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Living the Green Life: A Mixed-Methods Examination of the Relationship between Generativity and Environmental Engagement in Emerging and Mid-Life Canadian Activists and Nonactivists

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By

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Abstract

This dissertation examined the role of the personality features of identity and generativity for the composition of personal narratives and engagement in an environmental domain. Although generativity has been highlighted as a key feature of environmentalism, this work extends the understanding of that link by examining its relationship with, and its emergence in, personal narratives of environmental activists and nonactivists. Narratives were analyzed at three distinct levels, in order to develop a thorough understanding of how generativity might intersect with an environmental personal narrative identity.

In the first study, I examined stories in terms of the features of generative commitment scripts. Significant commitment themes for environmental engagement could be empirically grouped into three broader factors, each of which distinguished activists from nonactivists: personally feeling some special connection with nature, having significant relationships with influential people, and having developed a set of guiding personal values.

In the second study, I examined narratives for specific motive themes reflecting key generative desires of agency and communion: the desire of individuals to make a difference in the world, and to pass it along for the benefit of others. Narratives in this study were drawn from both the environment and the work domains. The stories of activists contained significantly more agentic and communal motive themes than those of nonactivists. Work stories contained more agency themes than environment stories. The stories of male activists contained more agency themes than the stories of male nonactivists in the environmental domain but not in the work domain. For male (but not female) activists, it would seem that the environmental domain is particularly salient in terms of feelings of productivity in comparison with nonactivists.

The focus of the third study was on more structural and discourse characteristics of the narratives. An index of reflective engagement in environmentalism was constructed, based on a composite rating of story quality for the narrated meaning of the event for the participant, the descriptive vividness of the story, and the expressed impact of the events described on the person's life. Generative concern was found mediate the relationship between environmental identity and reflective engagement in the narratives.

Across these studies, a key finding seemed to be the critical role that generativity plays in the expression of the personal narrative within the environmental domain. The studies each focused on different features of generativity, and yet together, highlighted the importance of a generative feeling of care and concern for the next generation for the expression of the life story in this domain.

Acknowledgements

While I was completing the requirements for my degree, and working on the various components of this document, I was enmeshed in the process, and was very much focused on the immediate tasks. Completing the defense of this document has allowed me to step back and consider the wider process. The past five and a half years have been a time of tremendous growth in my understanding of this area, in particular, as well as the research process, and academic life more generally. I am grateful for conversations with so many individuals who contributed to this growth in various ways.

To our research participants, thank you for sharing your stories; without those stories, this project would not have been possible. I know the process felt long, but I hope that the opportunity to reflect on your experiences might have been as enjoyable for you as it was for me to read your stories.

To my current and former lab mates, I am grateful for your numerous contributions this this project. Thank you for your shared conversations about the challenges (and rewards) of graduate school. It was always reassuring to know that I wasn't alone. Thank you for providing feedback on posters and presentations emerging from this project, along the way; you have encouraged and broadened my thinking. To the interviewers (both in Ontario and in BC), thank you for patiently listening to participant stories, and for carefully prodding to ensure the stories were complete. To my fellow-coders, Elise and Sonia, thank you for working with me to ensure that we were coding these many codes consistently; this was a large commitment, and I appreciate your help with this very important task. Thank you Kendal and Ty, for helping me to run the MPlus analyses (and so quickly!), and for helping me to understand the outputs.

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To my committee, Drs. Nancy Freymond, Joan Norris, and Manuel Riemer, thank you for encouraging me to stretch my thinking in new directions and to think about my research through a

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To my family, Phil, Tyler, Justin and Kaitlyn, thank you for your patience while I was focused on this project. Yes: *now* it's finished.

Table of Contents

List of Tables

List of Figures

Preface

As a person, a citizen and a parent, I can appreciate nature, and have concern for the earth's future ability to sustain humankind. During the time I have spent completing my PhD, I have had the opportunity to participate in several projects with a focus on environmental engagement. For my second PhD comprehensive project, I developed a scale to measure active environmental engagement. That project was a very small component of a much larger research program which evaluated the effectiveness of a series of workshops designed to teach youth to become environmental leaders. I was fortunate to be involved in this project, and through that involvement, my interest in environmental issues, and understanding stewardship of environmental change has grown. I now have a greater understanding of the need for strong leaders who are committed to effecting environmental change.

As a developmental psychologist, I am particularly interested in the social development of human beings, and how that social development might have an impact on personal engagement in important issues. I am intrigued by the impact that the development of healthy components of socioemotional functioning such as identity and generativty may have in relation to personal engagement in the broader world. I am interested in the development of personality, and how that development might impact personal behaviour.

As a researcher, I am interested in the stories that people tell, and how those stories might both reflect and impact their lived experiences. This project has allowed me to combine those interests and concerns, to study how the life story and personality might intersect around caring for the environment.

Chapter 1 provides the literature review and describes the theoretical frameworks which shaped this program of research. The studies described in this document are part of a

larger research project run by Dr. Michael Pratt and Dr. Joan Norris at Wilfrid Laurier University in Ontario and their collaborators, Dr. Kyle Matsuba at Kwantlen Polytechnic University in British Columbia and Dr. Dan McAdams at Northwestern University in Illinois. This overall research project was funded by the Social Sciences and Humanities Research Council of Canada (#410-2011-2372), and was originally conceptualized by Dr. Pratt, Dr. Norris, and Dr. Matsuba, in collaboration with their research labs, consisting of a number of graduate and undergraduate students. I was one of those students. Although I contributed to the collection of the data described in this document, the research program had already been conceptualized in general before I joined the research team. Although this research project involves numerous other researchers, this dissertation contains a significant portion of the results from this project. I participated in the data collection phase of the research by helping with participant recruitment, and by reviewing completed interviews for consistency. I transcribed all of the interviews and coded all of the narratives for the codes (along with a secondary coder, for reliability purposes) described in this document. I have been very fortunate to have been given the opportunity to utilize all of the quantitative survey data and narrative interview data from this project to design and conduct the analyses presented in this dissertation.

Chapters 3, 4, and 5 are the research chapters, which describe the empirical analyses of the research questions which emerged from my review of the literature. Because the analyses described in these three studies utilize different aspects of the same data set, Chapter 2 provides a description of the general methodology which is common to each of the three studies. In Chapter 6, I summarize the findings across the three studies and describe the implications for the field, more generally.

I am the sole author of Chapters 1, 2, 3, 4, and 6. Chapter 5 has been published in the journal, *Identity*. Although this manuscript was prepared in collaboration with others, I was the senior author for this chapter; I developed the hypotheses, conducted the analyses and wrote the manuscript. Analyses in chapter 4 were run for me by a colleague at Wayne State University because I do not have access to the Mplus software which is most efficient for these questions. I developed the models that were tested in those analyses. In this document, I have used "I" to refer to portions of the research which were my own work (i.e., the analyses and conclusions). I have used "we" or "the team" to refer to those aspects of the research which were determined in collaboration with the research team, or which were established prior to my joining the research team.

Chapter 1 - Introduction

Environmental issues are of grave concern in our world today. Climate change, habitat destruction, and environmental health risks pose serious risk to the earth's future ability to sustain the human race (Canadian Medical Association, 2008; Intergovernmental Panel on Climate Change, 2014; Wilson, 1988). Globally, concerns about the environment have increased dramatically since 2001 (Pew Research Center, 2007). Despite these increasing concerns about the state of our environment, however, there has been little increase in the level of participation in environmental activities by Americans in the past decade (Morales, 2010). A similar pattern exists for Canadians. A study conducted by My Sustainable Canada (2011) indicated that Canadian participants made truly sustainable purchases in only a few product categories, such as household cleaners and food; consumers tended to make less sustainable purchases in other categories. Although people wanted to contribute, and believed those contributions were having a positive impact, their actions really had only a minimal impact on the environment (Summerhill, 2010). Consumers so far seem unlikely to engage in the more impactful activities which require a significant behaviour change, personal sacrifice and strong commitment to the environment. Thus, there continues to be a gap between concern and action. It is important to understand the psychological factors that might encourage engagement in environmental causes in order to close this gap. To this end, psychologists are beginning to study the human response to environmental concerns, and to research factors predicting environmental engagement (American Psychological Association, 2010; Gifford, 2008; Harré, 2011).

In this set of studies, I have focused on identity and generativity and their connection with the life stories of young and midlife adult activists and nonactivists. Identity is the key

personality issue faced by adolescents (Erikson, 1968), and remains an important component of the development of self-understanding into adulthood (Erikson, 1968; Sneed & Whitbourne, 2003; Whitbourne, 1996). Identity develops in many domains. Traditionally, important domains for identity development and for its measurement have included interpersonal, occupational and ideological components of the self, which itself encompasses both political and religious ideas (Marcia, Waterman, Matteson, Archer & Orlofsky, 1993); however, for many people, certain other domains such as the environment and nature are similarly important to their personal identities. How people identify with the natural world may impact their actions and the way they narrate their personal experiences within that domain.

Generativity refers to feelings of care and concern for future generations, and was first described by Erikson (1968) as an important element of healthy adult development. Although Erikson originally described generativity as a key issue for midlife adults, evidence supports its earlier development (e.g., Pratt & Lawford, 2014). This caring for future generations may play an important role in motivating environmental concern. That generative concern may be reflected in, and impacted by personal stories about experiences within the natural world. Using a comprehensive, mixed-methods approach to examine a group of environmental activists and nonactivist comparisons, I have evaluated the role of generativity and identity for environmental engagement of emerging and midlife adults.

In this review of the literature, I first introduce identity, with particular attention to the life story as one particular indicator of the personal identity and as a tool for developing a deeper understanding of the self and personality. Features of the life story are used to further understand the environmental identity of participants in the present study. I also describe generativity generally and explore the connection of this concept to environmental

engagement and examine previous research which has examined these concepts in environmental activists. I explain the decision to take a mixed-methods approach in this project. This review of the literature supports the present set of three studies which comprehensively describe the interaction between generativity and environmental engagement in terms of personal concerns for the environment, and in terms of the individual narrative representation of a personal environmental identity. In the first study, I look at the broad themes contained in the life stories of participants. I examine how environmental activists incorporate generative commitment themes into their life stories, and whether that narration is distinct from nonactivists. In the second study, I examine more specific story themes relating to personal motivation. I compare differences between activists and nonactivists in terms of their generative motives, and look at the relationship of those themes to generativity. In the third study, I evaluate several structural characteristics of the stories. These structural features are analyzed in relation to an environmental identity and to generative concern.

Identity

The key personality issue faced by adolescents and youth is the development of identity (Erikson, 1968). Erikson described identity in terms of adolescent experiences of crises and their resolution. According to Erikson, it is necessary for adolescents to have experienced both crises and their resolution in order to establish a mature sense of identity which permits optimal psychological health as adults. Identity status reflects a pattern of consistency in responses across different life experiences and domains; this consistency is based on personal experiences around these crises and their resolution (Erikson, 1956). A personal identity is critical

throughout adulthood as it impacts how people engage with the world around them, and provides a lens through which they interpret all interactions and experiences.

Erikson (1968) described two central features of the construct of identity and its organizing role in personality; both describe the integration and unity of that overall identity. As a mature identity develops, it provides a sense of unity over time. Identity also unifies the sense of self across a variety of contexts; it provides meaning and purpose, and guides behaviour. Erikson (1968) thus stressed two central features of the construct of identity and its organizing role in personality which provides integration and unity. One of these was the integration of disparate roles or childhood identifications across contexts. The other, the integration and continuity of the self through time seems to require a more flexible approach to understanding the personal identity.

Some theorists have argued that this traditional Eriksonian conception of identity might be somewhat outdated (e.g., Gergen, 1991) because a unified, consistent identity might limit the personal freedom which is characteristic of life in a highly complex postmodern society. Gergen describes multiple selves as a more vital approach, which fluidly allows individuals to interact in a variety of situations. Schachter (2005) reconciles these two views of identity by emphasizing Erikson's description of identity as embedded within the surrounding culture, and connecting this with the present tendency of individuals to be exposed to multiple juxtaposed cultures and contexts. In this way, he allows that a more fluid identity may not be inconsistent with Erikson's original theory. Mayseless and Keren (2013) extend this understanding of identity to refer to that which provides life with meaning. Although this does not seem inconsistent with Erikson's description of identity as having made a commitment to some set of beliefs or values, it does allow for identity to be reflected uniquely within different domains. My understanding

of identity is consistent with this more fluid, flexible commitment to that which provides life with meaning. Given this understanding, individuals may be significantly impacted by various social contexts and meanings, which are intensely personal, depending on their own emphasis and connection with different, unique domains (Alisat & Pratt, 2014).

Narrative Identity

In his analysis of the individual, McAdams (1985, 1995, 1996) describes three levels of personality. He suggests that a thorough analysis must include a description of dispositional traits, personal concerns as well as an examination of the life story. McAdams contends that only by understanding these three levels of personality, can we fully understand a person.

At the first level are *dispositional traits*, which have been widely studied in the personality literature (e.g., the Big Five, McCrae & Costa, 1987). These characterizations are relatively stable over time, and generalized across contexts, and describe patterns of behavioural consistency. They allow for comparisons across individuals, but are generally lacking in descriptive richness when considering the unique nature of the individual.

At the second level, McAdams describes a set of constructs he labels *personal concerns*. By examining personal concerns, the understanding of the individual is becoming more nuanced. Characteristics at this level include constructs such as motives, values, goals and strivings (e.g., Emmons, 1986; Schwartz, 1992), as well as developmental stages and orientations in personality. At this level, constructs such as personal goals and strivings may reflect and shape the unique individual identity. In comparison to the traits found at level one, personal concerns are more contextualized, and may be dependent on time and place; that is, they may change, depending on the context of the individual.

McAdams believes the third level of personality consists of the individual's narrative representation of the self. It is at this level that the personal understanding of the self reflects the second important feature of identity described by Erikson (1968); this personally constructed identity unifies the individual conception of the self across time. At this level, the identity takes the form of a life story. In the life story, individuals describe both their connections with others and their own uniqueness, and integrate their understanding of themselves over time by taking into account their understanding of past experiences, present situations and the anticipated future.

Development of the life story typically begins during adolescence, when humans attain the cognitive capacity to recognize that a complete understanding of who they are necessarily involves a consideration of how they came to be, and how that unifying self can be integrated across all of the facets of their life. The development of this life story parallels the identity exploration which is taking place during adolescence in a variety of domains (Erikson, 1956). At the same time as this identity exploration, adolescents are also beginning to construct a personal narrative which organizes and unifies the developing sense of self (Habermas & Bluck, 2000; McAdams, 2001b). The life story provides a sense of unity and purpose for adults in modern cultures that helps anchor a unique sense of personhood. Life stories continue to develop throughout adulthood, and are often reconstructed to some degree to reflect current goals, motivations and interests (McAdams, 2001b).

What is the connection between the personality features of level 2, such as generativity and identity, and the life stories of level 3 in this model? There is some evidence and argument that life stories can contribute to both stability and change in the self and identity over time (McLean, Pasupathi & Pals, 2007). As stories are constructed to represent the personal

understanding of the self, the self and identity in the broad sense also develops in a way that is consistent with the stories that are being told. The life story is dynamic; it is constantly being reassessed to integrate and accommodate new information. Identity is also dynamic and may be partly created through the stories that are told to others and to the self about experiences as they are integrated into one's narrative (McLean et al., 2007). It is in this growth and reworking of storied experiences that narratives of Level 3 might both shape and be shaped by level two characteristics, those general adaptations which reflect the personal self as it exists within that time and context.

Clearly, the integration of the self across both context and time that Erikson describes is critical for making coherent sense of the self. Both help to provide a sense of unity and organization to the mature self. We thus might expect the integration of self across time, and the integration of self across different contexts to be linked together, but not necessarily identical in their portrayal of the emerging adult's personal adaptation (Alisat & Pratt, 2012; McLean & Pratt, 2006). In the present research program, the associations between these two models of identity were examined and interpreted within the specific domain of environmental concern.

Several cautions have been offered for the utilization of McAdams' (1996) framework as a foundation for understanding the self. Marcia and Strayer (1996) suggest that the "life story exists at a molar, concrete level" (p.347), and that unless the life story "provides data for subsequent abstractions or generalizations amenable to scientific scrutiny" (p. 347), it is not useful as a tool for developing any depth of understanding. On the other hand, Thorne and Latzke (1996) highlight the impact that the storyteller's immediate context can have on the narrating of the life story, as an additional concern around the meaning of the story. To

minimize these risks, in the present study, I have not limited my analysis to only one story; I have examined a selection of stories told about environmental events. I have focused on commonalities across a sample of stories, which has allowed for a more general understanding of the individual's narration of that material than studying only one story. Additionally, I have examined the stories for the presence of constructs which have been identified in previous research, which has provided a structure for analysis, and has allowed for an assessment of consistency with past findings. This also allows for abstraction of the constructs away from the concrete story, which may allow for a broader generalization of the results than would be suggested, given the criticisms of Marcia and Strayer (1996). Reliability was computed between two coders for a substantial portion of the stories for all narrative codes, providing additional rigor. While one theme, in one story, of one participant may not contribute to an understanding of the research questions, identifying themes across stories and participants may allow for a deeper understanding. I believe that the storyteller's context is an important part of the research questions posed here. In this case, I am interested in differences in the narrative characteristics between two groups of individuals whose personal contexts differ in terms of their level of connection with environmental issues.

Environmental Identity

In a general sense, identity refers to "some way of describing or conceptualizing the self" (Devine-Wright & Clayton, 2010, p. 267). Although earlier descriptions and research methods focused on widely important domains such as work, religion and politics (e.g., Marcia, 1966), for many people, certain other domains may be similarly important to their personal identities. For some, depending on the context and their past experiences, a cultural identity (Hammack, 2008), an ethnic identity (Phinney & Alipuria, 1990), or an organizational identity

(Albert & Whetten, 1985) may be particularly salient. For others, the natural world provides an important focus for their sense of self. Clayton described this as an "*environmental identity*," which develops when individuals organize elements of their sense of self around some part of the natural, nonhuman environment (Clayton & Opotow, 2003). Like other domains of identity, it may guide behaviour within the context of personal, social and political choices in relation to that specific domain.

Environmental identity may be particularly significant in relation to personal engagement in environmental activities and actions (Whitmarsh & O'Neill, 2010). That is, for environmental activists, individuals who are actively involved with environmental groups and more generally, with environmental issues, an environmental identity may be one important aspect of their personal self-concept. For example, based on her interviews with a number of prominent environmental activists, Horwitz (1996) observed that participants' feelings of connection with nature were closely related to their actions of caring for nature. Chan (2009) observed similar trends emerging in her interviews with people who were particularly engaged in "sustainability issues". On the basis of these interviews, she observed associations between a feeling of connection with nature and actions supporting environmental sustainability. Further evidence is provided by Matsuba and his colleagues (Matsuba, Pratt, Norris, Mohle, Alisat & McAdams, 2012), who reported significantly higher environmental identity scores for environmental activists compared to nonactivists for both young and mid-life adult samples. This study also revealed a significant positive relationship between environmental identity and engagement in environmental activities across both groups, suggesting that stronger feelings of connection with the environment are related to greater engagement, regardless of activist status. In all of these studies, environmental activists were described as individuals who were

particularly engaged with environmental or sustainability issues, and/or who were actively engaged in pro-environment organizations.

Generativity

A second key developmental construct which may have implications for involvement with environmental issues is *generativity*. Erikson (1968) identified generativity as a key ego developmental issue, and the focus of the 7th stage in his eight stage model of psychosocial development. Generativity describes feelings of concern and caring for the next generation. As part of their movement through the midlife period, Erikson (1968) believed that it is important for adults to leave a positive legacy by committing to society's future and engaging in activities that would ensure its continuation.

McAdams and de St. Aubin (1992) articulated a theory of generativity as a configuration of seven interrelated psychological features focused on providing for the next generation. These features include cultural demand, inner desire, concern, belief, commitment, action and narration. In their theory, they describe two motivations for generativity. *Cultural demand* describes an externally driven motivation, and reflects society's expectation that adults take responsibility for the next generation. *Inner desire*, on the other hand, is an internal motivation, arising from within the individual, a "need to be needed." These motivations combine to produce *generative concern*. Concern involves conscious feelings of caring about the next generation which may be sustained by a belief in the goodness of the human species. These motivations, concerns and commitments may result in *generative actions*. Such *generative behaviours* may involve creating, and maintaining or offering something which may act as a personal legacy. Generative behaviours may also involve such actions as nurturing children or protecting the environment, to ensure for continuity into the future. Finally, the

meaning of this constellation of features is determined by the person's narration of generativity, his particular story about caring for the next generation. The *generativity script* tells the story of how the individual sees his generative actions as fitting into his overall life story.

Generativity across the Lifespan

Although Erikson (1963) proposed that generativity is most relevant during mid-life, his concept of epigenesis allows that the goals which are salient at each stage of development may be present before and after the critical developmental phase. Kotre (1984) also argued that generativity may be expanded to other ages. Research in support of this has suggested that younger individuals also may have the capacity for at least some aspects of generativity (Frensch, Pratt & Norris, 2007; Lawford, Pratt, Hunsberger & Pancer, 2005; Pratt & Lawford, 2014; Stewart & vandeWater, 1998).

A study by McAdams, de St. Aubin and Logan (1993) supported the importance of generativity in middle age. They examined the pattern of scores on a generativity index across young, mid-life and older adults. Analyses supported a quadratic relationship, with generativity scores being highest for mid-life adults in comparison with the two other age groups. Although they do not present analyses directly comparing only the young adults and midlife adults, for some of the individual measures of generativity (i.e., generative concern and action), the scores of the young adults do not appear to be significantly lower than the scores for the mid-life adults. Similarly, in a study by Peterson and his colleagues (Peterson, Smirles & Wentworth, 1997), although the generative concern scores of university students were slightly lower than those of their parents, this difference was not significant. These observations allow for the possibility that generativity may have been important for some of these emerging and young

adults. Further, in several studies, Peterson and his colleagues (e.g., Peterson et al.1997; Peterson & Duncan, 1999) have linked generativity with political attitudes across a variety of ages. This suggests that generativity may be important for certain types of social interest or engagement across the lifespan.

Generativity and the Environment

Two features from McAdams and de St. Aubin's (1992) model, generative concern and generative action, may readily become focused on environmental issues. Considerations for the earth's capacity to sustain future generations may contribute to positive environmental choices now (Moore & Nelson, 2010) and provide a context for amplifying generative concerns within this domain. Considerable evidence emerges in qualitative research, in support of this connection between environmental concern and generativity. For example, in their interview studies with middle-aged environmental activists, both Chan (2009) and Horwitz (1996) observed that generative concerns played a role in the environmental commitment of their participants. This research will be described in detail below. Similarly, Guiney and Oberhauser (2009) found that their conservation volunteer participants described being motivated to make a positive change in the natural world. Many of the motivations emphasized by their participants revealed generative concerns, such as wanting to "give something back to nature", to "educate others about nature" and to "help others develop a stewardship ethic".

Additionally, in an analysis of interviews with older Australians who volunteered for environmental stewardship groups, Warburton and Gooch (2007) were guided by Erikson's (1968) description of generativity. They describe three generative themes which emerged in the responses of the majority of the interviewees. Environmental stewards described their environmental actions in terms of their implications for the future; by taking action, they were

ensuring a better world for future generations. They also described their growing awareness of the need to contribute to a more environmentally sustainable world and how that had changed over their lifetimes, and articulated their desire to work with younger people in order to share their environmental knowledge and awareness.

It is evident that generative concern has emerged as an important motivation for environmental engagement in these conversations; similar connections have also been found in quantitative studies. For example, Urien and Kilbourne (2011) found that students who were high on generative concern expressed higher intentions to behave in environmentally friendly ways than students who were low on generative concern. Likewise, Milfont and Sibley (2011) reported a significant relationship between generative concern and both environmental attitudes and self-reported ecological behaviours. As well, in prior quantitative research on the present sample, generativity has been shown to differentiate between environmental activists and nonactivists, and to be significantly positively related to environmental engagement and environmental identity across both groups (Matsuba et al., 2012).

Thus, generative concern and environmental identity have been found to be positively associated, and both have been found to be associated with concern about the environment. Past research, however, has examined these constructs as isolated aspects of the person. For example, environmental concern and generative concern have been linked at the level of 'personal concerns' but have not been studied in relation to features of the life story. Likewise, qualitative studies have examined the individual environmentalist at the level of narrative identity, taking into account the life story, but have examined this in isolation from other important features, such as personal concerns, and values. Different levels of the overall personal identity (as it has been described by McAdams, 1985) have not been examined

together. As McAdams (1985) suggests, in order to more completely understand the person, it is important to consider their identity at different levels. The present study has explored the individual at both levels. Standardized scale measures provided information about personal concerns and values, while detailed interviews permitted a richer understanding of that unique individual across time and place. In this way, I have developed a deeper understanding and integration of the importance of generativity for environmental identity, and how these are manifested in personal narratives in an environmental domain, and have begun to understand the whole person in this important domain.

Environmental Activism

Previous qualitative studies have suggested that by talking with committed activists about their environmental experiences, researchers might gain insights into factors which are characteristic of those engaged individuals, and which contribute to environmental engagement (Chawla, 1999; Chan, 2009; Horwitz, 1996). The present research extends research which has examined exemplars of engagement with sustainability issues.

Horwitz (1996) focused on the growth of environmental ethics among the environmental activists in her qualitative study. The 30 midlife activists in her study matured as environmentalism was also maturing in North America; they were among the early leaders of environmental stewardship. In response to her questionnaire, midlife activists described events in either narrative or list form which contributed to their concern about environmental issues. Horwitz's qualitative, grounded theory analysis of the data was guided by a perspective of environmentalism as a belief and value structure, as well as a lifespan developmental perspective which connected environmental ethics with identity formation throughout the

entire life. Horwitz also described generativity as an additional frame for understanding the development of an environmental ethic.

Although based only on responses to a request to describe formative events which have contributed to their environmental concern, several of the themes which emerged in Horwitz's (1996) analyses were consistent with the importance of identity and generativity among these environmental activists. For example, interactions with environmental role models may have formed the basis for the development of a personal identity which was connected with environmental ethics. This sense of an environmental identity was further supported by the tendency of participants' descriptions to reflect a striving for a sense of coherence over time in their connections with the environment. Horwitz also connected generativity to her participants' broad concerns about ecology over the long term.

Chawla (1999) took a somewhat broader approach, and examined a greater variety of reflections provided by her participants. She interviewed a sample of mid-life environmentalists representing a variety of environmental issues in the US and in Norway. Participants were asked to describe the sources of their commitment, how they felt they were most effective as environmentalists, and how they maintained their motivation for involvement in difficult times. She examined both experiences reported by these individuals and the sequence of these events in order to describe the life paths of their environmental engagement. For Chawla's participants, during childhood, the most important sources of environmental engagement were reported to be spending time in natural areas, and the family. Friends and family were described as prominent influences during emerging adulthood, and organizations seemed to be most impactful during adulthood. Several of the themes she identified, such as attachment to a natural space, or enjoyment of outdoor activities, may

contribute to the development of an environmental identity. She also described themes which support the connection of generativity with environmentalism, such as a concern about conditions for children and grandchildren in the future. These studies provide a good descriptive foundation to support the further examination of the importance of identity and generativity for environmental activism. Because these studies have only examined environmentalists, and have not included comparison groups, it is not possible to determine whether these connections are unique to environmentalists, or whether they would be similar for non-environmentalists. For example, Bisson and her colleagues (Bisson, Alisat, Norris & Pratt, 2011) reported that family was reported as an equally important source of environmental engagement for both a sample of activists and a comparison sample of non-activists in their study of emerging adults, emphasizing the importance of including a comparison sample to more fully understand the particularity of experiences of environmental activists.

Guiding Framework

The focus of personality researchers is on understanding how people think, feel and behave (Funder, 2013). The focus is on the whole person and the interaction among these three as they are manifested in a unique individual. Within this domain of environmental concern and engagement, I am interested in how people's thoughts and feelings may both impact their behaviour, and be impacted by those behaviours. In order to evaluate these relationships, it is useful to gather both objective quantitative data, and more flexible, subjective quantitative data. The utilization of mixed methods can result in a rich understanding of the mutual influence of these characteristics.

As a developmental psychologist, I am guided by a curiosity about human development across the lifespan. Within this perspective, Erikson describes the developmental concerns of

Identity and Generativity which impact thoughts and behaviours in unique ways at different developmental stages (Erikson, 1968). These two developmental concerns are not only critical for understanding personal development, but intersect significantly within the realm of environmental care and concern, as described above, so will be used to shape the present investigation of the narrative story of environmental engagement across the lifespan.

This project fits into the intersection of these two approaches. Specifically, I am intrigued by questions around how those characteristic thoughts, feelings and behaviours may change over time, and how the interactions among them may also change with development. Additionally, this project investigates the place that identity and generativity may have in understanding the manifestation of personality within this environmental domain.

More broadly, I approach this research from a psychosocial constructivist (McAdams, Diamond, de St. Aubin & Mansfield, 1997) point of view. This approach represents a compromise between the understanding of narratives, and research data more generally, as indicators of objective truths, and the more extreme social constructionist point of view, which holds that all knowledge is constructed and entirely subjective or relative to the interpreter's particular point of view and current performative context (e.g., Gergen, 1991). Consistent with the views articulated by Schachter (2005), my approach views narratives as constructions by the narrator who is situated within a societal context. Within this perspective, I believe that while narratives are personal constructions, I disagree with Gergen's (1991) contention that these narrative constructions are simply performances that are so unstable and fluid across contexts that they do not provide even a somewhat coherent picture of the storyteller and some underlying ideal sense of identity. I believe there is a thread which runs through stories, regardless of the adaptations that might be made to the stories in the moment, and this thread

reflects a deeper personal understanding of the individual's identity. With this in mind, I feel that the stories provide an opportunity, perhaps tempered by contextual forces, for understanding the meaning of individual differences.

Mixed-Methods Approach

A mixed-methods approach embodies the strengths of both quantitative and qualitative approaches in the collection of data and its analysis (Creswell & Plano Clark, 2007). The combination of these approaches allows for a deeper understanding of the research questions. In this study, quantitative data were gathered using standard scale measures of attitudes and personality features. Qualitative data take the form of modified life-story interviews, based broadly in the protocol described by McAdams (1985). In the present narrative study, a concurrent nested design with an emphasis on quantitative data (QUAN + qual; Hanson, Creswell, Clark, Petska, & Creswell, 2005) was used to allow for an evaluation of identity and personality at both the level of personal concerns, and at the level of the life story, and for the coordination of these two approaches.

Although quantitative and qualitative methods were used at the stage of data collection, analyses primarily consisted of quantitative techniques. Interview data were analyzed for themes relating to identity and generativity and were coded based on the presence, or levels, of these themes. These quantitative codes were used in analyses with quantitative questionnaire data. Interview excerpts were identified based on these codes and included in the description of study results, as a way to illustrate and contextualize study findings and to explore further interpretative ideas.

Understanding the Narrated Identity

McAdams (1996) describes a number of features which can be used to understand the structure and the content of the life story, including nuclear episodes, narrative tone, imagery, ideological setting, imagoes, themes and endings. Many of these features were utilized in the present study, to enhance our understanding of the narrative construction of identity in relation to the environment and the natural world.

McAdams (1996) describes those scenes which particularly stand out from the entire life story as "nuclear episodes." These are episodes which are particularly memorable and important, and may include stories relating to high points, low points and turning points. Similar to the "self-defining memories" described by Singer and Blagov (2004), these stories are focused on significant events and concerns in our lives. It is within the descriptions of these nuclear episodes that particular insight can be revealed into the identity of the storyteller. In this study, I included nuclear episodes such as personal scenes and turning points described by participants about their experiences with the environment and the natural world.

These episodes are vivid and personally important. They evoke an emotional response. The narrative tone construct describes this overall emotional tone, which can range from extremely negative to exceptionally positive. The telling of these stories also evokes imagery, the descriptive characteristics which bring the story to life. The emotional tone, and the level of descriptive detail contained within a narrative provide key information about the feelings of connection with the event being described. The personal identity is reflected in the choice of descriptors as the story is told. In this study, the tone and imagery used in the narration of environmental stories were used to study aspects of personal identification with the environment.

Another important feature of the life story described by McAdams (1996) is its overall themes. These goal-directed sequences which are pursued by characters provide important insight into the motivation for their actions and often take the form of agency or communion motivations. Agency refers to a motive for power, and feelings of mastery over the environment, and communion refers to a motive toward the connections of the individual with others. In this study, environmental stories were coded for several specific themes relating to agency and communion (using the techniques of McAdams, Hoffman, Mansfield, & Day, 1996).

Finally, the ideological setting and the endings of life story narratives are important (McAdams, 1996). The ideological setting refers to the moral foundation with which the storyteller judges and describes his or her own actions and those of others. It may be based on the person's religious, political or ethical values. Endings focus on the anticipated ending of the life-story, and refer to the generativity, or commitment, script which extends the legacy of the individual into the future. McAdams found that often the end of the stories revealed a generativity script, a reflection of the individual's orientation to symbolic immortality (McAdams et al., 1997). In this study, environmental stories were coded for the presence of commitment themes such as early blessing, or prosocial goals for the future, which are consistent with this generativity script. The ideological setting was also reflected in the generative themes describing moral steadfastness; these passages may reflect the narrator's personal guiding values and their moral foundation.

Although not explored in the present study, one additional feature of narratives described by McAdams (1996) is imagoes which represent the idealized personification of the self; people describe the selves they want to be. The actions of these imagoes often reflect the themes of the story. Unfortunately, the personal stories that were utilized in this research

project did not include descriptions of an ideal personal self, and individuals did not spontaneously provide that information in the stories which were narrated.

