An Examination of Regret as Expressed in the Life Reflections of Older Adults:

Predictors of Regret Intensity and Frequency, and Association With Well-Being

Connie Isenberg

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ABSTRACT

An Examination of Regret as Expressed in the
Life Reflections of Older Adults: Predictors of Regret
Intensity and Frequency, and Association With Well-Being

Connie Isenberg, Ph.D.
Concordia University, 2008

This study focused on the experience of regret in older adults as expressed within

the context of a life history framework, using quantitative and qualitative methods. The

goals were to explore the differential impact of demographic, personality, dispositional

and other relevant variables on frequency and intensity of lifespan regret, the impact of

both intensity and frequency of regret on psychological and physical well-being of older

adults, to examine regret themes and dimensions of regret as derived from an in-depth

life history interview and on the basis of qualitative data, to arrive at high- and low-regret

profiles that may indicate proneness to regret. This study was the first to use a lifespan-

interview measure of regret with older adults as well as the Big Five and several

dispositional variables, autobiographical memory and values as predictors of intensity

and frequency of regret, and to control these variables in examining the impact of regret

on well-being. In Phase 1 of the study, 111 older adults participated in a Life Reflection

Interview that yielded measures of intensity and frequency of regret, emergent values,

quality of experience of aging and physical well-being. They also completed a battery of

self-report questionnaires assessing personality, dispositional optimism, intolerance of

uncertainty, depression and happiness. In Phase 2, a subsample of 71 participants

completed measures assessing dispositional coping, perceived control and perceived

autobiographical memory. The findings show that relatively healthy, educated older

adults do not have high levels of regret, that predictors of intensity and frequency differ, that more variance in intensity compared to frequency of lifespan regrets is explained by the variables, and that regret does predict indicators of psychological but not physical well-being. The results suggest that the methodology used facilitates the measurement of self-defined regret by evoking a spontaneous expression of feelings. Future research should examine if the interview process may contribute to the working through of negative life experiences by providing an opportunity for the sharing and discussion of regrets with an interested and involved listener. Research should also focus on the identification of older adults who may be at risk.

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Overview

References to regret have long been found in popular culture and literature,

expressed in song lyrics (e.g., Sinatra's "regrets...I've had a few"), in verse (e.g.,

Moments by Jorge Luis Borges), and in prose (e.g., Margaret Lawrence's The Stone

Angel). It is only in the past two decades or so, however, that the allusion to the

normative nature of regret expressed in our literature and in our cultural folk wisdom has

been paralleled by a scientific exploration of regret as a psychological phenomenon

worthy of attention (Landman, 1993). The relative lack of earlier scientific attention is all

the more surprising given the salience and frequency of regret. Regret was identified as

the second most commonly-named emotion expressed by a sample of undergraduate

students and a sample of married couples (Shimanoff, 1984). In addition, the results of

the 1953 and 1965 national Gallup polls in the United States, as reported by Erskine

(1973), revealed that given the opportunity, 39% of men and 35% of women would live

their life differently, and given this opportunity, 43% of respondents (47% of those under

age 50 and 36% of those over age 50) expressed the wish to "get more education."

Regrets expressed in the present serve to telescope time, allowing a past

experience to be revisited in the present, thereby providing a mirror of the individual's

interpretation of and relationship to past life events. Current unsatisfying life

circumstances perceived to be the consequence of earlier life decisions may trigger

regret. For example, a person who is currently in a difficult financial state may intensely

regret not having completed his or her education, whereas a person who has succeeded financially in business despite having failed to complete his or her education might be less regretful (Jokisaari, 2003). Reflections on the past, of which regret constitutes one subtype, may have an impact on current life, enhancing or reducing its quality (Freeman & DeWolf, 1989). This aspect of regret, that is, its potential impact on quality of life (Mandel, Hilton, & Catellani, 2005; Roese, 1997, 2005; Zeelenberg, 1999) and more specifically, on psychological (Jokisaari, 2004; Lecci, Okun, & Karoly, 1994; McKee et al., 2005; Torges, Stewart, & Miner-Rubino, 2005; Wrosch & Heckhausen, 2002) and physical (Wrosch, Bauer, Miller, & Lupien, 2007; Wrosch, Bauer, & Scheier, 2005; Wrosch, Dunne, Scheier, & Schulz, 2006) well-being, is one that has captured the attention of psychologists, resulting in a rapidly growing, albeit still small, body of research.

The nature of the aforementioned impact on psychological and physical well-being is one of the questions studied by regret researchers who have theoretically and empirically examined many aspects of regret, including themes (e.g., Roese & Summerville, 2005), functions (Landman, 1993), the cognitive counterfactual component (Kasimatis & Wells, 1995; Sherman & McConnell, 1995), and the affective component (Gilovich, Medvec, & Kahneman, 1998; Wrosch, Bauer, et al., 2007). Still others (Gilovich & Medvec, 1994; Gilovich, Medvec, & Chen, 1995; Savitsky, Medvec, & Gilovich, 1997; Wrosch et al., 2005) have examined the differences between regrets of omission and commission. Whereas some group differences in the experience of regret have been reported in studies that include participants of both genders ranging in age from younger to older adulthood (e.g., Timmer, Westerhof, & Dittman-Kohli, 2005;

Wrosch & Heckhausen, 2002), a focus on individual differences has been largely restricted to regret-specific variables such as differences in the intensity of regret as measured by the self-reported frequency of regret-related intrusive thoughts or associated negative affect (Gilovich et al, 1998; Wrosch & colleagues, 2002, 2005) or individual differences in the use of self-regulation strategies such as the capacity to disengage from goals (Wrosch et al, 2005).

Specifically, regret researchers have suggested the importance of examining the association of broad personality traits to regret (Jokisaari, 2003; Metha, Kinnier, & McWhirter, 1989; Wrosch, Bauer, et al., 2007; Wrosch & Heckhausen, 2002). In addition, Jokisaari (2003) has stressed the need to control for neuroticism to ensure that the relationship between regrets and well-being is not spurious. Despite these recommendations, very few studies have either examined personality predictors of regret or controlled for personality when assessing the relationship between regret and psychological and physical well-being. One of the purposes of the present study is to address this relatively neglected area in the regret literature in a way that allows us to increase our understanding of the personality variables that are associated with regrets within the older adult population.

A review of the regret literature reveals that both intensity and frequency of regret have been investigated, but generally in separate studies. Markman, Baron, and Balkin (2005) exceptionally include both intensity and unlimited frequency of regrets in a study that addresses middle-aged entrepreneurs. The relation between these two dimensions of regret has received very little attention. This might, in part, be explained by the methods used to assess regret. One commonly applied method has been to provide a pre-

established list of regrets to participants, thereby precluding the spontaneous expression

of personally relevant regrets (DeGenova, 1992, 1993; Kinnear & Metha, 1989; Lecci et

al., 1994; Lewis & Borders, 1995). In addition, the number of selections is also at times

restricted (Landman & Manis, 1992; Landman, Vandewater, Stewart, & Malley, 1995).

In other studies, the most intense or severe regret of omission and/or commission is

requested (Gilovich & Medvec, 1995; Gilovich et al., 1998; Savitsky et al., 1997; Wrosch

and colleagues, 2002, 2005), allowing participants to freely select the regret but

restricting the frequency. A variant on this method is to use a sentence completion

instrument that only allows for the expression of one regret (Timmer et al., 2005) or to

provide a fixed number of physical spaces on a written sheet, commonly limited to three

to five regrets, in this way restricting frequency (Gilovich & Medvec, 1994; Gilovich,

Wang, Regan, & Nishina, 2003; Hattiangadi, Medvec, & Gilovich, 1995; Jokisaari, 2003,

2004; Savitsky et al.). Whereas this restriction on number may have some advantages by

encouraging participants to focus on their most troubling regrets, it does limit

investigations of the relation between regret intensity and frequency. Given the paucity of

research in this area, the present study aims to complement and extend our current

understanding of the association between intensity and frequency of regret as they relate

to individual personality differences and to psychological and physical well-being among

older adults.

The broader purpose of the present study was to contribute to the growing body of

knowledge about regret, with a specific focus on the experience of regret in older adults

as expressed within the context of a life history framework that allowed for an interview-

based measure of intensity and frequency of regret as they relate to standardized

measures of salient personality dimensions. DeGenova (1996) interviewed eight older adults and noted an initial reluctance on the part of the participants who were interviewed to admit to having regrets, yet many regrets were revealed in their stories. This finding supports the importance of asking directly but then also allowing for the expression of regrets in an open-ended way. The semi-structured interview format employed in the present study provided the opportunity for participants to express regrets in both ways, that is, as responses to direct questions and as spontaneous reflections on their past. The reflective process may have provided a context for a life review, that is, a process characteristic of older adults described by Butler (1963, 1974) whereby, spurred by awareness of mortality, individuals look back upon their life and reassess their past, thus prompting a return to consciousness of past experiences and unresolved conflicts. These conflicts may be reintegrated and in the process, enhance and add meaning to the individual's life. According to Butler, the life review may be influenced by current experiences as well as by character and may, in turn, contribute to well-being.

The mixed method qualitative-quantitative approach used in this study was designed to cast a net wide enough to capture a broad expression of regret with a number of participants small enough to allow for a detailed content analysis of the interview that yielded qualitative data and at the same time large enough to be accessible to quantitative analyses. As an introduction to this study, conceptualizations of regret will first be described. The relevant scientific literature on regret among older adults will be reviewed, and methodological issues will be underlined. The role of regret in old age will be viewed through the lens of lifespan developmental theory, thereby anchoring the present study in a theoretical framework. Finally, the study goals and hypotheses will be

described.

<center>Defining Regret</center>

It is widely accepted that regret consists of both a cognitive and an affective

component, that is, a thought and a feeling (Landman, 1987, 1993), but is not reducible to

either. Social psychologists (e.g., Kahneman & Miller, 1986; Roese, 1994, 1997, 2005)

have described the specific nature of the thoughts associated with regrets as

counterfactual thoughts, that is, thoughts that compare reality with imagined or

constructed alternatives. In counterfactual thinking, the actual is compared to the

possible. The individual asks him or herself what might have been under other

circumstances or how an outcome might have turned out differently. Counterfactual

thinking is not limited to establishing differences, however, but involves an evaluative

component, that is, an evaluation of whether the imagined outcome would have been

better or worse than reality. It is unfavourable comparisons, that is, comparisons that

evaluate current reality to be worse than the imagined outcome, that evoke the emotion

commonly referred to as regret (Gilovich & Medvec, 1995; Zeelenberg, 1999),

specifically in relation to aspects of life that have personal relevance and significance.

The individual cares about that which is regretted and it is the personal implication in the

form of caring that is inherent to regret and renders it an emotion. Kahneman and Miller,

in referring to regret as a counterfactual emotion, defined it as a negative emotion which

cannot occur without a prior counterfactual thought. A counterfactual thought or critical

judgment is, therefore, a necessary but not sufficient component of regret, just as the

emotion is a necessary but not sufficient component of regret (Zeelenberg, van Dijk, van

der Pligt, et al, 1998).

The functions of counterfactual thoughts have been explored (Roese & Olson, 1995). The first of two major functions identified is preparative. This function allows for the understanding of past mistakes by imagining alternative outcomes and alternative behaviours leading to these outcomes. The recurrence of negative outcomes can be avoided in this way. The second function is affective and aims at helping the individual feel better about the situation or event when using downward counterfactual comparisons, that is, imagining outcomes that were even worse than the reality-based one. Upward counterfactual comparisons, that is, alternatives that are better than the actual outcome could serve a preparative function when there are future opportunities for change (Markman, Gavanski, Sherman, & McMullen, 1993) or could elicit negative affect such as regret (Boninger, Gleicher & Strathman, 1994) when opportunities for change are not available as is common in older age. When instrumental intervention is not possible because outcomes are not controllable, downward social comparisons are more common, and help individuals preserve or enhance their self-esteem (Wills, 1981). It is when the individual is incapable of shifting from upward comparisons even when change is not possible, that his or her well-being may be compromised. This may have particular relevance for older adults as will be discussed later.

