to analyze variability in the perceptions of environmentalist stereotypes across the sample. There were small correlations between scores on the System Justification scale and both Warmth, $r = .11$, $p < .05$, and Competence, $r = .19$, $p < .01$. There was no significant correlation between SCM and either the NEP or the Enviro ID score, except for very small correlations with the Competition predictor where NEP, $r = -.09$, $p < .05$ and Enviro ID, $r = -.08$, $p < .01$. In other words, as environmental attitudes and identity increase, perceptions of competition between environmentalists and others decreases. Similarly, ANOVA comparing participants by their rating as an environmentalist (Enviro Rating) indicated no significant differences between groups on any SCM traits or predictors except Competition, $F(3,478) = 8.47$, $p <$

.001 (where non-environmentalists rating as 1 & 2 are combined for analysis, yielding 4 comparison groups). Post-hoc analysis (Hochberg[5]) lists non-environmentalists (1&2 on Enviro Rating) as viewing Competition higher than all other groups (i.e., Enviro Rating = 3, 4, or 5). Thus, to summarize, there was no significant difference in perceptions of stereotype content across environmental identity or attitudes, but participants who do not see themselves as environmentalists rated greater Competition between environmentalists and others. These results partly support the study hypotheses that there would be no significant differences in perceptions of stereotype content across varying levels of environmental identity or attitudes.

Analysis of SCM values by demographic characteristics yielded similar patterns. As predicted, no significant correlations were found between any SCM measures and either participant age or length of time in Canada. Independent t-tests comparing female and male participants indicated no significant difference on SCM measures, as hypothesized, however average values for the Competence trait were higher for females ($M = 3.36$, $SD = .60$) than males ($M = 3.04$, $SD = .62$), $t(471) = 5.46$, $p < .001$. Though not anticipated, an ANOVA by both type of municipality (city, town/village, rural) and BC development region yielded no significant group differences on any SCM measures. However, a comparison between provinces (5 groups: BC, MB, ON, AB, and other provinces) indicated significant differences in perceptions of Warmth ($F(4, 475) = 2.46$, $p < .05$) and Competition ($F(4, 478) = 2.78$, $p < .05$). Post-hoc comparisons (Hochberg) showed that BC rated Warmth higher than did AB, whereas no significant group differences were indicated in post-hoc tests for Competition.

Data analysis mostly supported the hypothesis that left-leaning political affiliation (vs. right-leaning) would be associated with slightly higher values on Warmth, Competence, and Status, and lower values on Competition. T-tests comparing voters/non-voters for each political party indicated that Liberal

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[5] Note: Hochberg post-hoc tests are used for groups of unequal size. The harmonic mean of the group sizes is used. Type-1 error levels are not guaranteed.

voters viewed perceptions of environmentalists as more Warm (M = 3.30, SD = .61) and Competent (M = 3.36, SD = .60) than those who have not voted Liberal (Warmth M = 3.17, SD = .66, Competence M = 3.17, SD = .63), where $t(478) = -2.14$, $p < .05$, and $t(477) = -3.36$, $p < .001$, respectively. Differences were nearly significant for perceptions of Competition $t(481) = 1.74$, sig = .08 (Liberal M = 3.13, SD = .86, Non-Liberal M = 3.27, SD = .92), and not significant for perceptions of Status. Whether participants have or have not voted federally for other parties did not indicate differences in perceptions of environmentalist stereotypes, except for perceptions of Competition. Lower ratings of Competition were reported by NDP voters (M = 3.13, SD = .86), than those who have not voted NDP (M = 3.32, SD = .93), where $t(481) = 2.28$, $p < .05$. In contrast, Conservative voters rated higher Competition (M = 3.57, SD = .94) between environmentalists and others than did participants who have not voted Conservative (M = 3.17, SD = .88), where $t(481) = -2.85$, $p < .01$.

4.2.3 Environmental Attitudes, Environmental Identity, and Demographics

Environmental attitudes were found to vary depending on participant identity as an environmentalist. A significant positive relationship was found between NEP and Enviro ID (r = .52, $p <$ .01). ANOVA comparing NEP scores between four groups on Enviro Rating indicated a significant difference between groups, $F(3,463) = 7.25$, $p < .001$. Post-hoc tests (Hochberg) show three homogenous subsets, where NEP scores differ between each of the following groups: strongly disagree/disagree (1&2), neutral/agree (3 & 4), and strongly agree (5). Results largely support the hypothesis that environmental identity would only partly predict environmental attitudes, and vice-versa, particularly as a large portion of the sample (71%) had similar scores for environmental attitudes but divergent scores for both Enviro Rating (3 & 4) and Enviro ID.

When considering gender, often missing in NEP studies (Hawcroft & Milfont, 2010), an independent t-test revealed that female NEP scores (M = 4.07, SD .48) were significantly higher than those for male participants (M = 3.90, SD = .59), where $t(460) = 4.08$, $p < .001$. These results are consistent with much of the literature on environmentalism, indicating that women tend to report higher environmental attitudes (Zelezny et al., 2000). In considering other demographics, there was a small

positive correlation between NEP scores and both age, $r = .19$, $p < .001$, and years in Canada, $r = .13$, $p < .01$ level. ANOVA by type of municipality yielded significant differences between participants who lived either in a city ($M = 3.95$, $SD = .51$), a town/village ($M = 4.06$, $SD = .50$), or rurally ($M = 4.18$, $SD = .47$), $F(2,464) = 7.36$, $p < .001$). Post-hoc comparisons (Hochberg) suggest a significant difference in NEP scores between city and rural participants only. ANOVA comparing NEP scores provincially between BC, MB, ON, AB, and the rest of the sample, indicated no significant difference. A comparison between the three most populated BC development regions (North Coast, VanIsl, and Main/South), the rest of BC, and the rest of Canada yielded a marginal significant difference on NEP scores, $F(4,463) = 2.71$, $p < .05$, though post-hoc comparisons indicated one homogenous subset across groups.