Overview

Previous research has shown that generativity may be important for the development of feelings of concern about the natural world, and commitment to caring for the environment; however, many of the studies which have addressed this question have focused on environmental activists, without including a comparison group of nonactivists. A complete understanding of these patterns requires the examination of activists in comparison with nonactivists, to discover the unique impact of generativity in comparison with that of an environmental identity. In the present research program, I examined the importance of generativity for environmental engagement of both activists and nonactivists, and utilized personal narratives in relation to quantitative scale measures to provide a more comprehensive picture of their personal identity in three studies. Analysis of the narratives has assessed three distinct levels, in order to develop a thorough understanding of how generativity may intersect with a personal narrative identity in individuals who are variously engaged with environmental issues. This multi-leveled analysis allowed for the development of a thorough understanding of the importance of generativity for the development and manifestation of environmentalism across these levels of narrative identity.

In this dissertation, personal descriptions of a number of nuclear episodes, or significant events from their personal experiences, in connection with the natural world and environmental issues, form the basis of this analysis of the construct of narrative identity. Each study examines different and distinct features of the environmental narratives, and evaluates

how each of these intersects with generativity. Table 1 provides a summary of key terms, and questions addressed in each study.

In the first study, I compared the manifestation of the narrative identity of environmental activists and nonactivists through an examination of the generative commitment themes contained in their narrations of personal events. The focus in this study was on what facets of peoples' lives are highlighted through inclusion in the event descriptions and life story regarding this domain. I evaluated how these broad themes are related to the person's level of environmental engagement and generativity. In the second study, I moved to a more specific analysis of the narratives. Here, the focus is on general goal orientation as it is revealed in the stories. Within the personal narratives, I identify motives which reflect generative desires for either productivity or for interpersonal connections. I examine these classes of agentic versus communal motives in relation to generativity, and compare patterns of these motives for environmental activists and nonactivists. In the third study, the focus of analysis is on somewhat more structural characteristics of the narratives. I evaluate how generativity and identity are related to the telling of the stories. An index of reflective engagement is used, which is based on ratings of the meaning, vividness and impact of the events described. The reflective engagement shown in the narratives provides significant insight into the importance of the environment for the storytellers, and is examined in relation to identity and generativity across both activists and nonactivists. Together, these three studies describe a broader and more comprehensive picture of how generativity and identity are related to the stories told, and to environmental engagement in general.

Table 1: Overview of Research Program

Key Constructs	***Identity***: Personal expression of the self. A sense of unity of that self-expression across time and context. ***Generativity*****:** Expression of care and concern for the next generations. ***Environmental Identity****:* Connection of the personal expression of self with the natural world. ***Environmental Engagement****:* Frequency of involvement in specific actions related to sustainability or caring for the environment. ***Narrative***: Personal stories told about significant life events. Also referred to as life stories. ***Narrative Identity***: Features of the life story provide some indication of self-identification and personal expression. Highlights the storyteller's present interpretation of lived events. ***Activists***: Individuals who are particularly engaged with environmental issues. Typically, this refers to active involvement in environmental organizations.
Study 1	Here, narrative identity was assessed in terms of broad story themes. The focus was on what facets of participants' lives were highlighted through inclusion in the narratives. Themes reflecting the commitment script have been identified and the relationship of these themes to environmental engagement, and generative concern was examined.
Hypotheses	1. Consistent with the results reported by McAdams et al. (1997), it was expected that the number of commitment themes identified in the stories would be positively related to generative concern. 2. The pattern of codes for the connection themes specific to the environmental context was explored in relation to the pattern of codes for the more general commitment themes. 3. The third hypothesis explored how the life stories of environmental activists were distinct from those of nonactivists. As one specific domain for the expression of generativity, and given the importance of generativity for environmental activism (Matsuba et al., 2012, Alisat et al., 2014), it was anticipated that the stories told by environmental activists would contain more general and environmental commitment themes than those told by nonactivists.

	4. One additional research question explored whether there were differences in the patterns of themes identified in the stories of environmental activists and nonactivists when controlling for level of generative concern.
Key Study Concepts	***Quantitative Measures:*** *Environmental Identification as an activist or nonactivist* *Generativity* ***Narrative Identity Indices**:* *Personal Advantage:* Passage shows evidence of personal feelings that the storyteller had experienced a personal advantage. This may be reflected in terms of a special position within the family, a unique experience in nature, or the development of a connection with the natural world. It also may be reflected in the presence of attachments with other people, or the presence of helpers. *Suffering of Others:* In the passage, the participant expresses sympathy, empathy or awareness with regard to the suffering of others which developed at an early age. *Moral Steadfastness:* The participant describes having been engaged in an action which was guided by an internalized set of moral values. Additional indicators of moral steadfastness include feelings of making a difference within the environmental domain, and evidence that the commitment to those morals and values is sustained across multiple domains. *Prosocial Goals for the Future:* The participant describes having positive goals for society in the future. *Coded for:* Each code was applied to appropriate stories across the environmental section of the interview. Additionally, the community section of the interview was coded for evidence of moral steadfastness.
Study 2	Goal directed sequences contained in personal story motives reflect generative desires for either productivity or interpersonal connections. Patterns of these motives were compared for activists and nonactivists in stories told in two domains (environmentalism and work). The relationship of

	these themes with generativity was also evaluated.
Hypotheses	1. The relationship of age (from emerging adulthood to late midlife) with generativity was evaluated. In the present study, three features of generativity were evaluated: generative concern, generative goals, and generative behaviour. Based on previous research that highlights the importance of generativity at earlier ages, this was approached as an exploratory question. 2. The relationship of age with motivational themes was assessed. Because agency is described as an antecedent to communion (McAdams, 1985), it was anticipated that levels of both these narrative themes would be positively related to age. 3. Differences between males and females were examined for key measures including generativity, and were explored for motivational themes. 4. The relationship between the number of agency and communion motivational themes and generativity was examined. It was expected that there would be a positive relationship between levels of these themes and generativity. 5. Story domain (work versus environmentalism) was examined as a moderating factor for levels of motivational themes in narratives by environmental activists and nonactivists. The role of gender was also evaluated in this analysis.
Key Study Concepts	***Quantitative Measures:*** *Environmental Identification as an activist or nonactivist* *Generativity* ***Narrative Identity Indices****:* *Agency Themes:* Actions are guided by a motivation for power, and feelings of mastery. Agency themes may reflect self-mastery, status, achievement, or empowerment. *Communion Themes:* Actions are guided by a motive of connection with others. Communion themes may reflect love, dialogue, caring or unity. *Coded for: Environment and work scene and turning point stories.*

Study 3	In the third study, the structural features of stories were analyzed: the focus here was on "how" the stories were told. Narrative tone, imagery and meaning were combined into an index of reflective engagement within each domain. This index was analyzed in relation to McAdams' second level of personality, including personal concerns such as environmental identity and generative concern.
Hypotheses	1. It was expected that there would be differences in the personal environmental stories told by environmental activists and nonactivists, with stories of activists reflecting greater investment and sophistication in this domain. 2. It was expected that environmental identity would be positively related to features of the environmental stories told, for both environmental activists and nonactivists. 3. It was anticipated that generativity would be positively related to the structure of the environmental narratives, as well as to environmental identity. 4. Finally, generativity was explored as a mediator in the relations between environmental identity and the environmental narrative features expressed in the life story.
Key Study Concepts	***Quantitative Measures****:* *Environmental Identity* *Generativity* *Environmental Involvement* ***Narrative Identity Indices****:* *Meaning:* Level of sophistication of reasoning reflected in personal narratives. *Vividness:* Level of descriptive detail contained in personal narratives. *Impact:* The extent to which the depicted event was described as enhancing personal commitment to the environment. *Reflective Engagement:* Index of narrative identity comprised of ratings for meaning, vividness and impact. Reflects an overall connection with and commitment to the environment.

	Coded for: Environmental scene, early scene, moral courage, and turning point stories.

Chapter 2 - General Methods

Data for the three studies described in this dissertation were collected as part of a larger mixed-methods study of environmental activists and nonactivists. The three studies presented here focus on distinct portions of this interview protocol, and only selected measures from the overall questionnaire package that was administered. The interview portion of this data collection focused on three distinct domains: environment, community and work. Although the focus of the present dissertation was on the environmental studies, segments of the community and work sections were used in analyses as indicated. Although I describe specific methodologies which are applicable for the analyses I present in each specific study, this chapter provides an overall description of the research program as it applies to the research questions I address in this dissertation. Because the individual studies have been prepared with a goal of publication, and because they were collected as part of a larger study, some overlap in content within the methodology sections (and to a lesser extent, results sections) is unavoidable.

Participants

Data were collected from 54 environmental activists and 56 non-activists, for a total of 110 participants[1] (63% female). Although participant recruitment was based in two sites (87 from Ontario and 23 from British Columbia), and most participants resided in Canada, a few activists were Canadians who currently lived elsewhere.

[1] Several participants in the original sample were eliminated from analyses. Because the nonactivist sample consisted of any individuals who responded to the advertisements, environmental activists may have inadvertently been included in the nonactivist sample. To ensure that the nonactivist sample did not include any activists, participants who reported themselves as scoring 10 on the 1-10 scale of environmental concern were removed. Based on this criterion, 5 'nonactivists' were removed from the sample. One non-exemplar was dropped because of difficulties in transcribing the interview. One exemplar was dropped due to incomplete data.

The sample was divided evenly between two age groups, a youth group (17-27, M_{age} = 21.8 years, *SD*=2.8), and a midlife group (28-59, M_{age} = 42.7 years, *SD* = 9.7). Eighty-two percent of our participants had completed at least some college or university. See Table 2 for a description of sample characteristics.

Table 2: Sample Characteristics

	Activists	**Nonactivists**
N	54	56
Age	32.68 years (SD= 12.25)	32.44 years (SD = 13.27)
Gender	57% Female	68% Female
Highest Level of Education Completed	76.9% completed college or university	44.6% completed college or university
Employment Status	82% are working at least part time	53% are working at least part time
Self-Rating for Importance of Environmental Issues (1-10 scale)	8.9 (SD = 1.12)	6.8 (SD = 1.58)

Procedure

All research procedures were reviewed and approved by the Wilfrid Laurier University research ethics board.

Identification of Environmental Activists Several steps were taken to identify environmental activists. Exemplary members of environmental organizations such as the Green Party of Canada and the Sierra Club were nominated by other members of the organizations; these were individuals who have dedicated "a significant amount of their resources to fulfill their moral commitments and pursue their passion for service to society and nature with great energy and effect, often inspiring others to do the same". Other individuals were identified based on media coverage or publications about their engagement in public environmental campaigns. Potential participants were contacted by e-mail or telephone and invited to participate in this research. Additional participants were individuals who were suggested by environmental activists during their interviews. Activists were involved in a broad range of environmental activities, including sustainability (N=15), climate change (N=9), habitat preservation and conservation (N=12), environmental education (N=11) and social justice/other (N=7).

Recruitment of Nonactivists Nonactivists were recruited through the undergraduate university participant pool at an Ontario university, through advertisements in community newspapers and public websites such as Craigslist, and through posters placed at community centers.

Research Session For most participants, the research session lasted approximately 90 to 120 minutes, and involved completion of a narrative life interview (see Appendix A), which was audio-recorded for later transcription, and a questionnaire package (see Appendix B). Non-activist participants who were recruited from the undergraduate university research

pools received course credit for their participation; all other participants received an honorarium of $50.

Interview

During the interview, participants were asked to describe the kinds of actions that they take in their own life that they believe promote environmentalism on both a daily basis, and "less than regularly". Participants provided a description and numerical rating (from one to ten) for how important they believed environmental issues to be. Participants also briefly described the person or group of people who they believed to have had the greatest impact on their environmental approach.

Participants then told life stories relating to their personal experiences with the environment and several other areas which are not included in this dissertation (community involvement, work). These stories were partially based on the procedures of McAdams (1993) for eliciting a general life story, Pratt and his colleagues (Pratt, Arnold, & Lawford, 2009) for eliciting moral stories, and partly adapted from the work of Chan (2009). Participants were asked to tell 8 types of stories:

1. *Parent and Grandparent Teaching Stories* In separate stories, participants were asked to describe a specific time when they learned something about the environment from both their parents and their grandparents. The incidents could be positive or negative.

2. *Environmental Scene* Participants were asked to describe a general environmental scene,

> "a time that was meaningful or important to [them] in some way with respect to [their] feelings about environmental issues. [And were asked to]

please describe what happened, with whom, when, what [they] were thinking and feeling, the impact of this event on [them], and what it says about [them] as a person."

Participants had cards with these prompts printed on them, to help them describe this and the remaining stories in detail, and if they missed any of these prompts, the interviewer would ask them directly after the participants completed their stories.

3. Early Scene Following the narration of the environmental scene, participants were asked if this was the earliest scene in their lives. If it was not, they were asked to recount a similar story about "an early event or scene that got [them] thinking about the environment [which could] be from [their] early childhood or later in their] adult life."

4. Environmental Dilemma Participants were next asked whether they had ever been faced with a dilemma, when thinking about the environment. For this story, they were asked to describe the experience, what the conflicts were in that situation, what they did, whether they thought that was the right thing to do, and how they knew it was the right thing to do.

5. Environmental Moral Courage Story In the moral courage story, participants were asked to describe a time when they did something in terms of the environment that took moral courage, that is, when they did the right thing, even though it was difficult to do. Again, they were asked to follow the prods, described above for the environmental scene.

6. Did Not Show Moral Courage Story Participants were next asked to tell about a time when they did not show moral courage in terms of the environment.

7. Positive and Negative Future Scenes In two separate stories, participants were asked to envision and describe a possible and realistic future environmental scene, "one which you hope will happen (or not happen) in the future". They were asked to describe why it was a positive (or negative) scene, and what it says about who they are or will be.

8. Turning Point Story The final story participants were asked to tell was a turning point story. This was described as "an episode through which a person undergoes substantial change in their approach to the environment." Again, participants were asked to use the prods described above.

Measures

Demographic Measures. Single-item self-report items assessed participant gender, age in years, marital status of parents, level of educational attainment (7 – point scale, from "less than high school" to "completed graduate school"), employment status and personal status as a parent.

Environmental Identity. The Environmental Identity scale (Clayton, 2003) is a 12-item scale which assesses feelings of connection with the natural world. Items such as "I think of myself as part of nature, not separate from it" were rated on a 1 (not true of me at all) to 7 (completely true of me) Likert-type scale. Cronbach's alpha in the present study was .87.

Generative Concern. The 20-item Loyola Generativity Scale (LGS; McAdams & de St. Aubin, 1992) measures level of generative concern. Items such as "Others often come to me for advice" were rated on a Likert-type scale from 1 (not at all true of me) to 9 (very true of me). Cronbach's alpha for the present sample was .88.

Environmental Inventory of Involvement Scale (EII). The 6-item Environmental Inventory of Involvement Scale was developed for this study (Matsuba, et al., 2012), and provides an indication of the frequency with which participants engage in specific environmental actions. Actions such as "contributed time or money to an environmental or wildlife organization" are rated on a 5-point scale (from 0, "never" to 4, "a lot"). Cronbach's alpha in the present study was .80.

Chapter 3 –Commitment Themes in the Narratives of Environmental Activists and Nonactivists

In the first study, narrative identity is analyzed broadly, for the presence of commitment themes in personal event narrations. The generative commitment themes are a critical component of the general redemption script described by McAdams (2006), which help to extend the legacy of the individual into the future. These themes are analyzed in relation to generative concern, and patterns are compared between environmental activists and nonactivists. Broadly, this study seeks to examine the question: do activists and nonactivitists use similar themes in their personal event narrations regarding the environment and its meaning for them, and if not, how do the patterns differ?

The Commitment Script

At its core, generativity describes feelings of concern and caring for the next generation. McAdams and colleagues (McAdams & de St. Aubin, 1992; McAdams et al., 1997) have shown that individuals who are high on generative concern as measured by the Loyola Generativity Scale tell stories which are distinct from those of individuals who are less generative. For example, in the narratives of highly generative adults, commitment scripts figure prominently in comparison with those of adults who are less generative. McAdams (2006) describes this "redemptive self" as the life-narrative prototype for highly generative individuals. Consistent with his description of the life story as the present interpretation and description of lived experiences, McAdams (2006) emphasizes that it is the individual's current portrayal of the event which is important, rather than the actual factual events which occurred in the past.

In this prototypic story, several features are identified which are characteristic of this type of story; these commitment themes (McAdams et al., 1997) describe a personal legacy and frequently involve themes which include acknowledgement of an early life advantage, early awareness of the suffering of others, moral steadfastness, articulation of redemptive sequences, and prosocial future goals. In particular, McAdams and his colleagues (1997) identified a group of generative adults on the basis of their vocational engagement with children and youth (often teachers), or their voluntary commitment to groups with a focus on children and youth. This group was matched with a less generative group who were not employed as teachers, or engaged in youth-oriented volunteer activities. To verify their identification as generative or non-generative, these individuals also completed the Loyola Generativity Scale, which measures generative concern, and completed a measure of generative behaviours. Participants in this study completed the life story interview, which consists of the description of different chapters across the lifespan, as well as the recounting of discrete events such as high point stories and nadir (or low point) stories. In this study, McAdams et al. examined the stories of high generativity participants and low generativity participants for descriptions which corresponded with the commitment themes. The high-generativity group scored higher than the low-generativity group on indexes which had been computed for four commitment themes: suffering of others, moral steadfastness, redemption sequences and prosocial goals for the future, and for one sub-theme of the fifth commitment theme: family blessing[2].

[2] In this study, the fifth commitment theme was early advantage, which included family blessing, childhood attachments, and number of helper incidents.

In the present study, we have extended this research by examining more focused stories told within one specific domain. Because it is anticipated that generativity may be important for the environmental domain, it was expected that telling stories in this domain would elicit commitment themes, particularly for those who are more generative. It was thus expected that the present analyses would replicate the pattern described by McAdams et al., such that the stories of participants who expressed more generative concern would contain more commitment themes than those who expressed less generative concern.

Building on this research, the redemptive-self script has been found to be consistent with the life stories told by moral exemplars (Colby & Damon, 1992), and those told by reformed criminals who have devoted their lives to helping others stay away from crime (Maruna, 1997). In these studies, groups of participants are distinguished from one another based on characteristics aside from their generativity, although it may be a factor in the lives of both moral exemplars, and reformed criminals. Although neither of these studies utilized a control group, Matsuba and Walker (2005) compared a group of young adult moral exemplars with a matched sample of nonexemplars. They found that for most themes, the stories of the moral exemplars did contain more commitment themes than those told by the other group. However, when they examined five different categories reflecting redemption, they found that the stories of nonexemplars contained more themes of recovery, growth and learning; only for one category (sacrifice) were the scores of moral exemplars higher than those of nonexemplars. Walker & Frimer (2007) found that the stories of moral exemplars contained more themes of redemption, helpers and attachments than a matched sample of nonexemplars.

For some individuals environmental engagement occurs as a result of personal moral norms about pro-environmental actions (Stern, Dietz, Abel, Guagnano & Kalof, 1999). From this connection, it was anticipated that although the environmental focus of the present study was somewhat distinct from the more generic moral domain under consideration in these moral exemplar studies reviewed above, the stories of environmental activists may be somewhat distinct from those of nonactivists in terms of the commitment themes that they contain. By including a scale measure of generative concern, this study was also able to extend these findings by examining the interrelationships of the commitment themes and generativity along with environmental activist status.

Commitment Themes, Generativity and the Environment

The connection between generativity and environmental concern suggests that the commitment script may provide an important structure for describing the environmental narratives of activists; however, research suggests that additional themes may be relevant in the stories told within this environmental domain, particularly for activists. For example, Horwitz (1996) asked environmental activists to describe events which contributed to the development of their environmental ethics. In her analysis, one key theme which emerged was spending time outdoors and having direct experiences with nature. In some cases, this was combined with an experience of environmental destruction, which formed the basis for moral outrage, which then motivated environmental action. Although not explicitly framed as such in Horwitz's manuscript, this seems to be consistent with early experiences of connection, or a perception of having experienced some early advantage, and of an awareness of the suffering of others or of nature. Similarly, Chawla (1999) identified fairly common themes based on

observations of the destruction or degradation of natural spaces in the descriptions provided by a sample of midlife environmentalists.

Chan (2009) found that many of the story themes and structures that she identified were consistent with the redemptive-self framework. In her prototypical commitment story, Chan identified "*how I learned how to make a difference*" as one important element in the stories of her activists. Stories consistent with this theme described having experienced a feeling of efficacy around environmental issues, and having come to understand that this was an area in which they could make a difference. Chan also described how her activist participants talked about sustaining their commitment into the future. Both of these themes seem to fit under the broader category of moral steadfastness that McAdams and his colleagues described (1997). Chan also described themes relating to future goals, in which her participants described a future for themselves in which they continued to work to make a difference in the world.

This previous work clearly supports the importance of the commitment script for understanding the engagement of environmental exemplars, but also highlights additional themes which may be unique to this population and context. However, the lack of comparison groups in these earlier studies of environmental activists makes it impossible to specify the particular story structures that uniquely characterize this group. In the present study, the work of Horwitz (1996), Chawla (1999), and Chan (2009) will be extended by the inclusion of nonactivists to allow for an examination of the use of commitment themes in life narratives by nonactivists in comparison to activists. In the present study as well, the relationship of these environmental connection themes with the more general commitment themes was evaluated.

Purpose and Hypotheses

The purpose of the present study was to examine commitment themes present in the narratives told by environmental activists and nonactivists. Three specific hypotheses were examined, along with one more general research question:

1. Consistent with the results reported by McAdams et al. (1997), it was expected that the number of commitment themes identified in the stories of both activists and nonactivists would be positively correlated with generative concern.
2. It was expected that the number of environmental connection themes which were developed based on the themes described in previous studies of environmental activists (e.g., Horwitz, 1996, Chawla, 1999; Chan, 2009) would be positively correlated with the more general commitment themes. Commonalities among all of these themes were further explored to identify themes which were coded similarly.
3. The third hypothesis explored how the life stories of environmental activists may be distinct from those of nonactivists. As one specific domain for the expression of generativity, and given the importance of generativity for environmental activism (Matsuba et al., 2012, Alisat, Norris, Pratt, Matsuba & McAdams, in press), it was anticipated that the stories told by environmental activists would contain more general and environmental commitment themes than those told by nonactivists.
4. One additional research question explored whether there were differences in the themes identified in the stories of environmental activists and nonactivists when controlling for level of generativity/ generative concern.

Method

Participants

Data were collected from 54 environmental activists and 56 non-activists, for a total of 110 participants[3] (63% female). Although participant recruitment was based in two sites (87 from Ontario and 23 from British Columbia), and most participants resided in Canada, a few activists were Canadians who currently lived elsewhere. Two age groups were included: the average age of the emerging adult group was 21.9 years (range = 17-27; *SD* = 2.8), and the average age of the midlife adult group was 43.1 years (range = 28-59; *SD* = 9.4). Eighty-two percent of our participants had completed at least some college or university, and approximately 59 percent had completed college or university (or higher).

Procedure

Identification of Environmental Activists. Several steps were taken to identify environmental activists. Exemplary members of environmental organizations such as the Green Party of Canada and the Sierra Club were nominated by other members of the organizations; these were individuals who have dedicated "a significant amount of their resources to fulfill their moral commitments and pursue their passion for service to society and nature with great energy and effect, often inspiring others to do the same". Other individuals were identified based on media coverage or publications about their engagement in public environmental campaigns. Potential participants were contacted by e-mail or telephone and invited to participate in this research. Additional participants were individuals who were suggested by environmental activists during their interviews. Activists were involved in a broad range of

[3] Several participants in the original sample were eliminated from analyses; five nonactivists were eliminated from the sample because they reported themselves as scoring at 10 on our 1-10 scale of environmental concern, which seemed unreasonably high. One nonactivist was dropped because of difficulties in transcribing the interview. One acitivst was dropped due to incomplete data.

predominantly environmental activities, including sustainability (N=15), climate change (N=9), habitat preservation and conservation (N=12), environmental education (N=11) and social justice/other (N=7).

Recruitment of Nonactivists. Nonactivists were recruited through the undergraduate university participant pool at an Ontario university, through advertisements in community newspapers and public websites such as Craigslist, and through posters placed at community centers.

Research Session. The research session lasted approximately 90 to 120 minutes, and involved completion of a narrative life interview, which was audio-recorded for later transcription, and a questionnaire package. Non-activist participants who were recruited from the undergraduate university research pools received course credit for their participation; all other participants received an honorarium of $50.

Interview

During the interview, participants were asked about their personal experiences with the environment, and with their communities[4]. The first section of the interview focused on the environment. First, they were asked to describe the kinds of actions that they take in their own life that they believe promote environmentalism on both a daily basis, and those they engage in "less than regularly". Participants provided a description and numerical rating (from one to ten) for how important they believed environmental issues to be. Participants also briefly described the person or group of people who they believed to have had the greatest impact on their environmental approach.

[4] Participants were also asked about events related to their work. Those stories were not analyzed in this study.

After these general questions, participants were asked to relate stories about events that they had experienced. These stories were partially based on the procedures of McAdams (1993) for eliciting a general life story, partly adapted from procedures described by Pratt and his colleagues (Pratt, Arnold, & Lawford, 2009) for eliciting types of moral stories, and partly adapted from the work of Chan (2009) on environmental narratives. In total, in the environment section of the interview, participants were asked to tell 8 stories in the following order:

1. *Parent and Grandparent Teaching Stories* In separate stories, participants were asked to describe a specific time when they learned something about the environment from both their parents and their grandparents. The incidents could be positive or negative.

2. *Environmental Scene* Participants were asked to describe a general environmental scene,

> "a time that was meaningful or important to [them] in some way with respect to [their] feelings about environmental issues. [And were asked to] please describe what happened, with whom, when, what [they] were thinking and feeling, the impact of this event on [them], and what it says about [them] as a person."

Participants had cards with these prompts printed on them, to help them describe this and the remaining stories in detail, and if they missed any of these prompts, the interviewer would ask them directly after the participants completed their stories.

3. *Early Scene* Following the narration of the environmental scene, participants were asked if this was the earliest environmental scene in their lives. If it was not, they were

asked to recount a similar story about "an early event or scene that got [them] thinking about the environment [which could] be from [their] early childhood or later in their] adult life."

4. *Environmental Dilemma* Participants were next asked whether they had ever been faced with a dilemma, when thinking about the environment. For this story, they were asked to describe the experience, what the conflicts were in that situation, what they did, whether they thought that was the right thing to do, and how they knew it was the right thing to do.

5. *Environmental Moral Courage Story* In the moral courage story, participants were asked to describe a time when they did something in terms of the environment that took moral courage, that is, when they did the right thing, even though it was difficult to do. Again, they were asked to follow the prods, described above for the environmental scene.

6. *Did Not Show Moral Courage Story* Participants were next asked to tell about a time when they did not show moral courage in terms of the environment.

7. *Positive and Negative Future Scenes* In two separate stories, participants were asked to envision and describe a possible and realistic future environmental scene, "one which you hope will happen (or not happen) in the future". They were asked to describe why it was a positive (or negative) scene, and what it says about who they are or will be.

8. *Turning Point Story* The final story participants were asked to tell was a turning point story. This was described as "an episode through which a person undergoes substantial change in their approach to the environment." Again, participants were asked to use the prods described above.

The second section of the interview focused on engagement with the community. In this section, the questions were similar to those which had been asked in the environment section. This section began with general questions about the participants' understanding of the meaning of community, the importance of community issues, and a description of community groups to which the participant belonged. This general section was followed by stories like those told in the environment section: parent influence, grandparent influence, most important community influence, a community scene, a positive and negative future community scene, and a community turning point scene.

Measures

Demographic Measures. Single-item self-report items assessed participant gender, age in years, marital status of parents, level of educational attainment (7 – point scale, from "less than high school" [1] to "completed graduate school" [7]), employment status and personal status as a parent.

Generative Concern. The 20-item Loyola Generativity Scale (LGS; McAdams & de St. Aubin, 1992) measures level of generative concern. Items such as "Others often come to me for advice" were rated from 1 (not at all true of me) to 9 (very true of me). Cronbach's alpha for the present sample was .89.

Narrative Coding

For this study, narrative coding utilized all of the stories in the environmental section of the interview. This allowed me to capture the broadest overall picture of each participant's narrative identity in the environmental domain. Coding of the commitment scripts was based on the procedures described by McAdams and his colleagues (1997), with the addition of

several codes to reflect environment-specific codes suggested by the analyses of other researchers identified below.

Commitment Script

Environmental stories were coded for elements of the commitment script, as listed below, based on several[5] of the themes described by McAdams (2006, McAdams et al., 1997). Additional themes were also coded, which were identified based on the review of the literature. Although these additional themes were related to those described by McAdams and his colleagues (1997), their focus is somewhat unique, and several were specific to the environmental context that the stories in this study focused on. In order to be coded as present, a given theme needed to be clear and explicitly present in the story. See Table 3 for additional code information; see Appendix C for a detailed coding manual. Stories were coded for each theme as described below.

1. Personal Advantage: The participant described a scene in which a special advantage or blessing was experienced. Five environmental story contexts were coded for evidence of each of the following five personal advantage themes: parent teaching, grandparent teaching, most important influence, scene and early scene.

[5] McAdams et al. (1997) describe two additional commitment themes: redemption sequences and contamination sequences. In a redemption sequence, an event is described as especially negative, but that somehow leads to a positive outcome. In a contamination sequence, an event is described such that it starts out as something very positive, but somehow results in a negative outcome. Few stories in the present sample were identified as either redemption (13) or contamination (2) sequences. For the most part, these were weak examples of each story theme, and did not contain the strong emotion described by McAdams and his colleagues (1997); also the coders did not agree on the majority of these codes. It seems that many of the redemption and contamination sequences identified by McAdams and his colleagues (1997) were in response to requests for a "high point" story or a "nadir" (or low point) story. We did not ask for either story type in this study.

a. Family blessing: Each story was coded for evidence of personal feelings of having experienced a family blessing. Passages which showed evidence of a family blessing depicted the storytellers' feelings that they had experienced some special advantage, or had been singled out in some way and recognized for somehow being distinct in a positive way (McAdams et al., 1997). Across all five stories, if the narrator showed evidence of having felt like they had experienced a special advantage, family blessing received a code of 1, otherwise, it was coded 0.

b. Personal blessing in nature: Stories were coded for evidence of personal feelings of having experienced some special positive and distinct event in nature. This code reflected feelings of privilege for having been exposed to nature in that scene. Across all five stories, a code of one was assigned to participants for evidence of having experienced a personal blessing in nature; otherwise personal blessing in nature was coded 0.

c. Becoming connected to nature: Stories were coded for evidence of some acknowledgement of connection to the natural world. It may have been framed as a calming restoration, intellectual fascination, the power of stewardship, or a developing connection with the natural world. Across all five stories, a 1 was assigned for evidence of some connection to the natural world; where no evidence was shown across the five stories, a code of 0 was assigned.

d. Personal attachments: The five target stories were examined for evidence of personal interactions with each identified person (mother, farther, grandparents, siblings, friends/ school, church/ religion) and those interactions were coded as negative (0), mixed or no interaction described (1) or positive (2; McAdams et al., 1997). One code was given for all

interactions with each individual across the five stories. The codes for these six identified categories were combined into an overall index of personal attachments. An additional, separate, code (0-2) was given to reflect interactions and feelings about the natural world.

e. Helpers or enemies: Each passage was coded for evidence of interactions with a helper, who was described as having influenced the storyteller in some positive way, or an enemy who was described as having blocked the participant's goals or actions (McAdams et al., 1997). Codes ranged from -1 (indicating that it was a negative/enemy interaction), through 0 (no reference), and 1 (passive, positive interaction) to 2 (personal, positive interaction).

An additional code was given to reflect the storyteller's perception of the extent of the impact of that interaction. This impact code was developed for this project. The impact of the interaction with that person was coded from -1 (negative impact) to 2 (significant positive impact).

2. Suffering of Others: The participant described a scene which contains some recognition of the suffering of others. Due to the environmental focus in the present study, this included both general suffering, or some harm or degradation of the environment. Six stories were assessed for this theme: the environmental scene, early scene, dilemma, moral courage, moral cowardice and turning point.

a. Awareness of Suffering: The participant showed some awareness of the suffering of others or of nature (McAdams et al., 1997).

b. Age of Awareness: The coder estimated the age at which the event took place.

Early Awareness of Suffering: Across all stories, participants received one code for early awareness of suffering, which was included in analyses: Participants received a code of 1 if they

showed some awareness of suffering, at an early age within any of the stories; a 0 was awarded if they did not show awareness, at an early age for any of the stories.

3. Guiding Values: The participant described an event in which actions were guided by personal values. Three themes in the stories were identified in reference to guiding values. Several different interview sections were coded for themes related to guiding values, as indicated below.

a. Moral Steadfastness: The passage described an event in which the participant was guided in some action by an internalized set of moral values (McAdams et al., 1997[6]). The focus was on the values guiding the behaviour in the situation, rather than on the actual behaviour, or impact of the behaviour. Four stories were coded for moral steadfastness: environmental scene, early scene, moral courage, turning point[7]. Each story was coded from 0 (indicating no moral steadfastness shown in the story) to 3 (indicating strong moral steadfastness that extends beyond societal norms). For this code, the focus was on overall moral steadfastness, and how typically it is that morals and values impact the narrator's interpretations of events, so an average was computed across stories.

[6] Although this code was based on the description provided by McAdams et al. (1997), the code differs slightly from that utilized in that study. There, they had coded sections of the interview describing values and beliefs for three separate aspects of moral steadfastness: depth, clarity and continuity. In the present study, the interview did not include a section that examined beliefs and values explicitly, and it was necessary to infer the values and beliefs from the stories describing discrete events. Because of this, it was more straightforward to assign a code for overall moral steadfastness which guided personal actions in those events.