It is generally accepted that regrets are composed of a counterfactual thought and a concomitant negative affect and the literature reveals agreement as to the distinction between regret and other affective states, such as disappointment (Landman, 1993; Zeelenberg, van Dijk, Manstead, & van der Pligt, 2000; Zeelenberg, van Dijk, van der Pligt, et al., 1998), anxiety and guilt (Berndsen, van der Pligt, & Doosje, 2004; M. Lucas, 2004). There are other definitional issues about which there is less agreement. The first is

the question of agency and related to this is the question of action versus inaction. Klein and Gotti (1992) posit that regret always contains a wish that things were different, but does not always carry self-blame. This is contradicted in other studies (Connolly & Zeelenberg, 2002; van Dijk, & Zeelenberg, 2005). Landman (1993) resists including a sense of personal responsibility as a defining characteristic of regret and argues for a broader definition that allows for others and circumstance to be agents of the regretted event. This view, that the concept of regret applies equally to conditions of self agency and conditions of circumstance, has been theoretically (Connolly, Ordonez, & Coughlan, 1997) and empirically supported (Roseman, 1991; Roseman, Spindel, & Jose, 1990). The intensity of regret experienced, however, has been demonstrated to be greater when the self is the agent of the act (Roseman; Wrosch & Heckhausen, 2002).

Conceptualizing regret as resulting exclusively from actions and failures to act provides a narrow definition of regret which excludes normative life changes, losses and circumstances as possible subjects of regret. Researchers' definitions of regret, even if not explicitly stated, can often be derived from the wording they use to measure regret. Gilovich and Medvec (1994) and others (Baum, 1999) asked participants to look back upon their lives and to identify what their biggest regrets were, without providing a definition of regrets. This allowed for a broader definition of regret, based on actions or failures to act but also allowing for circumstances beyond the individual's control. DeGenova (1996) specifically addressed things participants would wish to change but over which they had had no control. Erikson, Erikson, and Kivnick (1986) referred to their participants' expressed regret as lost capacities and newly acquired weaknesses, that is, normative losses over which they had no control.

Broader definitions of regret are also found in cross-cultural studies, for example, Gilovich et al. (2003) introduced two Chinese terms, each corresponding to a type of regret. The first applies to regretted consequences of one's behaviour and is linked to potential undoing, whereas the second term extends agency beyond the self and does not imply an intention to reverse a particular behaviour. "I regret that I had polio as a child" is an example offered by the authors of the latter type of regret. In similar fashion, Timmer et al. (2005) also distinguish between two different meanings of regret as used in German and Dutch, one in which responsibility for the regretted event is attributed to a person, the other expressing a feeling about a given event or state of affairs caused by circumstance.

Examples of the narrower definition of regret abound in the literature and the articulation of these definitions of regret varies. Researchers have asked participants to report their most severe commission and omission regrets (Gilovich & Medvec, 1995; Gilovich et al., 1998; Savitsky et al., 1997; Wrosch et al., 2005), the activity that they most regret not having pursued (Wrosch & Heckhausen, 2002), what they would have wanted to leave undone or would have wanted to do (Feeney, Gardiner, Johnston, Jones, & McEvoy, 2005; Jokisaari, 2003, 2004) or what they would have wanted to do differently (Kinnear & Metha, 1989; Stewart & Vandewater, 1999).

For the purposes of the present study, a very broad and inclusive definition of regret will be used. All regret related information will be derived from a face-to-face semi-structured life reflection interview that will elicit statements about regret in two ways. One is through responses to regret specific and counterfactual questions for which a standardized definition of regret is not offered. The other is through reflections on a

variety of life domains. These reflections will facilitate the emergence of spontaneous statements of regret contextualized within participants' personal histories. The depth and breadth of the interview, itself, lead to a broader definition of regret that encompasses participants' natural expressions of regret. Negative affect accompanied by a counterfactual thought about actions and failures to act, events and experiences where there is some control, uncontrollable life events, aspects of the self, normative life changes and losses all fall within the definition of regret as conceptualized for the present study. A broader view of the temporal aspect of regret is also maintained so that regretted matters may occur in the past, present or future.

Regret in Older Adults

A review of the literature on regret reveals that the research on regret in older adults, although rapidly expanding, still remains quite limited. Studies focusing exclusively on older adults and those comparing younger or middle-aged adults to older adults will be examined. Most studies have focused on the frequency, content and nature of regret, the latter looking specifically at temporal patterns in intensity and the elicitation of regret through action and inaction. A growing, but still limited number of studies have examined contextual and individual variables that may predict regrets in older adults and the impact of regrets on physical and psychological well-being. Research literature studying regrets in younger or middle-aged adults will be referred to for topics that have not been addressed in relation to older adults.

Predictors of Regret in Older Adults

Demographic Variables and Regret

Research investigating various demographic variables such as age, education, and

occupational status as predictors of regrets in older people remains quite limited.

Age. In interview based studies with older women, Kovach (1991, 1995) identified two categories of reminiscences, validating reminiscences consisting of positive self-appraisals, having made choices, positive social connections, joyous life experiences and past to present comparisons; and lamenting reminiscences, consisting of difficulties in one's life, lack of choices and expressions of regret. Whereas participants over age 85 expressed more positive self-appraisals than the younger old, the youngest group of older adults (those aged 65–74) expressed the most regrets. These findings suggest that as one ages there may be a tendency to remember oneself in a self-enhancing manner consistent with the positivity bias described below, hence having fewer regrets.

An association between age and regret was also suggested in the work of Baum (1999), who found that 42% of older adults expressed having no regrets. Baum suggested that older people may transform their memories from regrettable ones into memories without regret or may simply repress bad memories. These results need to be interpreted with caution because half of the participants were nursing home residents (mean age of 81) and half were community dwelling (mean age of 78.2), more of the former expressing having no regrets. Baum posited that the nursing home residents may be confronting their mortality with greater immediacy than were the community dwelling older people, hence disengaging more from the requirements of daily functioning and that this disengagement may reduce regrets which seem to have no relevance in the face of death. Potential differences in memory functions between the nursing home and community-dwelling participants and their impact on regrets were not discussed.

Somewhat inconsistent results regarding the relation between age and regret were

found in the following three studies. Comparing middle-aged to older women with and without children, Jeffries and Konnert (2002) found that older women cited fewer general life regrets than younger women but that the number of regrets about childlessness did not decrease with age. In a qualitative interview-based study with older childless women ($M = 74.7$ years), Alexander, Rubinstein, Goodman, and Luborsky (1992) found that although a few women claimed to have come to terms with the pain of childlessness as they aged, the more common experience reported was that of an increase in intensity of regret about childlessness with age. In contrast, Wrosch and Heckhausen (2002), comparing older to younger adults, found that age was not related to any indicators of intensity of regret and did not predict intensity of regret. Four indicators of intensity of regret were used in the study, the first consisting of an overall estimate of intensity. Participants reported the activity that they most regretted not having pursued and then indicated on a five-point Likert scale how strongly they regretted not having pursued this activity. The three other indicators were developed by having participants rate, once again on a 5-point Likert scale, the strength of nine emotions experienced when thinking about the reported regret. These emotions were factor analyzed, resulting in three regret-related emotional factors, each providing an additional indicator of intensity of regret. An examination of the methodologies used by Jeffries and Konnert, Alexander et al., and Wrosch and Heckhausen may help to clarify the apparently inconsistent research findings regarding the association between age and regret.

The three studies presented above differ in relation to the scope of the investigation of regret. Whereas Alexander et al. (1992) restricted their focus to childlessness, that is, to one specific life domain, Jeffries and Konnert (2002) focused

specifically on regret about childlessness but also examined general life regrets, by asking women if they had any goals that they had hoped to achieve but never did. Wrosch and Heckhausen (2002) asked participants to report the activity that they most regretted not having pursued and did not specify any life domains, thereby eliciting a wide variety of regret themes. One could argue that the inconsistencies in results reflect the different nature of the elicited regrets. Regret about being childless may be a more intractable kind of regret, that is, one that continues to affect the lives of older adults, perhaps even growing more intense with advanced aging because of its increased relevance. The women interviewed by Alexander et al. described their lack of children as something missing in their lives and expressed the belief that they would be less alone and would have someone to care for them and help them had they had children. Similar views were expressed by childless older women and men within the context of another qualitative study (Connidis & McMullin, 1999). These older people associated a lack of companionship and attendant loneliness, having missed out on an important life experience and a lack of support and care to their lack of children. Empirical validation of these perceptions was provided by Larsson and Silverstein (2004) who found that in practical terms, public services could not buffer the lack of filial care provided to individuals over the age of 81 years.

Another methodological difference among these studies is that Alexander et al. (1992) used a qualitative interview-based within-person design which allowed participants to retrospectively compare the current intensity of their regret about not having children to the intensity of their regret in the past, thereby tracking changes in their feelings about being childless through the course of their own lives. The nature of

the data derived was qualitative. In contrast, both Jeffries and Konnert (2002), and Wrosch and Heckhausen (2002) compared younger to older adults at a single point in time and results were based on quantitative data. These methodological differences yield complementary but different data, thereby limiting to some degree a direct comparison of results.

Mather and colleagues (Mather & Johnson, 2000; Mather, Shafir, & Johnson, 2000), comparing young adults to community-dwelling older adults, found that people, in general, tend to remember choices in a regret-minimizing and satisfaction maximizing fashion and that with age, people's tendency to distort memory in favour of the options that they chose, increases. In other words, older adults' memory for their choices was found to be more choice supportive. Their findings support the idea that remembering choices in a way that is choice-supportive may help to avoid negative emotions such as regret. This choice supportive bias may help to regulate emotion as people age.

Research on aging and emotion regulation also suggests that age may be negatively associated with regrets (Carstensen, Fung, & Charles, 2003; Carstensen & Turk-Charles, 1994; Mather & Carstensen, 2005). Gross and colleagues (Gross et al., 1997; John & Gross, 2004) found that older individuals tend to experience fewer negative emotions compared to younger individuals. They concluded that compared to younger participants, older people can control their emotions more effectively, selectively enhancing positive emotions or minimizing negative emotions, when they are experienced. It could, therefore, be hypothesized that as a result of greater emotional regulation, older individuals might experience fewer regrets. Although research on reminiscence in later life has mixed findings, the finding that age generally does not

predict overall frequency of reminiscence (Webster, 1994), coupled with the finding that bitterness revival, a dimension of reminiscence defined by memories of bad times and distress, shows linear decline with advancing age (Cappeliez, Lavallée, & O'Rourke, 2001) offers support to the hypothesis that older adults might experience fewer regrets.

These findings, emanating from both regret specific studies and from the emotion regulation and reminiscence literature, suggest that age may be negatively related to intensity and frequency of regret and that more research may further elucidate this potential association. The association between age and various regret themes will be discussed later in the section on demographic variables and regret themes.

Gender. Research findings on gender and its association with regret in older adults are limited and not fully consistent. Timmer et al. (2005) were among the only researchers to find an effect of gender, women being more likely to express having no regrets. This finding is somewhat surprising given the impact of traditional sex roles on intimate and emotional disclosure. Western culture discourages male expression of emotion, with the exception of anger (Brody & Hall, 1993; Grossman & Wood, 1993; Jansz, 2000), and men have been found to use more emotional suppression than women (Gross & John, 2003). Wrosch and Heckhausen (2002) did not find gender to predict any of their indicators of intensity of regret, nor were gender differences found in relation to overall regret (Kinnear & Metha, 1989) or in the amount of life revision (DeGenova, 1992). Landman and Manis (1992) and Roese & Summerville (2005) found no gender differences in frequency of counterfactual thought, the latter among younger adults, nor did Lecci et al. (1994) find gender differences in number of regrets recalled among young and middle-aged adults.