Finally, t-tests comparing participants who do and do not vote for each political party revealed significant differences on NEP scores. Liberal supporters ($M = 3.92$, $SD = .54$) had lower NEP scores than non- supporters ($M = 4.07$, $SD = .51$, $t(466) = 3.12$, $p < .01$). Values on NEP were lower for Conservative voters ($M = 3.50$, $SD = .64$) than non-voters ($M = 4.06$, $SD = .48$, $t(466) = 7.18$, $p < .001$). In contrast, NDP voters had higher NEP scores ($M = 4.06$, $SD = .46$) than non-supporters ($M = 3.91$, $SD = .61$, $t(466) = -3.09$, $p < .01$), as did supporters of the Green party ($M = 4.12$, $SD = .43$) compared to non-supporters ($M = 3.92$, $SD = .57$, $t(466) = -3.95$, $p < .001$). No difference was found for NEP scores between participants who do not vote at all, compared to those who do vote.

Unlike the NEP, t-test results indicated no significant difference in Enviro ID between female and male gendered participants. But similar to the NEP, there were significant, and slightly stronger, positive correlations between both Enviro ID and age ($r = .24$, $p < .001$), and years in Canada ($r = .15$, $p < .001$). Additionally, participants not born in Canada ($M = 3.73$, $SD = .57$) had higher Enviro ID score than those born in Canada ($M = 3.57$, $SD = .63$, $t(486) = -2.40$, $p < .05$). ANOVA revealed significant differences on Enviro ID scores by type of municipality, in which rural participants had the highest Enviro ID scores ($M = 3.81$, $SD = .63$), then town/village ($M = 3.70$, $SD = .54$), then city ($M = 3.53$, $SD = .62$, $F(2,485) = 7.96$, $p < .001$). In other words, urban participants had the lowest Enviro ID in this sample. These results are counter to the hypothesis that urban participants would have the highest Enviro ID across the sample.

Like NEP, post-hoc comparisons (Hochberg) indicate that only city and rural participants differ on Enviro ID. Scores for Enviro ID differed significantly between MB, ON, AB, BC, and the rest of Canada ($F(4,484) = 2.77$, $p < .001$). Post-hoc comparisons indicated that Enviro ID scores in BC were significantly higher than both AB and the rest of Canada, but not MB and ON participants. ANOVA ($F(4,484) = 9.07$, $p < .001$) and post-hoc tests (Hochberg) indicated that two BC demographic regions, Main/South and Vancouver Island, had significantly higher Enviro ID scores than the rest of Canada (i.e., all provinces outside of BC).

Mirroring the patterns for NEP, t-tests comparing people who vote/do not vote for each political party revealed significant differences in Enviro ID. Liberal ($M = 3.50$, $SD = .56$) Not Liberal ($M = 3.70$, $SD = .65$, $t(487) = 3.73$, $p < .001$). Conservative ($M = 3.02$, $SD = .68$) Not Conservative ($M = 3.67$, $SD = .58$, $t(487) = 7.08$, $p < .001$). NDP ($M = 3.70$, $SD = .56$) Not NDP ($M = 3.47$, $SD = .66$, $t(487) = -4.22$, $p < .001$). Green ($M = 3.78$, $SD = .56$) Not Green ($M = 3.50$, $SD = .63$, $t(487) = -4.95$, $p < .001$). Similarly, there was no difference in Enviro ID between those participants who do and do not vote in federal elections. These results mostly support the hypothesis that participants with left-leaning political affiliation would have higher Enviro ID scores.

4.2.4 System Justification, Environmentalism, and Demographics

Though included primarily as a distracter scale, the System Justification scale offers interesting additional information about the sample. Consistent with previous research, as environmental attitudes and identity increase, System Justification decreases, where total SJ scores were negatively correlated with both NEP ($r = -.40$, $p < .001$) and Enviro ID ($r = -.25$, $p < .001$). Similarly, participants who strongly agree that they are environmentalists (Enviro Rating = 5) had lower SJ scores ($M = 2.36$) than all other groups ($M = 2.76$ to 2.79) for Enviro Rating ($F(3,475) = 10.85$, $p < .001$).

Measures for correlation, t-test, and ANOVA indicated no significant differences on SJ scores based on participant gender, age, number of years in Canada, nor type of municipality (city, town/village, rural). There were significant differences in SJ scores between provinces, $F(4,475) = 3.05$, $p < .05$, however post-hoc (Hochberg) tests did not indicate differences between particular provinces (AB $M =$

2.87, *SD* = .53, ON *M* = 2.87, *SD* = .60, BC *M* = 2.69, *SD* = .63, MB *M* = 2.53, *SD* = .70, Rest of Canada *M* = 2.48, *SD* = .70). In contrast, ANOVA indicated no significant differences by BC development region (5 groups: 3 BC regions with largest population, the rest of BC, the rest of Canada). There was a significant difference on SJ scores depending on whether or not participants voted for a particular party. Liberal voters had higher SJ scores (*M* = 2.90, *SD* = .61) than those who have not voted Liberal (*M* = 2.51, *SD* = .62), *t(*478) = -6.93, $p < .001$. The comparison between Conservative supporters (*M* = 2.94, *SD* = .55) and non-supporters (*M* = 2.66, *SD* = .65) was similar, t (478) = -2.83, $p < .01$. In contrast, NDP voters (*M* = 2.56, *SD* = .60) had lower SJ scores than non-supporters (*M* = 2.84, .*SD* = 67), t (478) = 4.48, $p < .001$, as did non-voters (*M* = 2.46, *SD* = .57) compared to the rest of the sample (*M* = 2.70, *SD* = .65), t (478) = 2.06, $p < .05$. There was no distinction on SJ scores between participants who did or did not vote for the Green party.