[7] Environmental dilemmas were not coded here because they did not seem to fit the structure of the code: in many cases, participants described more general or hypothetical cases, and in other cases, they talked about environmental choices in general, or decisions made as part of a group, where they were less free to follow their own values and morals.

b. Making a Difference: In the depicted environmental or sustainability event, the passage reflected a feeling of efficacy and that this situation was meaningful to the storyteller (Chan, 2009). Four stories were coded for making a difference: environmental scene, early scene, moral courage, turning point. Stories were coded on a 3-point scale, ranging from 0 (no evidence) through 1 (the participant feels some efficacy regarding environmental actions in relation to the actions in the described event) to 2 (the participant feels particularly equipped to make a change in this area). For this code, the focus was on whether or not the participant had ever felt capable of making a change in the environmental domain, so an index was computed based on the highest rating that they received, across all four stories.

c. Sustained Commitment: Passages were evaluated for the presence of a more general commitment to the environment which served as a guiding value having impact across multiple areas (Chan, 2009). For this code, the focus was on a more global commitment to environmental morals and values. It was necessary to code material which reflected participants' overall thoughts and personal philosophy, or their engagement more broadly. As a result, three sections of the interview were coded for evidence of a sustained commitment across broad areas: in addition to the section in which participants discussed their definition of the environment, in which they were able to broadly describe their personal approach to the environment, and the section in which they were asked to describe their personal environmental actions, the community stories were also read with an eye to statements related to engagement with environmental issues within the broader community. For some participants, their personal environmental values were reflected in their descriptions of engagement with community groups. In some cases, these were environmental groups, but in

some cases, the main focus of these groups was not environmental (for example, church groups or groups at their work), and yet participants may have described how their focus in these groups is on helping them become more aware of the environment, for example. These three sections were scored (0-1) for the presence vs absence of any references to environmental concern, and the average was computed to provide an index of sustained commitment to environmental values.

4. Prosocial Goals for the Future: In their descriptions of future environmental scenes, the participant described prosocial goals for the future. Due to the environmental focus of the present study, prosocial goals could include positive environmental events or outcomes. Higher scores required that the participant provide well-articulated descriptions of two or more unique future goals. Future scenes[8] were coded for prosocial goals for society in general on a scale which ranged from 0 (no prosocial goals), through 1 (unarticulated goals), and 2 (one well-articulated goals) to 3 (two or more well-articulated goals).

[8] For this code, the positive and negative future scenes were coded together.

Table 3: Description of Codes

Themes	Source for Code	Focal Stories	Possible Code Range	Index Score Used for Analyses	Index Range, Inter-Rater Reliability[9]
Personal Advantage					
Family Blessing					
General	McAdams et al. (1997)	• Parent Teaching • Grandparent Teaching • Influence • Scene • Early Scene	0-1	Individual stories were coded for evidence of an early blessing (as described for each of the codes). An index was created across all stories to indicate presence or absence of each blessing across all of the stories, so evidence in any story resulted in a score of 1.	0-1 96.7 % agreement Free Marginal Kappa = .93 (based on 30 cases)
Nature	Developed for this study		0-1		0-1 93.3% agreement Free Marginal Kappa = .87 (based on 30 cases)
Becoming Connected with Nature	Chan (2009)		0-1		0-1 90% agreement Free Marginal Kappa = .80 (based on 30 cases)

[9] Inter-rater reliabilities are based on index scores that were used for analysis. In all cases, inter-rater reliabilities are based on at least 25% of the participants.

Personal Attachments					
• Mother • Father • Grandparents • Siblings • Friends/ School • Church/ Religion	McAdams et al. (1997)	• Parent Teaching • Grandparent Teaching • Influence • Scene • Early Scene	0-2[10]	After reading all 5 stories, coders judged whether there had been any evidence of negative, no/mixed or positive interactions with each target individual. An overall total was computed, consisting of the total attachments across all six categories.	0-12 *r* = .73 (based on 31 cases)
• Nature	Developed for this study.	• Parent Teaching • Grandparent Teaching • Influence • Scene • Early Scene	0-2	After reading all 5 stories, coders judged whether there had been any evidence of negative, no/mixed, or positive interactions with nature. This score was not included in the total 'attachment' score.	0 – 2 Cohen's kappa = .71 81% agreement (based on 31 cases)
Helpers versus					

[10] Although the possible range for attachment codes was from 0 – 2, with 0 referring to a negative relationship, no negative relationships were identified.

Enemies					
Presence of Helpers	McAdams et al. (1997)	• Parent Teaching • Grandparent Teaching • Influence • Scene • Early Scene	-1 (evidence of enemy) 0 (no reference) 1 (passive positive) 2 (personal, interactive positive)	An index was computed that reflected the total number of helpers portrayed in the stories. (So, an average was computed for all codes of either 1 or 2, and that was multiplied X 5, so as to not penalize participants who were coded -99.) A similar index was computed for the total number of enemies identified in the stories.	0 – 5 *r* = .91 (based on 29 cases)
Impact of Helpers		• Parent Teaching • Grandparent Teaching • Influence • Scene • Early Scene	-1 (negative impact) 0 (no reference, or no impact) 1 (minimal positive impact) 2 (significant positive impact)	For all stories an average impact index was computed (across all 5 stories). If no helper had been identified, impact was coded 0.	0 – 2 *r* = .77 (based on 29 cases)
Early Awareness of Suffering					
Aware of Suffering	McAdams et al. (1997)	• Scene	0 (no awareness) 1 (shows	The intended focus of this code is on 'early awareness of suffering'. To best replicate	0 – 1 87.5% agreement

		• Early Scene • Dilemma • Moral Courage • Moral Cowardice • Turning Point	awareness)	that in the present data set, an index code was created. To reflect some incidence of early awareness across all coded stories. Participants received a 1 (early awareness present) if they had received a 1 for awareness of suffering, and a 1 (during childhood) for age at which that incident of awareness took place, in any story.	Free-marginal kappa = .75. (based on 32 cases).
Age of Awareness	Developed for this study.	• Scene • Early Scene • Dilemma • Moral Courage • Moral Cowardice • Turning Point	1 (awareness developed during childhood) 2 (awareness developed during adolescence or adulthood) * No story, or no age indicated was treated as missing.		
Moral Steadfastness	McAdams et al. (1997)	• Scene • Early Scene • Moral Courage • Turning Point	0 (no steadfastness shown) 1 (emerging steadfastness) 2 (minimal – consistent with societal norms) 3 (present –	An index was computed based on the average steadfastness score across all four stories. This approach was taken, rather than the highest score (or presence/absence as used for other themes) because it seemed that this would be the best index of consistent	0 – 3 *r* = .75 (based on 30 cases)

			beyond societal norms)	displays of moral steadfastness across a variety of situations.	
Making a Difference	Chan (2009)	• Scene • Early Scene • Moral Courage • Turning Point	0 (no evidence) 1 (participant feels efficacy regarding env'l actions in described event) 2 (there is additional articulation around how the participant particularly can make a change in that area.)	Here, the interest was in whether or not participants felt like they were making a difference in terms of the environment, so an overall making a difference code was created that reflected the code for the event in which they had felt like they had the greatest efficacy in terms of their environmental engagement.	0 – 2 *r* = .92 (based on 30 cases)
Sustain Commitment	Developed for this study.	• Meaning of environment • Environment actions • Community section of interview	0 (no evidence) 1 (passage shows evidence of commitment to basic environmental principles).	An index was computed based on the average sustain commitment score across all three sections. This approach was taken, rather than the highest score (or presence/absence as used for other themes) because it seemed that this would be the best index of consistent displays of the breadth of environmental commitment across a variety of situations.	0 – 1 *r* = .93 (based on 32 cases; 3 sections each)

Prosocial Goals for the Future	McAdams et al. (1997)	• Positive and Negative Future Scenes were Coded Together	0 (no goals) 1 (unarticulated goals) 2 (one well-articulated goal) 3 (two or more well-articulated goals)	This code was used, as scored, for prosocial societal goals, based on the positive and negative future scenes.	0 - 3 *r* = .90 (based on 28 cases)

Results

Preliminary Analyses

Although the environmental activists were more likely to tell some story-types than non-activists, overall, across all stories, there was no significant difference between the overall frequency of stories told by activists and nonactivists; see Table 4. Across all interview sections, 10% of the stories were missing.

Table 4: Percentage of Participants Who Told Each Story

	Activists	Nonactivists
Parent Teaching	92.6	92.9
Grandparent Teaching	63.0†	46.4
Most Important Influence	100	98.2
Meaning of Environment	100	100
Environment Activities	100	100
Scene	100*	92.9
Early Scene	75.9	58.9†
Dilemma	96.3*	83.9
Moral Courage	98.1*	80.4
Did Not Show Moral Courage	96.3	87.5
Future Scenes	100	100
Turning Point	87.0	87.5
Total Number of Stories	M = 11.09 (SD = .87)	M =10.29 (SD = 1.34)

Chi-square tests indicate a significant difference in the number of stories told: † $p < .1$, *$p < .05$.

Descriptive statistics and zero-order correlations for key study variables are shown in Table 5. Less than 1% of quantitative data were missing. For missing scale data, person-mean substitution was used in the computation of means. Environmental activists were significantly more educated than nonactivists ($t(106) = 5.21$, $p < .001$) and told stories that were significantly longer than the non-activists ($t(108) = 3.58$, $p < .01$) so analyses below control for completed education level and mean story length. Gender was not significantly related to any study variables, and will not be examined further.

Table 5: Descriptive Statistics and Zero-Order Correlations for Key Study Variables

	Activist Status	Age	Education	Story Length	Generative Concern
Age	.01	--			
Education	.45**	.28**	--		
Story Length	.33**	-.03	.17†	--	
Generative Concern	.38**	.06	.17†	.16†	--
Gender	.11	-.12	.07	.15	-.12
Descriptives (M)	--	32.56	4.64	488.32	6.90
(SD)		(12.73)	(1.62)	(279.49)	(.97)

** $P < .01$; † $p < .1$

Because generativity has been theoretically linked to age as part of a developmental trajectory (Erikson, 1963), preliminary analyses also evaluated age differences in the commitment themes. A series of t-test and chi square analyses did not reveal any differences in the frequency of coded themes for emerging and midlife adults, so the two age-groups are combined for all further analyses.

H1: Relationship between Narrative Commitment Themes and Generativity

In the first hypothesis, it was expected that the number of commitment themes identified in the stories of both activists and nonactivists would be positively correlated with generative concern. A standard multiple regression analysis was conducted to evaluate the relationship between generative concern and narrative commitment themes which had been identified by McAdams and his colleagues (1997). A regression analysis was chosen as it allowed for the simultaneous assessment of the different codes, which allowed a comparison of the strength of the relationships with each of the different themes. These analyses should not be interpreted as reflecting a causal relationship, but rather as an approach to describing concurrent associations only in a more comprehensive way.

The control variables education and story length were entered in the first step, and commitment themes including general family blessing, early awareness of suffering, personal attachments, number of helpers, moral steadfastness, and prosocial future goals, were entered in the second step. The model produced in the first step did not adequately account for the prediction of generative concern [$F(2,106) = 2.74$, $p = .07$, $R^2 = .05$, $r^2 = .05$]. In the second step, the addition of the commitment themes contributed to a model that significantly predicted generative concern [$F(8, 106) = 4.56$, $p < .001$, $R^2 = .28$, $r^2 = .39$], and accounted for a

significantly greater proportion of the variability in generativity (R^2 change = .22). Cohen (1988) provided rules of thumb for the interpretation of effect sizes. He suggested that an *r* of .1 represents a 'small' effect size, .3 represents a 'medium' effect size, and .5 represents a 'large' effect size. According to this interpretation, the effect size of this relationship is medium to large. As shown in Table 6, moral steadfastness and the number of helpers in the stories contributed positively, significantly and uniquely to the prediction of generative concern; in addition, the contribution of family blessings, approached significance.

Table 6: Regression Analysis Predicting Generative Concern from Commitment Themes, Education and Story Length

Step 2[11]	β
Education	-.01
Story length	.01
General Family Blessing	.18†
Personal Attachments	.18
Early Awareness of Suffering	.07
Total Helpers	.24*
Moral Steadfastness	.23*
Prosocial Future Goals	.08

Final equation: $F(8, 106) = 4.89$, $p < .001$, $R^2 = .29$, $r^2 = .41$.

* $p < .05$; † $p < .1$.

[11] Variables entered in step 1 (education and story length) were not significant, so the β's are not presented here.

H2: The Relationship of Environmental Connection Themes with Commitment Themes

Several of the narrative themes identified in this study were suggested by previous research on environmental activists (e.g., Horwitz, 1996; Chawla, 1999; Chan, 2009) and are somewhat distinct from the commitment themes described in the McAdams et al. (1997) framework. Because these seem to be conceptually related to generative commitment, however, it was anticipated that these environmental connection themes would be positively related to the more general generative commitment themes in the environmental narratives. Table 7 presents correlations among the narrative codes for all themes. There are significant positive correlations among many of the narrative themes, suggesting some commonalities. Additional analyses were utilized to further explore the relationships among these narrative theme codes.

Table 7: Inter-correlations among Narrative Theme Indices

	2	3	4	5	6	7	8	9	10	11	12
1. Family Blessing	.25**	.26**	.12	.22*	.08	.10	.23*	-.05	.07	.19†	-.01
2. Personal Blessing in Nature	--	.48***	.31**	.52***	.14	.29**	.03	.34***	.17†	.13	.11
3. Becoming Connected To Nature		--	.30**	.42***	.16	.31**	.03	.09	.20*	.26**	.17†
4. Personal Attachments			--	.27**	.52***	.42***	.11	.16	.27**	.33***	.16†
5. Personal Attachment to Nature				--	.18†	.25**	.08	.20*	.25**	.34***	.20*
6. Helpers					--	.48**	.15	.08	.08	.21*	-.04
7. Impact of Helpers						--	.09	.47***	.37***	.46***	.15
8. Early Awareness of Suffering							--	-.05	-.18†	-.10	-.19*
9. Moral Steadfastness								--	.50***	.35***	.07
10. Making a Difference									--	.50***	.20*
11. Sustain Commitment										--	.33**
12. Prosocial Goals for the Future											--

Note: Bolded codes were developed based on previous studies of environmental activists, and are not part of the generative

commitment framework described by McAdams et al. (1997).

n = 110.

*** $p < .001$; **$p < .01$; * $p < .05$; †$p < .1$.

The structure of these themes was explored using an exploratory factor analysis (EFA). Because several of the variables were dichotomous, categorical measures, it was necessary to run the EFA using Mplus software. For categorical data, Mplus computes polychoric correlation and estimates the factor loadings based on that. Although four factors with an eigenvalue of greater than 1 were identified, the Scree Test suggested that two or three factors should be extracted. One factor, two factor, and three factor solutions were examined utilizing a weighted least squares estimate. Oblimin rotation[12] was used in this analysis to clarify the structure of the data because the factors were expected to be correlated. The model that fit the data best was the three factor model; this model also had the most interpretable solution (see Table 8 and Table 9).

Four variables loaded primarily on Factor 1: family blessing, personal blessing in nature, becoming connected to nature, and personal attachment to nature. This factor was labelled "feelings about nature" because three of the variables seemed related to personal feelings about experiences in nature. Three variables loaded primarily on Factor 2, and did not cross load on either of the other factors: personal attachments, number of helpers, and impact of helpers. This factor was labelled "relationships with people" because all were related to personal interactions with others. Two items loaded primarily on Factor 3, and did not cross load on either of the other factors: moral steadfastness and prosocial goals for the future. This factor was labelled "guiding values" because these themes all seemed to relate to personal values around environmental caring. Making a difference also loaded most strongly on Factor

[12] Oblique rotations are used when factors are expected to be correlated. Several different types of oblique rotations have been described in the literature; all tend to produce similar results (Fabrigar, Wegener, MacCallum & Strahan, 1999).

3, although it also loaded somewhat on Factor 2. Early awareness of suffering did not load on any of the factors substantially, and sustained commitment loaded equally on Factors 2 and 3.

Table 8: Fit Indices for Exploratory Factor Models of Commitment and Environmental Theme Codes

Solution	χ^2	df	CFI	TLI	RMSEA
1 factor	155.58*	54	.84	.80	.13
2 factors	93.44*	43	.92	.87	.10
3 factors	52.51	33	.97	.94	.07

Note: χ^2 = chi square goodness of fit statistic; *df* = degrees of freedom; RMSEA = Root Mean-Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker Lewis Index.

* Indicates χ^2 are statistically significant ($p < .001$).

Table 9: Factor Structure of 3-Factor Model of Commitment and Environmental Theme Codes

	Factor 1	Factor 2	Factor 3
1. Family Blessing	**.60**		
2. Personal Blessing in Nature	**.99**		
3. Becoming Connected To Nature	**.74**		
4. Personal Attachments		**.64**	
5. Personal Attachment to Nature	**.85**		
6. Helpers		**.72**	
7. Impact of Helpers		**.73**	

8. Early Awareness of Suffering	<.4	<.4	<.4
9. Moral Steadfastness			**.45**
10. Making a Difference		.42	**.69**
11. Sustain Commitment		.53	.52
12. Prosocial Goals for the Future			**.44**

H3: Commitment Themes in Stories told by Activists and Nonactivists

In a series of analyses, each commitment theme was compared between activists and nonactivists (see Table 10). It was expected that because the life stories of environmental activists are distinct from those of nonactivists, the stories of those activists would contain more general and environmental commitment themes than the stories of nonactivists. For binary variables, a chi-square comparison was utilized, and for continuous variables, a t-test comparison was used. The criterion for significance was set to $p = .001$[13] due to the number of simple difference tests being run in this analysis. For most of the analyses, the narratives of activists contained significantly more themes reflecting themes of personal advantage than nonactivists. This difference was found for three themes of personal advantage: feelings of having developed a connection with nature, personal attachments with other people and with nature, and the number of helpers contained in stories as well as the impact of those helpers. The numbers of family blessings and special experiences in nature did not differ significantly

[13] With 13 analyses, the criterion for this set of analyses was set to .001, resulting in the probability of a Type I error of 1/1000.

between activists and nonactivists[14]. For recognition of suffering at a young age, the difference between activists and nonactivists was not significant (see Table 10). The stories of activists contained significantly more themes, which reflected feelings that their actions were guided by some kind of internally held personal morals or values than the stories of nonactivists, as assessed by three themes including moral steadfastness, a feeling that one was making a difference and the consistency of the integration of personal values across different domains. Finally, the future scenes of environmental activists contained more well-articulated themes relating to positive future goals for society.

Table 10: Comparison of Commitment Themes in Stories of Activists vs Nonactivists

Commitment Theme	**Descriptive Statistics**	
	Activists	**Nonactivists**
	(N = 54)	(N = 56)
Personal Advantage		
Family Blessing		
General	n = 8	n = 1
	(14.8%)	(1.8%)
Nature	n = 26	n = 15
	(48.1%)	(26.8%)
Becoming Connected with Nature	n = 41***	n = 22
	(75.9%)	(39.3%)

[14] For both family blessings, and special experiences in nature, $p < .05$; because the criteria was set to a more stringent level, they are not described as 'significant' in the present analyses.

Personal Attachments	M = 8.28***	M = 7.55
	(SD = .98)	(SD = .97)
Attachment to Nature	M = 1.87***	M = 1.45
	(SD = .34)	(SD = .50)
Number of Helpers	M = 3.29***	M = 2.71
	(SD = 1.09)	(SD = 1.12)
Number of Enemies	M = .31	M = .30
	(SD = .51)	(SD = .57)
Impact of Helpers	M = .82***	M = .47
	(SD = .40)	(SD = .32)
Early Awareness of Suffering	n = 10	n = 15
	(18.5%)	(26.8%)
Moral Steadfastness	M = 1.64***	M = 1.03
	(.74)	(.70)
Making a Difference	1.24***	.34
	(.89)	(.64)
Sustain Commitment	.73***	.16
	(.24)	(.21)
Prosocial Goals for the Future	2.50***	2.02
	(.86)	(.98)

Note: For categorical variables, a chi-square statistic was used to estimate group differences in frequency of themes identified, and for continuous variables, a t-test analysis was used to estimate group differences.

† χ^2 analysis: $p < .01$.

*** $p < .001$

RQ: Differences in the Commitment Themes of Environmental Activists and Nonactivists when Controlling for Generative Concern

Previous research has identified patterns in the stories of environmental activists (Chan, 2009; Chawla, 1999). Because these studies have not compared activists and nonactivists, a key contribution of the present study is the examination of differences between these two groups. In a final set of analyses, I examined differences in the narrative themes of activists and nonactivists when controlling for generative concern. In this analysis, I utilized the factors that were identified in response to the second hypothesis. Again, because some of the theme codes were dichotomous, it was necessary to conduct the analysis using Mplus (v. 5.1, Muthén & Muthén, 1998-2008) which can accommodate categorical variables. A structural equations model was constructed to evaluate the relationship of environmental activist status with three factors (nature, people and values) based on the commitment themes. Weighted least squares estimation was used to estimate the entire set of parameters in the model simultaneously.

Model fit was tested using several standardized fit statistics: the chi-square test is an indicator of *lack* of fit, so a finding of significance often indicates the model is a poor fit for the data (Kline, 2005). Because the chi square statistic is affected by the size of the correlations in the model and non-normality of the data, it is necessary to evaluate other measures of fit (Hooper, Coughlan, Mullen, 2008). As a result, the comparative fit index (CFI; Bentler, 1990), and the root mean square error of approximation (RMSEA; Steiger, 1990) were evaluated to provide a more complete understanding of the model fit. A good-fitting model is indicated by CFI values of at least .9 and RMSEA values of close to .06 (Hu & Bentler, 1999).

The first set of analyses indicated that the code for family blessing had very little variance (92% of respondent stories did not contain evidence of feelings of having experienced a family blessing), and did not contribute to the fit of the model, so this variable was removed from the final model. Early awareness of suffering and sustain commitment were not included in this analysis because they did not clearly load on one factor in the EFA above. Activist status was included in the model as a predictor of these three latent variables. Generative concern and educational attainment were also included as predictors in order to control for their effect on the latent variables. See Figure 1. Arrows in the model indicate statistically significant path coefficients. Non-significant paths are shown with broken lines.

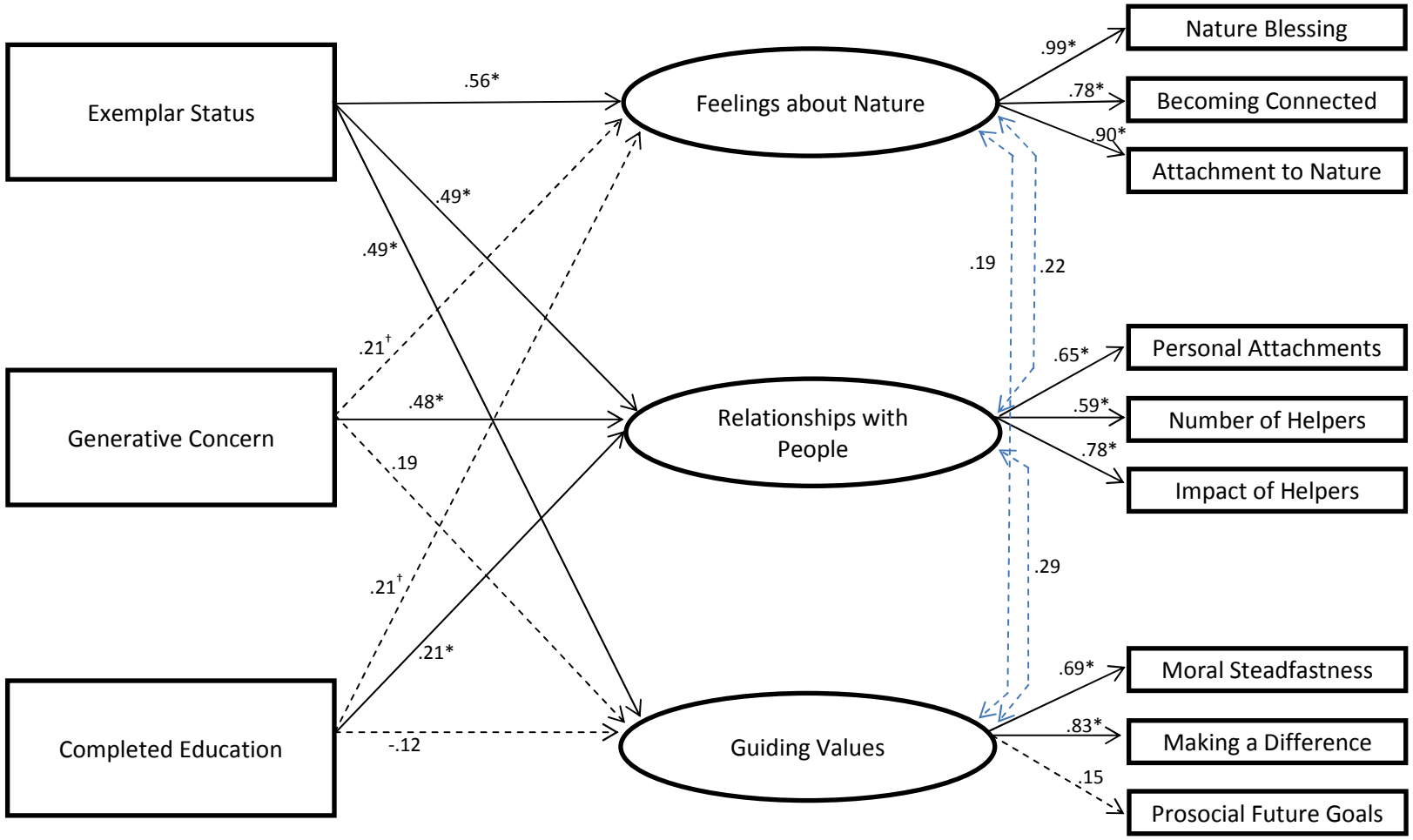

Figure 1: Model for Relationship of Three Narrative Commitment Factors with Exemplar Status, Generative Concern and Education

Structural equations model for prediction of commitment factors from environmental activist status, controlling for generative concern, and education, $\chi^2 = 37.10$, *df* = 25, *p* = .057; CFI = .922, RMSEA = .07; $^{*}p < .05$; $^{\dagger}p < .1$. The numbers reflect standardized regression weights[15].

[15] This model has 37 free parameters. Power requirements for SEM models suggest a ratio of 4:1 to 6:1 ratio (free parameters to participants) (Bentler & Chou 1987; Hoyle, 1991). Because the present analysis has not met this recommendation, these results should be interpreted as exploratory.

This model was tested using several standardized fit statistics. Analysis indicated the model was a good fit for the data (χ^2 = 37.10, *df* = 25, *p* = .057; CFI = .922, RMSEA = .07). The path coefficients from environmental activist status to each of the three factors were significant. The path coefficients from generative concern and completed education were significant only for the latent variable labelled people.

Sample Stories

The following story excerpts are presented to illustrate some of the differences between activists and nonactivists, and to illustrate some of the themes in the actual narratives. In this environmental activist's story, several themes of personal advantage are evident, including a feeling of becoming connected to nature, and having experienced a unique and special event in an environmental context.

> "Well, there's one time when I was in Costa Rica. One of the people that we were living with in that village was an ornithologist, so he was studying birds, it was his specialty, and he could call, or do so many amazing sounds and that's what he thought he should do. And we would go into the jungle and he would be able to see things, or there was one instance where we were hiking and, you know, there would just be like a ruffle in the bush and everybody would be like, 'oh the wind blew'. And he's like, oh, that was a, a 'this' bird, and it made, you know, this is what it, the call that it makes, and this is where it lives. He knew everything, this is like an encyclopedia. And the way that he described the whole situation was just like, *there wasn't anything that was separating him from that environment*. Like, it was all a part of his being and everything that he was, was

> still also that forest and everything that lived in it. So, *that was super impactful because it really drew me into that idea that we all are very interconnected ….if you don't spend time in those areas, in that environment, then it'll very easily become disconnected*. And, so that made a huge impression on me."

He describes coming to understand the idea of interconnection with nature, through observing this ornithologist, and how he personally understood that connection through the experiences he describes. Later on in his environmental stories, it becomes evident that he feels privileged for having experienced these special moments, both with his family, and within nature. He highlights how those special experiences have reinforced that connection with nature.

> "I looked across, almost the first or second day that I was there, and the whole mountainside was just a very brown, drab colour. And I remember asking one of the people that lived in the village why there was this difference in colour and he's like "oh, well it's all been cut." And I was just like, "what do you mean it's all been cut?" In Costa Rica, in order to make money they, basically, the fast food industry outsourced their beef production, and they would just clear cut a whole mountainside. And *in that conversation I learned* that it wasn't just that it was clear cut and the beef was raised on it, (but) it can only be raised in one season, because once the beef had eaten all the grass and eroded all the soil, there was almost zero chance of that ecosystem actually regenerating in any conceivable amount of time. And *right there was the first time that I had, like, a serious emotional connection to my own habits as a North American living outside of Toronto to directly impacting, you know, this amazing rainforest that I had such*

deep, like, real love and passion for once I had been there. Even right now when I tell it, I always feel like, kind of tingly all over 'cause it, it was so gripping. So *that was a really, really important one*. ….. I mean, there have been probably thousands of, like, those kinds of awed moments in my life, 'cause *I was going canoeing all the time, my parents love doing road trips, so every summer we would drive across from Toronto to Vancouver and back and go, like, all kinds of places where it was just, like, totally awed moment.*

Nonactivists also told stories where they expressed caring for the environment, and which reflected a development of their understanding of the natural world, as this excerpt from a nonactivists' grandparent teaching story shows. This story shows the development of a greater understanding of the natural world from unique experiences with her grandparents, but in this passage, the storyteller connects the experience to an understanding of farming in particular, rather than the natural world more generally.

"*It would be about how to care for a farm, so it wouldn't be world environment, it would be personal farming information* [I: Right]. So, something specific would have been on how to plant certain plants and that sort of thing. [I: Can you think of an actual event when you were at their farm at some point, and they were teaching you to plant something specific? One time?] One time. [I: Yeah.] [pause] Probably not. Again, we did it every year, and harvested every year sort of thing. I remember when I was little, just going down the rows and picking peas and you were just picking, picking, and my mother used to say I used to sit there and just tell myself stories as I was going down the rows. That's my memories of that, is just basically that kind of thing. [I: So, what impact do you

think that the event of you picking peas at your grandparents' farm had on you?] I probably appreciated farming. I probably appreciated the work of farming. I don't know if it impacted me environmentally, but I did appreciate what farmers did, *as opposed to a kid who was brought up in a city. That sort of thing made me value plants, going and taking care of them. And probably, that sort of thing probably made me value rain and that we needed it so often, as opposed to rain was being annoying because I couldn't go outside. So probably being involved in a farm, I appreciated the ebb and flow of the seasons* sort of thing, I think that would be it."

In the following passage, an environmental activist talks about a campaign that he engaged in with a focus on habitat preservation for one species in particular. He describes how he is guided by his personal morals and values when he has verbalized a promise. Later on in the passage, he comments on his feeling of having learned how to make a difference, and feeling good about that environmental campaign as a result.

"…And, obviously, it's one thing to campaign for something you see in a photograph and another to see something in person, and having the chance to go up and see this, this you know this (animal), living in this dark forested backdrop, it was really (an) inspiring moment. The guy who took us out to see the (animal) had just, his wife had just given birth to a child, I remember he made me promise to his daughter that that (animal) would be still there when she grew up had children. And *so I made her a promise and I'm pretty damn determined to keep it*. [I: yeah]. So that was probably a big thing. And then probably, well probably the (second) big turning point in the campaign, we were

struggling along quite, quite significantly, and (it) *was when [Magazine] had me as one of their 60 heroes of the environment. I'm not a hero but, it was that first moment where we had that recognition on a broad scale, media-wise, this was an important issue, and it was out and it really gave credibility to this entire youth movement that was building and overnight the campaign really went from a middle school letter-writing campaign to a global issue and that could, really took off at that point*."

Although the stories of nonactivists could also reflect moral steadfastness, as the following passage shows, it was also more frequently described in isolation from the other commitment themes, notably the making a difference idea. For nonactivists, often their environmental values impacted their behaviours in more simple ways than those of activists; for these individuals, the values were not connected with broader feelings of having been particularly impactful in terms of the broader environment. In this passage, it is evident that concern for "not littering" was important to the storyteller, and did impact her activities, but she does not go so far as to comment on how she had "learned to make a difference" within the environmental domain.

"There was one time, I was walking along the street, and a guy was throwing garbage out of his pocket and onto the ground and he was being really obnoxious at the same time, so, *he was really bugging me. [I: Um, hm.] So, I tapped him on the shoulder and I told him to pick all his garbage up* and he started like thinking he was all that [I: Um, hm.] I don't know.. he thought he was better than me and I was like "yeah, well you're disgusting for littering", and I just walked away. And I think he stopped and picked up some of the bigger

pieces but just laughed, like it didn't seem like he really cared. He was just doing it so that he didn't look, I don't know, too embarrassed . I don't know. He was with like two buddies of his, so, I don't think he was really inclined to listen to a girl. [I: And when was this?] I think I was in grade twelve, so, two years ago. [I: Do you remember what you were thinking in that situation?] That was really ignorant of him to be doing that. [I: Um, hm.] I don't know, he was really bugging me. He was being really obnoxious about other things …. and he was just littering everywhere, like it just, it was really bugging me. I was very angry."

For many of the environmental activists, when they were asked to consider environmental future scenes, they were able to describe a wide variety of environmental impacts. As this vision of an environmental activist shows, the ideas could be quite diverse.