In contrast, Webster (1994) found that gender predicts frequency of reminiscence, with women reminiscing more frequently than men and Santor and Zuroff (1994) found a significant effect of gender for an *Accepting the Past* measure, with women reporting less acceptance of the past than men. Given that acceptance of the past should result in fewer regrets, we could hypothesize that women would have more regrets than men. Given the contradictory findings in the literature, the association between gender and regrets requires further investigation. The association between gender and regret themes will be discussed in the section on demographic variables and regret themes.

Education. Another demographic variable that might predict regret in older people is education. Educational opportunities were much less available between the First and Second World Wars than they are currently. The repercussions of limited education can be far reaching, affecting financial and social status on a long-term basis. Research on the content and frequency of regrets among adults supports this notion, the most frequently cited regrets consistently being those related to missed educational opportunities (DeGenova, 1992, 1996; Roese & Summerville, 2005). Years of education have been found to be associated negatively with regret, so that the more education, the less overall regret (Schieman, Pearlin, & Nguyen, 2005). As with age and gender, the association between education and regret themes will also be discussed in the section on demographic variables and regret themes.

Socioeconomic status. Socioeconomic status is a demographic variable closely related to educational level. People with higher levels of income have reported lower levels of regret (Schieman et al., 2005). This is supported by Holahan, Holahan and Wonacott (1999) who found that higher occupational level in middle-aged men was

associated with the feeling of having lived up to one's abilities which, in turn, predicted a lack of retrospective desire to make other life choices three decades later. Further support is derived from the reminiscence literature, Fry (1995) suggesting that high social status and financial security may insulate men and women from the need to reminisce frequently or to review unpleasant past events. Given the preponderance of education-related regrets cited in the literature, the research evidence suggests that educational level and socioeconomic status may potentially be strong predictors of regrets.

Marital status. Another demographic variable that may be associated with the experience of regret is marital status. Marital status has been associated with life satisfaction, particularly in older men (Chipperfield & Havens, 2001), and although divorce has been found to have an intense and long lasting effect on life satisfaction (R. E. Lucas, 2005), individual differences appear to influence adaptation to divorce (R. E. Lucas, Clark, Georgellis & Diener, 2003). Lewis and Borders (1995), in the only regret specific study testing the association between marital status and life satisfaction, found that one of the predictors of life satisfaction in middle-aged professional women was regret about life circumstances, such as regret about finances, parental status and enjoyment in life. Degree of regret did not vary, however, as a function of marital status. One could speculate that marital status may not be associated with regret in middle-age, but with the accumulated losses and reduced resources of older adulthood, the married elderly may have lower levels of regret than the unmarried elderly.

Demographic Variables and Regret Themes

A meta-analysis by Roese and Summerville (2005) revealed that education is the most frequently reported regret across the adult lifespan, followed in descending order by

career, romance, parenting, self and leisure, these six regret themes representing 86.4% of

all regrets expressed. In these studies, participants were either required to select their

biggest regret from a list provided by the researchers (DeGenova, 1992; Kinnear &

Metha, 1989; Landman & Manis, 1992; Landman et al., 1995), or to express their regrets

in their own words which were subsequently coded by the researchers (Gilovich &

Medvec, 1994; Hattiangadi et al., 1995; Jokisaari, 2003; Lecci et al., 1994; Roese &

Summerville, 2005; Wrosch & Heckhausen, 2002). The remaining regret themes,

finance, family, health, friends and spirituality, were low in frequency.

To examine demographic correlates of regret themes in older adults, this review

will exclude those studies that focus exclusively on younger adults, but will retain those

that examine older adults or compare two or three adult age groups (e.g., older adults to

younger and middle-aged adults; middle-aged adults to younger adults), thereby

providing a developmental perspective. More recent studies will also be included.

Kinnear and colleagues (Kinnear & Metha, 1989; Metha, Kinnear, & McWhirter,

1989) found no main effects for age or gender for the most commonly endorsed regret

across the adult lifespan, that is, wishing to have taken education more seriously. There

were, however, main effects for educational level, with significantly more participants

employed in skilled and semi-skilled occupations as compared to professional

occupations endorsing this regret, across genders. These findings are consistent with

related results reported more recently (Schieman et al., 2005).

Kinnear and Metha (1989) did find a main effect of age in relation to three

regrets, older participants endorsing not being more assertive and not being more self-

disciplined less frequently than middle-aged and young adults, and not spending more

time with family, more frequently. An age-by-gender interaction was also found in relation to not being assertive, with the greatest contrast between the oldest men (3%) and the youngest men (38%). In addition, there was a main effect for gender in relation to not spending more time with family, men citing this latter regret more frequently than women.

DeGenova (1992, 1993, 1996) explored regrets in later life with both quantitative and qualitative designs, the latter consisting of in-depth interviews with four men and four women. Regret was defined as a desire for life revision, that is, a desire to change things in the past were it possible to relive one's life by spending more or less time involved in these areas. She found gender differences in desired areas of change, men saying they would spend more time pursuing, in descending order, education, family activities, and financial preparation for the future whereas women would spend more time, in descending order, developing their minds or intellect, doing things they enjoyed, and pursuing their education (DeGenova, 1992). Overall, education was the area with the highest desired change. Quantitative analyses revealed that women wished significantly more than men that they had spent more time in the areas of education and self-development, men wishing that they had taken more risks in life and that they had spent less time worrying about their job.

Wrosch and Heckhausen (2002) found the most frequently mentioned regrets in adults across the lifespan were related to work/education, family/partnership and self-development. They found no significant effects for age, gender and educational level in predicting regrets in the three life domains. These findings are consistent with those of Gilovich and Medvec (1994, 1995) who, examining regrets in young and old adults,

found the most common regrets were missed educational opportunities and a failure to "seize the moment" across age and gender and Levinson (1996) who found that women generally regret missed opportunities for education and career development.

Jokisaari (2003, 2004) did not find age differences in education-related regrets, but found that younger compared to older adults reported more regrets related to relationships and that older compared to younger adults reported more work and family-related regrets. Gender differences were also identified, women mentioning relationship and family regrets more frequently than men. This last finding was inconsistent with Lecci et al.'s (1994) finding that men selected regrets about intimate relationships more frequently than did women.

Further support for regrets about education being the most commonly endorsed is derived from the counterfactual literature, Landman and Manis (1992), asking participants ranging from early to late adulthood, in three separate studies, if they could start all over, what they would do differently. The educational domain evoked the most counterfactual thought in all three groups.

Only two studies (Baum, 1999; Timmer et al., 2005) did not find education-related regrets to be among the most commonly expressed. Timmer et al. found the oldest group cited hard times more frequently and missed educational opportunities less frequently compared to middle-aged and young adults. Young adults were more likely to cite past mistakes. In relation to gender differences, men expressed regrets about past mistakes and hard times more frequently and about social relationships and education less frequently than women. Baum found that the most frequently cited regrets among older adults were regrets of personal illness followed by regrets about education and career

limitations. Whereas the salience of illness over education among the participants in Baum's study is most likely explained by the fact that half of the participants were nursing home residents who presumably were no longer healthy enough to be living independently within the community, the findings of Timmer et al.'s study, that is, the last place position of education-related regret, cannot readily be explained.

In summary, education-related regrets have been consistently, although not universally, found to be the most frequently expressed among older adults. Research findings about the association between age and educational regrets have almost without exception concluded that there is no age effect. The research evidence in relation to gender has been less conclusive, some researchers (Gilovich & Medvec, 1994, 1995; Jokisaari, 2003, 2004; Kinnear & Metha, 1989; Metha et al., 1989; Lecci et al., 1994; Wrosch & Heckhausen, 2002) finding no gender effects for education regrets, others finding women to have more regret about education (DeGenova, 1992, 1993, 1996; Timmer et al., 2005). Educational level has also been found to be associated with education and work-related regrets (DeGenova, 1992, 1996; Kinnear & Metha; Metha et al.; Schieman et al., 2005). Age and gender effects have also been found in relation to self-related regret themes such as assertiveness and self-discipline and relational themes, such as family and intimate relationships.

Personality Traits (The Big Five) and Regret

Given findings that personality is a very strong predictor of both positive and negative affect among older adults (Isaacowitz & Smith, 2003), it can be expected that personality traits may also contribute to the experience of regret.

Neuroticism. Research examining the potential association between neuroticism and regrets is largely derived from the reminiscence literature. Cully, Lavoie, and Gfeller (2001) in a study on reminiscence in older adults found that neuroticism is positively associated with bitterness revival, a reminiscence dimension defined by memories of bad times and distress, and also predicts overall reminiscence frequency. Cappeliez and O'Rourke (2002) found that neuroticism not only predicted total reminiscence frequency but also reminiscence in the form of obsessing about a negative past. Webster (1994, 1999) found that people higher in neuroticism tended to experience more negative affect during reminiscence.

Regret is found to be a common outcome of upward counterfactuals, that is, upward mutations of negative outcomes (Davis, Lehman, Wortman, Silver, & Thompson, 1995; Landman, 1987, 1993). Kasimatis and Wells (1995) suggest that people who are higher on neuroticism may tend to engage more in upward counterfactuals. Because regrets in older adults can result from upward counterfactuals and are also characterized by negative affect, it could be argued that there might be an association between neuroticism and regret.

Openness to experience. As with neuroticism, research suggesting a potential association between openness to experience and regret is derived from the reminiscence literature. Several researchers (Cappeliez & O'Rourke, 2002; Fry, 1991; Webster, 1993, 1994) have found that openness to experience predicts frequency of reminiscence, with people higher on openness being more likely to reminisce frequently. Whereas Fry (1991) found that openness to experience, in addition to being associated with reminiscence frequency also predicted reminiscence pleasantness, Cappeliez and

O'Rourke (2002) and Webster (1994) found that openness to experience was positively correlated with the reminiscence function of addressing life meaning, that is, reminiscence about deeper and weightier issues. Although these somewhat contradictory findings render it difficult to speculate as to a potential association between openness to experience and regret, it is possible that reminiscing about weightier issues may lead people to have regret.

Openness to experience is a complex and multidimensional personality trait (Griffin & Hesketh, 2004) that has even been found to be associated with psychotic and delusional behaviour (Nettle, 2006), depression (Nowakowska, Strong, Santosa, Wang, & Ketter, 2005) and suicide (Duberstein, 1995; Heisel et al., 2006). Typically, however, it is associated with creativity and a cognitive style characterized by the seeking of novelty and complexity, and the capacity to connect seemingly disparate areas (McCrae & Costa, 1987). This thinking style is generally viewed as beneficial. Another perspective on openness to experience emphasizes an underlying desire for behavioural exploration and stimulation which potentially can lead to problem behaviours (Ozer, & Benet-Martínez, 2006; Trull & Sher, 1994). The latter findings suggest a positive association between openness to experience and regret, that is, that higher levels of openness to experience may be associated with higher levels of regret.

Agreeableness. Cully et al. (2001), examining personality and reminiscence in older adults, found that agreeableness correlated negatively with bitterness revival, that is, its relation to bitterness revival was in the opposite direction to that of neuroticism. Although the support provided by this study for an association between agreeableness and regret is quite limited, it suffices, coupled with the straightforward conclusion that

people who are high on agreeableness might be easy to get along with and are not easily troubled by the tribulations of daily life, for one to argue that agreeableness is negatively associated with regret.

Conscientiousness and extraversion. There is no support in the regret literature for a potential association between conscientiousness or extraversion and regret. It might be argued that more conscientious individuals might experience less regret because they tend to be achievement oriented, have many accomplishments, and are less prone to careless mistakes, thereby deriving greater satisfaction in life, whereas less conscientious individuals might experience more difficulties late in life due to poorer work and health habits (Aldwin, Sutton, & Lachman, 1996; Bogg & Roberts, 2004; Roberts, Walton & Bogg, 2005), consequently having more to regret.