	SCM										
Enviro ID	Competition - *r* (non-enviros distinct)	Enviro ID									
NEP	Competition - *r*	Pos *r*	NEP								
SJ	Warmth Pos *r*, Competence Pos *r*	Neg *r* (strong enviro distinct)	Neg *r*	SJ							
Age	0	Pos *r*	Pos *r*	0	Age						
Yrs in CAN	0	Pos *r*	Pos *r*	0	Pos *r*	Yrs in CAN					
Born in CAN	0	Not CAN > CAN	0	0	0	Born *M* = 44 > *M* = 24	Born in CAN				
Gender	f > m Competence	0	f > m	0	0	0	0	Gender			
Province	Vary on Warmth & Competition. BC > AB Warmth	BC > CAN, Van Isl + Main/Sth > CAN	0	Sig Diff	Van Isl > BC & CAN, Main/Sth < BC, not CAN	0	0	~70% f	Province		
Residence Type	0	Rural > Town > City	Rural > City	0	City < (Town/Vill + Rural)	City < (Town/ Vill + Rural)	not assessed	~70% f	Most Rural in MB & BC	Residence Type	
Politics	Liberal > Warmth & Competence, Cons > Competition, NDP < Competition	Vary by party (except non-voters)	Vary by party (except non-voters)	Vary by party (except Green)	Liberal < NDP > None < = Green = Conserv	not assessed	Most born in CAN: Cons voters 43/46	Cons 39% m, Non-voters 50% m, ~70% f other parties	~40 – 60% Liberal, NDP, & Green support	not assessed	Politics

Table 20. Matrix summary of quantitative analysis across measures and demographics

Key: Pos = positive, Neg = negative, r = Pearson's Correlation Coefficient, f = female, m = male, M = mean, 0 = no significant relationship

Chapter 5: Discussion

5.1 Evidence for Environmentalist Stereotypes

Using a combination of qualitative and quantitative survey methods with naturally occurring groups in the general public, results of this study suggest that there are identifiable stereotypes of environmentalists in Canada. Participants of varying environmental attitudes and environmentalist identity listed many similar words in a Free Association task, as well as statistically indistinguishable ratings of public perceptions of environmentalists on all Stereotype Content Model measures except Competition. Compared to the rest of the sample, participants who reported lower environmental attitudes and who did not identify as environmentalists rated higher levels of Competition between environmentalists and the general public in decision-making processes, resources, and power. Significantly, perceptions of environmentalist Warmth, Competence, Status, and Competition, were similar regardless of participant age, whether participants were born in Canada, how many years they had lived in Canada, or whether they lived in a city, town, or rural residence.

On the other hand, contrasting ideologies and provincial context did appear to influence SCM ratings. Conservative-voters rated Competition higher than non-Conservative supporters, and NDP-voters rated Competition lower than non-NDP supporters. Perceptions of Warmth and Competence varied by province, System Justification score, and support for the Liberal party. In particular, BC rated Warmth higher than AB, and System Justification scores were positively correlated with perceptions of environmentalist Warmth and Competence. Concurrently, Liberal voters rated Warmth and Competence higher than non-Liberal supporters, and also had higher averages on the SJ scale. Thus, there seems to be an interaction between province and political ideology, particularly centrist politics, which delineates perceptions of environmentalists and warrants more attention in future research. A modest but consistent mention of politics and political parties in the Free Association task, across all groups, reinforces their apparent relevance, as do significant variations in environmental values and identity across both provinces and political support.

5.2 Positive Environmentalist Associations

Though some previous research has highlighted primarily negative words and traits in relation to environmentalists and associated groups (e.g., vegetarians), predominantly positive environmentalist associations were found in this study. Free Association tasks used in some other studies asked participants to list words for a 'typical' environmentalist (e.g., Bashir, 2013) or elicited Free Association content following experimental manipulations (e.g., Minson & Monin, 2012). In contrast, instructions and scale order in this study were intentionally designed without a stereotype or other experimental prompt for the Free Association task. The aim of this task was to yield relatively unprimed personal associations rather than perceptions of cultural representations per se (i.e., stereotype content). Inductive analysis of Free Association content indicated that the frequency of both negative traits and labels (e.g., tree-hugger, hippy) seemed to decrease, and positive traits increase, the stronger participants' identification as an environmentalist (4 groups: non-environmentalist to strongly environmentalist). Positive traits made up the largest proportion of all responses per group (35% to 60%). Further, across all levels of environmentalist identification, the most frequent unique words were highly similar and largely positive, including: dedicated, caring, ethical, and strong.