"Hm … short term? I think a great start would be .. an actual agreement in the Copenhagen negotiation process that's happening in December, where the world can actually agree to do something about climate change, and Canada can agree not to be a jerk on the world stage. I would love it if we actually made progress and reduced like emissions nation-wide. But I think, for me, probably the most important kind of litmus test of whether or not we have achieved a measure of ecological well-being would be that .. indigenous societies and nations had the ability to co-exist without being slowly kind of devoured by the industrial development complex that is Western society. So .. like a co-existence between people who want to live traditionally and hunt and fish, and can do that sustainably without fear of starvation, without fear of eating poisonous kind of

off-shoots of petrochemical agents and things like that. Um .. that for me would be a sign that we're definitely [making positive changes]."

For many activists, when asked about a negative future, it triggered a unique set of ideas, which were often distinct from those described in the positive scene. Although the preservation of indigenous cultures is clearly important to this activist, her description in response to the negative future question touched on broader issues.

"Well, hm … if climate change were to continue unaddressed and we lost the ice caps and flooding began.. desertification of southern Ontario wouldn't be so great. The disappearance of indigenous cultures world-wide because of environmental catastrophe. .. Basically any situation that ends up with armed conflict or .. human suffering and death or just .. basically that .. because of .. environmental devastation. "

In contrast to this multi-faceted approach, the future scenes of many of the non-activists were quite focused around one issue, with little detail, as shown in this description.

"Oh, everyone recycling and having like bins of everything, you know, aluminum, plastic, all that kind of stuff, [and it will] just be like a normal thing. I mean, it will help so much. [I: Do you think that's realistic?] Yeah, I mean, eventually yeah, I mean, you know, when people start getting it, which, who knows, but I guess it's realistic."

Even when asked to describe a negative future scene, some nonactivists had a hard time distinguishing their response from the positive scene that they had just described. Clearly, waste disposal was important to the nonactivist who described the positive scene above, because it was also a concern for the negative future scene.

> "Filled with trash everywhere , kind of like New York but ten times worse.. Yeah, I just picture .. stuff everywhere, cans, bags of garbage stacked up, that kind of thing, that would be horrible. [I: And, could you see that happening?] Oh yeah .. yeah, probably more than the other, than the recycling, yeah. [I: More likely than the positive one?] Yeah. [And why is this negative for you?] Because it makes me kind of sad to think that that could actually happen that people just don't care that much, and don't think about like what .. how much, you know, trash and pollution and all that kind of stuff can have an effect on the environment. [And what do you think this says about who you are, that you don't want to see this happen?] That I care about our environment, in a way, you know .. I actually care enough to think about, you know, trying to recycle and that kind of thing and it makes me feel good."

Discussion

Personal narratives told by environmental activists and nonactivists were coded broadly for generative commitment themes (McAdams, 2006; McAdams et al., 1997). A variety of stories were coded for the presence of three personal advantage themes (family blessing, personal attachments, and the presence of helpers), as well as early awareness of suffering, moral steadfastness and prosocial future goals. Environmental narratives were also coded for more specific environmental commitment themes (Chan, 2009; Chawla, 1999; Horwitz, 1996). Although these environmental commitment themes were conceptually related to the more general commitment themes, they were somewhat more specific, and related specifically to the environmental domain which was the focus of the present study. Based on themes identified in

previous research reporting on interviews with environmental activists, five additional themes were coded: having experienced a special, unique event in nature, becoming connected to nature, and expression of positive feelings about the natural world, making a difference for the environment, and sustaining a commitment to the natural world across domains and into the future.

With the exception of sustained commitment, all stories which were coded for the general commitment themes and the environmental commitment themes focused on personal experiences within an environmental domain. For sustained commitment, the intent of the code was to provide a measure of narrative reflections of the global importance of environmental morals and values in the life of the storyteller. To achieve this, it was necessary to code material which reflected participants' overall thoughts and personal philosophy, or their engagement more broadly. As a result, three sections of the interview were coded for evidence of a sustained commitment across broad areas: participants' description of their personal definition of the term 'environment', descriptions of environmental actions, and the community stories. Community stories were pertinent to this section as they could provide an indication of the participants' engagement with environmental issues within the broader community, something which was thought to provide an important indication of overall environmental values and morals.

In response to the first hypothesis, the more general commitment themes were analyzed in relation to generative concern. This analysis supported a positive relationship between many of the commitment themes and generative concern, although number of personal attachments, expressing an early awareness of suffering, and having prosocial goals for the future were not related to generative concern. This pattern of results differs somewhat

from that reported by McAdams and his colleagues (1997). They had found a significant difference between individuals who were high and low in generativity on moral steadfastness, family blessing, suffering of others, and prosocial goals for the future; in the present study, only moral steadfastness parallels this result, although the relationship of family blessing with generative concern approached significance. Unlike the results reported in that study, the present study also found a significant relationship with number of helpers, and number of close personal attachments.

Additionally, McAdams et al. (1997) identified redemption and contamination themes as key components of the commitment script. In a redemption sequence, an event is described as especially negative, but that somehow leads to a positive outcome. In a contamination sequence, an event is described such that it starts out as something very positive, but somehow results in a negative outcome. In the present study, redemption and contamination themes were not coded because the stories did not contain the strong emotion described by McAdams and his colleagues (1997); also the coders did not agree on the few weak examples which might have been present. The narratives collected in the present study differed considerably from the "high point" and "nadir" experiences which were studied by McAdams et al. (1997).

There are several differences between the two studies which may help to account for the different patterns of themes identified in the present study. First, participants in the McAdams et al. (1997) study were specifically selected to be high and low in terms of their generativity. In the present study, although it was anticipated (and has been shown, see for example, Matsuba et al., 2012) that generative concern would be related to environmental activist status, the scores on the generative concern scale in the present study were more evenly distributed across the possible scale range.

A second, more significant, distinction between the two studies lies in the domain-specificity of the present study. Whereas the study by McAdams and his colleagues (1997) utilized the more general life story interview, which included stories for the life chapters across the lifespan, as well as specific stories such as high point, low point and turning point, the present analyses focused on stories told within an environmental domain. By limiting stories to this very specific domain, many participants may have been quite limited in the experiences they could access when they were telling stories in the present study, in comparison with all experiences across their lifespan. Particularly for nonactivists (who varied in their levels of generative concern), it seems that some of the commitment themes may have been more evident in stories which could more freely express the range of personal experiences to include other events, outside of the environmental domain.

Although it seems contrary that describing prosocial goals for the future was not significantly related to generativity in the present study (given the future-focus of generativity), this finding may also be a result of the environmental domain focus of the stories. This question specifically prodded for positive future environmental scenes, rather than more general future scenes (see for example McAdams et al., 1997) which is a much broader prod, and which would elicit a wider variety of responses than in the present study. Environmental issues are quite prominent in the media, so it was fairly straight forward for all participants in the present study (who are both high and low in terms of generativity) to describe some positive changes in the environment for the future. These were which were coded positively for positive prosocial goals, because positive environmental changes were seen as good for society as a whole.

The significant relationships found in the present study for number of helpers and for the number of close personal attachments may be a result of some of the specific questions

that were included in this study which differed from the McAdams et al (1997) study. For example, participants were specifically asked for times when parents and grandparents taught them about the environment, and to name a person or group of people who taught them about the environment; responses to these questions frequently highlighted close relationships, or helpers, which may have changed the distribution of these themes in comparison to the McAdams et al. (1997) paper.

In the second hypothesis, the environmental commitment themes were explored in an exploratory factor analysis along with the more general commitment themes. This analysis suggested the presence of three factors which seemed to be focused on feelings about nature, relationships with people, and guiding values. The third factor, guiding values seems to be the most consistent with the generative life story that is described by McAdams et al. (1997); they described the generative script as one in which "the protagonist commits the self to living in accord with a set of clear and enduring values and personal beliefs that continue to guide behaviour throughout the lifespan" (McAdams et al., 1997, p. 687). In the present study, story-tellers described events in which their actions were consistent with personal values that seem to provide a guiding framework across time, and in varied contexts. This is consistent with research on moral exemplars (Colby & Damon, 1992) which also has shown the importance of personal guiding values and supports the conceptualization of environmental engagement as one specific domain for moral actions.

The first and second factors have a somewhat different focus than the commitment script described by McAdams et al. (1997). The first of these factors, feelings about nature, seemed to be linked directly with the domain-specific focus of stories in the present study. It seems reasonable that significant stories told within an environmental domain would be

focused around feelings about the natural world, and that positive feelings about nature could serve as a framework for stories told within this domain.

The second factor also seems somewhat distinct from the commitment script described by McAdams and his colleagues (1997), Although they do describe feelings of holding a special place within the family, which would certainly be related to having special relationships with supportive people, in the present study, the factor seems to describe a more general availability of other supportive people across the lifespan, rather than exclusively in childhood as suggested by McAdams et al. This broad theme, of relationships with people, which highlights positive relationships, and the availability of mentor within the environmental domain, may reflect the importance of supportive networks of mentors who model environmental engagement, and, in turn, impact the construction of the environmental narrative.

In the third hypothesis, activists and nonactivists were compared on the number of themes identified in their stories. In these analyses, the stories of environmental activists contained significantly more commitment themes than those of the nonactivists. With the exception of early awareness of suffering, comparisons for all themes yielded significant differences. It seems clear that activists construct their stories about personal experiences in the environment in ways that are thematically different than nonactivists; however, with so many different themes, it seemed that more clarity was necessary to better understand the overall nature of these differences, more specifically.

In an exploratory analysis, then, the differences in the stories of activists and nonactivists were explored further, utilizing the three factors identified in the factor analysis described above. The three factors were examined in relation to environmental activist status in a structural equations model, which allowed for the simultaneous prediction of their

relationship with environmental activist status, and with education and generativity as predictors as well. This analysis revealed that the paths between environmental activist status and each thematic factor were all significant. The stories of environmental activists contained more themes related to feelings about nature, relationships with people, and guiding values. It seems that all three of these factors are important for the way environmental activists narrate their stories, in comparison with nonactivists. While it might seem reasonable that those individuals who act in exemplary ways in relation to environmental issues may have stronger feelings about nature, and that their actions are guided by strong personal values and morals, it is perhaps more interesting that environmental activists tell stories which reflect more connections with other people. Future research could benefit from a closer examination of the role that others play in the engagement of environmental activists; certainly understanding whether the other people play a role in the development of that engagement or whether those others help to sustain that engagement may be useful information for the development of programs to encourage environmental engagement.

For both generative concern and education, only the path to the factor describing relationships with people was significant. In terms of a feeling a connection with nature, and being guided by personal values, the effects of both generativity and education were quite modest. Although generativity is an important motivator for environmental engagement (Chan, 2009; Horwitz, 1996; Matsuba et al., 2012; Milfont & Sibley, 2011), the data presented in the present study would suggest that it is less important for personal environmental narratives than identification as an environmental activist. Likewise, a personal identification as an activist had a stronger relationship with the themes present in environmental stories than did education. It seems that having that personal connection with the environment is what is

critical here, and that individuals at all educational levels might benefit from this relationship, in terms of the stories that they tell. Clearly having "environmental activist" as part of one's identity is impacting narrated stories studied here, over and above other important factors. This is consistent with McAdams' (1985, 1995, 1996) contention that identity is a critical component of the life story narrative, and that these stories may provide a direct reflection of that identity.

This pattern was clearly illustrated in the sample stories presented above. Early experiences with the natural world are described in a more significant way by activists and often, they are able to describe the development of feelings of connection with the natural world in detail. In many cases, even when similar themes were present in the stories of activists and nonactivists, the activists seemed to be considering the connections at a much deeper level. For example, in the story excerpts which were used to illustrate the themes of special experiences in nature, and a developing connection with the natural world, the story of the nonactivist seems to describe the connection in terms of the benefit of nature to humans; that is, how the natural world is important for food production, whereas the story of the activist seems to be describing a love of nature for its own sake. This is consistent with the biophilia hypothesis (Wilson, 1993). Wilson has proposed that humans have an innate love of nature for its own sake. Although research has shown that this innate drive is not strong enough to motivate environmental engagement by itself (Levy, 2003), it may provide a filter through which some individuals process and describe their environmental engagement.

Similarly, as shown in the stories illustrating moral steadfastness and making a difference, the environmental activists talked about general morals and values, which are guiding more general engagement with environmental issues. In many cases, they talk about longer term events, which required a sustained effort over time. For example, in the story

quoted above, the activist is describing a prolonged environmental campaign that focused on saving the wildlife habitat of one endangered species. While many nonactivists were able to describe an environmental incident in which they felt they had been guided by their personal morals and values, it frequently was a more isolated incident, as in the story of the young woman who describes her feelings of anger at seeing someone litter and being motivated to speak out. The future scene descriptions also show distinct differences in the stories of activists and nonactivists which are consistent with these observations. Although nonactivists were able to express prosocial future goals which reflected improvements in the environment, for many of them, those goals were narrowly focused on one specific environmental concern, rather than the broader or diverse concerns articulated by activists.

Combined with the results of the structural equations model, this pattern confirms that although generativity has been identified as an important component of environmental engagement (e.g., Matsuba et al., 2012), a personal identification as an environmental activist may contribute uniquely to the environmental stories people tell, over and above the impact of generativity. It would seem that environmental stories are rich constructions, which add considerably to an understanding of the activist experience. Stories reflect the importance of unique and special experiences in the natural world, the impact of interactions with other significant relationships, and the importance of personal values for motivating an engagement in the environmental domain. It is evident that a full and complete understanding of environmental activists and nonactivists may benefit from the examination of the stories they tell, and from going beyond the surface story, to more general underlying themes, which may reflect at once concern for the environment as well as more general generative concern.

These findings further support the conclusion presented above that having "environmental activist" as a critical component of the personal identity is, again, impacting the personal life story. In her review of the literature, Chawla and Derr (2012) propose that individuals become engaged in the environment through developmental process, which begins with knowledge, and leads to a sense of efficacy, and action, that then results in the experience of positive outcomes, and goals, along with articulated expectations for positive outcomes. Throughout this process, the individual is engaging in reflection, and adaptation, which may serve to sustain that involvement. Mabsuba and Pratt (2014) observe that such a developmental process, of becoming embedded in environmental actions, and reflecting on those experiences, may contribute to the further development of that environmental identity, which may serve to enrich the environmental framework for the retelling of personal stories within that domain.

Limitations and Future Directions

Despite the interesting and important differences between the stories of environmental activists and nonactivists found in the present study, it is not without limitations. One key commitment element according to McAdams et al. (1997) could not be analyzed in the present study due to the infrequency of its identification in the stories – the presence of redemptive themes. The inclusion of high point and low point stories might have allowed for the identification of sufficient redemption themes in the stories for analysis.

A second consideration arises from the personal drivers for environmental concern and engagement. People may be motivated to engage with environmental issues for different reasons. For example, some individuals may be motivated by a love of nature, whereas others

may be inspired by concerns for social justice (e.g., Brulle & Pellow, 2006). It seems reasonable that these different motivations may be associated with different narrative themes. A related issue is personal background. Personal characteristics such as race or personal experiences may impact one's interpretation and retelling of environmental events. For example, spending time within an aboriginal community may impact feelings of connection with the natural world (Beckford, Jacobs, Williams & Nahdee, 2010). While some of this information could be determined from the narratives in the present study, it was not systematically available across the sample. These two issues could be addressed in future research by the identification of groups which differed on these characteristics, or at least through the gathering of more specific motivational and personal background information within more general samples.

An additional suggestion emerges from the observation, described above, that the domain specificity of the stories in this study may have limited the experiences available for participants to talk about. Older participants would have a broader time period from which to select events to narrate in response to the environmental questions in this study. It seems that including a broader range of participant ages could address this limitation.

A key finding of the present study was evidence for the connection of three distinct narrative thematic patterns with personal identification as an environmental activist or nonactivist. Further research is necessary to confirm this factor structure, and to evaluate how these three themes may be differentially related to the development of a personal identity as an environmental activist. Other researchers have shown, early nature experiences may be critical for the development of environmentalism (e.g., Chan, 2009). It is plausible that early development of environmentalism might contribute to the development of personal values that guide environmental caring across time and into the future. The present data cannot address

this question. Longitudinal research is needed to further understand the place of these three themes in terms of an environmental identity, which may be connected to positive environmentalism outcomes.

The final suggestion for future research here focuses on a more practical application of the findings from this research. Learning about the stories people tell, while interesting theoretically, does not help the earth in an immediate way. It would be particularly interesting to examine the long term impacts of having expressed these themes within the life story narration. That is, are more commitment themes, such as moral steadfastness, related to a continued commitment to environmental issues, over time? Longitudinal data are necessary to address this question, and this is certainly a critical first step towards understanding how the present findings may be used to encourage personal environmental engagement.

Chapter 4 – Domain, Gender and Generativity as Factors in the Generation of Motive Themes in the Stories of Environmental Activists and Nonactivists

In the second study, I move to a more specific analysis of the themes present in the narratives. In this study, I examine what motivates environmental activists and nonactivists, and how those motives might be portrayed in the life story. Narratives are coded for the presence of generative desires, which serve as basic motivations. These goal-directed sequences (McAdams, 1996) typically reflect desires for either productivity or interpersonal connections, which are both components of generativity. Patterns of these generative desires are compared for activists and nonactivists, and in stories which connect closely with the personal identity in comparison with stories that are less closely connected with the personal identity.

Generativity

Generativity describes feelings of concern and caring for the next generation. As part of their movement through the midlife period, Erikson (1968) believed that it is important for the resolution of this seventh of his stages that adults concern themselves with leaving a positive legacy by committing to society's future and engaging in activities that would ensure its continuation. Several theorists have elaborated on this theory by describing specific types of generativity. For example, Vaillant and Milofsky (1980) suggested that caring was somewhat distinct from efforts to maintain society, and that these motives may develop at different rates.

McAdams and de St. Aubin (1992) made additional distinctions and described generativity as a configuration of seven interrelated psychological features focused on providing for the next generation. These features include cultural demand, inner desire, concern, belief, commitment, action and narration. In McAdams and de St. Aubin's theory,

inner desires are said to take the form of either personal expansion, which results in symbolic immortality, or interpersonal connection, emphasizing a "need to be needed"; they combine with cultural demand to produce generative concern. Concern involves conscious feelings of caring about the next generation, an outlook which may be sustained by a belief in the goodness of the human species. Generative concerns may fuel the development of personal goals, or generative commitments which lead to generative behaviours. Finally, the personal meaning of this constellation of features is determined by and reflected in the person's narration of generativity, the individual story about caring for the next generation. The generativity script tells the story of how the individual sees his generative actions as fitting into his overall life story and extending into the future (McAdams et al., 1997). In this model, too, it is possible that the different features develop at different rates; for example, people may experience feelings of concern for the next generation and commitment to care for others prior to engaging in generative actions, and both may precede the integration of that generativity into the life story. Based on different rates of development of different features of generativity, the present study examined several different indices of generativity, to evaluate their relevance at different ages.

Across the Lifespan

Although Erikson (1963) proposed that generativity is most relevant during mid-life, his concept of epigenesis allows that the goals which are salient at each stage of development may be present before and after the critical developmental phase. Kotre (1984) also argued that generativity may be expanded to other ages. Empirical research is supportive of the idea that younger individuals may have the capacity for at least some aspects of generativity (Pratt & Lawford, 2014; Stewart & vandeWater, 1998). Additional research has shown that different

aspects of generativity may be more prominent at different stages of development (McAdams, de St. Aubin & Logan, 1993; Stewart & vandeWater, 1998). In several studies, Peterson and his colleagues (e.g., Peterson, Smirles & Wentworth, 1997; Peterson & Duncan, 1999) have linked generativity with political attitudes across a variety of ages. This suggests that generativity may be important for certain types of social interest or engagement across the lifespan. In younger individuals, generativity may provide an important motivating force in some areas such as civic engagement, moral concern, or environmental interest (Frensch, Pratt & Norris, 2007; Lawford, Pratt, Hunsberger & Pancer, 2005; Pratt & Lawford, 2014; Pratt, Norris, Alisat & Bisson, 2013; Stewart & vandeWater, 1998). Given this important connection between generativity and social issues, and the importance of environmental care for the future of our earth, it seems germane to further examine the importance of generativity for environmental concern across adulthood.

Motivation for Actions: Agency and Communion

Agency and communion are two concepts which describe how people relate to their social world (Bakan, 1966). Bakan originally described these as two modalities which operated in opposition, so that optimal functioning could be achieved by attaining a balance between them. More recently, however, researchers have proposed that they should be viewed as separate dimensions which are not mutually exclusive (Wiggins, 1991; Leonard, 1997). Agency refers the way people act on their world and strive to achieve mastery and competence. While the focus of agency is on the individual, communion, on the other hand, emphasizes the self in relation to others. Communion refers to the desire to closely relate with others and to build interpersonal connections.

In McAdams and de St. Aubin's (1992) model of generativity, the two inner desires for self-expansion or interpersonal connection align with the motives of agency and communion.

McAdams (1985) suggests that these two generative motives are roughly sequential. The first step involves a drive for symbolic immortality through the creation of a product. This product may develop within a specific domain which is particularly important to the individual and so is closely connected with the personal sense of self. This product represents a powerful extension of the self into the future, and reflects a motive of agency. In the second step, McAdams describes the importance of connection with others; this "need to be needed" may involve offering the product to others, so that they may benefit from its creation. In this step, control over the product is relinquished in favour of connection with a broader community. The motive here is communion.

Motivational Themes and Generativity

McAdams and de St. Aubin's (1992) model of generativity suggests that both agency and communion are critical for the development of generativity. This is supported by evidence presented by Ackerman, Zuroff and Moskowitz (2000) who found in samples of emerging adults and midlife adults that at all levels of agency, increases in communion were associated with increases in generativity, and vice versa at all levels of communion. In this study (Ackerman et al., 2000) agency and communion were measured at the level of traits and at the level of interpersonal orientations, which represent consistent patterns of behaviour and interpersonal engagement. As traits, these are somewhat different than the motives of agency and communion (Winter, John, Stewart, Klohnen & Duncan, 1998) which serve as generative desires, and motivational sources of behaviour that guide thoughts and can ultimately lead to behavoiur (McAdams & de St. Aubin, 1992). The present study extended this research by focusing on agency and communion as motives.

The research by Ackerman and her colleagues (2000) also highlighted the importance of context-specificity for the display of agentic and communal behaviours. Correlations between indicators of agency measured in a work context and indicators measured in a home context were not significant, nor were correlations significant for indicators of communion measured in these two different contexts.

A coding system described by McAdams and his colleagues (McAdams, Hoffman, Mansfield & Day, 1996) allows the identification of the separate themes of agency and communion to be evaluated in narratives of personally important scenes. Because this system evaluates agency and communion in personal narratives, it allows for the measurement of agency and communion themes in unique contexts; we compared these motives in an identity-salient domain with those in a less personally important domain.

Motivations for Actions, Generativity and the Environment

Generative concern has emerged as an important motivation for environmental engagement in both quantitative and qualitative studies (Alisat, Norris, Pratt, Matsuba, & McAdams, in press; Matsuba et al., 2012; Milfont & Sibley, 2011; Moore & Nelson, 2010; Urien & Kilbourne, 2011; Warburton & Gooch, 2007). This connection between generativity and environmental concern suggests that motivations for actions may be important elements of environmental narratives. For example, in her thematic study of the narratives of environmental exemplars, Chan (2009) found that her participants talked about feelings of personal efficacy, and described the central theme of these stories as “how I learned to make a difference.”

Measham and Barnett (2008) conducted interviews were with volunteers from environmental groups in Australia in order to identify their motivations for volunteering. In this study, the most prevalent motivations which emerged in these interviews were related to agency (helping a cause, general desire to care for the environment, and desire to care for a particular place), and communion (social interaction).

Warburton and Gooch (2007) describe two motives for environmental engagement expressed by their older (i.e., >55 years) environmental stewards. Participants in this study described the "long-term rich rewards associated with environmental change" (p. 46), and "the pleasure gained from helping and teaching younger people" (p. 46); these may be conceptually linked to agency and communion, respectively.

While these studies provide considerable evidence concerning the role of agency and communion as motives for environmental caring, the research presented has focused exclusively on environmental activists. This allows for two possible explanations. It is possible that environmental activists tell stories which, in general, reflect more themes of agency and communion across various topics. However, it is also possible that it is the importance of the environmental domain for the environmental activists which elicits stories which evoke themes of agency and communion. By including nonactivists in the present study, and by examining stories told in a nonenvironmental domain, the present study was able to evaluate these alternate explanations.

Gender and Development

Gender seems to be importantly related to agency and communion, although the nature of this relationship is complicated. Although it has been argued that agency is a prototypically masculine trait and communion is a prototypically feminine trait (Bakan, 1966), more recent

research suggests that this may have changed over time, as societal expectations for men and women have changed. For example, Twenge (1997) reported on a meta-analysis of 103 studies conducted between 1973 and 1995 which examined patterns in male and female scores on two measures of gender-stereotyped personality traits (the Bem Sex-Role Inventory and the Personal Attributes Questionnaire; Bem, 1974; Spence, Helmreich & Stapp, 1974, 1975, Spence & Helmreich, 1978) over time. This analysis indicated that for both women and men, the tendency to self-rate with male (agentic) characteristics has increased since the early seventies, and the increase for women was greater than that for men; the overall difference in these ratings between the two genders has decreased. Analyses also suggested that the self-rating for men of the feminine (communal) traits may have increased over time, although this tendency was smaller than that shown for agency.

Additional evidence indicates that social role may play a role in the self-identification with agentic and communal traits (Moskowitz, Suh & Desaulniers, 1994). Participants were more likely to describe their social interactions with agentic traits (such as dominance) when they were in a dominant role in the interaction, versus communal traits (such as agreeableness) when they were in a more submissive role. This highlights the potential role of contextual features as a determinant of personal motives, rather than biological sex.

Similarly, although both agency and communion are important goals of development, and are critical for the expression of generativity, there has been some speculation regarding the developmental ordering of their relevance (Diehl, Owen & Youngblade, 2004). McAdams' conceptualization of the motives as sequential seems to suggest that agency precedes communion. Consistent with this, Diehl and his colleagues (2004) rated the self-representations of young, mid-life and older adults for evidence of agentic and communal

characteristics. They found that the descriptions of younger and mid-life age groups had more agentic traits, and those of the older adults contained more communal traits. In the present study, we examined the relationship of both age and gender with use of generativity and motivational themes in different contexts (environmental vs. vocational narratives).

Purpose and Hypotheses

The purpose of the present study was to explore the relationship of personal motives (that is, agency and communion) displayed in personal narratives with generativity. The impact of the identity-salient nature of narratives told in an environmental domain was compared for environmental activists and nonactivists in relation to stories told in a work domain by each group. We anticipated that stories in a work domain had the potential to be equally significant for activists and nonactivists. Specifically, the following hypotheses and research questions were examined:

Research Questions:

1. The relationship of age (from emerging adulthood to late midlife) with generativity was evaluated. In the present study, three features of generativity were evaluated: generative concern, generative goals, and generative behaviour. Based on previous research that highlights the importance of generativity at earlier ages, this was approached as an exploratory question.
2. Analyses also explored differences between males and females for key measures including generativity, and were explored for motivational themes.

Hypotheses:

1. The relationship of age with motivational themes was assessed. Because agency is described as an antecedent to communion (McAdams, 1985), and consistent with

previous research (Diehl et al., 2004), it was anticipated that levels of both these narrative themes would be positively related to age. Additional analyses examined whether these age relationships differ by story domain, or by gender.

2. The relationship between the number of agency and communion motivational themes and generativity was examined. Based on the importance of these motivations for the development of generative feelings and actions, it was predicted that I would find that there was a positive relationship between levels of these themes and generativity.
3. Story domain was examined as a moderating factor for levels of motivational themes in narratives by environmental activists and nonactivists. It was expected that because the environment is an identity-salient domain for the activists, agency and communion would be more prominent in stories told in that domain in comparison to stories told by nonactivists. Fewer differences were expected between groups in stories told in the work domain. The role of gender was also evaluated in this analysis.

Method

Participants

Data were collected from 54 environmental activists and 56 non-activists, for a total of 110 participants[16] (63% female). Although participant recruitment was based in two sites (87 from Ontario and 23 from British Columbia), and most participants resided in Canada, a few activists were Canadians who currently lived elsewhere. Participants were between 17 and 59 years old (M_{age} = 32.56, *SD* = 12.70). Eighty-two percent of our participants had completed at least some college or university, and approximately 59 percent had completed an

[16] Several participants in the original sample were eliminated from analyses; five nonactivists were eliminated from the sample because they reported themselves as scoring at 10 on our 1-10 scale of environmental concern, which seemed unreasonably high. One nonactivist was dropped because of difficulties in transcribing the interview. One activist was dropped due to incomplete data.

undergraduate degree college or university (or higher) and were reasonably well educated; 82% had completed at least some college or university.

Procedure

Identification of Environmental Activists. Several steps were taken to identify environmental activists. Exemplary members of environmental organizations such as the Green Party of Canada and the Sierra Club were nominated by other members of the organizations; these were individuals who have dedicated "a significant amount of their resources to fulfill their moral commitments and pursue their passion for service to society and nature with great energy and effect, often inspiring others to do the same". Other individuals were identified based on media coverage or publications about their engagement in public environmental campaigns. Potential participants were contacted by e-mail or telephone and invited to participate in this research. Additional participants were individuals who were suggested by environmental activists during their interviews. Activists were involved in a broad range of predominantly environmental activities, including sustainability (N=15), climate change (N=9), habitat preservation and conservation (N=12), environmental education (N=11) and social justice/other (N=7).

Recruitment of Nonactivists. Nonactivists were recruited through the undergraduate university participant pool at an Ontario university, through advertisements in community newspapers and public websites such as Craigslist, and through posters placed at community centers.

Research Session. The research session lasted approximately 90 to 120 minutes, and involved completion of a narrative life interview, which was audio-recorded for later transcription, and a questionnaire package. Non-activist participants who were recruited from

the undergraduate university research pools received course credit for their participation; all other participants received an honorarium of $50.

Interview

During the interview, participants were asked to describe the kinds of actions that they take in their own life that they believe promote environmentalism on both a daily basis, and "less than regularly". Participants provided a description and numerical rating (from one to ten) for how important they believed environmental issues to be. Participants also briefly described the person or group of people who they believed to have had the greatest impact on their environmental approach.

Participants then told life stories relating to their personal experiences with the environment, community involvement and work. These stories were partially based on the procedures of McAdams (1993) for eliciting a general life story, Pratt and his colleagues (Pratt, Arnold, & Lawford, 2009) for eliciting moral stories, and partly adapted from the work of Chan (2009). Although participants were asked to tell 8 stories, the present study focuses on two stories which were told in both the environmental domain, and the work domain, the scene and the turning point story. For the environmental domain, the questions read thus:

1. *Environmental Scene* Participants were asked to describe a general environmental scene,

   "a time that was meaningful or important to [them] in some way with respect to [their] feelings about environmental issues. [And were asked to] please describe what happened, with whom, when, what [they] were thinking and feeling, the impact of this event on [them], and what it says about [them] as a person."

Participants had cards with these prompts printed on them, to help them describe this and the remaining stories in detail, and if they missed any of these prompts, the interviewer would ask them directly after the participants completed their stories.

2. Turning Point Story Participants were also asked to tell was a turning point story. This was described as "an episode through which a person undergoes substantial change in their approach to the environment." Again, participants were asked to use the prods described above.

For the work domain, the same questions were used, but specified stories relating to their work, rather than to the environment.

Measures

Demographic Measures. Single-item self-report items assessed participant gender, age in years, marital status of parents, level of educational attainment (7 – point scale, from "less than high school" to "completed graduate school"), employment status and personal status as a parent.

Generative Concern. The 20-item Loyola Generativity Scale (LGS; McAdams & de St. Aubin, 1992) measures level of generative concern. Items such as "Others often come to me for advice" were rated from 1 (not at all true of me) to 9 (very true of me). Cronbach's alpha for the present sample was .89.

Generative Behaviour. As a measure of generative behaviour, participants completed a 29-item version of the Youth Involvement Inventory (Pancer, Pratt, Hunsberger & Alisat, 2007). This measure assesses active engagement in community and social activities. Using a 5-point scale, from 0 (*never did this*) to 4 (*did this a lot*), participants rated how frequently they had engaged in activities such as "helped organize neighbourhood or community events", or "led or

helped out with a children's group or club" over the past year. This measure has been shown to be positively related to generative themes (Frensch, Pratt & Norris, 2007), and generative concern (Lawford, Pratt, Hunsberger & Pancer, 2005). Cronbach's alpha in the present sample was .90.

Generative Strivings. Participants were asked to generate a list of 5 personal strivings (Emmons, 1986; Emmons & McAdams, 1991). Strivings are relatively consistent patterns of goals that represent what an individual is typically trying to do in their current life context. Participants were asked to complete the statement, "I typically try to…" five times, with reference to the things that they typically or characteristically are trying to do in everyday life. Strivings were described as a "repeated, recurring goal, not a one-time goal". Each statement was coded for the presence of strivings related to generative content (i.e., if the statement was generative, it received a score of 1, versus 0 if it was not generative). Generative strivings scores thus can range between 0 and 5. A sample statement that would be coded as generative is "give back to others in any way that I can". The strivings of 20 participants were coded by two independent raters, resulting in an intraclass correlation of .78. Ratings of the primary coder were used.

Narrative Coding

For this study, narrative coding focused on agency and communion themes. McAdams (2001a) suggests that these codes work best when "subjects describe particular events in their lives that they find to be especially personally meaningful – events that the subjects themselves may see as having had an important impact on their identity" (p. 1). In this study, the stories most consistent with this are the environmental scene and turning point stories described in

the environmental section of the interview, and the comparable stories from the work section of the interview, so these stories were the focus of analyses.