Hypothesizing on a potential association between extraversion and regrets is, however, more complicated. Cully et al. (2001) found extraversion to predict total reminiscence frequency but without any reference to the affective valence of the reminiscence. To further compound the inconclusiveness of the evidence, extraversion has been found to relate to positive but not negative affect (Costa & McCrae, 1985). Drawing on the literature with young adults, it has been found that higher extraversion and lower neuroticism are necessary conditions for higher happiness (Diener & Seligman, 2002) and extraversion and neuroticism are the most reliable predictors of life-satisfaction (Diener & Lucas, 1999; Schimmack, Diener & Oishi, 2002). Generalizing these latter findings to older adults, one could argue that extraversion would be negatively associated with regret. This generalization is tempered, however, by recent findings that extraversion declines in older age (Terracciano, McCrae, Brant, & Costa Jr.,

2005).

Dispositional Traits and Regret

      Intolerance of uncertainty. Intolerance of uncertainty has been described as a cognitive bias that influences people's perceptions of and responses to uncertain situations (Dugas et al., 2005). It is manifested in an excessive tendency to become upset and to be unable to act in situations of uncertainty.

      It is a given that uncertainty is inherent to many aspects of life experience and cannot be avoided. One situation which is rife with uncertainty and relevant to regret is that of decision-making (Crawford, McConnell, Lewis, & Sherman, 2002). It then follows that individuals who have difficulty tolerating uncertainty may have difficulty making decisions and may behave in a counterproductive way (Sherman & McConnell, 1995). Pieters and Zeelenberg (2005) postulate two sources of regret when making a decision, one being negative outcome but the other being a poor quality decision process. If, as Dugas et al. (2005) state, people who are intolerant of uncertainty are unable to act in situations of uncertainty, the degree of stress and upset that they experience might result in a very poor decision making process. One can argue that the more intolerant of uncertainty the individual is, the more likely to engage in a decision process in which there is inconsistency between the intended and the actual behaviour. This inconsistency, in turn, can produce a negative outcome, thereby potentially evoking regret in relation to both the process and the outcome. Although intolerance of uncertainty appears highly relevant to the experience of regret, it has not previously been studied in relation to regret. This study is the first to examine the association between intolerance of uncertainty and regret in general and specifically in relation to older adults.

Unknown or novel life situations are by definition ambiguous or uncertain. One such situation that is relevant to investigating regrets in older adults is the interview, itself. The facilitation of intimate disclosure and the promotion of meaning-making and of a sense of expertise in the interviewees are three aspects of interviews designed to gather information from older adults that have been identified as positive (Russell, 1999, van den Hoonaard, 2005). The situation, itself, however, still remains an uncertain one, particularly for those individuals who are highly intolerant of uncertainty. Van den Hoonaard, in a qualitative study on widowhood in older women, found a level of uncertainty among these women, manifested in apparent nervousness, requests for clarifications and for reassurance. Given the uncertainty of the decision-making process and the potential for uncertainty in the interview process, one can speculate that intolerance of uncertainty would positively predict regret.

Dispositional optimism. Wrosch and colleagues (Rasmussen, Wrosch, Scheier, & Carver, 2006; Wrosch & Scheier, 2003) posit that there are personality traits that are worthy of investigation that are not fully subsumed in the five factor personality traits. Dispositional optimism is one such example (Scheier, Carver, & Bridges, 1994). It is defined as a general expectancy for positive outcomes (Scheier & Carver, 1985) and has been shown to have beneficial effect on health and well-being (Scheier, Carver, & Bridges, 2001), serving a protective factor for physical (Fitzgerald, Tennen, Affleck, & Pransky, 1993; Segerstrom, 2006) and psychological health (Taylor, Kemeny, Reed, Bower, & Gruenwald, 2000).

Although Wrosch and colleagues (Rasmussen et al., 2006; Wrosch & Scheier, 2003) did not examine optimism directly in relation to regret, two of their findings in the

more global context of quality of life have relevance for our understanding of regret. They suggested that optimists attribute responsibility for negative events to external sources. Wrosch and Heckhausen (2002) found that older compared to younger adults reported lower levels of internal-control attributions, that is, less personal control in relation to their regrets of omission, and that older adults who reported higher levels of internal-control attributions had more intense regret. If optimists make external attributions for negative events, then older adults who are optimists may be more likely to have lower levels of regret. A second finding (Rasmussen et al.), albeit with young adults, is that optimists reengage in new goals when other goals are unattainable and have an easier time identifying and engaging in new goals. In older adults, goal disengagement has been found to be related to greater well-being only when accompanied by higher levels of reengagement (Wrosch, Scheier, Miller, Schulz, & Carver, 2003). If optimists have an easier time reengaging, these latter findings strongly suggest that dispositional optimism may be negatively associated with regret, so that more optimistic people would have lower levels of regret.

Further suggestions of an association between dispositional optimism and regret are derived from the well-being and the counterfactual literature. In the literature examining well-being (R. E. Lucas, Diener & Suh, 1996), optimism has been found to be positively correlated with measures of pleasant affect and negatively correlated with unpleasant affect. Kasimatis and Wells (1995), examining counterfactual thought, found, albeit with young adults, that optimism is positively correlated with downward and negatively correlated with upward counterfactuals. In other words, people who are optimistic are more likely to imagine how events could have turned out worse and less

likely to imagine how they could have turned out better. As stated earlier, regret is found to be a common outcome of upward counterfactuals, that is, upward mutations of negative outcomes (Davis et al., 1995; Landman, 1987, 1993). It can, therefore, be argued that optimism and regret would be negatively correlated. The current study is the first to examine the association between dispositional optimism and regret in general and specifically in relation to older adults.

Perceived Control. Perceived control refers to the belief that one has control over outcomes in one's life (Lachman & Weaver, 1998a, 1998b; Skinner, 1996) and consists of two dimensions, personal mastery and perceived constraints (Lachman & Weaver) which are consistent with Skinner's competency beliefs and contingency beliefs. Competency beliefs refer to one's belief in one's own efficacy in achieving goals and contingency beliefs refer to the degree to which one believes that uncontrollable factors do not interfere with the achievement of one's goals.

Fry (1991) found that older adults experiencing a sense of life control tended to reminisce less frequently but to experience their reminiscence as pleasant when they did reminisce. She went on to suggest that people who have a sense of control over their lives may be more involved in goal-directed activity and therefore spend less time reminiscing. Further support for the positive benefits of a sense of internal control for older adults is provided by Wong and Watt (1991) who found that older adults with a sense of internal control engage more in instrumental reminiscence, a form of reminiscence that is more predictive of well-being.

Wrosch and Heckhausen (2002) have closely examined regret-specific perceived control, comparing younger to older adults. They found that age significantly predicted

regret-specific control attributions, with older participants reporting lower levels of internal control attributions regarding the activity that they most regretted not having pursued. The interaction between age and control attributions significantly predicted the overall intensity of regret: older adults who reported higher levels of internal control attribution having higher ratings in the overall intensity of regret. Timmer et al. (2005) found the same pattern of control attribution, with older adults compared to middle-aged adults being three times more likely to make external attributions. Wrosch and Heckhausen underline the protective nature of external attributions of control for older adults given the reduced opportunities to effect change with increasing age. Lower levels of internal control attributions reduce responsibility and consequently, the negative emotional consequences of failures. From a counterfactual perspective, the more one feels one has control, the more one would construct counterfactuals and the more potential regret (Sherman & McConnell, 1995). Wrosch and colleagues (2002, 2003, 2005, 2006, 2007) have developed a growing body of research focused on domain-specific control and its impact on regret and well-being. The relation between regret and global perceived control has not, however, received much attention and will be examined in the current study in an exploratory fashion independently and in relation to regret-specific control.

Dispositional Coping. Coping refers to the cognitive and behavioral efforts made by individuals during stressful events to restore their physiological and emotional equilibrium (Folkman & Lazarus, 1980). It includes the coordination of actions and contingencies in the environment, of social resources, and emotion regulation (Skinner, Edge, Altman, & Sherwood, 2003; Somerfield & McCrae, 2000). Dispositional coping,

in contrast to situational coping, refers to an individual's characteristic and stable cognitive and behavioral responses to stress across life situations (Carver, Scheier, & Weintraub, 1989). Carver et al., building on Folkman and Lazarus' original formulation of coping which consisted of problem-focused and emotion-focused coping, arrived at an expanded coping construct composed of four factors: problem-focused coping, emotion-focused coping, social support seeking and avoidance. The association between dispositional coping, per se, and regret has not been examined directly.

Although psychological well-being has been found to remain relatively stable throughout adulthood (Carstensen, 2007; Diener & Suh, 1997), the aging process, with its attendant losses and declines in functioning, presents older adults with ongoing challenges. To maintain well-being, older adults must adapt to the life changes that confront them by, among other things, using coping strategies effectively (Brandtstädter & Renner, 1990; Heckhausen and Schulz, 1995). Wrosch and colleagues (Wrosch & Heckhausen, 2002; Wrosch et al., 2006) identified regret as one of the psychological challenges of aging and described two ways in which the negative sequelae of regret can be controlled, the first being to actively change the circumstances or conditions of the regretted experience or event, the second being to change one's perceptions of the regretted experience or event. These two strategies correspond to the distinction between primary and secondary control as elaborated by Heckhausen and Schulz (1995; Schulz & Heckhausen, 1997). Wrosch and Heckhausen bring to our attention the similarities among the following three pairs of theoretical constructs: primary and secondary control, assimilation and accommodation (Brandtstädter & Renner, 1990), and problem-focused and emotion-focused coping (Folkman & Lazarus, 1980). Primary control, assimilation,

and problem-focused coping focus on changing the situation whereas secondary control, accommodation, and emotion-focused coping focus on the regulation of negative emotional responses to the situation. The latter can be achieved by a variety of strategies including changing one's perception of or reaction to the situation. In situations that cannot be changed, persisting in problem-focused coping strategies may be counterproductive, eventually leading to chronic distress (Lazarus, 1996). The same could be said of primary control. Wrosch and Heckhausen found that for older adults, greater use of primary control strategies as reflected in levels of internal control attributions, predicted higher levels of intensity of regret. It has also been found that those who tend to engage in upward counterfactuals may also tend to use problem-solving coping (Carver et al, 1989). These findings, coupled with evidence of the adaptiveness of problem-solving coping in middle-aged adults (Landman et al., 1995) and maladaptiveness in situations of constrained opportunities for goal attainment (Vitaliano, DeWolfe, Maiuro, Russo, & Katon, 1990), suggest that problem-solving coping may be positively related to levels of regret.

Other Relevant Variables and Regret

Values. The potential association between values and regrets in older adults has received very little attention in the empirical regret or related research literature. Landman (1993) created a conceptual link between regret and human values, suggesting that regret may connect the individual with human values. She provides an example of regretting not having been present for a friend who subsequently committed suicide. She goes on to say that ". . . it is better to have values, even at the cost of the pain of regret..." (p. 29). She goes further (Landman, 1995) and suggests that worldviews and values may

direct attention and guide memory and that regret may be experienced quite differently depending on the worldview within which it occurs. This would suggest a positive association between values and regret as does her suggestion that reflecting on and feeling sorry for moral failures can serve as a step toward reconstruction and integrity (1993).

In contrast, M. Lucas (2004) referred to existential regret as a desire to undo or change a choice made that goes against one's values. She suggested that the regrets that stay with us longest are existential regrets which elicit a feeling of having abandoned the self and that when a choice is made that is consistent with beliefs and values, regret is reduced, transient and less intense. She described a state reminiscent of generativity as conceived by Erikson (1950), in which there is a desire to pass on personal achievements and values as a legacy (Alexander et al., 1992). Dienar and Lucas (1999) describe personality as being comprised of traits and of the goals that serve to motivate an individual's behaviours. They posit that goals can be conceptualized as values.

In a qualitative interview based study with older adults, Borglin, Edberg, and Hallberg (2005) identified four themes linked to quality of life, one of which, anchorage to life, referred to a positive outlook on life and the maintenance of a sense of continuity through reminiscence, the development of strategies to deal with life changes and personal life values. The latter were found to underlie and support the individual's ability to accept and adjust to life changes, thereby contributing to quality of life.