While some content from the Free Association task is quite distinctively positive (e.g., caring) or negative (e.g., delusional) in association, other responses are more ambiguous. In particular, a thematic category that emerged in qualitative analysis was for labels in relation to environmentalists. Labels were reported across all groups, but their use dropped off steadily with increasing environmentalist identification (Figure 4). This may indicate that people with greater environmental participation and identity possess a richer experience of environmentalists and are able to offer more specific traits and words, rather than more general, and possibly derogatory, terms. Whereas some labels were listed primarily by non-environmentalists, the label *activist* was one of the most frequent unique words across all groups (top eight words), suggesting that it is relevant to environmentalist identity in ways that other labels (e.g., tree-hugger, hippy) are not. Further, the meaning and perceived associations with the label *activist* may differ depending on the connotations and intent of the individual. For instance, strong

environmentalists may be more likely to refer to their in-group as activists as a sense of pride, whereas non-environmentalists may use this label in a more disparaging way.

5.3 Mixed Stereotype Content: Interpreting Traits and Predictors in the Stereotype Content Model

With similar scores on SCM measures across most variables in the analysis, and thus strong evidence for an environmentalist stereotype in Canada, averages across the entire sample are used here to compare study results to SCM theory and previous research. In accordance with the SCM, that stereotypes for most groups are a mixture of more or less positive and negative evaluations, results of this study indicated moderate scores for Warmth (M = 3.23, SD = .64), Competence (M = 3.25, SD = .62), and Competition (M = 3.21; SD = .90), and low scores for Status (M = 2.48; SD = .67). Significant and relatively strong correlations between predictors and traits (i.e., Status predicting Competence, and Competition predicting Warmth) provide support for the model (Table 16). In other words, by measuring public perceptions of the social standing of a group, the model predicts public perceptions of the traits for that group. For example, the model suggests that a group perceived to be low in Competition would be high in Warmth. However, in light of the difference in obtained values for Status vs. Competence, which according to the model should be similar, it may not be surprising that patterns within the Competence trait suggest two divergent constructs. Intelligence and confidence were rated relatively high, whereas competent, capable, and skillful were somewhat lower. In the Free Association task, words pertaining to intelligence were highly common, yielding a main coding category for *smart.* This is also reflected in the relatively high score for the *well-educated* scale item in the Status predictor (Table 17). In contrast, the *confident* scale item was poorly correlated with other individual items on the SCM and can be interpreted as both a positive or negative trait. Thus, scores for both intelligence and confidence may have caused a conflated Competence score. Similarly, patterns across the Warmth trait suggest two separate constructs, whereby environmentalists were rated noticeably higher in aspects of morality and good intentions than in aspects of Warmth (Table 17). These observations of divisions, across both Competence and Warmth, are not out of keeping with observations of Fiske et al., who created the model (Fiske et al., 2002). In

consideration of the stereotype in question, the patterns seem to suggest an even more mixed and multi-dimensional stereotype, of positive and negative evaluations, than indicated by the traits and predictors alone.

Though not directly comparable across other study samples and methods, the scores obtained from the SCM place environmentalists in a space relative to other groups along dimensions of Warmth and Competence, as well as Status and Competition, in which to interpret perceived traits in somewhat predictable ways (re: quadrant mapping in Fiske et al., 2002). Indicated by the perceived low Status of the group, results seem to suggest that the public would view environmentalists with either paternalistic prejudice (when perceived to be low in Competition) or contemptuous prejudice (when perceived to be high in Competition). Paternalistic prejudice is characterized by pity and sympathy, whereas contemptuous prejudice is characterized by contempt, disgust, anger, and resentment. That said, beliefs about public stereotypes do not necessarily reflect an individual's perceptions and can also vary depending on an individual's position relative to the group in question (Fiske et al., 2002). In particular, environmentalists may be more likely to see their in-group members with admiration and pride, as suggested by the results of the Free Association task.

While adding new items to an established scale can sometimes weaken its reliability, the additional items appended to the SCM in this study nonetheless provide interesting results that are worthy of discussion. Exploratory analysis of the scores for these traits indicated that participant responses to the items were much more variable and inconsistent overall, where unlike the original SCM items, environmentalist identity and attitudes appeared to have some bearing on interpretation of these items. A few explanations come to mind. Unlike the existing items on the SCM, most of these added terms are negative evaluations and thus reverse-scored items. In other words, high scores on these traits indicate low levels of Competence, and a lack of Warmth. As the SCM contains only positive items, and is thus not counter-balanced to limit response set bias, it is unclear to what extent the introduction of negative items may have in itself affected participant responses. Alternatively, the additional items were drawn from existing literature identifying negative traits associated with environmentalists, whereas the SCM

measures traits and beliefs that can broadly be applicable to any social group. The added items may elicit stronger reactions and associations for participants than the original SCM items, and may be especially relevant to perceptions of environmentalist stereotypes. Indeed, some of the highest averages were for added items, specifically: forceful, aggressive, judgmental, self-righteous, and over-reactive. Overall, drawing from the pattern of scores across both the original and added items on the SCM, the impression provided of environmentalist stereotypes includes: smart and highly educated, well-intentioned and moral, low status, over-reactive and judgmental, somewhat capable, somewhat warm, and in moderate competition with the public for resources, decision-making, and power. Further investigation of both the original and added items on the SCM as aggregated constructs will provide a more robust account of the mixed stereotype content for environmentalists.