Coding was based on McAdams' (2001a) quantitative narrative methodology. Each story was coded for the presence or absence of each of the motivational themes described below. The total number of themes present in each story was computed, so possible agency and communion scores for each story were between 0 and 4.

Motivational Themes.

The environmental and work scenes and turning point stories were coded for motivational themes of agency and communion (McAdams et al., 1996; McAdams, 2001a). These stories were coded for the presence or absence of each of four different agency themes, and four different communion themes. In order to be coded as present, a given theme needed to be clear and explicitly present in the story.

Agency Themes (from McAdams, et al., 1996)

Self-mastery: Stories which show evidence of self-mastery will depict the storyteller as trying to master or control the self. The individual reveals efforts to master or control a self that has already achieved some level of autonomy. Self-mastery may be revealed in descriptions of insight into the self, control over one's life path, or a strengthening or increased understanding which results from a depicted event.

Status/victory: Stories which reflect status or victory describe the storyteller as having achieved a heightened status in comparison with others or show evidence of status or victory in some competitive context.

Achievement/Responsibility: In stories which reveal motives of achievement or responsibility, the story indicates feelings of pride or mastery as a result of a specific

achievement which is the result of meeting a challenge, or taking on responsibilities in a non-personal setting. These stories typically depict a situation which required some striving towards the specified goal.

Empowerment: Stories which reflect motives of empowerment describe feelings of personal enhancement, or strengthening. This may be as a result of increased understanding or level of skill which allows the storyteller to feel more capable of being successful, or may result from an association with "Someone or something larger and more powerful than the self" (McAdams, 2001, p.7). The empowerment may involve reference to a force, such as God or nature, or it can also involve an influential person or group.

Communion Themes (from McAdams, et al., 1996)

Love/Friendship: In stories which are coded for a theme of love or friendship, the storyteller describes a loving or caring relationship between peers.

Dialogue: Stories which describe a reciprocal form of communication between individuals are coded as showing dialogue. In these stories, the conversation is not depicted as a means to something else, but rather, as the focus of the event itself. The event is described through the use of a dialogue reproduced from the original event.

Caring/ Help: Stories coded for caring or help depict the storyteller providing care, nurturance or support to another person, and displaying positive emotions resulting from the event.

Unity/Togetherness: Stories showing unity or togetherness extend beyond a relationship of two people, and are based on the idea of being part of a larger community.

Reliability

All coding was done by a primary coder. A second experienced graduate student coder coded stories from 28 randomly selected participants (25% of all participants). For this subsample of stories, disagreements were settled by discussion; for the remaining codes, the scores of the primary coder were used. Codes for all indicators of agency were totaled, and codes for all indicators of communion were totaled by story. The correlations between these totals for the two coders were strong (agency r = .84, communion r = .84). Although some qualitative observations are based on the separate indicators of the primary coder, all statistical analyses of results reported below are based on these total scores.

Results

Preliminary Analyses

Narrative themes present in stories in this study were coded, and quantified as described above. These totals were used in analyses with other quantitative measures to provide a picture of the relationships among variables of interest. Included with these quantitative summaries of patterns in the data, I have selected excerpts from the stories which are illustrative of these patterns. These excerpts have been included below to illustrate the findings, and to contextualize them. Although the excerpts have been edited for length, and in some cases for clarity, the words are those of study participants.

Descriptive statistics of study scales and frequencies of stories of each type told by activists and nonactivists are shown in Table 11. Less than 1% of quantitative data were missing. For missing scale data, person-mean substitution was used in the computation of means.

Activists told significantly more environmental scene stories than nonactivists (χ^2 = 4.00, p < .05); there were no significant differences between the two groups for the other story

types. Across all four story types, there were a total of 15 missing stories (3%). To account for missing stories in analyses, mean agency and communion scores were the focus of all subsequent analysis, either at the domain level (i.e., environmental versus work domain), or overall (across all four story-types).

Table 11: Number of Narratives Told and Descriptive

	Activists (N = 54)	Nonactivists (N=56)
Environmental Scene	54[a]	52[a]
Environmental Turning Point	52[a]	53[a]
Work Scene	53[a]	54[a]
Work Turning Point	52[a]	55[a]
LGS Mean	M = 7.27* (SD = .88)	M = 6.54* (SD = .94)
Age	32.68 (SD = 12.25)	M = 32.44 (SD = 13.27)
Education	5.09* (SD = 1.49)	3.64* (SD = 1.42)

[a] number of stories told; * $p < .05$.

The percentages of stories of each type coded for each motive theme are shown in Figure 2 and Figure 3. For environmental stories, the most frequently coded agency motives were self-mastery (29.9% of stories) and empowerment (16.6% of stories). For work stories,

the most frequently coded motives were self-mastery (48.8% of stories) and achievement (42.3% of stories).

Overall, communion motives were coded less frequently than agency motives. The most frequently coded communion motives for environmental stories were unity (11.4% of stories) and helping (8.1% of stories). For work stories, the most frequently coded communion motives were helping (8.9% of stories) and love and friendship (8.5% of stories).

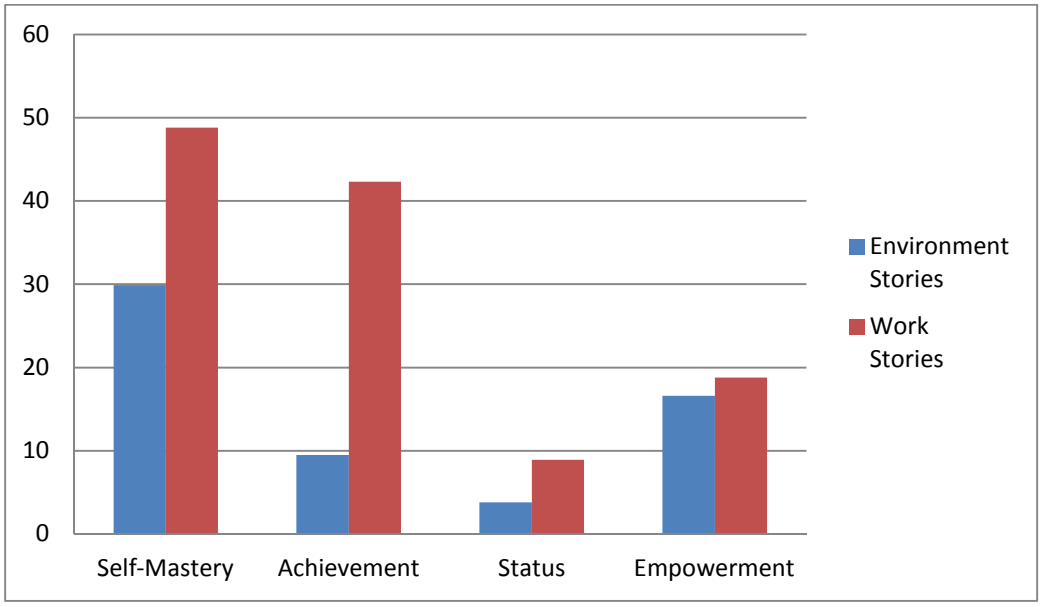

Figure 2: Agency Themes: Percentage by Story-Type

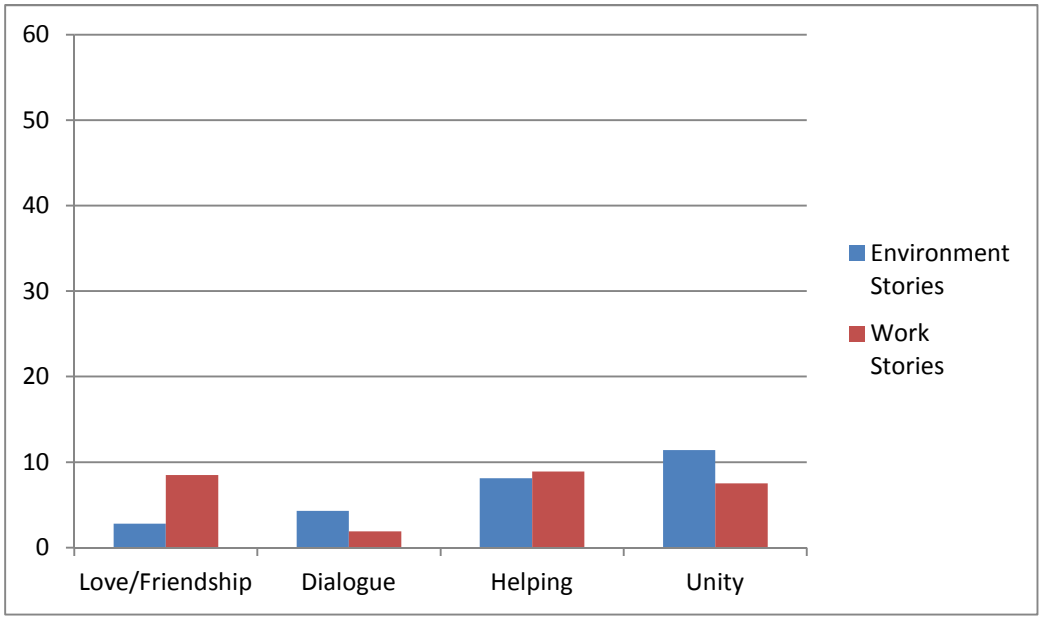

Figure 3: Communion Themes: Percentage by Story-Type

This excerpt from the environmental scene story of an environmental activist shows both agency and communion motives. (Italics are used to highlight motives, and motives are labeled in bold italics in parentheses.) This story is quite elaborate and walks the reader through the participant's exploration of new ideas through to their implementation in an event which resulted in strong feelings of agency.

> "In the winter and spring of 2007, … climate change is breaking big in the media and it catches my attention. I picked up this idea on the side [that] I wanted to learn, and in typical geekish academic style find a book to read. So I find The Weathermakers and, I tear through that (laughs) in a few days and am *pretty deeply moved by it. I think what I found in that, was you know, something I cared deeply about* (***caring***), and, to some extent, a purpose for me. I would be described as like an over-achiever in my high school years; I got good grades, did

a bunch of other frivolous activities that were defined for me as what good young people do [but] I could tell that, *I always had a feeling that it was hollow, that this was, this path was being set out for me as what you do to be a good person and I didn't believe it. It felt empty, yet I knew that I did have talent, that I had the capacity to, you know, to apply that talent to make the world a better place and had no idea how to actually do so* (*shows* ***self-mastery*** *as he comes to a deeper understanding of his own feelings*). I found it, you know, *learning about climate change was something that I felt was profoundly important and something over which, I can exercise agency* (***empowerment***). This would get to event number two, I remember hiking up the hill, beside my place, in the snow, and um looking out over the town and thinking that I was willing to devote significant amounts of my energy to making change on this issue and not only that, that *the people I saw around me, I believed, would be willing to do so with me… not to the same extent, not necessarily at the same, the same time period, but that that potential existed. I wasn't doomed to be acting alone* (***unity***). [Around this time], I was chair of um the district level student council, and this chair is really why I felt that I had this potential. After I'd gone through reading this book, becoming a little bit more educated on this, I decided that it was important for me to take a step. Fortunately, we also had a five thousand dollar budget that hadn't been spent (laughs) at all, then by the end of the year, we're kind of thinking okay, what the heck are we gonna do with this? [So I] say hey guys, I've got this idea: we're gonna bring in a speaker, rent out the biggest hall in town, pack it with as many students as we can (laughing) and see if we can

> [raise awareness]. And somehow I made it happen…… *We ended up with 600 or so, you know, people at the event and [name] spoke* (***achievement***). And you know, *I felt, I felt exhilarated, empowered, and convinced that my actions could make a difference* (***empowerment***)."

Nonactivists told stories with agency and communion motives as well, although the following story is somewhat less elaborated than the previous one by an environmental activist. This nonactivist describes an important environmental turning point.

> "[Meeting] my professor here. When I came here, to university, I cared about the environment, but I didn't really know that much about it. [In my biology class], we really focused on ecology and the environment, and the impact of [humans] on the environment. So, I was just kind of sitting in class and she'd show a lot of videos from like BBC, like Planet Earth and stuff, and those videos, they really make you feel sad about the environment and [show you] just how bad things actually are because they travel all over the world kind of showing all these bad things that are happening to the environment. *Just watching the videos and like listening to her talk, it really made me think like wow, I think I need to help to make the environment like kind of better*, (***caring***) in a way. [I: And what were you feeling, when you were watching those videos?] [I was] just feeling like, at first they showed all the bad things that were happening, so, I kind of felt powerless but then eventually like we saw videos on, like it was still like the bad things that are happening, but [they also] *showed more people, like the more jobs and more people that are trying to help, and then I was thinking like oh, I could be one of them, I could help that way* (***empowerment***). [I: And how

was this a turning point for you?] [It changed] just my mind set about what I want to do and what I want to get out of life, helping out……. After a while of watching those videos and listening to her talk, I was kind of like maybe this could be what my career is, like doing something that I'm really passionate about. So my mindset was just, *instead of just taking a course because I had to, it shaped me to think that it could be my future* (***self-mastery***)."

In this next excerpt of a non-activist describing a work scene, several agency motives are evident.

"……There was a music concert by some Christian guy that I'd never even heard of but some of my friends were going, so I went along. This black guy from Ethiopia got up to speak and [talked about] child sponsorship in Zimbabwe and some of the programs, and because he mentioned Zimbabwe, I went up to speak to him. We just chatted afterwards and *he ended up offering me the job. It was a big move for me to come down here with no family and you know, whatever, it was really hard, but I really felt like it was worth it* (***achievement***), and it was the right thing for me, and it was like a very powerful draw to be able to work for an organization that actually works in Zimbabwe….. So I really enjoyed that, I did like a lot of stuff for them…. like before the recession hit, the intention was that I was actually gonna go out there and, be involved in implementing some programs and stuff like that so, I was really really excited. [I: What was the impact of that event?] Well, it brought me here, and I'm still here, even though I'm not with that organization any more. It also kind of shifted my career goals somewhat as well, just because he's helped me understand a lot more about the

Canadian job market and work culture. *I've kind of shifted my career goals somewhat, um, because I realize I really don't like working in really big organizations and just like the whole corporate culture kind of nyaah* (***self-mastery***). There's just too much politics. But I'm so grateful for that job, like I was only there for a year, …… it made me a lot more aware of things that I really enjoy, like I'm so flexible, I can do a huge number of things, but it's sort of, things that really bring me joy are more being involved with, with my art, and with people. [I: And what does this say about you as a person?] Just that *I'm, again, flexible, adaptable, oh, my goodness, I think very, or becoming more and more committed to living my strengths and being who I was created to be. And living, living my strengths and living my passions* (***empowerment***) where I am right now."

Table 12 summarizes average agency and communion ratings for each of the stories told.

Table 12: Agency and Communion Ratings for Each Story

Story	Agency		Communion	
	Range	Mean (SD)	Range	Mean (SD)
Environmental Scene (N=106)	0-4	.47 (.83)	0-2	.33 (.55)
Environmental Turning Point (N=105)	0-3	.68 (.84)	0-2	.18 (.43)

Work Scene (N=106)	0-4	1.29 (.96)	0-3	.36 (.59)
Work Turning Point (N=107)	0-4	1.08 (.91)	0-2	.18 (.43)

Zero-order correlations for demographic variables with key study variables were examined. Environmental activists were significantly more educated than nonactivists (r = .45, p < .001), and told stories that were significantly longer (r = .27, p < .01), both of which were related to overall agency and communion (r's between .20 & .56, p < .05). Both education and story length are controlled in analyses below.

The overall average number of agency themes coded across all stories was significantly correlated with the overall average number of communion themes coded across all stories (r = .20, p < .05), although not after controlling for story length (r = .12, p = .22). However, when the analysis was repeated for the different story types, the correlations were only significant for the environmental narratives (see Table 13).

Table 13: Correlation between Agency and Communion Themes by Story, Controlling for Story Length and Education

	Environment	Work
Scene	.21 *	-.08
	(.24*)	(-.07)
Turning Point	.33 ***	0
	(.38***)	(.06)

Note: Zero order correlations are in parentheses.

*** $p < .001$, * $p < .05$.

RQ1: Relationship of Age with Generativity

The first research question explored the relationship of age with different features of generativity. Age in years was significantly correlated with generative strivings ($r = .21$, $p < .05$). Age was not related to other measures of generativity, including generative concern ($r = .06$, n.s.), or generative behaviour ($r < .01$, n.s.).

RQ2: Comparison of Generativity and Motivational Themes for Males and Females

The second research question evaluated gender differences for key measures. A series of t-test comparisons of generativity measures and motivational themes indicated that there are no significant differences between males and females on any of these measures (see Table 14).

Table 14: Gender Comparisons for Generativity Measures and Motivational Themes

Measure	Males	Females	*t* (*d*, *df*)
Generative Concern	6.74	6.99	1.30 (.25, 108)
Generative Behaviour	1.46	1.57	.78 (.15, 108)
Generative Strivings	1.44	1.23	.88 (.17, 108)
Overall Agency	.98	.82	1.33 (.26, 108)
Overall Communion	.27	.25	.32 (.06, 108)
Environmental Agency	.76	.46	1.85 (.36, 61.45)†
Environmental Communion	.32	.21	1.48 (.28, 108)

Work Agency	1.20	1.15	.28 (.05, 108)
Work Communion	.23	.29	.71 (.14, 108)

*** $p < .001$; ** $p < .01$; * $p < .05$; †$p < .1$

H1: Relationship of Age with Motivational Themes

Agency is described as antecedent to communion in the literature (e.g., McAdams, 1985). As a result, it was expected that the importance of these motives will change with development; we thus anticipated positive correlations of both themes with age. Analyses only partially supported this hypothesis. Partial correlation analyses (controlling for story length and education) indicated that age was significantly positively correlated with the number of communion themes for work stories; see Table **15**. For environmental stories, age was significantly negatively correlated with the average number of agency themes. Agency in work stories was unrelated to age.

Table 15: Correlation of Age with Agency and Communion Themes

Story	Correlation with Age, Controlling for Story Length and Completed Education
Overall Agency	-.13
	(-.04)
Overall Communion	.30**
	(.32**)

Environmental Agency	-.22*
	(-.13)
Environmental Communion	.16
	(.19†)
Work Agency	.02
	(.07)
Work Communion	.33**
	(.33**)

Note: Values in parentheses show zero-order correlations.

** $p < .01$, *$p < .05$, † $p < .1$.

H2: Relationship of Motivational Themes with Generativity

In their theory of generativity, McAdams and de St. Aubin (1992) proposed that generative motives (such as agency and communion) are important for the development of generative feelings and actions. As a result, it was predicted that agency and communion themes would be positively related to other measures of generativity. See Table **16** for the correlations of the average number of agency and communion themes across all stories with generativity measures. The average number of agency themes identified across all stories was significantly correlated with generative concern, and with generative behaviours. The average number of communion themes identified in the stories was significantly related to generative concern, behaviour and strivings.

Table 16: Correlations of Agency and Communion Themes with Generativity

	Generative Concern	Generative Behaviour	Generative Strivings
Overall Agency	.28**	.26**	.13
	(.35***)	(.33***)	(.12)
Overall Communion	.25*	.28**	.29**
	(.27**)	(.31**)	(.30**)
Environmental Agency	.25*	.29**	0
	(.32**)	(.35***)	(.01)
Environmental Communion	.22*	.26*	.17†
	(.24*)	(.28**)	(.17†)
Work Agency	.17†	.11	.19†
	(.24*)	(.20*)	(.18†)
Work Communion	.16†	.20*	.30**
	(.18†)	(.22*)	(.30**)

Note: Partial correlations controlled for the effect of story length and education.

Values in parentheses show zero-order correlations.

*** $p < .001$; ** $p < .01$; * $p < .05$; †$p < .1$

H3: Comparison of Motivational Themes for Environmental Activists versus Non-Activists

It was expected that environmental and work stories would differ in terms of their importance for environmental activists and nonactivists. In the final hypothesis, it was expected that differences between the two groups would emerge in terms of the agency and communion themes for these two story types such that the environmental stories of activists would contain more agency and communion themes. A repeated-measures analysis of covariance allowed for the simultaneous evaluation of differences in the motivational themes between activists and nonactivists, and the interaction of activist status with gender and story type, while controlling for education, story length, age and generative concern, see Table **17** & Table **18**. This analysis was conducted separately for agency themes and communion themes.

The analysis of agency themes supported main effects for activist status, generative concern, and story length (see Table **17**). Cohen (1988) provides guidelines for the interpretation of effect sizes; a partial η^2 of .01 represents a small effect size, a partial η^2 of .059 represents a medium effect size, and a partial η^2 of 0.138 represents a large effect size. For all of these analyses, the effect sizes were medium to large. Activists told stories that were significantly more agentic than nonactivists. Stories told by participants who scored higher on the Loyola Generativity Scale contained more agency themes, and longer stories contained more themes of agency. This analysis also revealed a significant three-way interaction among activist status, story-type and gender, see Figure 4. Follow-up analyses indicated that for males, there is a significant interaction between story type and activist status [$F(1,31) = 4.09$, $p = .05$], supporting the observation that for environmental stories, the environmental activists tell stories with a greater number of agency themes than nonactivists; the work stories told by

the two groups contain a similar number of agency themes. For women, the main effect of activist status approaches significance [$F(1,60) = 3.23$, $p = .08$].

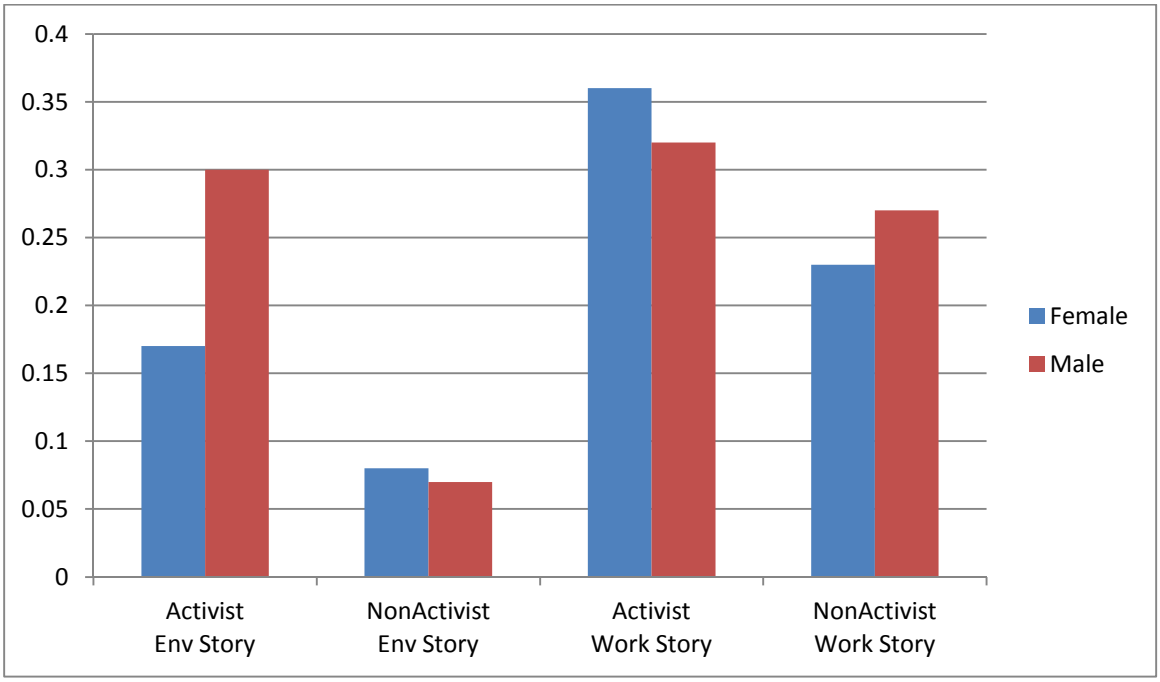

Figure 4: Average Number of Agency Themes

Sample Stories

These two stories, from a midlife female nonactivist are consistent with the pattern shown in the quantitative analyses. Although the story is very well articulated, and is clearly important to the storyteller, there are no agency themes in the following environmental narrative.

> "Well, the first big wow moment that I can remember was taking my first university course, when I was living in Waterloo, and my husband was a Masters student and I took a course in Environmental studies. I was probably 21 and I'd

finished high school, I'd gone to college and then I was going back to university. It was a night course and I learned about the Minamata disease, which was from mercury, and it was in the native population in Northern Ontario. The kids were getting sick, their hair was falling out, no one knew what was wrong with them, and I guess it was coming from the mines and their fishing and their fish were full of mercury. I hadn't really thought about these things before. And then, there was an algae bloom on a lake, Little Otter Lake, near Parry Sound. And my parents had friends that owned like a cottage thing on Otter Lake. And I remember, there was an algae bloom on top of the water and nobody knew what it was from. And when I took this environmental studies course at Waterloo, they were talking about the year that they had, this algae bloom on Little Otter Lake, and it was caused from the phosphates coming from the soap factory that was on the lake. But here the residents, [were] completely in the dark, not knowing what had gone on, and I find out, years later, by taking a night course at the University of Waterloo that that's what happened. And I thought "oh, my God" like why didn't people say what that was; why was it all a secret that the plant had done this horrible thing to the whole lake and I could find out by taking a course miles away and years apart. It's crazy. [I: What were you thinking in the course, do you remember what you were feeling, when you learned about the algae?] It was probably dismay. I was shocked, just shocked that these people, for all these years, had never known, what was going on on their lake ... I don't think I was really angry about it. I was just pretty surprised. [I: What impact do you think this had on you?] Because I still remember it so

clearly, I think that the needs to know, and I think that's the difference between then and now. You can't hide things, with the internet, municipalities now have the ability to post meetings, we have, we know what's going on ahead of time. Things aren't secretive and can't be secretive anymore. Maybe nobody ever wanted them to be, I wouldn't say that, but there's more transparency now than there was then. [I: And what do you think this story says about you?] I guess because I still remember it so clearly, it .. it's .. how would I word that? … It was in me already, you know, I didn't just take that course and walk away from it thinking oh, I just got that mark." [ID: 135]

Consistent with the quantitative pattern, two agency themes are identified in her work narrative.

"I think negotiating a lease was probably one of the most recent things, because I can go in and do that and .. and be very logical about it. *We just locked in a five year lease so that's something that's been very helpful to B, to have me be able to do those sorts of things*. (***Achievement***) I think my business mind is pretty, pretty tight and straight. [I: And when was this, recently?] A couple of years ago, maybe, and *we're doing an office renovation right now too, so I'll take that on, get that done as well. It just seems easy for me* (***Empowerment***), sort of a gift, maybe, that I can see something finished, if I look at something, I can see it completed. [I: So what was your role in this process?] Renegotiating the amounts and the time frames and actually, recently we went in because we're expanding a little bit, and, so there were some things that they gave us, like

"we'll do the wall, we'll do the door; if you take this space, then we'll give you this price". And if my husband had done that on his own, I don't think it would have worked out like that. [I: And what were you thinking, when you were negotiating for this?] It just comes to me. I guess it's just there; it's not something that I have any learning or teaching. I just [try to] be very clear and precise and say what [I] want and just be calm. [I: And what were you feeling?] Power… Empowered, powerful. [I: What impact did this have on you?] When things go well like that, I think it just kind of builds, you feel less … I have more confidence. (***Empowerment***.) [I: What do you think this story says about you?] That I hope that when I speak I'm very clear and precise … but in a not, in, in a pushy sort of way." [ID: 135]

As a contrast, the following environment scene and work scene for a male activist both contain three agency themes. Both scenes touch on career themes, as his work and education are closely related to his environmental identity; in his environmental scene, his focus is on how he made the decision to return to environmental studies.

"One of the jobs I had, I worked for an oil and gas company. For four years, and that's what I did before I came [to university]…… But I came to a crossroads after having this job for a while. We were gonna be moving full time down to the States; I had some job offers that were quite attractive, but I came to this cross roads and either I was gonna, do this job or find another job, or I was gonna do a masters and actually get into what I was interested in, and actually studying the natural sciences, and I chose the latter and started, and I got in with [advisor] at [university] and being much happier by studying, I guess, essentially, the impact

of, climate variability and change on lakes …. This has real practical implications for the culture that resides up in that area and [is important for] building our scientific understanding of how these natural systems work. So it's much more fulfilling, I'm much happier now, doing this, much less conflicted… So obviously I came to [university] ... (I: What were you thinking?) … Yeah, coming out of my undergrad, I always thought wow, it would be great to keep going with this. *I'm actually amazed that I, I got through my undergrad, because when I got into it, I was like a deer in headlights, like [yeah] I didn't know what science was, I didn't take a science course at, in high school . Well, I mean, grade eleven chemistry, and ... well, I took stats. [But] my first year, I took environmental sciences and that was the toughest course I'd ever taken at that point, and I got through it, and I managed to get through my first year, still not really understanding anything, but I got through it* (***Achievement***). And then the second year was similar, the third year, my marks were worse, and then the fourth year, I had pulled up my socks and got a little better and things started working out and I really got, started getting really interested in this, the whole thing. It wasn't until my second year that I started the biology side of it because I wasn't able to until I got that environmental science course, but that's where I would say … definitely the, the final year, that there was this, *I was definitely getting a seed planted at that point* (***Self Mastery***). And then I always thought about, you know, afterwards, it would be great to pursue this kind of thing and then just put that aside. I got the [oil and gas company job] because I knew that would be handy ... *When I got into the oil and gas industry, I knew that okay, this is kind of good*

that I'm getting experience on one side, but you know, there's more to it that I want to pursue, and that's what I did (***Empowerment***). So, I mean now it's come around and I'm really happy about it. [I: What does it say about you as a person?] It's really positive because I'm happier now than I have been ever, probably. I mean I've done a lot of really great fun things in my life, but now it's like I'm really starting to feel like really fulfilled both personally and from I guess the family perspective too, but I think it was a really smart thing. [I: And what do you think this says about who you were, the choice that you made to go to school?] I guess it just means that I'm not afraid to go with what might not be the norm. I mean, to decide to go back to school, after [I] have already put in five years of post-secondary education, to decide to go back, when you're 29 or just about 30 [*um, hm*] and you have a wife and you have a, well, plans to have a family or whatever, you could just sort of fit in that, that box of the way people in all of our families have been [*yeah*]. *I guess it says that I'm, you know, not afraid to, to step out of that and go with my heart and go with, like a decision what makes me think that I'll be much more fulfilled* (***self mastery***) and highly appreciative of the support that I get from my wife. Yeah, I couldn't be doing it without her. So, I guess I'm just sort of stepping out of that little box there and see where this takes me." [ID: 142]

In his work scene, he focuses on his work that was unrelated to his environmentalism. "I remember this one time, getting to a point so boiled up in my brain about the jobs that I had, this is working back for the oil and gas exploration company, that all the hard work that I was doing was, it was like nothing that they had had

before. *They're a small company, they didn't have anybody like me* (***status***). I was providing some products that I really made available fast, and did a lot of spatial assessment for them that they'd otherwise not be able to do. And I remember getting to a point where I was working so hard and you know, everyone likes to get a pat on the back once in a while, and it just wasn't happening, like there was no "hey, good job on that, you just saved us 30 grand"... The one time, I walked into my boss' office after a meeting where people were just being stupid, just negative, and meanwhile, a lot of good things were going on, and I walked in and I said .. I want at least a ten percent raise now, and this was probably ... I'd had a ten percent raise, like maybe two months prior, and then a five percent raise probably five months prior to that, so, we're talking twenty-five percent raise within a year. *This goes back to that whole ratio thing, if you're not promoting something, and this is the mentality; it's a money driven industry and I got to see that, but if you're not really, if your overall efforts aren't going to a product that promotes that sense of environmental connection, then you want your money* (***Self Mastery***). It was like that situation where it was me going in there with the confidence saying "lookit, this is what I'm doing, I deserve this, so give it to me". *And he did. There was no way he could get around it* (***Achievement***). I mean that's one side that doesn't necessarily have any sort of, anything to do with environmentalism, but ..I guess it's another side of me." [ID: 142]

For communion themes, there were significant main effects for activist status and age (see Table **18**), which had effect sizes that were medium to large. Activists told stories with significantly more communion themes than nonactivists. Older participants told stories with

significantly more communion themes. The main effect of generative status approached significance; participants who were more generative told stories with somewhat more communion themes. Results of these analyses are summarized in Figure 5.

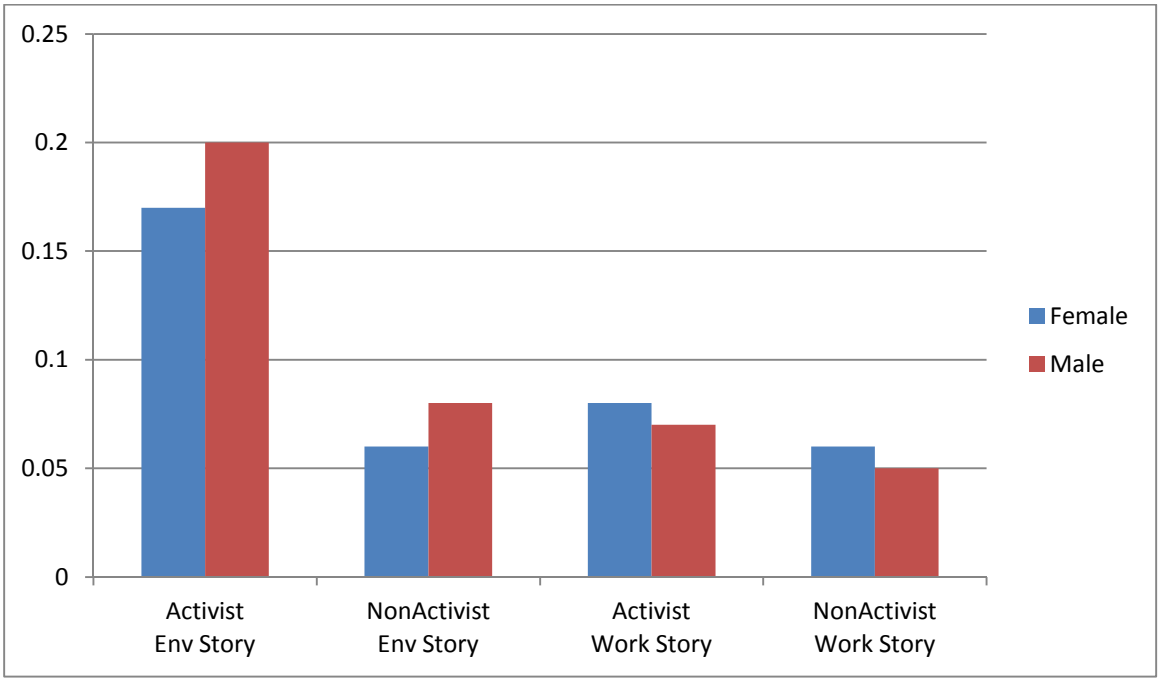

Figure 5: Average Number of Communion Themes

Sample Stories

Overall, stories reflected fewer communion themes, but this male activist's stories reflect the difference between environmental stories and work stories; his environmental scene reflects feelings of unity with a group of like-minded individuals, while his work story contains no themes of communion.