In a study on reminiscence, Fry (1991) found that aspects of meaning and purpose in the lives of older adults predicted frequency of reminiscence, those people experiencing a sense of existential vacuum tending to reminisce more frequently. The

search for values and goals motivating frequent reminiscence was found to be negatively associated with the pleasantness of reminiscence, suggesting that the absence of values in later life can result in the experience of negative affect. Pushkar, Basevitz, Conway, Mason and Chaikelson (2003) examined values which emerged within the context of a life history interview as predictors of the experience of aging. They found that the number of emergent values positively predicted quality of aging, the more values, the better the quality of aging. These findings suggest that more emergent values would be associated with lower levels of regret.

Autobiographical Memory. Perusal of the regret-specific scientific literature reveals that the association between autobiographical memory and regret has received very little attention. Regret is inextricably linked to autobiographical memory in that regret is the emotional response to an evaluative recollection of past life experiences or events. It would seem that without memory of the self, that is, autobiographical memory, there can be no regret. To understand the specific nature of this relationship it would be important to ask the following question. Does one's ability to remember one's personal experience in the past have an impact on current level of regret? "Those who cannot remember the past are condemned to repeat it," Santayana said (1905/1954). This oft cited quotation suggests that being unable to remember the past would preclude learning from it and making changes in the present. By extension, it might also be interpreted as an allusion to the impossibility of working through or adapting to that which is not known to us because it has been forgotten.

Autobiographical memory may serve several different functions (Bluck, Alea, Habermas, & Rubin, 2005; Pasupathi, Lucas, & Coombs, 2002; Webster, 2003). It has

been conceptualized as an important developmental process in later life (Pasupathi, Weeks & Rice, 2006) which helps to maintain a sense of self by creating continuity across the lifespan, by allowing for the maintenance of a sense of self through old age (M. A. Conway, 1996; Heckhausen, Dixon, & Baltes, 1989), and by allowing for a coming to terms with a life lived, reconciling past experiences (Wong & Watt, 1991) and laying to rest past goals that are no longer attainable (Wrosch & Heckhausen, 2002). Autobiographical memory is not, however, a direct copy of past experience but rather a reconstruction (Levine, 1997; Neisser, 1982). For example, choices made are part of one's personal story and may influence one's self perception. Memory of these choices may be distorted to minimize regret and maximize satisfaction (Mather & Johnson, 2000; Mather et al., 2000). M. Conway (2001) found that young adults retrospectively adjusted their autobiographical memory as a function of the discrepancy between their anticipated functioning and actual outcome in a direction that exaggerated consistency between the two and enhanced self-esteem. The explanation posited by M. Conway for this empirically demonstrated recall bias is that it creates a more coherent portrait of the past, thereby facilitating the maintenance of a positive view of self. This is consistent with Baum's (1999) assertion in relation to older adults that autobiographical memory may be upgraded, autobiographies, rewritten. Wilson and Ross (2003; and Ross & Wilson, 2003), presenting a bi-directional model of the relation between autobiographical memory and current self-identity, underline people's tendency to revise their appraisals of their past selves, using the revised memory to create a preferred and enhanced representation of self.

Investigations of memory retrieval in older adults have found that negativity of

memories declines with age (Webster & Gould, 2007), that older people are more likely to remember positive than negative events (Bluck & Levine, 1998; Carstensen & Mikels, 2005), and counter to expectations, this latter has been found to be true even for depressed older adults (Yang & Rehm, 1993) who retrieved more positive than negative memories to neutral prompt words used to stimulate personally significant memories. Further evidence for an increasing positive memory bias with age is derived from the work of Carstensen and colleagues who found that older adults showed a greater positive memory bias than middle-aged adults (Kennedy, Mather, & Carstensen, 2004) and than young adults (Charles, Mather, & Carstensen, 2003; Löckenhoff & Carstensen, 2007; Mather & Cartsensen, 2005). The authors suggested that the positivity effect served as an effective emotion-regulation strategy, given its influence on current emotional state, that is, older participants were in a more positive mood after answering the memory questions than at baseline. Another emotion-regulation strategy was described by Comblain, D'Argembeau, and Van der Linden (2005), who found that for older compared to younger adults, negative memories were associated with more intense positive feelings, that is, older adults were adept at positive reappraisal of their negative memories.

The recent emphasis on the positivity bias in older adults, that is, that with age there is a decrease in the experience of negative emotion (Labouvie-Vief, Lumley, Jain, & Heinze, 2003), less attention is paid to negative emotional stimuli and negative memories are less remembered or are associated with positive feelings, is beginning to receive support from researchers (Cabeza, 2002; Cabeza, Anderson, Locantore, & McIntosh, 2002; Mather et al., 2004) examining the neural bases of these empirical findings. Mather et al. compared younger to older adults with event-related fMRI.

Participants viewed pictures of a positive, negative and neutral emotional valence. Subjective arousal ratings indicated that whereas younger and older adults did not differ in their ratings of positive pictures, younger adults rated the negative pictures as more arousing, reflecting a diminished response to negative information in older adults. The fMRI findings revealed different activation patterns in the amygdala for younger and older adults, the latter having a reduction in their amygdala response to negative information.

Given the reported positivity bias in autobiographical memory for older adults, and findings with younger adults that show that individuals who are higher on autobiographical memory scores are less neurotic, more extraverted, and more conscientious (M. Conway, Csank, Blake, Holm, & Fillion, 1994), it can be argued that a greater belief in one's ability for autobiographical memory would be associated with lower levels of regret.

Regret and Well-Being in Older Adults

As people have been living progressively longer, negative stereotypes that pervaded our views of older adulthood have been supplanted by a more balanced view that focuses on both losses and gains (Brandtstädter & Renner, 1992; Carstensen, Hanson, & Freund, 1995) and acknowledges the possibility of continued growth and development in old age (Staudinger, Marsiske, & Baltes, 1995; Rowe & Kahn, 1997). The concept of "successful aging" (Rowe & Kahn, 1987, 1997) focuses more attention on variability in aging and goes beyond the notion of maintenance of physical and cognitive functioning, to include active engagement with life.

That impairments and deficits can accompany old age is undisputed, as is the

increasingly unfavorable balance of gains and losses with aging (Brandtstädter, Wentura, & Greve, 1993; Staudinger, Freund, Linden, & Maas, 1999), but earlier assumptions about the attendant negative psychological sequelae have not received full support (Aldwin, Spiro, & Park, 2006; Aldwin, Spiro, Bossé, & Levenson, 1989). Nor is there compelling evidence for declines in self-esteem (Dietz, 1996), sense of efficacy and control (Brandtstädter & Baltes-Götz, 1990; Brandtstädter & Wentura, 1995; Lachman, 2006) and subjective well-being (Brandtstädter & Greve, 1994; Diener & Suh, 1999; Lacey, Smith, & Ubel, 2006; Rothermund & Brandtstädter, 2003a). In fact, overall most elderly seem to cope with aging efficiently (Brandtstädter, 2006; Brandtstädter et al., 1993; Carstensen, 2007). This discrepancy between increasing risks and losses with aging and the maintenance of well-being has been labeled a paradox (Baltes & Baltes, 1990; Brandtstädter & Greve, 1994; Gatz & Zarit, 1999), and has stimulated researchers to attempt to understand the mechanisms, be they protective or adaptive, that allow the elderly to maintain psychological well-being in the face of the challenges of aging. Wrosch et al. (2006) have identified regret as one of the psychological challenges of aging, one which may affect up to 90% of older adults (Landman, 1987; Wrosch et al., 2005).

Given how common regret appears to be among older adults the question to now be addressed is whether or not regret has an impact on older adults' psychological and physical well-being. Some studies have directly examined the association between the presence of (McKee et al., 2005) or level of regret (frequency or intensity) and indices of psychological and physical well-being (DeGenova, 1993; Jokisaari, 2004; Lecci et al., 1994; Torges et al., 2005; Wrosch & Heckhausen, 2002; Wrosch et al., 2005, 2006,

Wrosch, Bauer et al., 2007) across adulthood. Others have addressed this question

indirectly by focusing on the management of regret (Wrosch & Heckhausen, 2002;

Torges et al., 2005). Findings from the studies reviewed below generally suggest that

regret does predict indices of both psychological and physical well-being.

Regret as a Predictor of Psychological Well-Being

The bulk of the research examining regret as a predictor of psychological well-

being is cross-sectional and so causality cannot be established. It is, therefore, possible

that psychological well-being predicts levels of regret.

Depression and Happiness. Perusal of the literature reveals that a variety of

constructs, for example, negative affect, depression, life satisfaction, positive affect and

happiness, are used as indicators of psychological well-being. It is important to note that

the present study uses measures of depression and of happiness as two of the indices of

psychological well-being. Although life satisfaction and happiness are not identical

constructs (Lyubomirsky, King, & Diener, 2005; Pinquart & Sörensen, 2001), the former

referring to a cognitive evaluation of one's well-being, the latter to an emotional one,

findings related to the association between regret and both of these constructs are

reported below. Regret in older adults has been found to negatively predict life

satisfaction (DeGenova, 1993; Jokisaari, 2004; Kinnear & Metha, 1989; Metha et al.,

1989; Torges et al., 2005), social well-being and morale (McKee et al., 2005) and to

positively predict depression (Wrosch et al., 2005) and negative affect (McKee et al.).

These results are consistent with those derived from studies on regret in middle-

aged adults and across the life span. Lecci et al. (1994), exploring life regret as a

predictor of psychological adjustment in middle-aged adults as compared to young adults,

defined regret as goals that the participants wished they had pursued but never did, and found that the number of regrets cited was positively correlated with depression and negatively correlated with life satisfaction for the older participants. Jokisaari's results (2004) were somewhat inconsistent with those of Lecci et al., the number of overall regrets contributing to the prediction of life satisfaction, but not to depression in adults across the lifespan. Jokisaari did find, however, that some regret themes had unique effects on life satisfaction and on depression, the more education and work-related regrets, the lower life satisfaction, and the more self-related regrets, the greater depression. Holahan et al. (1999) found that feeling that one had lived up to one's intellectual abilities at midlife predicted overall life satisfaction three decades later. In middle-aged women, missed opportunities were positively associated with depression (Landman et al., 1995) and regret was negatively associated with life satisfaction (Lewis & Borders, 1995).

Further support for the association between regret and depression and life satisfaction is found in the reminiscence and autobiographical memory literature. Cully et al. (2001) found that lower depression in older adults was associated with less frequent bitterness revival reminiscence and Yang and Rehm (1993) found that depression was positively associated with memories of negative self-relevant experiences. Acceptance of the past, an indicator of ego-integrity as described by Erikson (1950) was also found to be associated with depression so that the greater the acceptance of the past, the less depression (Rylands & Rickwood, 2001; Santor & Zuroff, 1994).

Butler's (1963, 1995) conceptualization of the life review also provides support for an association between acceptance of the past and life satisfaction. He describes a

continuum of intensity, with the extreme manifestations and outcomes being potentially psychopathological, so that life review may be reflected in increased reminiscence, mild nostalgia and mild regret, or alternately, it may be reflected in an obsessive preoccupation with the past. Butler hypothesized that in the latter situation the excessive focus on the past may elicit regret so painful as to generate anxiety, guilt, despair and depression.