5.4 Distinctions in Environmentalist Identity

Across the study sample, 69% of participants self-identified as environmentalists, but there appear to be significant differences within this group, and compared to the rest of participants. Patterns across the data seem to suggest that non-environmentalists are a relatively distinct group, as are strong environmentalists, but that there is more similarity between environmentalists and neutral respondents than between other groups. Each level of self-identity as an environmentalist (Enviro Rating) was distinctly different from the next in overall Enviro ID score[6]. However, there was no significant difference between the Enviro ID scores of participants who disagreed or strongly disagreed to the Enviro Rating item, nor a significant difference in the average score for environmental attitudes (NEP). Similarly, there was no significant difference in the NEP scores of participants who responded as neutral or agree to Enviro Rating, and 'strong' environmentalists' ratings were significantly higher than all other participants. Thus, while NEP & Enviro ID are significantly positively correlated, NEP did not directly

[6] Environmental identity was measured in aggregate (Enviro ID) as a 12-item average, and included responses to a single question asking participants to indicate their level of agreement (*1 = strongly disagree to 5 = strongly agree*) with the following statement: *I consider myself to be an environmentalist* (Enviro Rating).

predict environmentalist identity in its various forms. The NEP scores of many self-identified environmentalists (Enviro Rating = 4) are statistically indistinguishable from the scores of participants who are neutral in environmental identity (Enviro Rating = 3). Other nuances between Enviro Rating groups also warrant attention. Though scores on the System Justification scale were significantly negatively correlated with both NEP and Enviro ID across the sample, strong environmentalists (Enviro Rating = 5) were distinct from all other groups in having a significantly lower score on SJ. In contrast, non-environmentalists as a whole perceived group Competition on the Stereotype Content Model as significantly higher than did all other participants.

Given that people who identify as strong environmentalists reported distinct environmental attitudes, identities, and views on the need for societal change, relative to other groups, they may represent a stronger degree of environmentalism along a varied, but linear continuum. Alternatively, they may have different goals, values, social networks, and/or experiences than other groups, particularly in relation to stereotypes and intergroup interactions. Various studies have attempted to delineate the blurry divisions between types and strength of environmental identity (Kashima, Paladino, & Margetts, 2014). For example, interviews across diverse environmental groups in the USA yielded four distinct types of people and behaviour described by using the term "environmentalist" (Kempton, 2004): *1) those who say they care about the environment but take no public actions; 2) those who act to preserve local habitat often through private actions (also called "conservationists"); 3) those who act in the civic or political realm, by writing to representatives or attending hearings (also called "activists"); and 4) those who act via demonstrations, civil disobedience, or "direct action" such as blocking logging operations (also called "radicals")*. Researchers found that these different meanings are sometimes used to differentiate between groups or opponents within the environmental movement. In that vein, many study participants reported limited participation in local and international environmental organization, and rallies and protests, despite relatively high scores on other aspects of environmental identity.

Research has demonstrated the public's reluctance to being identified as an environmentalist in various contexts (Brick et al., 2017; Brough et al., 2016; Owen et al., 2010). It is striking that in this study

there was no significant difference in scores on the SCM, SJ, and NEP across 71% of the sample, of neutral respondents and environmentalists, but that these participants differed mainly in measures of environmental identity. Surprisingly, measures of embarrassment and reluctance to be identified as an environmentalist were the least strongly correlated with other Enviro ID items and Enviro Rating overall. These results suggest that concern about being identified as an environmentalist in a social setting was not a significant concern for study participants. However, the item rating the importance of co-workers (work or school) seeing the participant as being concerned about environmental issues was more highly correlated with all other questions about environmental identity. A lack of embarrassment may reflect a sample comprised largely of participants with strong environmental attitudes and who live on the south coast of BC, where there is likely a prominent environmental community, and thus high salience of environmental values and behaviour (Owen et al., 2010). As outlined by Owen, Videras, and Wu (2010), polarized communities, either supportive or dismissive of environmental values and initiatives, tend to have more self-claimed environmentalists than moderate communities, and community composition is important in understanding environmental identity and behaviour. Study participants from BC reported stronger environmental identification than the rest of Canada, and Vancouver Island and Main/South regional districts the strongest environmental identity overall, despite similar environmental attitude scores. There may also be more opportunities to participate in environmental activities in BC than in other provinces, especially with widespread pipeline opposition and related activity in recent years, and therefore opportunities to interact with this social group in which one might belong.

Whether in BC or elsewhere, and despite relatively strong environmental attitudes, there are various factors that differentiate participants in their identification as environmentalists. This potentially broad public group with relatively strong environmental attitudes but wavering environmental identity may be especially susceptible to the effects of negative environmentalist stereotypes. Further, given its size within this sample and possibly in the population more widely, engagement with this somewhat ambiguous group appears to be highly relevant to the failure or success of a given environmental initiative. As identity can be highly contextual, and social context can subtly but significantly influence

behaviour (Rabinovich et al., 2011), the distinctions and fluidity between these identities warrants further attention. Triangulation between study methods and disciplines may improve understanding of the interplay between environmentalist heterogeneity, identity, and stereotypes in Canada. It may be worthwhile to re-evaluate measures of embarrassment and reluctance to identify as an environmentalist with a larger sample of non-environmentalists. Also, the aggregate score used for Enviro ID is not an established scale and further research might include additional items and scales to evaluate the social desirability of an environmentalist identity in various contexts.