> "Well, I guess one that one of the most meaningful was going to a conference at the University of Ottawa, last January, to the SYC conference, which is Sierra Youth Coalition. A delegation went with a bunch of people from different

organizations on campus, student organizations. A group of us went and we were there for four nights. Universities from all over Ontario were there and we shared a lot of similar experiences and a lot of problems we were having with organizing for environmental issues on campus. So, we took that energy we had from that particular conference, learning about all types of things, like setting up a sustainability office, or trying to get bottled water off campus, to assessing carbon emissions and stuff like that, and we took all of this knowledge and energy we were gathering from other people at the conference and we brought it back to [our university], and that really sparked, I think, what we now have at [our university]; a committed, small group, mind you, of committed people who are looking at um, at change on campus. [I: What were you thinking when you were at the conference, and hearing about all of these?] I was certainly thinking that the time has come, if it has not already passed, for this stuff, and … *it's really encouraging to see other people at the conference; there were other, there were a hundred other people there, and it's really encouraging to see, you know, sometimes you feel desperate and alone with these big all-encompassing issues, but seeing that there's other people who are just as committed as you, really inspired you (**Unity**)*. I guess that was what I was thinking, was that, you know, we're not alone anymore and that really inspired me, I suppose. [I: You said you were feeling inspired. What else were you feeling?] I was feeling sad that it has to come to this, to point where we actually need to, to organize to convince people that this, you know, ecological sustainability is a good idea, not so much angry, but that a lot needs to be done and from what it's been, I guess it's been

13 months now, so, a lot has changed. [I: What do you think this says about who you are?] I think, again, my willingness; I didn't have to go to the conference, but I went and it really changed my life, so, I think that says a lot about who I am and trying new things. I was really busy at school at the time, but I decided to take four days off and see what experiences I could have."

His work story describes a meaningful scene where he became convinced that he had made the right career choice, but does not contain any themes of communion. Although he expresses concern for people who were killed in this war, there is no description of closer personal connection and/or interaction with them that could be coded for one of the target communion themes.

"Just recently I want to the [academic] Library during reading week. I had a lot of self-doubt I guess, um, about what I was doing, like does this actually really matter? Are people gonna care about all the time I'm putting into this? [Will I] one day eventually write books about this stuff? The Thursday before I went, I found out I got into my PhD program next year, and I got to the library and ... in reading these documents and finding out that I was right about the war in Vietnam, and how terrible and immoral and tragic it was really proved to me that what I'm doing is right and I, I am happy to spend my life doing what I'm doing. [I: What were you thinking while you were in the library?] I was thinking this is something worth spending the rest of my life doing. I was ... feeling happy that I was finding out this information, proving to myself once and for all what I thought all along was right and feeling angry, you know, a lot of people were murdered in this war and it's just tragic …… What is it about our society that

allows for the mass killings of people? That makes me mad. So I was feeling a lot of emotions, happiness, anger, tired, because you know, I was in an archive for ten hours a day. [I: What do you think this says about who you are?] I think it says that it's important to find meaning in life, ... and looking back at the past informs the present and can change the future. So, I think that me choosing this particular path in life shows, I guess, my moral courage because I could just stay at home and play X-Box all day if I wanted to, but I don't, so." [ID: 109]

Table 17: Repeated Measures Analysis of Covariance for Agency Themes

Agency Themes		
Variable	*F*	*Partial* η^2
Type of Story	.32	< .01
Activist Status	4.46*	.05
Gender	2.60	< .01
Age	.46	< .01
Generative Concern (LGS)	6.22*	.06
Length of Story	37.22***	.28
Education	.11	< .01
Type by Activist Status	1.20	.01
Type by Gender	2.25	.02
Type by LGS	.05	0
Type by Length	.12	< .01
Type by Education	.11	< .01
Type by Age	1.10	.01
Activist Status by Gender	.21	.02
Type by Activist Status by Gender	5.87*	.06

Note: *** $p < .001$; ** $p < .01$; * $p < .05$; †$p < .1$

Table 18: Repeated Measures Analysis of Covariance for Communion Themes

Communion Themes		
Variable	*F*	*Partial* η^2
Type of Story	0	0
Activist Status	5.88*	.06
Gender	1.36	.01
Age	14.26***	.13
Generative Concern (LGS)	3.42†	.04
Length of Story	.02	0
Education	.12	< .01
Type by Activist Status	1.64	.02
Type by Gender	1.56	.02
Type by LGS	.01	0
Type by Length	.52	< .01
Type by Education	.11	< .01
Type by Age	1.4	.02
Activist Status by Gender	.07	< .01
Type by Activist Status by Gender	< .01	0

Note: *** $p < .001$; ** $p < .01$; * $p < .05$; †$p < .1$

Discussion

Narrative motivational themes and generativity of environmental activists and nonactivists were examined. Motive themes of agency and communion were assessed based on personal narratives told in environmental and work domains. Narratives from two different domains were examined in order to assess the importance of personal salience of the narrative domain for personal motives; while work domains were expected to be equally important to both activists and nonactivists, overall, environmental stories were expected to be of particular significance for activists. Additionally, age and gender were examined as factors in relation to generativity and motive themes.

The number of agency themes present in the stories was significantly correlated with the number of communion themes in environmental stories, but not in work stories. This suggests that while an emphasis on either productivity or on relationships with other people may be important within the realm of one's work, these two motives may uniquely contribute to the work domain. On the other hand, it seems that these two generative motives somehow interact within the environmental domain. It is likely that consideration of personal experiences in relation to the environment may trigger a generative desire to make a change which could be based on feelings of wanting to care for others, or, more specifically, for future generations. This is consistent with narrative themes which have been identified in interviews with environmental activists (e.g., Chan, 2009; Guiney and Oberhauser, 2009).

Age was found to be significantly related to generative strivings, and not to generative concern and generative behaviours in this sample. This finding supports the characterization of the different features of generativity as separate and somewhat distinctive (McAdams & de St. Aubin, 1992), and is consistent with the idea that different aspects of generativity may appear

at different life stages (Stewart & Vandewater, 1998). It appears that as people age, their generative goals may become more prominent in comparison with other goals; however, generative concerns and engagement in generative behaviours may become important at a younger age and so appear to be more consistent over time. This seems consistent with other theoretical and empirical research that has described the importance of generativity for emerging as well as for midlife adults (Kotre, 1984; Pratt & Lawford, 2014). This is also consistent with results reported by McAdams, de St. Aubin and Logan (1993) who reported age effects for generative narrations and strivings, but not concerns.

Age was also found to be related to communion themes present in work stories. This relationship of age with communal themes was similar for both women and men in the present sample. This seems consistent with the theoretical description of agency as antecedent to communion (McAdams & de St. Aubin, 1992), and with empirical research that has found a relationship between communion and age (Diehl, Owen & Youngblade, 2004). Age was negatively correlated with agency in the environmental stories, and was not correlated with agency in the work stories. It seems reasonable that agency is an important component in work stories at all ages.

No differences were found between males and females for any of the study variables. This may be surprising, given the theoretical descriptions of agency and communion as more masculine and feminine traits, respectively. However, the present study examined agency and communion as motivations for action, rather than as personality traits. Traits and motives represent different levels of personality functioning (McAdams, 1995), and may impact behaviour in different ways (Carlo, Okun, Knight, & de Guzman, 2005; McAdams, 1995; Winter, John, Stewart, Klohen & Duncan, 1998).

For the most part, agency and communion motive themes present in environmental and work stories were significantly correlated with generativity. As expected based on the theoretical links described by McAdams and de St. Aubin (1992), greater generativity was associated with more agency and communion themes. The relationship of generativity with motive themes may be somewhat confounded with exemplar status, however, because the relationship of generativity with communion themes was found to be not significant in the repeated measures analysis of covariance which included activist status.

Activists told stories with significantly more agency and communion themes than nonactivists. The work stories of both activists and nonactivists contained more agency themes than the environmental stories, and the environmental stories of the activists contained more agency themes than the stories of nonactivists. For agency themes, there was an additional, moderating impact of gender; for males, the difference in the number of agency themes between the work stories and the environmental stories was much smaller than the difference for activist women, or than the difference for nonactivists, suggesting that agency is quite an important motive for the environmental engagement of male activists, or at least for their understanding and narrative representation of this aspect of their identity.

Implications and Future Directions

The personal narratives of activists and nonactivists in the present study were somewhat distinct in terms of the motive themes they contained: activists told stories which contained more themes of agency and communion than nonactivists. Research has highlighted the importance of generativity for environmentalism (Alisat et al., 2014; Matsuba et al., 2012; Moore & Nelson, 2010), so it is proposed that generativity, then, may act as a focal point for the expression of community and agency in the personal narratives of environmental activists in

comparison with nonactivists. Generativity may globally serve as an internal driver for the environmental activists in the present study, which could serve to propel their engagement with the natural world, but also could impact the way they compose their personal stories. Because generative desires of agency and communion may be important to them, their personal narratives would be framed around these motives.

Generative concern was not significantly related to communion themes in the repeated measures analysis of covariance presented here, however. It is expected that this may be a result of the relationship between generativity and environmental engagement. Another possibility is that the Loyola Generative Concern scale may not capture all of the features of generativity which are motivating environmental engagement. In their examination of the importance of generativity for environmental engagement, Matsuba and his colleagues (2012) consider three different features of generativity: generative concern, generative strivings and generative behaviour, which together contributed to the latent variable "environmentalism". It seems prudent, then, to consider the possibility that more general features of generativity, beyond concern, may be driving this relationship with the motives present in personal narratives for environmental activists.

These findings also highlight the importance of the consideration of the focal domain of narrative life stories, at least for evaluating the motives of agency and communion. Work appears to be an important domain for the manifestation of feelings of agency, and this was reflected in the stories of both activists and nonactivists. It is noteworthy that several of the environmental activists in the present sample were employed in a position where they could work on environmental issues. For at least some participants, this connection may have acted as a moderator for the relationship of environmentalism and agency. It was not possible to

examine this statistically, however, as specific information around domain of employment was not collected in the present sample.

Given this connection between story domain and motive themes, it is likely that other stories, perhaps in a family domain, may tap into feelings of communion more strongly than either the work stories or the environment stories in the present study. To assemble a complete picture of personal motives of agency and involvement, it seems pertinent to include stories across a variety of domains.

Chapter 5 - Caring for the Earth: Generativity as a Mediator for the Prediction of Environmental Narratives from Identity among Activists and Nonactivists

In the third study, the focus of analysis is on somewhat more structural characteristics of the narratives and how generativity and identity are related to the telling of the stories. Here, I examine how the stories are told by both activists and nonactivists, and how these structural patterns may be related to generativity and environmental engagement.

Environmental Identity

In a general sense, identity refers to "some way of describing or conceptualizing the self" (Devine-Wright & Clayton, 2010, p. 267). For some individuals, the natural world provides an important focus for their sense of self. Clayton described this as an *environmental identity*, which develops when individuals organize elements of their sense of self around some part of the natural, nonhuman environment (Clayton & Opotow, 2003). Like other domains of identity concern, it may guide behaviour within the context of personal, social and political choices. For example, environmental identity may be particularly significant in relation to personal engagement in basic environmental activities as well as more involved leadership or political actions (Chan, 2009; Horwitz, 1996; Matsuba et al., 2012; Whitmarsh & O'Neill, 2010).

The Life Story as Identity

As part of the process of exploring and establishing a mature personal identity, adolescents begin to construct a personal narrative which organizes and unifies the developing sense of self (Habermas & Bluck, 2000; McAdams, 2001). Autobiographical narratives are individual constructions, and are an integral part of the personality (Smith & Sparkes, 2008). The life story provides a sense of unity and purpose in modern cultures that helps anchor a unique sense of personhood and can reflect a personal narrative identity. Personal stories

reveal more than a factual summary of experienced events; rather, life stories are constructed, continue to develop throughout adulthood, and are often reconstructed to some degree to reflect current goals, motivations and interests (McAdams, 2001).

Personal investment in a specific domain of identity concern may impact the development of expertise within that sphere (Alisat & Pratt, 2012). Because the narrative life story has the flexibility to focus on the self within a particular domain, it can provide insight into the individual's personal thoughts and connections within that specific context, beyond what can be assessed with questionnaire scales (Alisat & Pratt, 2012; Soucie, Lawford & Pratt, 2012). Within the moral domain, for example, Matsuba and Walker (2005) found that for prosocial exemplars, important features of their moral identity were internalized and reflected in the personal life story. The present research extends this line of inquiry into environmental topics, a domain which is often strongly linked to moral concerns and moral norms (Moore & Nelson, 2010; Stern, Dietz & Black, 1986).

A personal emphasis on a certain domain may be reflected in features of the life story told within the context of that domain. These stories, then, may act as an indicator or expression of the sense of identity. Here, we study environmental stories to help us understand the potential connections between a standard measure of environmental identity and a narrative approach to identity within the same domain.

Different dimensions of the life story may provide insight into this narrative identity (Blagov & Singer, 2004). For example, personal narratives may contain little descriptive detail, or rich detail, drawing on a vivid recollection of the lived experience (Soucie, Lawford & Pratt, 2012). As memories more closely connected with the personal identity are more vivid (Singer &

Blagov, 2004), we expected that memories of an environmental event would be more vivid for individuals who more strongly identify with the natural world.

Life stories may also differ in terms of the breadth of meaning conveyed. Meaning refers to what the individual learns or understands from the event, and involves some reflection on the implications of the event. McLean and Thorne (2003) describe the meanings expressed in life stories as either lessons, which are concrete and behavioural, or insights, which extend beyond the immediate incident and enable a more coherent and meaningful understanding of the self. They suggested that these stories may serve different purposes; stories involving meaning may reflect episodes of change and growth whereas stories that do not involve meaning may reflect continuity. In terms of our focus here, the stories of environmental activists regarding the environment may reflect experiences of personal growth and the development of a deeper understanding of environmental issues. This, in turn, could fuel their engagement.

Because narrative identity plays the important role of connecting past events to the present self (McAdams, 1993), personal stories often contain interpretations of how those earlier events have impacted the self in the present. In fact, events which are more importantly linked to the self are more likely to be incorporated into the life story (Pasupathi, Mansour & Brubaker, 2007), and those causal connections play an important role in terms of self-making and maintaining coherence of the narrative identity (Pals, 2006). As a result, stories may vary in terms of the perceived impact of the event described (Alisat & Pratt, 2012). Because a close personal connection with the environment is important for engagement with sustainability issues, it was expected that the stories of activists would be more likely to describe events that impacted positively on their commitment to environmental concern than those of nonactivists.

Generativity

Erikson (1968) described generativity as an important focus during midlife; adults strive to leave a positive legacy by committing to society's future and engaging in activities that would ensure its continuation. Although generativity is thought to be most relevant during mid-life (Erikson, 1963), younger individuals also may have the capacity for at least some aspects of generativity (Lawford, Pratt, Hunsberger & Pancer, 2005; Pratt, Norris, Alisat & Bisson, 2013; Stewart & vandeWater, 1998).

Drawing on the model of generativity articulated by McAdams and de St. Aubin (1992), generative concern may readily be focused around environmental issues. Considerations for the earth's capacity to sustain future generations may contribute to positive environmental choices now (Moore & Nelson, 2010) and provide a context for amplifying generative concerns within this domain. Generativity, environmental concerns, and identity have been found to be positively associated and perhaps mutually influential (Chan, 2009; Guiney & Oberhauser, 2009; Horwitz, 1996; Matsuba et al., 2012; Milfont & Sibley, 2011). In the present study, we explored the connections between generativity and an environmental identity in relation to environmental narratives. We compared environmental exemplars in youth and midlife with a sample of nonexemplars, something not typically done in most previous studies.

Generative concern has been connected with features of the life story narrative; McAdams (2006) described the typical generative life story as one that entails overcoming adversity, connecting with others, and emphasizes a hopeful belief in the future. Features of this generative life story may predispose generative storytellers to extract more personal meaning from their experiences (Pratt, Norris, Arnold & Filyer, 1999). Likewise, the stories of generative individuals often reveal themes of redemption (McAdams, 2006), or show greater

steadfastness in their commitment to a personal ideology (McAdams et al., 1997), both of which may highlight the storyteller's personal understanding of the impact of depicted events. We anticipated that greater generativity might sharpen the meaning and import of experiences for the self in a compelling way which would result in more meaningful, impactful and vivid stories.

Consistent with Erikson's (1968) theoretical emphasis on the importance of successful resolution of each stage for facilitating movement into those following, in longitudinal research, earlier identity status maturity has been found to predict positively to later generative concern (Jia, Pratt & Alisat, 2013; Pratt, Arnold & Lawford, 2009). From another perspective, however, McAdams' (2001) suggestion that identity as a life story develops and changes across the life course supports the dynamic nature of narrative identity; as a result, the mature narrative identity may continue developing as generative concerns become more salient. Generativity may interact with and motivate current goals and interests and thus provide for the amplification of a specific narrative identity within the life story (e.g., as in the highly generative adults of McAdams et al., 1997). We anticipated that given a level of personal connection with the environment, the resulting generative concern may provide a lens through which events in this domain are interpreted and narrated, and perhaps further amplified.

Thus, the development of a situated personal identity in the environmental domain, involving strong feelings of connection with nature and environment, should lead organically to a strengthening of feelings of generative concern about the natural world. Given the strong focus on future concerns for the Earth within the environmental movement (Moore & Nelson, 2010), this strengthening should entail higher personal levels of generative concern overall. Thus, for individuals who highly value their relationship with nature as a part of their identity,

we anticipated that their overall sense of generative concern would be enhanced through caring for the environment as a legacy to future generations (Chan, 2009). This focused and enhanced generative concern should be reflected in various expressive features of personal narratives about this core domain, such as story vividness, meaning-making and impact. Given this argument, we expected that generativity would at least partly mediate the relations between a direct self-report of a personal environmental identity and the features of personal environmental stories told across our sample of both activists and nonactivists.

Purpose and Hypotheses

The purpose of the present study was to explore environmental narratives told by activists and nonactivists and their relationship to self-reports of environmental identity and generativity across a wide age range. Specifically, we examined the following hypotheses:

1. We expected differences in the personal environmental stories told by environmental activists and nonactivists, with stories of activists reflecting greater reflective engagement and expertise in this domain than those of their counterparts.
2. More specifically, we expected that higher scores on the environmental identity scale developed by Clayton (2003) would be found for activists, and would be positively related to vividness, meaning-making and impact of the environmental stories told, for both activists and nonactivists.
3. We further expected that generativity would be positively related to these features of the environmental narratives, as well as to the Clayton measure of environmental identity across the sample of activists and nonactivists.

4. Finally, we predicted that generativity would mediate the relations between the Clayton measure of environmental identity and the characteristics of environmental narratives across the sample.

Method

Participants

Data were collected from 54 environmental activists and 56 nonactivists, for a total of 110 participants (63% female). Participants ranged in age between 17 and 59 years (Mage = 32.56, SD = 12.70). Participants were recruited from two sites, (87 from Ontario and 23 from British Columbia). Eighty-two percent of our participants had completed at least some college or university, and approximately 59 percent had completed college or university (or higher).

Several steps were taken to identify environmental activists. Exemplary members of environmental organizations (e.g., the Green Party of Canada) were nominated by other members of these organizations; these were individuals who have dedicated "a significant amount of their resources to fulfill their moral commitments and pursue their passion for service to society and nature with great energy and effect, often inspiring others to do the same". Other individuals were identified based on media coverage or publications about their engagement in public environmental campaigns in Canada. Although most participants resided in Canada, a few activists currently lived elsewhere.

Potential activist participants were contacted by e-mail or telephone and invited to participate in this research. Additional participants were individuals who were suggested by environmental activists during their interviews. Activists were involved in a broad range of environmental activities and some were involved in several ; the activities or organizations that first came to our attention for these individuals involved issues related to: sustainability (N=

15), climate change (N= 9), habitat conservation (N= 12), environmental education (N= 11) and social justice (N= 7).

Nonactivists were recruited through the undergraduate university participant pool at an Ontario university, through advertisements in community newspapers and public websites such as Craigslist, and through posters placed at community centers. Participants were told that we were interested in their sense of self and involvement in terms of environment, community and work, and that they would be asked to tell personal stories about important life experiences. Nonactivist participants recruited from the undergraduate university research pools received course credit for participation; all other participants received an honorarium of $50.

Because the nonactivist sample consisted of any individuals who responded to the advertisements, environmental activists may have inadvertently been included in the nonactivist sample. To ensure that the nonactivist sample did not include any activists, participants who reported themselves as scoring 10 on the 1-10 scale of environmental concern were removed[17].

Two participants in the original sample were eliminated from analyses. One nonactivist was dropped because of difficulties in transcribing the interview. One activist was dropped due to incomplete data.

Procedure

The research session lasted approximately 90 to 120 minutes, and involved completion of a narrative life interview, which was audio-recorded for later transcription, and a set of questionnaires. During the interview, participants were asked to talk about their personal

[17] This resulted in the removal of 5 participants from the nonactivist category.

experiences with the environment and several other areas not included in the present analyses (community involvement, work). Five environmental stories are the focus of the present paper; these stories were partially based on the procedures of McAdams (2001) for eliciting a general life story, and partly adapted from the work of Chan (2009) and Pratt, Arnold and Lawford (2009).

Participants were first asked to describe a general environmental scene, "a time that was meaningful or important to you in some way with respect to your feelings about environmental issues." Participants used cards with prompts printed on them, to help them describe the story in detail, and if they missed any of these, the interviewer asked them directly. Prompts asked participants to describe what happened, with whom, when, what they were thinking and feeling, the impact of this event, and what it says about them as a person. If this was not the earliest environmental scene in their lives, participants were asked to recount a similar story about "an early event or scene that got you thinking about the environment." Participants were also asked to describe a time when they showed moral courage in terms of the environment, a time when they did not show moral courage, and a personal environmental turning point story.

Measures

Demographic measures. Single-item self-report items assessed participant gender, age in years, completed education (7 – point scale, from (1) *less than high school* to (7) *completed graduate school*) and employment status.

Environmental identity. The Environmental Identity Scale (EIS; Clayton, 2003) is a 12-item scale assessing feelings of connection with the natural world. Items such as "I think of myself as

part of nature, not separate from it" were rated on a 1 (*not true of me at all*) to 7 (*completely true of me*) Likert-type scale. Cronbach's alpha in the present study was .87.

Generativity. The 20-item Loyola Generativity Scale (LGS; McAdams & de St. Aubin, 1992) measures level of generative concern. Items such as "Others often come to me for advice" were rated on a Likert-type scale from 1 (*not at all true of me*) to 9 (*very true of me*). Cronbach's alpha for the present sample was .88.

Environmental Inventory of Involvement Scale. The 6-item Environmental Inventory of Involvement Scale (EII; Matsuba et al., 2012) was developed for this study. It provides an indication of the frequency with which participants engage in specific environmental actions. Actions such as "contributed time or money to an environmental or wildlife organization" are rated on a 5-point scale (from 0, "*never*" to 4, "*a lot*"). Cronbach's alpha in the present study was .80.

Narrative Coding. The five environmental stories were coded along a number of specific dimensions described below[18]. Codes of the primary scorer were used in all narrative analyses. Interrater reliability was computed on a subset of 12 randomly selected participants (55 stories total) for each dimension. Coders were blind to all information about the narrators. Reliability was strong, ICC = .85 for vividness, ICC = .88 for meaning-making, and ICC = .93 for impact.

Vividness. The vividness of the story referred to the level of descriptive detail provided. A story could be coded from 1, for little or no detail provided in the description, to 5, for stories which contained a great deal of descriptive information.

[18] More detailed coding information is available from the authors.

Meaning-making**.** Stories were coded for meaning-making using the coding system described by McLean and Pratt (2006). This score reflected the level of sophistication of autobiographical reasoning described in the story, with higher scores indicating greater reflection and self-understanding. Codes ranged from 0 (no meaning), through 1 (a lesson; lessons are specific and often behavioural and do not display any increase in general understanding or connections beyond the original event), 2 (vague meaning; these stories are broader and somewhat more sophisticated than lessons, and reflect emerging connections with the original event) to 3 (well-defined meaning with well-articulated insights).

Impact. The impact of the event was coded for the extent to which the story was described as sustaining or enhancing a commitment to further involvement with the environment. Stories received a score from 1, given for events with no impact or a negative impact on the individual's engagement with the environment, to 5, reflecting a significant positive impact.

The following environmental scene told by a nonactivist was coded 2 for vividness, 0 for meaning-making, and 1 for impact:

> "I'm from up north, so we go on a canoe trip every year, and the environment, well, not the environment, but the river and everything, it's so nice, and it's clean and that's important. I guess what happened would be canoeing down the river with my dad and some of his friends. [*What were you thinking?*] I was really young most of the time, I was probably about six to twelve, we used to do it every year, but I guess how nice it was, that's what I'd be thinking. I guess I was feeling happy. An impact would just be ... I have an attachment to canoeing and stuff like that, just because it was part of my childhood. I guess what it would say about who I am, is that I like the outdoors."

The following environmental scene told by an environmental activist was coded 5 for vividness, 3 for meaning-making and 5 for impact:

> "In Costa Rica, we walked through this rainforest path. I let the group go on so I was alone. I have a very strong memory of sitting down in the middle of this forest. In the rainforest, it is hard for me to describe how dense with living stuff it is, at every level, there's so much noise and all these different interconnecting levels of life. I sat there for a while, by myself, and had time to realize just how incredibly complex and unique the natural world is, and that was probably the moment when I realized that there was no other particular priority that made any more sense; this is the only thing worth devoting yourself to, seriously. [*So, what was the impact of this event on you?*] I think fairly significant. I was already politically active but I switched directions, became more involved in environmental initiatives. I always will be really engaged with global social justice issues but I began to think that although the goal is to try and alleviate some human suffering, I couldn't think about that independently of what we will do to the environment along the way. Is it worth making everyone's lives better if we ruin the planet? That probably was one of the keys for me to start to think about making individual lifestyle choices a little bit more consciously."

The following turning point story, told by a nonactivist, was coded 4 for vividness, 2 for meaning-making, and 4 for impact.

> "In the summer [of grade 10], I did a program for high school students who are high achieving. We were divided into four groups and told that we were all fisher-people, and .. there was a body of fish in the middle, and each day each

> group would submit, 'we want to catch this many fish' and then .. get back that number of fish. At the beginning, we didn't know what the mechanics were governing this rule. As the fish depleted, we would catch less and so we would give a higher number to get the same number of fish. The whole point of the game was to understand that if one person over-fishes, everyone loses. The turning point in the game was when one group didn't fish one day and subsisted entirely off the charity of others, and that had enough of an effect that the fish population bounced back a little. That kind of illustrated what the mechanics of the game were and … acted as a turning point within the game, and I think a turning point within my perception of how this works. So, if you can do something dramatic enough that people understand how something works, it's easier to come to a compromise. I would say that has influenced my thinking on environmental issues, too, to a significant degree."

Results

Preliminary Analyses

Descriptive Statistics.

Descriptive statistics of study scales and narrative codes for activists and nonactivists are shown in Table **19**. Less than 1% of the scale data were missing. For missing data, person-mean substitution was used in the computation of means. Age did not differ significantly between the activist and nonactivist groups. T-test analyses indicated were no significant differences between males and females on key study variables.

Table 19: Descriptive Statistics for All Study Measures

Variables		Activist (n = 54)		Nonactivist (n = 56)		
		M	*SD*	*M*	*SD*	*t*
Age		32.68	12.25	32.44	12.27	0.10
Education		5.09	1.49	3.64	1.42	5.21***
Average Story Length		580.56	310.60	399.39	213.17	3.58**
Environmental Identity (EIS)		6.05	0.69	5.06	1.05	5.86***
Generative Concern (LGS)		7.27	0.88	6.53	0.93	4.25***
Environmental Involvement Inventory (EII)		3.33	0.68	2.30	0.71	7.77***
Narrative Vividness	Environmental Scene	4.63	0.71	3.84	1.07	4.43***
	Early Scene	3.85	1.39	3.27	1.36	1.77
	Showed Moral Courage	4.21	0.91	3.20	1.20	4.63***
	Did Not Show Moral Courage	3.98	1.07	2.50	1.32	5.95***
	Turning Point	4.21	1.03	3.00	1.20	5.51***
Narrative Meaning-Making	Environmental Scene	2.57	0.84	1.63	1.04	5.15***
	Early Scene	1.93	1.01	1.50	0.94	1.81
	Showed Moral Courage	1.79	1.01	1.18	0.89	3.18**
	Did Not Show Moral Courage	1.50	0.95	0.81	0.79	3.89***
	Turning Point	2.35	0.77	1.44	0.75	6.07***
Narrative Impact	Environmental Scene	4.07	1.03	2.65	0.89	7.60***
	Early Scene	3.37	1.32	2.47	0.97	3.31**

	Showed Moral Courage	3.34*	1.11	2.27*	1.05	4.89***
	Did Not Show Moral Courage	2.50*	1.36	1.58*	0.85	3.92***
	Turning Point	4.37*	0.80	2.71*	0.91	9.81***
	Females (N)	31		38		χ^2= 1.28
	Males (N)	23		18		

***p , .001; **p < .01; * p < .05.

Narrative Measures.

Occasionally, individuals were unable to respond to a story prompt. Overall, activists told significantly more stories than nonactivists, t (108) = 2.78, p < .001, d = .53; across all five stories, activists were unable to tell an average of 9.3% of these stories, whereas nonactivists were unable to tell an average of 17.9% stories, roughly twice as many. The measures for vividness, meaning-making, and impact for all 5 stories were positively correlated (correlations ranged from .18 to .62). Likewise, within each story type, the narrative codes were significantly positively correlated (correlations ranged from .37 to .65). Based on these strong positive interrelationships (across stories and narrative codes, overall α = .87 [standardized scores]), the narrative scores were standardized and the mean was computed to yield an overall index of reflective engagement; this reflective engagement mean was thus based on fifteen scores, comprising three scores for each of five stories (see Table **20**).

Table 20: Construction of Reflective Engagement Index

Code	Source for Code	Possible Range	Stories Coded	Compution of Index Score
Vividness	Soucie, Lawford & Pratt (2012)	1-5	Scene Early Scene Moral Courage Story Did Not Show Moral Courage Turning Point	Mean of all 15 scores. (Vividness, meaning & impact for each of 5 stories.)
Meaning	McLean & Pratt (2006)	0-3		
Impact	Alisat & Prat & (2012)	1-5		

Group comparisons.

Environmental activists were significantly more educated than nonactivists, $t(106) = 5.21$, $p < .001$, $d = .99$, and told stories that were significantly longer, $t(108) = 3.58$, $p = .001$, $d = .68$, so all further analyses control for completed education and story length.

Relationships Among Study Variables.

Zero-order correlations for key study variables are shown in Table **21**. Although age did not show significant correlations with reflective engagement narrative means in these zero-order analyses, it was confounded with education level (age was significantly positively correlated with education), so it is included in analyses below. The zero-order correlation for the environmental involvement inventory score (EII) and the reflective engagement mean was .50. A partial correlation, controlling for effects of activist status, age, completed education and story length indicated that the reflective engagement mean was significantly positively correlated with the EII, $r(96) = .29$, $p < .01$, providing construct validity for this index measure.

Table 21: Correlations among Key Variables

	1	2	3	4	5	6	7
1. Envir. Narr.	-						
2. Activist Status	.67***	-					
3. Age	-.08	.01	-				
4. Education	.44***	.45***	.28**	-			
5. Mean Story Length	.58***	.33***	-.03	.17	-		
6. EIS	.46***	.49***	.21*	.31**	.28**	-	
7. LGS	.43***	.38***	.06	.17	.16	.41***	-
8. EII	.50***	.60***	.01	.16	.24*	.53***	.49***

Note. Envir. Narr. = Environmental Narrative Index; EIS = Environmental Identity; LGS = Generative Concern; EII = Environmental Inventory of Involvement Scale.

***$p < .001$; **$p < .01$; * $p < .05$.

Differences in the Reflective Engagement of Narratives Told by Activists and Nonactivists (H1)

In the first hypothesis, we expected differences in the personal environmental stories told by environmental activists and nonactivists. Using a univariate analysis of variance, we examined differences in the reflective engagement mean between environmental activists and nonactivists including education, story length and age as covariates (see

Table **22**). The main effect for activist status was significant while controlling for education, story length and age. Cohen (1988) provided rules of thumb for the interpretation of effect sizes. He suggested that a *d* of .2 represents a 'small' effect size, .5 represents a

'medium' effect size, and .8 represents a 'large' effect size. According to this interpretation, the effect size of this comparison was small. Activists told stories which were rated as showing more reflective engagement than those told by nonactivists[19].