The following studies explored intensity of regret indirectly through the management of regret, and its impact on indicators of well-being. Torges et al. (2005) coded participants' construal of their regrets, that is, had they come to terms with the regret, put the best face on it or had they not come to terms with it. The findings showed that those who had not come to terms with their regrets scored lower on indices of well-being. Wrosch and Heckhausen (2002), comparing older to younger adults, found a significant age by regret-specific control attribution interaction for predicting intrusive thoughts, that is, older adults with higher control attributions had a higher intensity of regret and higher levels of intrusive thoughts. To assess the breadth of impact of intrusive thoughts, the correlations between intrusive thoughts and life satisfaction and intensity of regret, respectively, were examined. The correlation between intrusive thoughts and life satisfaction was much stronger, suggesting that intrusive thoughts provide a broad indicator of psychological adjustment. On the basis of the evidence provided, it can be expected that levels of regret will negatively predict happiness and positively predict depression. There is some evidence, however, that it is frequency of positive affect that accompanies life events that correlates with happiness, intensity having a much weaker effect (Argyle, 1999; Diener, Colvin, Pavot, & Allman, 1991; Diener, Sandvik, & Pavot, 1991; Lyubomirsky et al., 2005) and so it is possible that frequency and not intensity of

regret will predict happiness.

Omission and commission regret. Whereas Wrosch and Heckhausen (2002) examined only regrets of omission, in later studies Wrosch and colleagues included both regrets of omission and of commission. The original emphasis on regrets of omission was based, at least in part, on the common finding that the majority of regrets in older adults are regrets of omission, that is, regrets about things left undone (DeGenova, 1996; Gilovich & Medvec, 1994, 1995; Gilovich et al., 2003; Hattiangadi et al., 1995; Jokisaari, 2003; Savitsky et al., 1997; Roese & Summerville, 2005) and that the causal factors for regrets of omission are less salient than for regrets of commission. Although older adults reported higher levels of disengagement from regrets of commission (Wrosch et al., 2005), thereby suggesting that regrets of omission do linger, Wrosch et al. did not find support for either increased frequency of regrets of omission in older age nor for differential age effects of regret of omission and commission. They suggest that older adults' capacity to positively reappraise their regretted experiences may reduce the impact of omission regrets on global distress. Continued exploration of regrets of omission may be warranted to further explicate the impact of regrets of omission on well-being.

Experience of Aging. There are no previous studies examining the relation between regret and the experience of aging. The Experience of Aging Index (Pushkar et al., 2003) assesses participants' subjective well-being in a way that is quite distinct from measures of depression or happiness. Subjective well-being refers to people's evaluations of their lives that include a cognitive judgement of life satisfaction and an affective evaluation of mood and emotions (Diener & Lucas, 1999). Whereas depression and

happiness measures generally assess the affective component of psychological well-being, the Experience of Aging Index taps into the cognitive component of well-being. It requires that participants reflect upon their aging experience, including past to present comparisons in functioning, self-perception and affective states; disadvantages and advantages of growing older; control over life decisions; learning from illness; and the development of goals for the future. Experience of aging is a broad construct, from a temporal perspective covering past, present and future, and encompassing several areas linked to the quality of the aging process. Given the association between regret and the affective components of well-being, that is, life satisfaction and depression, one can speculate that regret would negatively predict the experience of aging.

Regret as a Predictor of Physical Well-Being

A few studies have examined regret as a predictor of physical well-being. All but one study (Wrosch, Bauer, et al., 2007) are cross-sectional and so assumptions about causality must be limited. It is, therefore, possible that physical well-being predicts levels of regret and as will be seen below, Wrosch et al. (2006) suggest a reciprocal influence.

Torges et al. (2005) studied two types of regret in people in their 60's, missed opportunities and lifestyle regrets, and found an association between regret and self-reported physical health, participants reporting one type of regret, lower on physical health than those reporting no regret, and those reporting two types of regret, lower on physical health than those reporting one type of regret. Wrosch and colleagues (Wrosch & Heckhausen, 2002; Wrosch et al., 2005) found that regret intensity, as expressed in regret-specific intrusive thoughts and negative affect linked to most severe regrets of omission and commission, predicted health problems in older, but not younger, adults.

They also found that depressive symptoms mediated the association between regret intensity and health problems.

The studies cited above relied on self-report indicators of physical well-being. Wrosch and colleagues (Wrosch, Bauer, et al., 2007; Wrosch et al., 2006) have found further evidence of the impact of regret on health among older adults, using biological markers of health. They found that older adults who reported more intense regret secreted a larger volume of diurnal cortisol. Examining cold symptoms and sleep problems in a three-month longitudinal study, these researchers found that intensity of regret was associated with sleep problems. The health problems associated with regret were not illnesses which are more prevalent in old age (Wrosch et al., 2005) and not severe age-normative health problems (Wrosch, Bauer et al, 2007). Wrosch et al. (2006) underline the possible reciprocal influence between psychological well-being and physical well-being, with regret having emotional sequelae that may lead to a physical decline that may, in turn, lead to further negative impact on psychological well-being. The evidence emanating from the literature suggests that levels of regret will positively predict self-reported health conditions in older adults. Further research can contribute to our knowledge of this association in relation to age-normative health conditions.

THE PRESENT STUDY

The main purpose of the present study is to gain a better global understanding of regret in older adults. Consequently, a broad-based, rather than a narrowly focused, empirical approach was used, allowing for an expansion of knowledge of several aspects of regret. Specifically, a mixed quantitative-qualitative method was used in a cross-sectional design.

Study Goals and Hypotheses

Predictors of Intensity and Frequency of Regret

The first goal of the present study was to explore the differential impact of demographic, personality, dispositional and other relevant variables on frequency and intensity of regret. Most studies on regret have investigated either intensity or frequency but very few (e.g., Markman et al., 2005) have included both. Consequently, comparisons between these two dimensions of regret have received very little attention. Given the exploratory nature of this work, specific hypotheses were not developed for the effects of variables on intensity versus frequency of regret.

The relation between demographic, personality, dispositional and other relevant variables, and regret in older adults was examined. Many aspects of regret in older adults have been investigated. Whereas the importance of investigating the association between broad personality traits and regret has been underlined by several researchers (Jokisaari, 2003; Metha et al., 1989; Wrosch & Heckhausen, 2002; Wrosch, Bauer et al., 2007), this area has not yet been adequately examined. The following four hypotheses were posited.

Hypothesis 1. It was predicted that demographic variables such as age, educational level and socioeconomic status would be associated with regret. Given previous evidence that older people have fewer regrets (Kovach, 1991, 1995), that with age there is an increasing choice supportive bias (Mather & Johnson, 2000; Mather et al., 2000), and that older individuals tend to experience fewer negative emotions (Gross et al., 1997; John & Gross, 2004), it was predicted that age would be negatively associated with levels of regret. It was predicted that years of education and socioeconomic status would be negatively associated with regret as previously found by Schieman et al. (2005)

and supported by Holahan et al. (1999) who found that higher occupational levels in middle-aged men predicted a lack of retrospective desire to make other life choices three decades later. No specific predictions were posited for gender and marital status.

Hypothesis 2. It was predicted that four of the Big Five personality traits would be associated with regret. Given evidence that neuroticism predicts negative affect during reminiscence (Cappeliez & O'Rourke, 2002; Cully et al., 2001; Webster, 1994) and greater engagement in upward counterfactuals (Kasimatis and Wells, 1995), it was predicted that higher neuroticism would predict higher levels of regret. Although openness to experience has been viewed as a positive trait (Cappeliez & O'Rourke, 2002; Fry, 1991), it has also been linked to problem behaviours (Ozer & Benet-Martínez, 2006; Trull & Sher, 1994), psychotic and delusional behaviour (Nettle, 2006) and depression (Nowakowska et al., 2005). Given the weight of evidence relating openness to experience with difficult functioning, a positive association between openness to experience and regret was predicted. Agreeableness has been found to correlate negatively with bitterness revival (Cully et al., 2001), leading to a prediction of a negative association between agreeableness and regret. Although both conscientiousness and extraversion have not previously been examined specifically in relation to regret, there is evidence that conscientious people are more likely to engage in healthy behaviour, have successful careers and be married, and are less likely to engage in risky behaviour and hence, live longer (Roberts et al., 2005), leading to a prediction that conscientiousness would be negatively associated with regret. No specific predictions were posited for extraversion.

Hypothesis 3. Intolerance of uncertainty, dispositional optimism, perceived control and problem-focused coping are dispositional variables that were predicted to be

associated with regret. Given the uncertainty inherent in most decision-making situations and in novel life situations such as the interview, itself (van den Hoonaard, 2005), it was predicted that intolerance of uncertainty would positively predict regret.

Wrosch and colleagues (Rasmussen et al., 2006; Wrosch & Scheier, 2003) suggested that optimists attribute responsibility for negative events to external sources. They also found that older adults who reported higher levels of internal-control attributions, that is, attributed more personal control over the regretted situation, had more intense regret (Wrosch & Heckhausen, 2002), leading to the prediction that optimism would negatively predict regret.

People experiencing a sense of life control tend to reminisce less frequently, perceive their reminiscence as pleasant (Fry, 1991) and engage in more instrumental reminiscence, a form of reminiscence that is predictive of well-being (Wong & Watt, 1991). This would suggest that perceived control would negatively predict levels of regret. As for coping, greater use of primary control strategies as reflected in levels of regret-specific control attributions has been found to predict higher levels of intensity of regret (Wrosch & Heckhausen, 2002) and those who tend to engage in upward counterfactuals may also tend to use problem-solving coping (Carver et al., 1989). These findings, coupled with evidence of the maladaptiveness of problem-solving coping in situations of constrained opportunities for goal attainment (Vitaliano et al., 1990), suggest that problem-solving coping may be positively related to levels of regret.

Hypothesis 4. Emergent values and autobiographical memory are two other variables that have been predicted to have an association with regret. The potential association between values and regret in older adults has received minimal attention in

the scientific literature. Fry (1991) found that a search for values and goals which motivated frequent reminiscence was found to be negatively associated with the pleasantness of reminiscence, suggesting that the absence of values in later life can result in the experience of negative affect. Pushkar et al. (2003) found that frequency of emergent values predicted a positive experience of aging. These findings lead us to hypothesize that emergent values will negatively predict regret.

The positivity bias in autobiographical memory for older adults coupled with findings with younger adults that show that individuals who are higher on autobiographical memory scores are less neurotic, more extraverted, and more conscientious (M. Conway et al., 1994), led to the prediction that a greater perceived ability for autobiographical memory would be associated with lower levels of regret.

Regret as Predictor of Psychological and Physical Well-Being

The second goal of the present study was to examine the impact of both intensity and frequency of regret, as spontaneously expressed within the context of a life reflection interview, on the psychological and physical well-being of older adults while controlling for personality and dispositional traits. Several specific hypotheses were tested.

Hypothesis 1. It was expected that regret in older adults would predict psychological well-being, specifically, positively predict depression and negatively predict happiness and the quality of the experience of aging. Regret has been found to negatively predict life satisfaction (DeGenova, 1993; Jokisaari, 2004; Kinnear & Metha, 1989; Metha et al., 1989; Torges et al., 2005), social well-being and morale (McKee et al., 2005), and to positively predict depression (Lecci et al., 1999; Wrosch & Heckhausen, 2002; Wrosch et al., 2005, 2006, Wrosch, Bauer, et al., 2007) and negative

affect (McKee, 2005).

Hypothesis 2. Because regrets of omission are common in older adults (e.g., Gilovich et al., 2003; Jokisaari, 2003; Roese & Summerville, 2005) and older adults have reported higher levels of disengagement from regrets of commission (Wrosch et al., 2005), it was also hypothesized that regrets of omission would positively predict depression.

Hypothesis 3. Regret in older adults has been found to positively predict self-reported physical health conditions (Torges et al., 2005; Wrosch & Heckhausen, 2002; Wrosch et al., 2005) and biological markers of health (Wrosch, Bauer, et al., 2007; Wrosch et al., 2006). On the basis of this evidence, it was expected that levels of regret would positively predict self reported health conditions.

Regret Themes and Dimensions

The third goal of the present research was to examine regret themes and dimensions of regret as derived from an in-depth life history interview that focused on different points across the lifespan and was designed to gather demographic information as well as personal views and reflections. In addition to responses to regret specific questions, the structure of the interview allowed for the spontaneous and unlimited expression of self-defined regret. The qualitative approach to the interview was designed to yield a detailed description of regret themes as well as dimensions of regret derived from the content coding of the interview and described below. Because several regret specific questions were included in the interview, a priori hypotheses could be generated in relation to the themes which are commonly found in the literature. All other themes emerged spontaneously from the interview and a priori hypotheses could not be

determined for those themes.