5.5 Limitations and Future Directions

Further to the discussion above, there are additional limitations to the current study that present opportunities for further research. While the snowball sampling method used by email and social media was successful in recruiting a significant representation of environmentalists, the environmental topic for this research was clear from recruitment materials and may have biased the results through self-selection. Further, as participant recruitment was initiated primarily through extended personal and professional networks, and the research was clearly from an environmental department, participants may have been inclined to provide what they believed to be favourable answers both due to perceived social proximity and perceived researcher biases toward environmentalism. These effects, called demand characteristics, can be a source of measurement error in which participants think they have determined the research hypothesis and try to answer in a way that 'helps' the researcher (Sarafino, 2005). To some extent, demand characteristics were managed in this study, as in the inclusion of the distracter scale to somewhat blur the study purpose (SJ), and in the social distancing used in the SCM scale asking about public perceptions. However, other scales, including the NEP and Free Association task, asked for personal views. Concerns about positive bias on environmental measures are not uncommon in research (McIntyre & Milfont, 2016). That said, in this study, participants across all comparison groups listed negative traits and some included quite sharp comments at the end of the survey, suggesting many were not limited by these factors. Nevertheless, a wider breadth of recruitment across provinces and demographic variables, including Conservative voters and non-environmentalists, would strengthen future research in this area

and provide more information about patterns of environmentalism and stereotypes in relation to politics and geographical context in particular. Additionally, as modifications were made to many of the scales used in this survey, additional research using these or similar scales would improve the generalizability of the study findings.

Future sampling could also seek better representation across the socio-economic spectrum. Although limitations in representativeness for online surveys are quickly improving, online populations are still lacking in older adults, the unemployed, and those with less education (Hine et al., 2016). Including income and education would serve to both ensure diversity in the sample, and also provide additional variables shown to correlate with environmental measures. For example, communities with a high proportion of post-graduate degrees are more likely to self-identify as strong environmentalists than those with a lower proportion (Owen, et al., 2010). Further, many pro-environmental behaviours are largely inaccessible or even irrelevant depending on income, social mobility, and leisure time (Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007). These factors may significantly affect degree of identification as an environmentalist and participation in environmental activities, or significantly alter the nature of environmentalism for a community. Expressing environmental concern takes very different forms for different people, situated in particular geo-political contexts, with drastically different needs and relative power (Guha & Alier, 1997). For many, and perhaps most, people worldwide, environmental concerns cannot be separated from other barriers rooted in poverty, marginalization and inequality. Further, environmentalism, conservation, and similar constructs have underlying assumptions based in Euro-North American cultural assumptions (Nadasdy, 2005). Thus, further research on environmentalist social groups and stereotypes might also consider varying worldviews, and historical and political context with regards to environmental interests, intergroup relations, identity, and research tools.

From another perspective, where this research focused primarily on perceptions of stereotype content held broadly in the public, much work could be done in identifying the impacts of environmentalist stereotypes on pro-environmental behaviour and participation in environmental groups.

Quasi-experimental studies and focus groups may be especially useful for understanding diverse impacts and experiences.

5.6 Implications and Applications

As outlined in the introduction, stereotypes and related social-psychological barriers can have personal, social, and behavioural implications both for members of a stigmatized group and out-groups. Results of this study indicate that consistent stereotype content is understood amongst members of the public across a range of personal variables, suggesting that the stereotype is commonly experienced and navigated, both as an in-group and out-group member. Stereotypes can significantly alter an individual's perception about members of an out-group, limit their willingness to interact with out-group members, and lead to a mental distortion of the information provided by members of that group (Bodenhausen & Lichtenstein, 1987; Judd et al., 1991; Park & Rothbart, 1982; Rahn, 1993). Where substantial evidence exists to demonstrate that stereotype activation impairs cognitive functioning of stigmatized individuals, and undermines their competence in the eyes of others (Croizet et al., 2001; Spencer et al., 1999; Steele & Aronson, 1995), unfavourable content in environmentalist stereotypes likely delegitimize both people perceived to be environmentalists and their actions. In the letter described earlier that Minister Oliver released to the Canadian public, he dismissed opposition and dissent to pipeline development as 'just environmentalists'. This appeared to be a strategy to invoke judgment about the legitimacy and the status of a group that would resonate in light of a cultural stereotype. It would seem that environmentalist stereotypes can delegitimize not only self-identified environmentalists and their actions, but anyone concerned about environmental issues, which according to environmental attitude research is a significant majority worldwide. Further, as previous research has suggested, these group perceptions may create social distance and group divisions (i.e., 'us-them' mentality) (Bigler et al., 1997).

While environmental concern is highly common, environmentalism may not be appealing to a broad range of people. Just as an individual may hold strong values and attitudes about any number of public issues, such as health care, public safety, and equity, few individuals would identify or engage in these issues in the way sometimes expected of the general public for environmental issues, especially not

at a ‘radical’ or ‘activist’ level. However, some approaches such as choice architecture and nudging have been demonstrated to elicit some types of pro-environmental behaviour with relatively little individual effort or adherence to environmental values (Thaler, Sunstein, & Balz, 2012). Also, importantly, infrastructure improvements that maximize resource efficiency and minimize waste can elicit large-scale environmental improvements without comparable efforts for public support. These impacts can be largely invisible to the public, such as in retrofitted energy and water systems, but can have more significant impacts than some public engagement efforts (Ma, Cooper, Daly, & Ledo, 2012; Novotny, Ahern, & Brown, 2010). Perhaps the biggest and most problematic disconnect in public attitudes and action is the lack of impetus for policy-makers and leaders to make bold choices and investments in line with widespread public values and current environmental knowledge. Environmental progress requires organizations open to change to solve complex problems, and those organizations need champions willing to prioritize sustainability across organizational structures (Sharp, 2015). In this way environmentalist stereotypes may be especially influential as a barrier to individuals in any number of personal and professional roles from publicly expressing attitudes that may lower their status and competence in the eyes of others, and may alter perceptions of information they provide. Rather than becoming mainstream and integrated in everyday decision-making, stereotypes may reinforce the idea that environmental concerns and actions are a side-of-the-desk concern and reserved for ‘hippies’ and ‘radicals’.