Table 22: Univariate Analysis of Variance to Examine Environmental Narrative Index

Variables	F (1, 102)	Partial Eta Squared
Activist Status	40.10***	.29
Education	7.57**	0.07
Mean Story Length	36.27***	.27
Age	3.56	.04

***$p < .001$; ** $p < .01$; * $p < .05$

This activist's story reflects strong feelings of personal connection with the environment, and an emphasis on the importance of its preservation.

> "I've always loved nature and environment and trees, gardens and plants and animals, and I like being outside. I'd done some volunteer work, for the hatchery before that for a few years. It was just small things really. But I hadn't really been

[19] As a means of establishing discriminant validity, additional analyses examined two nonenvironmental work stories. These analyses indicated that the vividness and meaning-making ratings for activists' narrations about a work scene and a work turning point scene did not differ from those of nonactivists, lending support to the domain-specificity of the findings described in the present paper (Thériault, Bisson, Alisat, & Pratt, 2011).

> aware of, or plugged into all the big problems, and the community of people trying to do things. So it was really joining the 'Student Environment Center' that really triggered me to get plugged in. And it's pretty small steps but you get involved in the [Environmental] Club, and from there, the amount of things that have happened over the last four or five years, have kind of bloomed."

Environmental Identity and Reflective Engagement Mean (H2)

In the second hypothesis, we expected that higher scores on the environmental identity scale would be found for activists, and would be associated with greater narrative reflective engagement for both activists and nonactivists. A t-test analysis was utilized to compare the environmental identity scores of the activists and nonactivists. Activists were found to score significantly higher than nonactivists, $t(95.53)= 5.86$, $p < .001$. The zero-order correlation between environmental identity and the reflective engagement mean was .46. A partial correlation, controlling for the effects of activist status, age, education and story length indicated that environmental identity was significantly positively correlated with the narrative reflective engagement index, $r(97)= .20$, $p < .05$.

Generativity, Environmental Identity and Reflective Engagement (H3)

The third hypothesis predicted that generativity would be positively related to both environmental identity and to narrative reflective engagement for both activists and nonactivists. Zero-order correlations indicated that generative concern was significantly correlated with both environmental identity, $r(109)= .41$, $p < .01$, and the reflective engagement mean, $r(109)= .43$, $p < .01$. The partial correlations, controlling for the effects of activist status, age, education, and story length supported this relationship with both

environmental identity, $r(96) = .28$, $p < .01$, and the reflective engagement mean, $r(96) = .32$, $p < .01$, consistent with the role of generativity as a possible mediator between these two constructs.

Generativity as a Possible Mediator of the Relations between Environmental Identity and the Reflective Engagement Mean (H4)

In the final hypothesis, we predicted that generativity would mediate the relationship between environmental identity and narrative reflective engagement across the sample of activists and nonactivists. The final set of analyses examined whether environmental identity predicted quality of environmental narratives, and whether this was mediated through generative concern. Tests of this mediation were based on the recommendations of Hayes and his colleagues (Preacher, Rucker & Hayes, 2007; Hayes, 2009). The ability of a moderator to influence a mediational pathway is based on the computation of conditional indirect effects. The conditional indirect effect is estimated using a bootstrapping technique which is a nonparametric resampling procedure that involves taking a large number of samples from the data set and computing the indirect effect for each. In this study, bootstrapping estimations were performed on 20,000 samples. The information from these computations was used to construct a confidence interval for the indirect effect. Confidence intervals which do not include zero indicate the indirect effect is significantly different from zero ($p < .05$).

Using Preacher and Hayes' (2008) SPSS macro for multiple mediation, the role of concern in mediating the relationship between environmental identity and the reflective engagement mean was evaluated. The effects of activist status, age, education and length were controlled in this analysis. As shown in

Table 23, activist status, age, education and mean story length were all significant covariates in this model. Environmental identity significantly predicted generativity which, in turn, predicted the reflective engagement mean. The addition of generativity to the model reduced the relationship between environmental identity and reflective engagement mean to nonsignificance, and the 95 percent confidence interval for the indirect effect of environmental identity on reflective engagement mean through generativity did not include 0, supporting the role of generativity as a significant mediator of this relationship; 95% CI [.01, .08].

Table 23: Summary of Mediation Analysis for Prediction of Environmental Narrative Quality (ENI) by Environmental Identity (EI) through Generativity (LGS)

Effect	B	*SE* B	*t*
Total Effect of EI on ENI (c – path)	0.10	0.05	2.07*
Mediated Model:			
Effect of EI on LGS (a – path)	0.30	0.10	2.89**
Effect of LGS on ENI (b – path)	0.13	0.05	2.84**
Direct Effect of EI on ENI (c' – path)	0.06	0.05	1.25
Control Variables:			
Activist Status	0.48	0.10	4.60***
Education	0.08	0.03	2.87*
Mean Story Length	0.001	0.0002	5.86***
Age	-0.01	0.003	-2.42*
R^2	.65		
95% Confidence Interval	.01, .09		

Note. Bootstrap estimates are based on 20,000 samples.

***$p < .001$; ** $p < .01$; * $p < .05$

Although this model is consistent with the theoretical connections among these variables described above, this analysis was based on concurrent data and so it was impossible to determine the actual ordering of these variables in the mediation model with any certainty. Therefore, we tested whether a different ordering of the variables could also fit the present results. In this analysis, environmental identity was tested as a possible mediator of the impact of generativity on the reflective engagement mean. However, results of this analysis did not support this alternative interpretation. The path from environmental identity to the reflective engagement mean for narratives was not significant in this model, and the estimation of the 95% confidence interval contained 0, suggesting that environmental identity did not clearly mediate the relation between generativity and the reflective engagement mean; 95% CI[-.006, .050]. Thus, the hypothesized model in which generativity acts as a mediator between environmental identity and the reflective engagement mean provides a better fit for these data.

The following story from our sample shows how the environmental identity might foster greater generativity. In this story, the individual's connection with, and generative feelings towards, the environment are evident, and their enhancement seems to be tied to direct experiences with nature.

> "I guess I'd say camping in Algonquin Park, just to garner that sense of appreciation for me. [*What happened?*] It was just the awesome beauty of it and the quiet serenity that gives you time to think, 'this is really nice, and this is

worth preserving and not wasting'. It sounds a little cliché but that's my answer. [*So what impact did this have?*] It probably gave me more resolve to continue, because at that point, I probably did already start to have some environmental feelings and thoughts, I'm sure, so it probably had the impact of solidifying my resolve and those beliefs. When you're young, some things just come and go but obviously this is one that has stuck with me, so [this camping trip] may have hardened that thought. [*What does that say about you as a person?*] This story says that I have a real background in experiencing the environment and not just from learning about it and seeing it on TV and having people tell me it's worth protecting but from actually experiencing it."

Discussion

In the present study, we examined features of the environmental narratives told by environmental activists and nonactivists in relation to environmental identity, behaviour and generativity. Participants who were more engaged in environmental actions told stories with more reflective engagement, even when we statistically controlled for environmental activist status. This provides support for the construct validity and meaningfulness of our narrative measure in this domain, and suggests the narrative variations are not simply a reflection of activism status.

Concerning the first hypothesis, because participants had been sampled intentionally in terms of their level of public engagement with the environment, we were able to examine differences in the stories told by environmental activists and nonactivists. Analyses supported the conclusion that environmental activists tell stories about their experiences in the environment more readily, and also tell stories which contain more reflective engagement than

those told by nonactivists. Activists' stories were coded as more meaningful, more vivid and as having more impact on future environmental engagement. These findings indicate that activism and public commitment in this domain are substantially related to a more elaborated narrative identity, as indexed by the life story, as predicted. The results of this analysis support the use of personal stories as a direct reflection of domain-specific identity. This is consistent with similar findings in other identity domains, such as religion and morality (Alisat & Pratt, 2012; Soucie, et al., 2012), indicating a greater degree of story-telling expertise and reflective engagement in a domain where the self is reported to be more highly invested. These findings show how personal narratives of environmental experiences reflected general investment in this domain in the self-concept, as McAdams' (2001) model would predict. It is worth noting that the stories of environmental activists were also longer than those of nonactivists, as would be expected, but the present results show these differences in ratings of reflective engagement of environmental stories hold even with story length controlled.

Consistent with the second and third hypotheses, across both samples of participants, environmental narratives were found to be related positively to a standard questionnaire measure of environmental identity, and to a measure of generativity. This finding is consistent with McAdams' (2001) description of the importance of life stories for defining and reflecting the sense of personal identity. As participants discussed their experiences in the natural world, their feelings of connection with that world were clearly quite salient for those high on this identity. This environmental identity was shown in the reflective engagement of stories told in this environmental domain.

Similarly, generative concern on the LGS was positively related to level of reflective engagement shown in these environmental narratives. We found this to be the case even

among our nonactivists. This is consistent with previous research linking generativity with environmental engagement (e.g., Horwitz, 1996; Matsuba et al., 2012; Milfont & Sibley, 2011), and reflects the importance of generativity as a key organizing structure within the environmental domain.

Analyses also supported the role of generativity as a potential mediator of the relationship between environmental identity and the quality of environmental narratives, consistent with the fourth hypothesis. This relationship might be consistent with the developmental pathway described by Erikson (1968), who suggested that healthy psychosocial development requires that earlier stages be resolved before the individual moves on to work on later stages. Based on this theory, a mature identity would be established before generativity concerns can become more prominent. In the specific domain of environmental concern, it appears that the development of a situated personal identity, involving strong feelings of connection with nature, could lead to a strengthening of feelings of generativity about the natural world, and thus of generative concern overall, given the strong focus on future concerns for the Earth within the environmental movement (Moore & Nelson, 2010).

Our participants' stories reflected the importance of generative feelings towards the environment, and in many cases, the enhancement of this connection seems to emerge from direct experiences with nature. This was supported in our analyses, even when controlling for environmental activist-status of participants and is consistent with previous research which describes generative themes that emerge in interviews with environmental activists (Chan, 2009; Horwitz, 1996). This finding further emphasizes the importance of generativity, for both activists and nonactivists.

An alternate possibility may be that it is environmental narratives which mediate the relationship between environmental identity and generativity. If this were the case, a feeling of personal connection with nature could lead to key personal experiences that provide the basis for the reflective engagement shown in environmental stories, which in turn would encourage personal feelings of care and concern for the future of the earth. However, we suggest that the experiences themselves are not sufficient, and that generative feelings are necessary to create these rich descriptions. Of course, longitudinal research is necessary to fully explore these various possibilities, and to test carefully for mutual influences among these variables.

When these results are considered in light of the findings described by Matsuba et al. (2012), a coherent picture of the importance of generativity for environmental commitment and engagement begins to emerge. Identity may serve as a foundation for commitment to the environment; however in both reports, the importance of generativity is also highlighted, as this potentially mediates the relationship with identity, which may contribute to environmental engagement as well as to personal stories and reflections on the environment. In turn, over time, these reflections and a sense of narrative investment may amplify the participant's generative concern as well. It is also possible that environmental engagement may encourage feelings of connection with nature, which may lead to a stronger environmental identity. Indeed, it seems most plausible that some sort of dynamic interplay among identity, generativity and personal engagement within a domain should be expected across the individual's life experiences. As noted, however, when we tested the alternative model of environmental identity mediating between generativity and narrative, it was not as good a fit in this particular data set. Certainly longitudinal data would be critical in assessing these ordering issues effectively, however.

Limitations and Future Directions

Despite its contribution to an emerging area of study, this research did have some limitations. First, although the pathways suggested by the mediation analysis are consistent with previous research, and with the developmental trajectory described by Erikson from identity to generativity, the data are correlational and cross-sectional, and so it is not possible to establish potential causal ordering. This pattern is also consistent with results reported by Pratt and Lawford (2014), which supported the forward prediction of features of civic narratives from earlier generativity in a longitudinal, young adult sample. However, further longitudinal and/or experimental research would be necessary to adequately examine the directionality of these influences and inter-relations. Second, researchers in conservation psychology have highlighted the impact of situational factors on environmental engagement (e.g., Schultz, Oskamp & Mainieri, 1995). Future research should examine the interaction of situational factors with personality factors, such as those highlighted in the present study. Third, recent research has suggested that the developmental construct of generativity may be associated with trait measures of personality, including high Extraversion, high Openness to Experience, high Conscientiousness and low Neuroticism (Cox, Wilt, Olson & McAdams, 2010). Future research could benefit from the inclusion of trait measures of personality, in order to examine their relative impact, compared to generativity, specifically on the environmental life story.

Fourth, although the inter-rater reliabilities of our narrative codes were satisfactory, it is certainly the case for some participants that their activist or nonactivist status could be inferred based on the stories they told. Despite this, however, the present results showed consistent effects even when activist status was controlled, suggesting this issue did not seriously undermine the present analyses. Finally, although we took a mixed methods approach to

understanding the environmental stories told by our participants, our analyses were limited to general features of the individual stories told. In future analyses, we plan to take a more open-ended, global approach to the entire environmental life story. For example, elements of broad generativity-related themes (e.g., "redemption', McAdams, 2006), broad motive structures (e.g., "making a difference", Chan, 2009) and of future goals (e.g., personal strivings, Emmons, 1986) could be distinguished in the overall stories. We expect that this will further inform our investigation into how committed individuals think about environmental issues, and the kinds of factors which may impact environmental engagement. By understanding these narratives, we hope to identify key features which may be highlighted in environmental messages as one way to encourage behaviour which is more consistent with expressed environmental concerns (Pew Research Center, 2007). For example, as generativity seems to play a key role in personal feelings of narrative identification with nature, future environmental messages might highlight more explicitly the importance of a strong future-orientation and of leaving an environmental legacy for future generations.

Despite these limitations, we believe that the present results provide evidence of the importance of both a situated narrative identity and of generativity in this key domain of environmentalism. Our results supported the prediction of environmental narrative features from feelings of connection with the environment, but these were mediated through feelings of stronger generative concern. Thus, generativity was shown to be importantly connected with self-reported feelings of identity and engagement with environmental concerns, and to be implicated coherently in the specific stories people tell about their experiences in nature. Indeed, a research narrative of the life story in this critically important policy domain seems ripe for the telling.

Chapter 6 – Conclusion

Summary and Integration of Key Findings

Broadly, this dissertation sought to understand the impact of individual differences in an environmental domain within an adult developmental perspective. It examined the role of identity and generativity for the composition of personal narratives and engagement within this important domain. Previous research has highlighted the importance of generativity as a key feature of environmentalism (e.g., Matsuba et al., 2012). Here, I have extended the understanding of that link by examining its relationship with, and its emergence in, personal narratives of environmental activists and nonactivists. In this study, participants were identified as activists and nonactivists; activists closely identified with the natural world and were engaged actively with its preservation. Environmental concern was an important part of their self-concept, and was a significant factor in their personal narratives.

Narratives were analyzed at three distinct levels, in order to develop a thorough understanding of how generativity might intersect with a personal narrative identity in individuals who were variously engaged with environmental issues. This multi-leveled personality analysis has resulted in the development of a more complete picture of the importance of generativity in relation to environmentalism and the narration of the life story. Here, I will summarize the key findings from this research as they relate to this over-arching research question and will then bring these pieces together and discuss implications for future research.

In the first study, I compared the expression of the personal life story of individuals identified as environmental activists and nonactivists in terms of the generative commitment scripts (McAdams et al., 1997) contained in their narrations of personal events. The McAdams

et al. study was focused on how more and less generative midlife adults narrated their personal life stories broadly across many domains. In contrast, the focus of this dissertation was on how environmental activist and non-activist participants narrate their lived experiences with nature, and their personal interpretation of those events as reflected in the narrative themes expressive of presumably generative commitment shown in their stories. By identifying prominent themes in their stories, a deeper understanding of participants' experiences of these personal events was developed. This analysis showed that the stories of activists contained substantially more commitment themes than those of nonactivists, as predicted. Significant commitment themes for environmental engagement could be empirically grouped into three broader factors, each of which distinguished activists from nonactivists: personally feeling some special connection with nature, having significant relationships with personally influential people in one's life, and having developed a set of guiding personal values. Broadly then, generative commitment was shown to be an important element of the narrations of environmental activists in comparison with nonactivists. In a structural equations model, generative concern was found to be related to two of the identified factors; it was significantly related to the factor describing relationships with people and it was found to be related to the factor describing a special connection with nature, at trend level.

Interestingly, the factor describing a guiding set of personal values was least strongly related to generative concern, despite the fact that that factor is the one which most clearly relates to the generative commitment script described by McAdams et al. (1997). Although further research is necessary to clarify the explanation for this pattern, I would suggest that this pattern might be connected to the domain-specificity of the focus of the present study. While participants in the study by McAdams and his colleagues (1997) were able to draw on the entire

range of their personal experiences, stories in the present study were restricted to those within an environmental domain. This restricted range for content material very likely may have impacted the connections of stories with personal guiding values, and with generative concern, more generally. The strong prediction to all three factors from environmental identity (particularly in comparison with generative concern) highlights the importance of the activist vs nonactivist construct in this specific domain. It seems not unreasonable that this personal identity, in terms of environmental activism, is quite important in terms of these themes within this content domain, however, future research ought to more fully explore this connection of generative narrative themes with content domain, in terms of personal identity.

In the second study, I analyzed the narratives using codes which were more motivationally focused than those utilized in the first study. In this study, I examined four narratives for specific motive themes reflecting generative desires. Here, the focus was on general goal orientation. Within the stories, I identified themes that reflect either productivity or interpersonal connections. These themes revealed the generative motives of agency and communion: the desire of individuals to make a difference in the world, and to pass it along for the benefit of others. The patterns of those agency and communion motives were compared between environmental activists and nonactivists. Narratives in this study were drawn from the environment and the work domains – the latter was used as a more general comparison of a common domain for most individuals.

In this study, the stories of activists were found to be distinct from those of nonactivists; the stories of activists contained significantly more motive themes than those of nonactivists, including both agentic and communal motives. Work stories contained more agency themes than environment stories. The stories of male activists contained more agency themes than the

stories of male nonactivists in the environmental domain, but not in the work domain. Consistent with the hypothesis, at least for male activists, it would seem that the environmental domain is particularly salient in terms of feelings of productivity in comparison with nonactivists; in the work domain, it would appear that agency is more relevant for all males regardless of environmental activist status. For women, however, the analyses did not support the predicted differences based on domain. Rather, the stories of female activists contained more themes of agency than the stories of female nonactivists, regardless of story domain. For communion themes, none of the interactions among gender, domain and activist status were significant; there was only a significant main effect for activist status. The stories of activists contained more communion themes than those of nonactivists.

In the third study, the focus of analysis was on more structural and discourse characteristics of the narratives. Here, I evaluated how generative concern and a feeling of personal identification with the natural world were related to the patterns of telling of the stories. An index of reflective engagement in environmentalism was constructed, based on ratings for the narrated meaning of the event for the participant, the descriptive vividness of the story, and the expressed impact of the events described on the person's life. Such reflective engagement as shown in life narratives provides significant insight into the importance of that domain for the storyteller (Alisat & Pratt, 2012). In this study, then, I understood reflective engagement to tap the personal importance of the environmental domain for the storyteller. In sum, generative concern was found to predict environmental identity, a feeling of connection with the natural world, which in turn predicted this narrative measure of reflective engagement in the narratives, even when controlling for environmental activist status.

A key finding of these studies seems to be the critical role that generativity plays in the expression of the personal narrative within this environmental domain. In all three of these studies, evidence supported this important role of different features of generativity for the narration of the life story. In the first study, environmental activists differed significantly from nonactivists in terms of the generative commitment themes present in their narratives, based on the earlier work of McAdams (2006) on the commitment script for generative adults. Clearly, for environmental activists, who meaningfully care for the earth and devote a considerable amount of their time and energy to its preservation, broader generative commitment themes such as important relationships with other people and strong sets of guiding values, as well as their personal connections to nature, are significant in how they narrate their personal experiences. In the second study, generative motivations as expressed through both agency and communion emphases seemed particularly salient for environmental activists in relation to environmental events (although this was somewhat moderated by gender). In the third study, generative concern contributed significantly to the structure of the narratives. In this study, the analysis was not based on generative narrative themes, but on generative concern as measured by a standard questionnaire, which was found to be importantly related to the overall structural characteristics of the narratives even when the contribution of environmental activist status was statistically removed from the analysis. Across these three studies, analyses thus point to the consistent importance of a personal emphasis on caring and concern for others, and for future generations. The studies each focused on different features of generativity, and yet together, highlight the importance of generativity for the expression of the life story. This seems to be the case, whether the generativity is

contributing to the basic story structures of the narrative, or whether it is a key component of the story itself.

A second key finding highlighted by the results presented here is the uniqueness of different features of generativity. Despite the importance of generative concern shown in the third study, it was less important in the narration of generatively-linked themes in either the first or second studies in comparison with a personal identity connected with environmental engagement. In these studies, this feeling of close connection with the natural world and active engagement in caring for it was a stronger predictor of both commitment themes (Study 1), or generative motive themes (Study 2) than was a general measure of level of generative concern. Likewise, analyses presented in Study 2 show that generative agency and communion motives are correlated with generative concern and generative behaviours, but not with generative strivings (or goals). Clearly, then, these different features of generativity have impacted the expression of a narrative identity in somewhat unique ways, but each seemed quite important for its unique expression. This supports the contention of McAdams & de St. Aubin (1992), that different features of generativity manifest themselves in different ways. As McAdams and de St. Aubin (1992) observe, these features of generativity seem to "operate simultaneously and on a number of different levels" (p. 1004). Their interactions are complex, and their meaning is best understood through the meanings revealed in the personal narrative. The personal life story provides a unique window into the meaning and importance of this construct for the individual. It seems critical, then, for researchers to be aware of these differences among the features, and to be deliberate in their choice of constructs when studying generativity, paying particular attention, in many cases, to that narration.

Theoretically, middle-age has been described as the focal time for the expression of generativity (Erikson, 1968). Empirical support for this connection is somewhat mixed. For example McAdams and his colleagues (1993) reported patterns consistent with this for generative commitments and narrations, but not for generative concern and generative action. On the other hand, Pratt and Lawford (2014) described the importance of generative concern at age 23 for the prediction of later civic engagement in a variety of areas, such as community involvement, environmentalism, work and political activity. In the present study, analyses did not support any significant age-based conclusions related to generativity, with the exception of a positive correlation of age with generative strivings. Rather, analyses suggested that both emerging and midlife adults, across our sample, had the capacity for the expression for generativity, as reflected by such diverse measures as generative concern, generative motives, and generative commitments, and that this generative expression was related to their personal identity and engagement in the environmental domain. This relationship between the capacity for generativity and expression in terms of environmental engagement did not seem to be consistent with the hypothesized stronger emphasis on generativity during mid-life. Although it remains possible that generativity could mean different things during emerging adulthood and midlife the present data did not allow for a deeper analysis of the constructs in this way.

Considering this finding more broadly, at the intersection of personality and lifespan development, it seems to highlight a continued role for these key personality features throughout adulthood. These studies would indicate that for both emerging and mid-life adults, generativity is a critical feature of environmental engagement, and that personal development and growth over time does not change that basic relationship. From a more practical viewpoint, it might seem to support the engagement of youth in environmental issues

by encouraging generative concern at a younger age, as the development of early generativity has the potential to impact environmental engagement throughout the lifespan.

The narrative approach to understanding identity (McAdams, 1996) that was utilized to study the life stories research project seems to have been a useful tool for developing a deeper understanding of the connections between generativity, identity and environmental engagement. The personal stories shared by participants seemed to highlight important individual differences, and in a way that would be difficult to measure with standardized scale measures. These rich constructions allowed for an understanding of personal identity and different features of generativity at several different levels. Consistent with the psychosocial constructivist approach that framed the study, it is evident that the participants have been impacted by their social context, but that threads of their identity also provide a coherence across their stories, and may underpin this central life project.

The findings of this dissertation connect well with other research, and extend it through the inclusion of both environmental activists and nonactivists in the present study's sample. The inclusion of nonactivists allows for the direct comparison of themes present in their stories, and confirms the differences which have been suggested by earlier research which has analyzed interviews only with environmental activists (Chawla, 1999; Chan, 2009; Horwitz, 1996). Although the stories of activists and nonactivists may contain similar themes, the narrative story excerpts included in this document highlight the distinctiveness of their stories in terms of the themes they contain, as well as the ways in which they are expressed. Activists are considering more unique aspects of their concern for the natural world simultaneously, and as they are doing this, they narrate more themes related to generative commitment, and generative desires to preserve that natural world for future generations. The style and

discourse structure of their narrations about environmental events also differed substantially from those of nonactivists in Study 3.

Limitations

As with all research, it is important to recognize the limitations, and use those to fuel future inquiry. One oversight in the present data collection was the inclusion of detailed descriptive information about "who" our participants were. Additional information about personal cultural background, for example, may have allowed for a deeper understanding of the relationships found in the present studies. In fact, future research could benefit from the inclusion of more diverse cultural samples, perhaps by intentionally including indigenous peoples who may have a different relationship with the natural world which could impact their personal interpretations (and narrations) of those experiences.

A related limitation lies in personal approaches of environmental activists. Active caring for the environment may emerge from very different motive sources (Arnocky, Stroink & DeCicco, 2007; Schultz, 2001). For example, some individuals are motivated by a love of nature, and a desire to preserve the natural world. The approach of these conservationists is summarized in this statement:

> "I think that when you see things like [trees or mountains or rivers], and when you're immersed in them, and when it's a part of your life, I think that there's a sense of awe, and there's a sense of sort of inspiration that comes from those natural landscapes… I think it's remarkable that humans universally think that you know, a forest is beautiful, and you feel very connected to it and you feel like there's sort of generations of growth here, life that existed way before you,

> that will exist, hopefully, way beyond you. And I think that that's sort of a fundamental human thing, that we appreciate the environment."

For other individuals, the motivation arises from a focus on social justice issues, and concerns about equality. Activists, such as the one quoted below, very likely have a different connection with environmental issues than someone whose focus is on conservation, for example.

> "I think a lot of [my concern comes from] the way environmental issues interact with human societies as well. Sometimes I think environmental issues can be pushed aside as just being environmental and we forget that there is a human impact of any environmental issue… I mean, it's humans that are creating environmental issues, or environmental issues that are creating other human-based problems. My experience with indigenous communities has been exactly that, you know, where things like that tar sands or mining or things like that impact the environment, but they also have a grand impact on human communities as well. So, I think the environment is important in the sense that it's sort of almost left out of the, the social justice sphere of things"

Yet other individuals could be motivated by depletion of natural resources, which could impact both feelings and thoughts about the natural world, as well as behaviours directed towards its preservation as indicated in this statement.

> "what [the environment] means to me is just that, without it, humans don't live, or, without the environment that we've evolved in, we can't continue.

So, it's important if we want to continue to keep it clean, keep it safe, [and], keep it so we can use it in the future "

Although these personal approaches were not evaluated explicitly in this study, future research could benefit by a targeted recruitment of such diverse individuals, to directly assess the impact of such differences on the relationship between identity and generativity as well as differences in the engagement and narrations within this environmental domain. It is also advisable to include several measures to assess these different approaches; the environmental identity scale used in the present study was strongly focused on feelings of caring and connection with nature, and it is likely that conservationists would score more highly than someone who is more motivated by social justice concerns.

Overall, across all three studies, the research presented here highlights the diversity of the various features of generativity. For example, generative concern seems to be far more important for structural features of the narrations than it is for the content of those stories, although both generative desires and commitments seem to be important for the themes contained within the stories. Additionally, correlations presented in Chapter Four show that generative motives are correlated with generative concern and generative behaviours, but not with generative strivings (or goals). While the present data do not allow for the development of a complete picture of the relationship of all features of generativity with environmental engagement, it does highlight the importance of future research on each of these unique features to tease apart their relative impact on the narration of the life story, and in important areas such as environmental concern, as well as related areas, such as community involvement, or moral exemplarity (e.g., Stern, Dietz, Abel, Guagnano & Kalof, 1999).

While this study has contributed significantly to developing an understanding of the importance of generativity for engagement with environmental issues, a key limitation lies in the nature of the data that were collected. Because all of the data were collected in one session at the same point in time, the analyses cannot contribute to an understanding of the potential causal ordering of these various factors. A key future direction of this line of inquiry lies in the development of the web of causal links in this picture. To do this, it is necessary for researchers to undertake costly and time-consuming longitudinal research, which would allow for the study of the development and maintenance of environmental engagement over time.

Future Directions

As suggested above, one key direction for future inquiry in this area should focus on longitudinal research. Despite the finding of a lack of support for an impact of age on the relationship of generativity measures and environmental identity and engagement in the present study, the theoretical emphasis on generativity during mid-life might motivate researchers to examine these patterns longitudinally, to assess whether there are differences in these relationships over time, within the individual. Likewise, a key question from a developmental perspective is how these commitments in the domain of environmentalism may interact over time with the features of generativity to produce these varied life story structures. Only longitudinal work can help us to address such developmental questions directly.

This study focused exclusively on emerging and midlife adults. Future research ought to evaluate these patterns in older adults as well, to evaluate whether these patterns are consistent over adulthood, or if, perhaps, the importance of generativity may decline or be patterned in different ways after midlife.

Findings from this set of studies highlight key links of identity and generativity with engagement in relation to important environmental issues. Clearly, personal identification with the natural world is strongly related to generativity features, such as care and concern for future generations and the narration of the life story in this important domain. Identification as an environmental activist is a critical component in the development of generative features of the narration of environmental stories. This study could provide a base upon which to build a program to encourage environmental identification and engagement, although additional research is necessary to directly connect these findings with real-world application. Given the strong connections between personal identification as an environmental activist and various features of generativity, first steps in this direction might be to examine the question of whether priming people to think more actively about the future of humanity and the earth might impact the kinds of narratives that they tell about environmental events. If researchers were able to make this connection empirically, it certainly could lead to longitudinal research that examines whether priming or enhancing generative thinking over the longer term could lead to stronger feelings of connection to nature and the environment, and ultimately, greater engagement in environmental activities.

It also seems reasonable, given the complex relationships that emerged among identity, generativity and environmental behaviours that any program which is intended to increase environmental engagement ought to acknowledge these complicated relationships by encouraging the building of these diverse connections. For example, as the life story begins to develop during adolescence, it seems likely that this is a good age to begin focusing these educational efforts, to encourage contemplation of personal connections with the natural world while the life story narrative is being built, so those ideas could be directly integrated into

the self-concept and self-understanding. Given past research that has established a link between early nature experiences and environmental identity (Chawla, 2007), environmental education programs might focus efforts begin to build this concern for the natural world within a natural setting, to allow for the development of a deeper personal connection with the natural world at the same time as that generative story is developing. Although the findings from this set of studies certainly begin to draw important theoretical links among generativity and environmental identity, further research is necessary to identify causal links which could pave the way for concrete programs to encourage environmental identification and, ultimately, behavioural change.

Appendix A: Interview

Introduction

Thank-you for agreeing to be part of our study. In this interview, we would like to ask you about three specific areas where you may or may not have life experiences and which you may or may not feel have shaped who you are in some way. Specifically we're going to ask you questions about the environment, the community as well as your work or career. We're going to ask you to tell your thoughts on these areas, as well as some stories about things that have happened to you in the past with regard to each of these areas. Everybody responds to these questions differently, so you may have a lot or very little to say depending on your own views and life experiences, however, it would be helpful if you could include as much detail as possible in order for us to gain a greater understanding of who you are overall. Here is a card with some useful prompts if you need some help with this (use prompt card from Futures interview)**. For each event, describe in detail what happened, where you were, who was involved, what you did, and what you were thinking and feeling in the event. Also, try to convey what impact this key event has had in your story and what this event says about who you are or were as a person. Please be very specific here.** Do you have any questions at this point?

I am going to ask you about some specific life events. A key event should be a significant episode in your past set in a particular time and place. It is helpful to think of such an event as constituting a specific moment in your life that stands out for some reason. Thus, a particular conversation you had with your mother when you were 12-years-old might qualify as a key event. This is a particular moment set in a particular time and place, complete with particular characters, actions, thoughts, and feelings. An entire summer vacation – be it very happy or very sad or very important in some way – on the other hand, would not qualify as a key event because it takes place over an extended period of time.

To start off, can you tell me about a specific time when you learned something about the environment or environmental issues from one or both of your parents? This may have been a positive or negative experience.
Can you tell me about a specific time when you learned something about the environment or environmental issues from one or both of your grandparents? This may have been a positive or negative experience.

Section 1: Environmental Scenes

The first area that we would like to discuss with you is about the environment. Again, when it comes to this area, there is a wide range of thoughts, ideas and involvement. We would like to hear about how issues around the environment may or may not impact you.

Introductory Questions
People often have different ways of thinking about the environment. What does it mean to you?
How important are environmental issues to you?

On a scale of 1 – 10 how important are environmental issues to you?

I would also like to learn about the kinds of actions that you might take in your own life that you believe promote environmentalism.

What kinds of things do you do on a daily basis?

Are there other things you do less regularly?

How do these things help the environment?

Looking back over your life, please identify the single person or group of people that have had the greatest influence on your environmental approach– either positive or negative. Please describe them and how they have impacted your environmental approach.