Hypothesis 1. It was hypothesized that women would have more regret about education than men (DeGenova, 1992, 1993, 1996; Timmer et al., 2005), that age would not predict education regrets (Baum, 1999; Timmer et al.), and that people with more education would have fewer education and work regrets (DeGenova, 1992, 1996; Kinnear & Metha, 1989; Metha et al, 1989; Schieman et al., 2005).

Hypothesis 2. In relation to the dimensions of regret, it was predicted that most regrets would be regrets of omission, as suggested by previous findings (Gilovich & Medvec, 1994; Gilovich, Kerr, & Medvec, 1993; Roese & Sommerville, 2005; Savitsky et al., 1997). No further hypotheses were posited in relation to the dimensions of regret.

Identifying High- and Low-Regret Groups

The fourth and last goal of this study was to provide a brief description of people high and low on frequency of regret and to compare these contrast groups on the basis of demographic variables, standardized measures and an exploratory in-depth content analysis of the Life Reflection Interview. These high- and low-regret profiles may contribute further to our understanding of the individual differences that result in some older adults being more prone to having regret. Given the descriptive, qualitative and exploratory nature of this last goal, specific predictions were not made.

Method

Participants

A total of 117 participants took part in the study. Participants were recruited from a subject pool of older adults who had previously participated in unrelated research at the Adult Development and Aging Laboratory of the Center for Research and Human Development (CRDH) at Concordia University and through community groups and seniors' organizations. Two participants were eliminated because they failed to return their take-home package and four others were eliminated because of errors in the audio recording of interviews or because of their mental health status at the time of testing. The 111 participants retained ranged in age from 65 to 92 years with a mean age of 74.14 (*SD* = 6.12). This sample was fairly well-educated, having completed an average of 14.13 years of education (*SD* = 3.63 years, range = 3 to 21 years). The average score on the Blishen Scale (1987), a socioeconomic index for occupations, was 52.39 (*SD* = 14.02, range = 22.08 to 101.32), indicating middle class socioeconomic status. Typical occupations for the sample could be classified as managerial, professional, and skilled technical. The participants were also in relatively good health as measured by a health index described below, with 82% of the participants rating their health as "good" or "very good" on a 5-point Likert scale (*M* = 4.03, *SD* = .73, range = 1 to 5) with "very good" as the highest rating . The average number of illnesses listed was 2.45 (*SD* = 1.68, range = 0 to 9). The sample consisted of 67 women (60%) and 44 men (40%). Of the total number of participants, 55 were married or cohabiting at the time of the interview (49.5%), 32 were widowed (28.8%), 16 were divorced or separated (14.4%) and 8 (7.2%) had never been married. A significantly greater percentage of men (70.5%) than women (36.4%)

were married at the time of testing, $\chi^2(1, N = 111) = 12.27, p < .001$. Men ($M = 15.16$, $SD = 2.93$) also had significantly more years of education than women ($M = 13.45, SD = 3.90$), $t(109) = 2.49, p < .05$.

By a fortuitous coincidence, the participants in this study were later contacted by telephone to participate in a separate study on worry and coping. Seventy-one of the original participants (64%) responded favourably to this request to return for another testing session which took place one year after the first one. This required a short in-laboratory testing session and the completion of a take-home package. Several measures administered at this second testing time were of particular relevance to the investigation of regrets, consequently the 71 participants who returned for further testing thereby constituted a subsample to which several additional regret-relevant measures were administered in Phase 2 of the study. Phase 2 provided more measures for the prediction of regret intensity and frequency but did not constitute the second wave of a longitudinal study. Regret measures were not administered in Phase 2 of the study for primarily pragmatic reasons. The large number of questionnaires in the test battery precluded the addition of a regret measure equivalent to that used in Phase 1. All measures administered in both phases of the study are listed below.

A series of analyses was performed to determine whether participants who took part in Phase 2 of the study differed significantly from those who did not on the demographic variables of age, gender, years of education, marital status, socioeconomic status and health status. Chi-square analyses revealed that the proportions of men and women in both subsamples were similar, $\chi^2(1, N = 111) = 2.43$, ns, as were the proportions of married and unmarried participants, $\chi^2(1, N = 111) = 0.11$, ns. A series of

t-tests was conducted to test for differences of age, years of education, health status and socioeconomic status between the 71 participants who returned for a second testing session and the 40 who did not return. The participants who returned had significantly more education (M = 15.0, SD = 3.38) than those who did not return (M = 12.58, SD = 3.59), $t(109)$ = 3.55, p < .01. The participants who returned also had a significantly higher socioeconomic status (M = 55.13, SD = 14.03) than those who did not return (M = 47.51, SD = 12.77), $t(109)$ = 2.84, p < .01.

Measures

The following description of the battery of measures clearly indicates the phase of the study in which the measures were administered, Phase 1 (original sample, N = 111) or Phase 2 (subsample, n = 71). The Life Reflection Interview and all measures derived from it were administered in Phase 1 of the study, as were measures of personality, happiness, depression, dispositional optimism and intolerance of uncertainty. In Phase 2 of the study, measures of autobiographical memory, perceived control and dispositional coping were the relevant measures from the other battery of measures administered to the subsample (n = 71).

Life Reflection Interview (Phase 1, N = 111, in-laboratory)

The Life Reflection Interview (Appendix A) was a face-to-face individual interview that lasted, on average, 75 minutes. The interview focused on different points throughout the lifespan, from childhood to the current time, and was designed to gather both demographic information and personal views and reflections on various aspects of participants' lives. A scripted introduction enabled interviewers to provide participants with a detailed understanding of the personal nature of the interview. Interview questions

were carefully worded to facilitate an interactive and thoughtful process of moving from the past to the present, even when dealing with the most basic demographic information. For example, rather than simply asking the participants how old they were, interviewers said "I can see from the information sheet that you were born in .... So you are now..." and then paused, thereby setting the tone for the participants' active involvement in the elaboration of their life history and their reflections thereupon. The ten life domains explored were: education, occupation, finances, marital status, parental status, family, friends, health, experience with aging, and death. The 72 questions comprising the interview were structured to provide a rich personal history in relation to each of the above-mentioned domains. Factual questions elicited demographic and other information in relation to each domain. They were followed by probing items that engaged participants in a deeper and wide ranging evaluative reflection that included regrets, lessons learned, choices and values (Pushkar et al., 2003) as they emerged from participants' life histories and decisions made. Given the focus of the present study, the regret-related reflections will be the primary subject of inquiry.

The semi-structured nature of the interview and the range of question formats which included open-ended items and rating scales, allowed for the collection of both quantitative and qualitative data. A 5-point rating scale that interviewers completed during the interview accompanied interview questions pertaining to regrets. These ratings served as the major source of interview-derived quantitative data. The large number of reflection-promoting open-ended questions served as the major source of qualitative data for content analysis. Interviewers were encouraged to probe for clarification or to pursue a content area raised by a participant for the purposes of elaboration.

Demographic information. Educational level was determined by the highest level of education achieved converted to years. The Blishen Scale (1987), which has been widely used in Canada (Gold et al., 1995; Deonandan, Campbell, Ostbye, Tummon, & Robertson, 2000), was used as an index of socio-economic status. It ranks occupations according to a combined function of income and education levels and provides standardized ratings of socio-economic status.

Health. Health was assessed by two methods. Participants were asked to describe their health by listing their current medical problems, providing a count of the number of conditions. Subjective health was ascertained by having the participants rate their health status on a scale ranging from "very poor" (1) to "very good" (5). A factor analysis on these two variables yielded a single factor which accounted for 70% of the variance on these scores, health status loading negatively (-. 84) on to the factor, and number of illnesses loading positively (.84). The health factor scores derived from the factor analysis were reversed and used as an index of participants' health status, with higher scores reflecting better health. Self-ratings of general health have been demonstrated to be reliable and to have good construct (Bird & Fremont, 1991) and predictive validity in older adults (Cousins, 1997; Idler & Kasl, 1991).

Intensity of lifespan regret – Items. Throughout the Life Reflection Interview and across life domains, questions eliciting factual information were asked first, followed by a series of questions that elicited more reflective, evaluative and personal responses. The regret-specific questions were asked only after participants were already engaged in cognitive and affective processing of their life experience within each domain. The following sequence of questions related to education provides a typical example.

Participants were first queried about factual information. They were asked, "How far did you go in school?" and for those with university education, "What did you study in university?" Participants were then asked two questions that promoted an affective-evaluative style of reflection on their remembered past and its impact on the present. Interviewers asked, "Thinking back to your education, what do you think was the most valuable lesson you learned from your schooling?" and "Did your studies serve you well later on? Why"? Only then were participants asked about their education-related regret, as follows, "Looking back on it now, is there anything you regret about your studies?" This type of wording allowed for an associative thought process around predetermined regret themes, including education and other themes.

Although 10 life domains were explored in the Life Reflection Interview, regret-specific questions were asked in relation to six of these domains. The domains selected for investigation of regrets were education, occupation, financial situation, marital status, parental status and age-associated cognitive changes. These domains sampled points across the full lifespan from childhood to the current time. The domains not included were family, friendship, health and death. The selected domains, as treated in the interview, were circumscribed, thereby lending themselves to the formulation of specific regret questions. Family, friendship and health, however, were conceptually too broad and multifaceted to lend themselves to the formulation of singular meaningful regret-related questions that could be contained within the context of the interview without extending the length of the interview unduly. Death, as a theme, did not lend itself to an exploration of regret as part of this study, but probably deserves to be studied by itself.

There were a total of 10 interview questions which addressed regret directly, one

each for education, occupation, financial situation and age-associated cognitive changes, four questions for marital status and two for parental status. In the latter two domains, marital and parental status, because more than one status was possible, questions were specifically designed to address each possible status. For example, in relation to parental status, participants with children were asked "Do you sometimes regret having had children?", whereas those without children were asked "Do you sometimes regret not having had children?" In relation to marital status, current marriage, being single, being divorced and past marriages were addressed in separate regret questions.

A definition of regret was not provided for the participants, thereby allowing them to arrive at their own conceptualizations of regret, that is, to determine for themselves the nature of their experiences as regret or not. This resulted in a broad and inclusive definition of regret, ranging from regretfulness in relation to normative life changes to regret over circumscribed actions or failures to act, regret over events and experiences outside of one's control to regret over events and experiences for which one was responsible. Each regret-related question yielded quantitative and qualitative data, the coding of the latter reflecting this broad expression of regret. The content analysis of regrets that yielded the qualitative data will be discussed in the procedure section below.

The quantitative data were derived from the interviewer's rating of the participant's degree of regret on a 5-point Likert-type scale ranging from "Not at all" (1) to "Very much" (5). This rating was made by the interviewers during the interview for each regret-related question. The four marital status-specific questions were collapsed into one rating, the mean being used for those individuals for whom more than one marital status applied. Only the appropriate parental status question was rated for each

participant, depending on whether or not the participant had children. The sum of the ratings for regret across five of the above-mentioned life domains yielded an "intensity of lifespan regret" score ranging from 5 – 25. Regret about financial situation was not retained as a component of intensity of lifespan regret. In relation to their current financial situation, 56.7% of participants reported it to be as they had hoped it to be upon retirement, or better, hence, having no regret. In addition, data were missing for 18.9% of the participants, thereby precluding mean substitution (Tabachnick & Fidell, 2001). This high rate of missing data probably reflects people's reluctance to discuss financial matters.