While identifying social-psychological barriers such as environmentalist stereotyping may explain some of the difficulty in achieving sustainability goals, it also points toward opportunities. A better understanding of environmentalist stereotypes and their effects in various contexts may help inform initiatives for education, engagement, and collaboration that challenge social psychological barriers and the stigmatization of environmentalists. This information may assist decision-makers in governmental and non-governmental organizations to design more effective sustainability initiatives with greater public support and uptake. More specifically, it may help to tailor initiatives to the intended audience in ways that align with their motivations, values, and identity, and by using framing and messengers that challenge environmentalist stereotypes or avoid invoking environmentalist stereotypes altogether. Insights

regarding cognitive biases pertaining to environmentalists could be useful in developing group facilitation tools that break down intergroup barriers to improve collaboration on pressing sustainability issues. For example, research on racial stereotypes in the US led to a highly successful classroom model called the Jigsaw Classroom that reduced racial conflict and improved racial integration (E. Aronson, n.d.). Using a cooperative structure, the Jigsaw Classroom diffuses suspicion, fear and distrust between groups (E. Aronson, n.d.). Exposure and collaboration in this type of format is likely to result in more open information sharing and critical thinking, regardless of how strongly people identify as environmentalists.

As a final point, though the mixed stereotype content obtained in this study points to challenges for public engagement and intergroup relations, results also indicate that, particularly amongst individuals with relatively strong environmental attitudes, there are strong positive associations with environmentalists. Traits including dedicated, strong, ethical, caring, and admirable, were highly common in the Free Association task. Accordingly, people who engage in the environmental movement, or who may be motivated to, may experience reinforcement within this in-group and amongst people with strong environmental attitudes more generally. One study with both college students and activists from the American public indicated that activism was highly associated with personal well-being, feelings of vitality, and flourishing (Klar & Kasser, 2009).

5.7 Conclusion

This study builds on research in psychology on intergroup processes and environmentalism. In particular, it expands on the small but growing body of literature on perceptions and stereotypes of environmentalists. As few studies have assessed environmentalist perceptions of the stereotypes directed at their own in-group, the current study included representation of environmentalists, as well as participants recruited more broadly from the Canadian population. Environmentalism was measured by assessing environmental attitudes (NEP) and environmental identification across a variety of survey scale items. Participants were asked to both provide word associations about environmentalists, and to rate public perceptions of environmentalists on the Stereotype Content Model, an established scale with strong validity and reliability that has seldom been used in studies with this social group. Participants also

completed the System Justification scale, a measure of beliefs about society, and provided demographic information. Results of this study provide evidence for the existence of environmentalist stereotypes in Canada, and establish stable content across diverse demographic groups. A better understanding of environmentalist stereotypes may offer insight into resistance to environmental initiatives, thereby improving design for greater public engagement. This information may also help to better understand conflict in decision-making processes, and to develop group facilitation and management tools that break down barriers between interest groups, thereby improving collaboration and outcomes in decision-making processes.

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Appendices

Appendix A Research Survey

a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

SURVEY: Environmental Values and Beliefs

Please answer each section of this survey in the order presented.
Thank you!

PART 1

Off the top of your head, **list five words** that come to mind when you think of: *people who have strong environmental values and who take actions to protect the environment.*

1.
2.
3.
4.
5.

Please turn the page…

PART 2

We are interested in perceptions of: *people who have strong environmental values and who take actions to protect the environment*. We are not interested in your personal beliefs, but in how you think the general public in Canada* view these individuals on average.

Circle the number that best represents how you think these individuals are **viewed by the general public in Canada*** for each of the following characteristics:

As viewed by Canadians in general*, to what extent are each of the following traits characteristic of: *people who have strong environmental values and who take actions to protect the environment*?	**Not at all**				**Extremely**
…Competent	1	2	3	4	5
...Confident	1	2	3	4	5
…Capable	1	2	3	4	5
…Forceful	1	2	3	4	5
…Intelligent	1	2	3	4	5
…Skillful	1	2	3	4	5
…Irrational	1	2	3	4	5
…Friendly	1	2	3	4	5
…Well-intentioned	1	2	3	4	5
…Trustworthy	1	2	3	4	5
…Aggressive	1	2	3	4	5
…Immoral	1	2	3	4	5
…Judgmental	1	2	3	4	5
…Warm	1	2	3	4	5
…Good-natured	1	2	3	4	5
…Unhygienic	1	2	3	4	5
…Sincere	1	2	3	4	5
…Over-reactive	1	2	3	4	5
…Prestigious	1	2	3	4	5
…Eccentric	1	2	3	4	5
…Economically successful	1	2	3	4	5
…Well-educated	1	2	3	4	5
…Self-righteous	1	2	3	4	5
…High status	1	2	3	4	5

**For the purposes of this survey, the general public in Canada refers to anyone living in the country, or who considers themselves to be part of Canadian society.*

We are interested in perceptions of: *people who have strong environmental values and who take actions to protect the environment*. We are not interested in your personal beliefs, but in how you think the general public in Canada* view these individuals on average.

Circle the number that best represents how you think these individuals are **viewed by the general public in Canada***:

1. As viewed by Canadians in general, if these individuals get special consideration (such as preference in decision processes), this is likely to make things more difficult for the general public.

(strongly disagree) 1 2 3 4 5 (strongly agree)

2. As viewed by Canadians in general, resources that go to these individuals are likely to take away from resources of the general public.