Environmental Scene

Now I am going to ask you to tell some environmental stories about your life. First, I'd like you to tell me about a time that was meaningful or important in some way with respect to your feelings about environmental issues. Once again, describe what happened, with whom, when, what you were thinking and feeling, the impact of this event, and what it says about you.
Is this your earliest environmental event or scene? (IF YES, SKIP NEXT QUESTION, IF NO CONTINUE TO NEXT QUESTION)

Early Environmental Scene (skip if answered yes to above)

Now, I'd like you to think about an early event or scene in your life that got you thinking about the environment. It may be from your childhood, or later in your adult life Please describe in some detail this early event, including what happened, where it happened, who was involved, what you did, what you were thinking and feeling, what impact this experience may have had upon you, and what this experience says about who you were or who you are.

Environmental Dilemma

When it comes to thinking about the environment, have you ever been faced with a dilemma, where you weren't sure what to do? Could you describe the experience for me? What were the conflicts for you in that situation? What did you do? Did you think it was the right thing to do? How did you know it was the right thing to do?

Environmental Moral Courage Story

1) What do you think the term 'moral courage' means?
What do you think moral means?
What do you think courage is?

2) Tell me about a time when you did something in terms of the environment that took moral courage.

3) What about a time when you felt you didn't show moral courage in terms of the environment or environmental issues?

Positive Future

I would like you to envision a possible and realistic positive future scene with respect to the environment – this is a scene that you hope will happen in the future. How would you describe this future scene? Why is this a positive scene?

Negative Future

I would like you to envision a possible and realistic negative future scene – this is a scene that you hope does not happen. How would you describe this future scene? Why is this a negative scene?

Turning Point

In looking back in one's life, it is often possible to identify certain key "turning points" – episodes through which a person undergoes substantial change. Please identify a specific episode from your life that you now see as a turning point in your approach to environmental issues.

[Before beginning next sections, ask participants how they are doing at this point, and if they would like to take a short break.]

Section 2: Community Scenes

Introductory Questions

In our next section we're going to discuss "community". People often have different ways of thinking about community. What does the term community mean to you?
Now, I'm going to ask you about your involvement with different groups and communities, so, do you have a group of people or a community that you feel connected to, that you spend time with, that you do things for, and that does things for you? And so, if so, what groups might those be? So, like they could be from you know, work, or the neighbourhood, or school, church, anything like that, so?
How are your parents important in terms of your thoughts about the community?
How are your grandparents important in terms of your thoughts about the community?

Community Scene

Tell me about a time when you were involved with your community? Please describe the scene in detail, including when and where it occurred, who was involved, what were you thinking and feeling and is the scene important to you today? Who was the most influential person in your life in terms of your involvement with your community?

Positive Future for Community

I would like you to envision a possible and realistic positive future scene with respect to your community – this is a scene that you hope will happen in the future. How would you describe this future scene? Why is this a positive scene?

Negative Future for Community

I would like you to envision a possible and realistic negative future scene – this is a scene that you hope does not happen. How would you describe this future scene? Why is this a negative scene?

Community Turning Point

In looking back in one's life, it is often possible to identify certain key "turning points" – episodes through which a person undergoes substantial change. Please identify a particular episode from your life that you now see as a turning point in your approach to your community.

Section 3: Vocational Scenes

In our final section, we'd like to ask you about work. Like the environment and community, this means different things to different people. "Work" can refer to what you do now or what you want to do in the future.

Introductory Questions
What does the idea of working mean to you?
What's your current status with regard to work? (currently working at a temp job/permanent job; training for a new career; in between jobs)
How are your parents important in terms of your thoughts about work?
How are your grandparents important in terms of your thoughts about work?

Career Scene

I'd like you to tell me about a time that was meaningful or important in some way with respect to your work. Once again, describe what happened, with whom, when, what you were thinking and feeling, the impact of this event, and what it says about you.

Positive Future

I would like you to envision a possible and realistic positive future scene with respect to your work – this is a scene that you hope will happen in the future. How would you describe this future scene? Why is this a positive scene?

Negative Future

I would like you to envision a possible and realistic negative future scene – this is a scene that you hope does not happen. How would you describe this future scene? Why is this a negative scene?

Turning Point

In looking back in one's life, it is often possible to identify certain key "turning points" – episodes through which a person undergoes substantial change. Please identify a particular episode from your life that you now see as a turning point in your approach to your work or career.

So we're approaching the end of our interview… is there anything else about the environment, community, or work that you would like to add?

Overall, how did you feel about this interview?

Thank-you for your participation!
How are you feeling now? Would you like to take a short break before we start the questionnaire?

Appendix B: Questionnaire

Environment, Community and Work
Survey, Winter 2010
Background Information

1) Sex: ___ Male ___ Female

2) Age: _____

3) Are your parents: __ married __ separated
__ divorced __ other: (please explain_____)

4) Please list all of the people with whom you are currently living (ex: brothers, sisters, parents, grandparents, friends).
ex: John (brother)_____ _____
_____ _____
_____ _____

5) Please list all of the members of your immediate family (ex: parents, siblings, grandparents, step family).
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

6) What is the highest level of education that you have completed to date?
__ less than high school
__ completed high school
__ some college or university (please explain: _____ years completed)
__ completed college program
__ completed undergraduate university
__ some graduate (Masters, PhD) university (please explain: ___ years completed)
__ completed graduate school

7) Are you currently enrolled in an educational institution? __ Yes __ No

8) Are you employed? ___ Full-time ___ Part-time ___ Not Employed
If you are employed, what type of work _____
How many hours per week do you work?_____

9) Are you in a committed romantic relationship?
___ Yes ___ No
If yes, length of relationship: _____

10) Do you have any children? ___ Yes ___ No
If yes: How many children do you have? _____
Do you have guardianship or custodial care of the child/children?
___ Yes ___ No

Personal Strivings

For this part of the study we would like you to think generally about your life. We are interested in the things that you typically or characteristically are trying to do in your everyday life. Think about the objectives or goals that you are trying to accomplish or attain. We might call these objectives "strivings."

Here are some examples:
- trying to help others in times of need
- trying to impress your partner with your intelligence
- trying to persuade others that you are right
- trying to avoid being noticed by others
- trying to overcome your fear of strangers
- trying to seek new and exciting experiences

- Strivings are phrased in terms of what a person is 'trying' to do, regardless of whether the person is actually successful. For example, a person might 'try to get others to like them' without necessarily being successful.
- Strivings may be fairly broad, such as 'trying to make others happy,' or more specific, as in 'trying to make my daughter happy.'
- Strivings may be positive or negative. In other words, they may be about something you typically try to obtain or keep, or things that you typically try to avoid or prevent. For example, you might typically try to 'obtain' attention from others or you might typically try to 'avoid' drawing attention to yourself.
- A striving should be a **repeated, recurring goal, not a one-time goal.** Therefore, 'trying to get Sue to go to the dance' is not recurring, whereas 'trying to get to know Sue better,' is.

We would like you to list five things that you are currently trying to do in relation to your life. These strivings should be relevant to your life now. Describe each striving in a sentence, by completing the sentence "I typically try to……." Please keep these guidelines in mind as you complete each sentence.

- Please keep your attention focused on <u>yourself</u>. Do not mentally compare the things that you typically do with what other people do. Think of yourself and your purposes alone. Be as honest and objective as possible.
- Try to recall instances of your typical behaviour and base your statements upon the actual behaviour which you <u>intended</u>, as opposed to what might have been the result of the behaviour.
- It might be helpful to think about the sorts of <u>effects</u> you are typically trying to have on other people.
- Try not to use examples of strivings given in these instructions.

<u>With regard to my life:</u>

1) I typically try to _____.

2) I typically try to _____.

3) I typically try to _____.

4) I typically try to _____.

5) I typically try to _____.

Environment Involvement Inventory

The following is a list of community and political activities that people can get involved in. For each of these activities, please use the following scale to indicate whether, in the **last year** you did this:

0	1	2	3	4
never	once or twice	a few times	a fair bit	a lot

	20. Contributed time or money to an environmental or wildlife conservation group		31. Started buying a product because you think it protects the environment (ex., soap)
	32. Read a conservation or environmental magazine		33. Had a serious discussion on environmental issues with your parent(s)/child(ren)
	34. Watched a television special on the environment		35. Taken steps to reduce energy use (ex., turn off water, lights)
	36. Recycled newspapers, glass, or other items		

Values Task

Below is a list of qualities that people might think are important for them in terms of the kinds of persons that they want to become. Rate each quality according to how important *you* think it *should be* in your life.

0	1	2	3	4	5	6
unimportant			moderately important			important

Qualities	How important do you think each value is **in your life**?
Honest / Truthful (Tell the truth; don't cheat or steal from others)	
Fair and Just (Treat all people equally; don't put people down)	
Loyal (Be faithful to my friends and family)	
Wisdom (A mature understanding of life)	
Protecting the Environment (Preserving nature)	
A Spiritual Life (Emphasis on spiritual, not material, matters)	
Meaning in Life (A purpose in life)	
Equality (Equal opportunity for all)	
Inner harmony (At peace with myself)	
Mature Love (Deep emotional and spiritual intimacy)	
A World at Peace (Free of war and conflict)	
True Friendship (Close, supportive friends)	
Unity with Nature (Fitting into the natural world)	
Helpful (Working for the welfare of others)	
A World of Beauty (Beauty of nature and the arts)	
Responsible (Dependable, reliable)	
Broad-Minded (Tolerant of different ideas and beliefs)	
Forgiving (Willing to pardon others)	

Environmental Identity Scale

Please indicate the extent to which each of the following statements describes you by using the appropriate number from the scale below.

1	2	3	4	5	6	7
not at all true of me			neither true nor untrue			completely true of me

	1.	I spend a lot of time in natural settings (woods, mountains, desert, lakes, ocean).
	2.	I think of myself as a part of nature, not separate from it.
	3.	If I had enough time or money, I would certainly devote some of it to working to protect the environment.
	4.	When I am upset or stressed, I can feel better by spending some time outdoors "communing with nature".
	5.	I feel that I have a lot in common with other species.
	6.	Behaving responsibly toward the earth -- living a sustainable lifestyle -- is part of my moral code.
	7.	Learning about the natural world should be an important part of every child's upbringing.
	8.	I would rather live in a small room or house with a nice view than a bigger room or house with a view of other buildings.
	9.	I would feel that an important part of my life was missing if I was not able to get out and enjoy nature from time to time.
	10.	I have never seen a work of art that is as beautiful as a work of nature, like a sunset or a mountain range.
	11.	I feel that I receive spiritual sustenance from experiences with nature.
	12.	I keep mementos from the outdoors in my room, like shells or rocks or feathers

Loyola Generativity Scale

Use the following scale to indicate your agreement or disagreement with each statement about your relationships with others.

-4	-3	-2	-1	0	+1	+2	+3	+4
very strongly disagree	strongly disagree	moderately disagree	slightly disagree	neither agree nor disagree	slightly agree	moderately agree	strongly agree	very strongly agree

	1. I try to pass along the knowledge I have gained through my experiences.
	2. I do not feel that other people need me.
	3. I think I would like the work of a teacher.
	4. I feel as though I have made a difference to many people.
	5. I do not volunteer to work for a charity.
	6. I have made and created things that have had an impact on other people.
	7. I try to be creative in most things that I do.
	8. I think that I will be remembered for a long time after I die.
	9. I believe that society cannot be responsible for providing food and shelter for all homeless people.
	10. Others would say that I have made unique contributions to society.
	11. If I were unable to have children, I would like to adopt children.
	12. I have important skills that I try to teach others.
	13. I feel that I have done nothing that will survive after I die.
	14. In general, my actions do not have a positive effect on others.
	15. I feel as though I have done nothing of worth to contribute to others.
	16. I have made many commitments to many different kinds of people, groups, and activities in my life.
	17. Other people say that I am a very productive person.
	18. I have a responsibility to improve the neighborhood in which I live.
	19. People come to me for advice.
	20. I feel as though my contributions will exist after I die.

Appendix C : Commitment Theme Codes

Commitment Script Coding

Personal Advantage

Code Sections: Parent teaching, grandparent teaching, influence, scene, early scene

Family Blessing

Definition: Passages coded for themes of early blessing showed evidence of personal feelings that the storyteller had experienced a special advantage or had been singled out somehow and recognized for being distinct in a positive way.

Code: One code given for each story.

In General[20]: Focus was on general relationships and feelings of personal advantage within the context of the family.	
Description showed evidence	1
Description showed no evidence, or no story told.	0
In Nature[21]: Focus was on experiences in nature; the passage showed some indication that positive (and distinct) experiences in nature had been experienced, or that there was a feeling of privilege for having been exposed to nature in that scene.	
Description showed evidence	1
Description showed no evidence, or no story told.	0
Becoming Connected[22]**:** The passage acknowledged a feeling of connection with the natural world. It may have been framed as a calming restoration, intellectual fascination, the power of stewardship, or a developing connection with the natural world.	
Description showed evidence	1
Description showed no evidence, or no	0

[20] Code based on themes described by McAdams et al., 1997.

[21] Code developed for this study.

[22] Code based on themes described by Chan (2009).

story told.	

Examples:

Family Blessing:
"My father was a biologist so I guess he's been a major motivator of my career path and my interests as far as academic and otherwise. I grew up in a remote part of Nigeria and those are my earlier childhood memories. My dad got a working position out there, and I remember he was teaching science courses at a college not far from the house and I would go and just see dissections of frogs and whatnot, and he would contextualize it for me, so, I'd be in a classroom. For me, it was very interesting and my father always took it one step further and would explain .. not only the, like the anatomy of the frog, but also what a frog was in the ecosystem and when we would then go out on walks or whatnot. He'd point out sounds and whatnot."

Nature Blessing:
"My feeling on that was that even though I was probably like seven years old, I was more educated on how a fishing industry worked than these, you know, sixty year old people walking by."

Becoming Connected:
"When I was younger, we were involved in this …. group of families kind of that got together and [went] camping and hiking, but then we also did things like tree planting and wildlife management. There was one guy that kind of like took care of us, and he would take us out and he would teach about birds and plants. He really encouraged me and taught me to fish, and he taught me to, and he encouraged me to like go camping and learn things about the outdoors."

Childhood Attachments

Definition: Coded for the participants' feelings about the relationship with the identified person/ category.

Code Sections: Overall, one code across all sections.

	Evidence that the participant felt mainly negative about interactions.	Mixed relationship interactions, or no reference to that individual.	Evidence that the participant felt mainly positive about interactions.
Mother	o	1	2
Father	o	1	2
Grandparents	o	1	2
Siblings	o	1	2
Friends-School	o	1	2
Church - religion[23]	o	1	2

[23] Codes for the first six attachments are based on themes described by McAdams et al., 1997.

The Natural World[24]	o	1	2

Helpers vs Enemies

Definition: Passage showed evidence of specific incidents in which there was an explicit description of a helper who influenced the participant in some positive way or an enemy who aimed to block the participant's goals or actions. Helpers could include environmental mentors, if described in a more significant way.[25]

Code: Separately, by story.

Passage showed evidence of an enemy	-1
No reference to helpers or enemies.	0
Participant named some positive influence on a very passive level (saw a movie, read a book, or role model)	1
Participant named someone they have interacted with on a personal level, who impacted them in a positive way.	2

Impact was also coded, based on the participant's description and personal evaluation of the extent of the impact[26] of the interaction.

Negative impact.	-1
No reference to helpers or enemies.	0
Interaction had a minimal impact.	1
Interaction had a significant impact.	2

Example:
"[My friend] encouraged me to read this book for years and years and I never never did, um, eventually, in second year, for some reason, I decided to read this book. The book fundamentally changed the way I viewed our natural environment" (Coded 2 for helper, 2 for impact.)

Suffering of Others

Code Sections: Scene, Early Scene, Dilemma, Moral Courage, Moral Cowardice, Turning Point

Awareness of Suffering[27]

[24] Code for attachment with the natural world was developed for this study.

[25] Code based on themes described by McAdams et al., 1997.

[26] Code developed for this study.

Definition: Passage showed that the participant experienced sympathy, empathy or awareness with regard to the suffering of others. This may be in references to people or nature.

Code: Separately, by story

No awareness.	0
Showed awareness of the suffering of others or nature	1

Age of Awareness

No age indicated or no suffering.	MISSING
Awareness of suffering developed during childhood.	1
Awareness of suffering developed during adolescence or adulthood.	2

Example:
"I think in 2001, out west, and we visited the Athabasca Glacier, and we went up in a huge truck thing to go see it, and the people taking us on the tour just really emphasized the point that the glacier had gotten increasingly smaller over the years and that it's melting and stuff, and that it just really showed me what global warming is doing to things [it was just] amazing things that they're disappearing slowly. I thought it was pretty cool that it still existed, but then I was thinking like if I ever wanted to take my kids here, I don't know, in 20 years or whatever, it might not exist for them to see." [Coded 1 for awareness, and 1 for age of awareness.]

Guiding Values

Moral Steadfastness

Code Sections: Scene, Early Scene, Moral Courage, Turning Point

Definition: In the passage, the participant described having been engaged in some action which was guided by an internalized set of moral values[28]. The focus of the code was on the morals and values which guided the behaviour in the situation, rather than the impact of the situation.

Participant did not discuss personal actions in response to the situation. (The morals must be guiding something.)	0
Participant described a desire to behave in a way consistent with personal morals or values, but did not engage in that	1

[27] Codes were based on themes described by McAdams et al., 1997; they described an early awareness of suffering, so the codes for awareness of suffering and age of awareness were combined to identify individuals who expressed some awareness of suffering during childhood.

[28] Code based on themes described by McAdams et al., 1997.

behaviour due to external (or other) pressures.	
Participant described a behaviour which was guided by some internally held morals or values (like picking up litter, or recycling – i.e., societal norms) So in this case, the person could be responding to behavioural norms, rather than a moral value that what they are doing is 'right'. A score of 2 could also apply to situations where participants came to realize something about the environment that motivates a change in behaviour, but in this case, the behaviour change must be quite explicit even though they may not have actually engaged in that behaviour yet.	2
Participant described a behaviour which was guided by some strong morals or values (i.e., which extended beyond societal norms). Although this behaviour may have been related to societal norms, it somehow went beyond the basic normed behaviour (so, for example, it is normal to not litter, or to recycle, but it is not the norm to tell someone to pick up their litter; that would have received the higher score.)	3

Examples:
"When you see the system's broken and no one's trying to fix it, it takes a lot of courage to say look, I'm gonna put my name forward [to run in an election] and I'm gonna put my whole life on the line to go after this, and I did, for several years. It takes a toll on you. It takes a toll on your finances, on your health, on your time, everything. And then you have to talk about the issues; it doesn't take any moral courage to run and talk about stuff that you don't believe in, it doesn't take any courage to not follow through with it, but I kept following through with it, whether it was popular or not."

Making a Difference

Code Sections: Scene, Early Scene, Moral Courage, Turning Point

Definition: In the passage, the participant described a feeling of having effected some kind of positive change[29].

No evidence.	0
The description of the event contained three critical elements: - The event was meaningful to the participant. - The participant felt like they were making a difference. This feeling of efficacy could be either implicit or explicit, but it is necessary that they feel like they are able to make a difference by engaging in the action they have described in the passage.	1

[29] Code based on themes described by Chan, 2009.

- The event takes place within an environmental or sustainability context, in the public sphere. (I.e., it was necessary that the behaviour extend beyond private sphere activities like recycling or not littering. It should somehow influence other individuals, organizations or policies.)	
In addition to the elements described above, the participant explicitly articulated an understanding that this was an area where the individual, in particular, can be effectual, so they felt some identification with this activity as a niche for their own environmental involvement.	2

Example:
"It was a gravel pit rehab and according to the um gravel pit license, I was supposed to take the topsoil piles and redistribute [them] all over the area …. And I said no, I'm not doing that. And I went up against the the region, […and the] ministry of natural resources, and I said no, I'm not doing it. And I had to fight really hard, because topsoil, all you're doing is redistributing exotic weeds, and you don't need topsoil to grow things, that's a big fallacy. And I, I stood my ground, I said no, I'm not doing it, and, so there was a compromise made, that I could live with and everybody else could live with…. And years later, I took the guy from the region that I was locking heads with and I showed him, I showed him the two areas, what the difference was, and also the trees and vegetation that was had planted in the two areas, and hopefully I convinced him that you don't need topsoil I tried the best I could to explain why I wasn't doing it. I wasn't being obstinate, I had a scientific basis for not doing it."

Sustain Commitment

Code Sections: Meaning of Environment, Environmental Actions, Future Scenes

Definition: The passage described a commitment to the environment that has impacted multiple domains. Participants described basic philosophical principles that have guided their choices.

Meaning of Environment	
Description of the environment reflected no personal connection or a very superficial connection with the environment or the natural world.	0
Description of the environment reflected a deep connection of the individual with environmentalism and/ or the natural world. Participants commented that their environmentalism is very important in their life, or has an impact on all areas of life. The participant described the environment as being all-encompassing, and was clear that the environment is something that people need to care for.	1
Environmental Actions	
The environmental actions were described as a discrete list of behaviours which did not seem to be driven by a deeper connection to the natural world.	0

From the description of the environmental actions, it was clear that the participant's feelings about the environment have impacted actions and behaviours in many areas. In response to "why", participants went beyond making the obvious connection (so, "I recycle to reduce waste" is not sufficient for a score of 1, for example). Participants may have referred to their carbon footprint generally, but the response clearly demonstrated some understanding of that beyond "it is good to reduce my carbon footprint".	1
Community Section	
Participant did not mention the environment in the community section, or did so very briefly, and/or superficially.	0
From reading through community sections related to community groups, scene story, future scenes and turning point story, it was clear that the participant's concern for the environment has impacted engagement with community, either by impacting the types of groups, or by the kinds of activities described.	1

Example:
"I think about .. basically the global earth that we're a part of. I think about all of the interconnected systems that uh support life in this planet and I think about wilderness, I also think about the plants that are growing in my window, I think about myself, I think about the wild animals, I think about the pets and the animals that are raised by people, uh, I think about the air that's circulating and the storms and the waters and, yeah, I think about this one large organization that has many interconnected parts."

Redemption Sequences

Code Sections: Scene, Early Scene, Moral Courage, Moral Cowardice, Turning Point

Definition: *Especially negative* events that result in positive outcomes. Event reflects a significant change in state.[30]

Contamination Sequences

Code Sections: Scene, Early Scene, Moral Courage, Moral Cowardice, Turning Point

Definition: An *especially positive* event results in negative outcome.

Prosocial Goals for the Future

Code: Future Scenes

[30]Insufficient redemption and contamination sequences were identified in the present sample, so they were not included in any analyses. These thematic descriptions are included only for completeness.

Definition: Participant described prosocial goals for the future at a general societal level which included both environmental outcomes and more general prosocial goals.

No goals in this area	0
Unarticulated in this area – goals mentioned but little detail as to how they will be accomplished.	1
One well-articulated goal.	2
Two or more well-articulated goals.	3

Appendix D: Generative Motives

Motivational Themes.

The environmental and work scenes and turning point stories were coded for motivational themes of agency and communion (McAdams et al., 1996; McAdams, 2001a). These stories were coded for the presence or absence of each of four different agency themes, and four different communion themes. In order to be coded as present, a given theme needed to be clear and explicitly present in the story. All themes are based on those described by McAdams and his colleagues (1996).

Agency Themes

Self-mastery: Stories which show evidence of self-mastery will depict the storyteller as trying to master or control the self which has already achieved some level of autonomy. Self-mastery may be revealed in descriptions of insight into the self, control over one's life path, or a strengthening which results from a depicted event. Often is reflected as something more internal such as insight into the self, control over one's life path, or a personal growth or strengthening.

Status/victory: Stories in which the storyteller describes having achieved a heightened status in comparison with others, or shows evidence of status or victory within some competitive context.

Achievement/Responsibility: Stories in which the story teller displays feelings of pride or mastery as a result of a specific achievement as a result of meeting a challenge, or taking on responsibilities. Typically these achievements take place in non-personal settings, and require some striving towards the specified goal.

Empowerment: Stories which describe feelings of personal empowerment or enhancement which may result from personal initiative, or an association with "Someone or something larger and more powerful than the self" (McAdams, 2001, p.7) display evidence of empowerment. Often the empowerment involves a reference to a spiritual force, such as God, nature or the cosmos, however, it can also involve an influential person as well. The feeling of empowerment is usually directed towards something external (rather than an internal understanding as with agency).

Communion Themes

Love/Friendship: In stories which are coded for a theme of love or friendship, the storyteller describes a loving or caring relationship. To be coded for love/friendship, the description must include more information than a mention of being "friends" or "lovers". In this study, it may also include expressions of deep caring or love for nature or animals.

Dialogue: Stories which describe a reciprocal form of communication between individuals are coded as showing dialogue. In these stories, the conversation is not depicted as a means to something else, but rather, as the focus of the event itself.

Caring/ Help: Stories coded for caring or help depict the storyteller providing care, nurturance or support, and displaying positive emotions resulting from the event. Incidents may involve caring for another person or for the natural world.

Unity/Togetherness: Stories showing unity or togetherness extend beyond a relationship of two people, and are based on the idea of being part of a larger community. The description must reflect a whole unit, not just several discrete relationships.

Appendix E: Narrative Codes for Reflective Engagement

Narrative Coding – Conventions

Code	Description	Codes
Meaning	How the event connects to the life story. Refers to the individual's perception of the meaning of the incident in his/ her current life. Must come from the episode that is being described.	0 – no meaning 1 – lesson – meanings were often behavioural & do not extend much beyond original recalled event 2 – vague, but general meaning 3 – narratives with insights (Meanings extend beyond the specific event to explicit transformations in one's understanding of one's self, the world or relationships.)
	Examples: 0 - I guess one thing would be that we usually we go camping or, I'm from up north, so we go canoeing or something like that every year. We'll go on a canoe trip and the environment, well, not the environment, but the river and everything, it's so nice; it's clean and stuff like that. That's important.[*You can follow the cue card for this question*] Okay. Yeah. I guess what happened would be canoeing down the river. It's uh near Maddawa and North Bay. Who's involved would be my dad and some of his friends, we go canoeing. What were you thinking? I was really young most of the time, probably from about six to twelve, we used to do it every year, but I guess, how nice it was, that's what I'd be thinking. I guess I was feeling happy. The an impact would just be that I have an attachment to canoeing and stuff like that, because it was part of my childhood. I guess what it would say about who I am is that I like the outdoors, that's really all I can think of. {*Passage is somewhat descriptive, but does not provide any deeper interpretations about lessons or insights gained from the experience*.} 1 - Going fishing when I was maybe about ten, with my brother and my mom and we had real worms and my brother was ripping them in half and putting them on the hook. We were fishing off the pier, catching little toxic fish and having so much fun. I think I was mostly just enjoying it, enjoying something we'd never done before and being on the water. I never thought I'd like fishing or worms or any of that sort of stuff, so I guess as an impact, **I always know that I'll go fishing again and enjoy doing that sort of thin**g. And maybe it says that I am not as afraid of the gross things in nature like bugs and worms and stuff as I thought. Not so afraid of the creepy crawlies. {*lesson does not extend beyond the original*	

	experience- I will like fishing again because I liked it the first time I went.} 2 - My cottage has no electricity or anything, and so all the water like comes from the lake and stuff and it's run on propane and everything, and I never even noticed. When I [was about five or six], I was like "oh yeah, there's no electricity up here." I like started to think that we can live easily without it and stuff, because like I had never even known it. So, maybe that was, that was probably one of the turning points. [*What were you thinking?*] That it's easy to live without all this extra stuff, like cars. I realized I can have fun with like my brothers or my cousins without all this extra stuff that's just gonna pollute the environment. {*The result of the incident is some insight, but it extends directly from the event, rather than showing significant insight.*} 3 - I was at university studying international development and we had a speaker come in, and he was basically having an open question and answer period. There were a lot of uh naïve kind of young people in my class wanting to know "why is everything such a mess?" And "how can we fix it?" And the guy said "vote"; like if you get involved in politics and we have good politicians, it's gonna be a lot easier, and so that kind of got the wheels turning for me in terms of getting involved with politics. I started doing some computer research after that and just keeping my ears open. **I guess I was thinking that maybe politics is the answer, you know, like protesting and all that sort of stuff is, is good and fine, but politics is what's gonna make the lasting um policy changes, and maybe this is the direction that I've kind of been looking for**. An impact that that's had on me is that I got involved with the Green Party and I don't know if I would have done that otherwise. {*Storyteller reveals some additional insights in how to effect change – protesting is not sufficient, but being politically active may result in the desired changes*.}	
Vividness	level of descriptive detail higher stories are typically very specific stories that include a lot of descriptive detail	1 – little or no details given to 5 – very detailed description
	Examples: 1 - Basically a turning point in my life that, okay. In high school, I wasn't really educated about the environment but after coming to university and taking environmental courses, I've become more educated about issues and I **guess in a sense, I am more passionate about it, as I'm more aware of it and I feel like in the future I will definitely strive to make changes in regards to the environment**. [I: Can you think of a specific incident?] That's really hard. I could say a specific class, my intro to environmental studies, that really had an impact on me because it educated me about the environment. And it made me aware of issues more in depth like how water pollution affects fish and going into issues like that. Those classes have really educated me and I think it's a good thing for people to know about because a lot of people in the world today are totally oblivious to such issues, and just take things for granted, basically. {*Few details are included that describe why the class was meaningful. Participant indicates s/he will make changes, but does not describe the nature of those*	

<table>
<tr><td></td><td colspan="2">*changes*.}

3 - I was at my grandfather's house, and he's got a really big yard, out in the country, and, he would take me around, like he's got different spots where he's got different things. He would show me how you would grow this certain thing, and **how you're supposed to take care of it**, and the **landscaping aspect** to it too, and it was just really nice because it was a bonding experience for me and I guess that's what kind of helps me enjoy the environment more - that it was a bonding experience for me and my grandfather, and I enjoyed more and it does help me relieve stress, and it gives me a feeling of like knowing that he helped me with that and it's just **this nice feeling**. So, I just think it, it goes to show that it, I am a patient person and I'm caring and calm and I can do things like that.
{*Passage is somewhat descriptive, although some details are vague.*}
5 – When I was probably in grade ten or eleven, we had gone on a class trip to the land fill. They showed us, the recycling, and then they showed us the garbage and how it gets buried underneath. They were showing us how all the garbage gets piled and they bury it under like a layer of soil, and nearby, there was kind of a lake, and **it wasn't a big lake of course, but it had ducks, and I think probably like an otter; I've seen a couple animals there. It was so shocking to see how clean the water looked**, like, I don't know if it was, but **it looked very very crystal clear, very clean. It was a sunny day** that we went, so it **looked very picturesque**, like a very very nice lake. And then and **then you look just to the left, like a hundred meters and you see landfill**, wow. I learned that probably, there was always a danger of **'leachade' or something like that, that's the run-off basically from the garbage, and any kind of chemicals in the plastic, and anything else that's been thrown out, when it starts to disintegrate, it starts to kind of almost liquefy and melt**. So, just knowing that that kind of seeps into the water, and then you look over there and you're thinking wow, you know, that looks so nice and perfect, and yet it's very at risk right now.
{*This passage contains a significant amount of descriptive detail.*}</td></tr>
<tr><td rowspan="2">Impact</td><td>The extent to which the story was described as sustaining or enhancing their personal commitment to further involvement</td><td>1 –negative impact to
2 – no change
3 – more conviction or reinforced behaviours or attitudes
4 – slight change
5 – high positive impact</td></tr>
<tr><td colspan="2">1 - I guess when I went from my grade six school, starting grade seven, I could walk to my elementary school with my friend who lived across the street and then grade seven came and we had to drive ten minutes to get to school and it just showed me that driving every day was kind of unnecessary. We could have taken the bus or whatever, but her mom lived worked closeby anyway, so, we were on her way. That just showed me that for the upcoming years, that I'm gonna have to be getting a lot more rides and stuff, just 'cause of distance in a city. [*What was the impact on you?*] I made sure that I did car pool every day with her. I was on time, so I didn't miss the ride and have to get on my parents to drive me or something, so, I made sure I always took them up on the ride, since they were going anyway. It says that even at that young of an age, I understood that car pooling is a good thing, I guess, and that I was cautious about the environment.</td></tr>
</table>

	{*The incident described in this passage seems to have had no impact on engagement with the environment.*} 3 - I have a cottage, it's right on Georgian Bay. Basically I was just swimming alone in the bay, and I just saw so many boats in the water and everything like that and then I was thinking about what exactly is being put into the water from these boats. It got me really thinking about pollution of water and everything like that, and then I was kind of disgusted and ran out of the water, even though Georgian Bay is pretty clean. Basically, now, I avoid using boats and things like that. I like paddle places, but I do not use motor power, whatsoever. What's this say about me.. I feel strongly about the environment, even in the most minimal way, like boats, they don't do too much, but still, I think I notice what harm they do, even though it's minimal. {*This event clearly impacted later environmental engagement, but the impact was somewhat limited – that is, s/he avoids using boats, but the engagement does not extend broadly into other areas of caring for the environment.*} 5 - In Costa Rica, we walked through this rainforest path. I let the group go on so I was alone. I have a very strong memory of sitting down in the middle of this forest. In the rainforest, it is hard for me to describe how dense with living stuff it is, at every level, there's so much noise and all these different interconnecting levels of life. I sat there for a while, by myself, and had time to realize just how incredibly complex and interesting and unique the natural world is, and that was probably the moment when I realized that there was no other particular priority that made any more sense; this is the only thing worth devoting yourself to, seriously. [*So, what was the impact of this event on you?*] I think fairly significant. I was already politically active but I switched directions, became more involved in environmental initiatives. I always will be really engaged with global social justice issues but I began to think that although the goal is to try and alleviate some human suffering, I couldn't think about that independently of what we will do to the environment along the way. Is it worth making everyone's lives better if we ruin the planet? That probably was one of the keys for me to start to think about making individual lifestyle choices a little bit more consciously." {*This event had a significant impact on the storyteller's overall approach to environmental issues.*}
If two incidents are described, we focused on the longer, more articulated story.	

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