(strongly disagree) 1 2 3 4 5 (strongly agree)

3. As viewed by Canadians in general, the more power these individuals have, the less power the general public are likely to have.

(strongly disagree) 1 2 3 4 5 (strongly agree)

**For the purposes of this survey, the general public in Canada refers to anyone living in the country, or who considers themselves to be part of Canadian society.*

PART 3

Circle the number that best represents **YOUR** level of agreement with each of the following statements.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. In general, society is fair.	1	2	3	4	5
2. In general, the Canadian political system operates as it should.	1	2	3	4	5
3. Canadian society needs to be radically restructured.	1	2	3	4	5
4. Canada is the best country in the world to live in.	1	2	3	4	5
5. Most policies serve the greater good.	1	2	3	4	5
6. Everyone has a fair shot at wealth and happiness.	1	2	3	4	5
7. Our society is getting worse every year.	1	2	3	4	5
8. Society is set up so that people usually get what they deserve.	1	2	3	4	5

PART 4

Circle the number that best represents **YOUR** level of agreement with each of the following statements.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
9. We are approaching the limit of the number of people the earth can support.	1	2	3	4	5
10. Humans have the right to modify the natural environment to suit their needs.	1	2	3	4	5
11. When humans interfere with nature, it often produces disastrous consequences.	1	2	3	4	5
12. Human ingenuity will insure that we do NOT make the earth unlivable.	1	2	3	4	5
13. Humans are severely abusing the environment.	1	2	3	4	5
14. The earth has plenty of natural resources if we just learn how to develop them.	1	2	3	4	5
15. Plants and animals have as much right as humans to exist.	1	2	3	4	5
16. The balance of nature is strong enough to cope with the impacts of modern industrial nations.	1	2	3	4	5
17. Despite our special abilities humans are still subject to the laws of nature.	1	2	3	4	5
18. Human destruction of the natural environment has been greatly exaggerated.	1	2	3	4	5
19. The earth has only limited room and resources.	1	2	3	4	5
20. Humans were meant to rule over the rest of nature.	1	2	3	4	5
21. The balance of nature is very delicate and easily upset.	1	2	3	4	5
22. Humans will eventually learn enough about how nature works to be able to control it.	1	2	3	4	5
23. If things continue on their present course, we will soon experience a major ecological disaster.	1	2	3	4	5
24. We would like to check that you are still paying attention. Circle the correct number: 5 – 1 = ?	1	2	3	4	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
25. There are landscapes that say something about who we are as a community, a people.	1	2	3	4	5
26. My health and the health of my family are strongly related to the natural environment.	1	2	3	4	5
27. I have strong feelings about nature (including all plants, animals, the land, etc.). These views are part of who I am and how I live my life.	1	2	3	4	5
28. Plants and animals, as part of the interdependent web of life, are like 'kin' or family to me, so how humans treat them matters.	1	2	3	4	5
29. How I manage the land, both for plants and animals and for future people, reflects my sense of responsibility and stewardship for the land.	1	2	3	4	5
30. I often think of some wild places whose fate I care about and strive to protect, even though I may never see them myself.	1	2	3	4	5
31. Humans have a responsibility to account for our own impacts to the environment because they can harm other people.	1	2	3	4	5
32. I think of myself as an environmentally conscious person.	1	2	3	4	5
33. It is important to me that *co-workers* (work or school) think of me as someone who is concerned about environmental issues.	1	2	3	4	5
34. I would be embarrassed to be seen as having an environmentally conscious lifestyle.	1	2	3	4	5
35. I think of myself as someone who is very concerned with environmental issues.	1	2	3	4	5
36. I would not want my *family* to think of me as someone who is concerned about environmental issues.	1	2	3	4	5
37. I would not want my *friends* to think of me as someone who is concerned about environmental issues.	1	2	3	4	5

PART 5

These demographic questions help us understand how respondents to this survey compare overall to the general population in Canada. You may skip questions you feel uncomfortable answering.
Your responses will remain confidential and anonymous.

1. What is your gender? _____

2. What is your age? _____ (years)

3. For how many years have you lived in Canada? _____ (years)

4. Were you born in Canada? (CIRCLE ONE) Yes No

5. In what Canadian province do you live? (If multiple, CIRCLE ONE where you spend the most time)

Nfld. Lab.	N.B.	Manitoba	B.C.	Nunavut
P.E.I.	Quebec	Sask.	Yukon	Outside
N.S.	Ontario	Alberta	N.W.T.	Canada

6. What best describes the area where you live? City Town / Village Rural

7. What is the name of the municipality (or regional district) in which you live?_____

8. What language do you use the most, day-to-day? _____

9. What is your ethnicity/ethnicities? _____

10. For which political parties do you usually vote in federal elections (CIRCLE all that apply):
Liberal Green NDP Conservative Bloc Other None

*CIRCLE the number that best indicates **your** level of agreement with each of the following statements:*	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
11. I consider myself to be an environmentalist.	1	2	3	4	5
12. I am part of a group of people or community with strong environmental values.	1	2	3	4	5
13. I am a participant in the environmental movement.	1	2	3	4	5
	Never	Rarely	Sometimes	Very Often	Consistently
14. I participate as a member of a national or international environmental organization.	1	2	3	4	5
15. I participate as a member of an environmental group or organization in my community, municipality or province.	1	2	3	4	5
16. I participate in rallies and/or protests in support of environmental issues.	1	2	3	4	5

If you have any comments you would like to share about
the questions or topics in this survey, please list them here:

Thank you very much for your participation!