Intensity of lifespan regret - Coding of quantitative data. The intensity of lifespan regret score refers to perceived intensity of regret and includes regret about education, occupation, marital status, parental status and age-associated cognitive changes. This score was derived from external judgements of intensity, that is, from the interviewers' perceptions of the participants' expressions of intensity of regret. Triangulation of rating methods was used, therefore, to provide convergent reliability for the interviewers' ratings of intensity. External judgements of intensity of regret have been made before, with a small number of elderly participants (Gilovich & Medvec, 1995), with middle-aged adults (Savitsky, Medvec, & Gilovich, 1997) and with middle-aged women (Loewenstein et al., 1981). Although each of the methods used in previous studies differs from the others, in no study was more than one method used for external judgement of intensity of regret with the same data. Two methods of external judgement of data derived from a qualitative interview were described by Ardelt (2003) in a study on wisdom in older adults, with interviewers relying on direct interview experience and

another rater relying on written transcripts. In the present study, three methods of external

judgement were used to rate intensity of regret.

First, the interviewers rated the participants' intensity of lifespan regret during the

interview, as described above. To establish the degree of reliability of the interviewers'

quantitative ratings, two independent sets of coders, Coders A and Coders B, rated the

intensity of participants' lifespan regret. Coders A, three trained undergraduate students,

each listened to the audio recordings of one-third of the interviews and rated the

participants' intensity of regret on a three-point scale, ranging from ""No regret" to "A

lot of regret." The sum of the scores for the five life domains yielded a scale for intensity

of lifespan regret ranging from 5 – 15. To establish reliability of coding among Coders A,

an independent coder rated 20% of responses. Percentage agreement between Coders A

and an independent coder who rated 20% of the sample, ranged from 62.5% to 94% for

the five regret domains.

A third rating of intensity of regret was provided by two additional trained

undergraduate students, Coders B, who independently read the transcribed interviews of

all participants, identifying each of the regrets on the basis of wording. They then listened

to the selections of the audio recordings of the interviews that contained the verbally

expressed regrets and rated the degree of regret on a 5-point Likert-type scale, ranging

from "Very Little" (1) to "Very Much" (5). The inter-coder correlation (Coders B) for

intensity of regret based on a randomly selected sample of twenty-five percent ($n = 28$) of

the participants was .87.

Inter-rater correlations for intensity of lifespan regret, that is, the sum of the

ratings across life domains, were .82 between the original interviewers and Coders A, .71

between the original interviewers and Coders B, and .84 between Coders A and Coders B, $p < .0001$.

How did the three rating methods differ? The interviewers were most experience-near, in that they were in a face-to-face interview situation with the participants, and hence, able to use verbal, visual (e.g., facial expressions and behavioural movements and gestures) and auditory (e.g., tone of voice, vocalizations such as sighs) cues to assess the intensity of expressed regret. The first set of independent coders, Coders A, listened to the audio recordings, thereby, focusing on verbal and other auditory cues. The second set of independent coders, Coders B, initially relied on the transcription of the expressed regrets, thereby focusing first on the language used and then, with the audio recordings, adding the verbal and auditory cues used by Coders A.

There is some empirical evidence of a relative advantage of rating qualitative interviews from the experience-near perspective (Ardelt, 2003). In a study related to ratings of wisdom in older adults, the interviewer's ratings of wisdom correlated significantly with the criterion, whereas those of second raters who only read transcripts of the interviews did not.

Cronbach's alpha for interviewers' ratings of intensity of lifespan regret across the five domains for this study sample was .45, reflecting a low level of internal consistency, which was not unexpected. On the basis of a meta-analysis of nine studies on regret between 1989 and 2003, Roese and Summerville (2005) suggest that the most frequently cited regrets are not evenly distributed across life domains but are found within those domains perceived to offer the greatest opportunities for corrective action. They further demonstrate that intensity of regrets also varies across life domains,

intensity being positively associated with opportunities for corrective action and with the relative importance of the life domain for the individual.

Frequency of lifespan regret. Frequency of regret was also treated quantitatively although it was derived from the content analysis and will be discussed in the section on the content analysis of lifespan regrets.

Personality (Phase 1, $N = 111$, in-laboratory)

The NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992), a shortened version of the NEO Personality Inventory (Costa & McCrae, 1985), measures the following five broad personality dimensions: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (Appendix B) and has been used extensively with older adults (e.g., Cappeliez & O'Rourke, 2002; Cully et al., 2001; Fleeson & Heckhausen, 1997; Weiss et al., 2005). It consists of 60 statements to which the individual responds on a 5-point Likert-type scale ranging from "strongly disagree" to "strongly agree." A score is obtained for each of the five dimensions by adding the scores on the dimension-related items.

Scores on the neuroticism subscale fall along a continuum from emotional adjustment to emotional instability. Those who score high on neuroticism are prone to experiencing emotional distress, being less able to control their impulses, and coping less well than others with stress.

Scores on the extraversion subscale fall along a continuum from introversion to extraversion. Those who score high on extraversion tend to be sociable, cheerful, energetic and optimistic. Those who score low are more reserved and prefer solitude.

Scores on the openness to experience subscale fall along a continuum from

openness to novel experiences, both internal and external, to a conventional and conservative outlook. A person who scores high on openness would tend to be curious, creative, and unconventional.

Two additional domains assessed by the NEO are conscientiousness and agreeableness. Highly conscientious people are described as strong-willed, determined, persistent, organized, and reliable. Agreeableness represents the degree to which one's orientation to others is positive or negative. People who are high on agreeableness are altruistic, that is, sympathetic to others and eager to help them.

As reported in the NEO-PI/FFI Manual Supplement (Costa & McCrae, 1989), test-retest reliabilities range from .80 to .93, internal reliabilities range from .74 to .89 and in terms of validity, correlations with other standardized measures of personality range from $r = .45$ to $r = .82$. For the present sample, each of the scales had acceptable internal levels of reliability, with Cronbach alphas ranging from .68 to .86.

Dispositional Optimism (Phase 1, $N = 111$, in-laboratory)

The Life Orientation Test (LOT; Scheier & Carver, 1985) was used as a measure of dispositional optimism. (See Appendix C). Dispositional optimism refers to the generalized expectancy that good things, rather than bad things, will happen. It is a trait that remains relatively stable across life domains. Items sample expectations for positive and negative outcomes without tapping into attributions but solely into expectations of outcome. Scores are distributed along a continuum, with optimists and pessimists being defined relative to each other. It is a 10-item measure with four filler items, three positively-worded items, and three reverse-coded items. Respondents indicate their degree of agreement with statements such as, "In uncertain times, I usually expect the

best," using a 5-point Likert-type scale ranging from "strongly disagree" to "strongly agree". Negatively-worded items are reversed and a single score is obtained. Cronbach's alpha for the total score has been reported at .82 (Scheier et al., 2001). The internal consistency for the present sample was somewhat lower but adequate at .73.

Happiness (Phase 1, N = 111, at-home)

The Memorial University of Newfoundland's Scale of Happiness (MUNSH; Kozma & Stones, 1983) was used as a measure of psychological well-being. (See Appendix D). This measure was designed for use with nonclinical samples of older adults and has been used extensively in research with older populations (e.g., McNeil, 1995; Webster & McCall, 1999). The 24 scale items sample positive and negative affect and experience, 10 items focusing on the past month, and the remaining 14 items expanding the temporal frame to a more long-term focus. The MUNSH assesses the balance between positive and negative affect and experience and yields an overall affect balance score by subtracting negative valence items from the positive ones. Compared to a depression scale, the MUNSH has the advantage of being sensitive to individual differences in both the top and bottom halves of what its originators call the "bliss-misery" continuum (Stones, 1991). The MUNSH has an acceptable internal consistency score (r = .70), good six to 12 month test-retest reliability (r = .70) and has been found to significantly predict Avowed Happiness (Robinson, Shaver, & Wrightsman, 1991). For the present sample, each of the scales had acceptable internal levels of reliability, with Cronbach alphas ranging from .63 to .79.

Depression (Phase 1, N = 111, at-home)

The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977)

is a self-report questionnaire designed to measure current frequency of depressive symptoms. (See Appendix E). It has been used extensively in research with populations of older adults. The scale consists of 20 items and respondents are asked to rate the frequency of occurrence for each symptom of depression during the past week. The response scale ranges from "rarely or none of the time" (less than once a week) to "most or all of the time" (5 to 7 days a week). Four symptom clusters of depression, that is, depressed mood, psychomotor retardation, lack of well-being and interpersonal difficulties, are measured. The CES-D has a test-retest reliability of .67 for a four-week interval, and a correlation of .81 with the Beck Depression Inventory and .90 with the Zung Self-rating Depression Scale (Robinson, Shaver, & Wrightsman, 1991), demonstrating excellent criterion validity. The internal consistency for the present sample was .84.

Intolerance of Uncertainty (Phase 1, $N = 111$, at-home)

The Intolerance of Uncertainty Scale (IUS; Freeston, Rhéaume, Letarte, Dugas, Ladouceur, 1994) (Appendix F) is a 27- item questionnaire measuring individuals' perception of information in ambiguous situations. More specifically, it measures how they respond on a cognitive, emotional and behavioural level to the ambiguity of a situation. The items are rated on a 5-point Likert scale, with higher scores indicating greater difficulty tolerating uncertainty. The original French version of the measure has excellent internal consistency (.91) and good test-retest reliability over a five week period ($r = .78$). A recent validation study of the English version (Buhr & Dugas, 2002) revealed a four-factor structure, rather than the five-factor structure of the French version, but retained the underlying ideas represented by the factors. Inspection of the item content

suggests that items that portray uncertainty as stressful (e.g., "Uncertainty makes me uneasy, anxious or stressed"), that uncertainty limits the ability to act (e.g., "When it's time to act, uncertainty paralyzes me"), that unexpected events should be avoided (e.g., "I must get away from uncertain situations"), and that uncertainty is unfair (e.g., "It's not fair that there are no guarantees in life"), load on the four factors, respectively. Cronbach's alpha for the English version of the scale was .94 and test-retest reliability was good ($r = .74$). The discriminant validity of the IUS has been demonstrated in relation to Generalized Anxiety Disorder (Dugas, Gagnon, Ladouceur, & Freeston, 1998) and Ladouceur, Talbot and Dugas (1997) have provided support of its construct validity, the IUS being associated with a tendency to seek out evidence prior to making a decision in an ambiguous situation. The internal consistency for the present sample was .91.

Values (Phase 1, $N = 111$, in-laboratory)

The emergent values measure (Pushkar et al., 2003) (Appendix G) assesses the extent to which individuals articulate values when reflecting on their lives. It is a count variable that provides the number of values expressed in the life reflection interview. Values are defined as principles or qualities that individuals perceive to be important to have or to put into practice and can be classified as utilitarian or deontological, both of which are based on universal abstract principles, as well as expressions of the basic values of virtue theory and its recently developed ethics of care, which focus on character and responsive behaviour. The utilitarian approach focuses on the moral worth of an action as determined by its contribution to overall utility or outcome as measured by the realization of happiness for the greatest number of people. This is in contrast to deontology which also focuses on universal principles but is a duty-based approach to

ethics which rejects the emphasis on happiness as a moral goal and proposes, instead, rational principles of duty which sometimes conflict with the desire for happiness. Virtue theory identifies as virtuous those habits and behaviours that can be viewed from the point of view of practical wisdom and result in the achievement of a good life. The understanding of human nature, and the development of the capacity for flexible responsiveness to others based on good judgement are inherent to virtue theory. The theory of ethics of care emphasizes prosocial virtues such as caring for others, patience, the ability to nurture and self-sacrifice which relate to social practices and moral education. Examples of values are found in the appendix. Inter-coder reliability for two independent coders for the number of values expressed was significant at .66.

Experience of Aging (Phase 1, $N = 111$, in-laboratory)

The Experience of Aging Index (Pushkar et al., 2003) (Appendix H) is a 10 - item measure derived from the life reflection interview that assesses the quality of individuals' experience of aging. Five items consist of ratings of the degree to which older adults describe experiencing changes in their current functioning compared to the past and the valence of these changes. Of these five items, three address changes in the specific areas of mental functioning (e.g., "Have you noticed any changes in your mental activities as you've gotten older"), emotional life and self-perception and are rated on a 5-point Likert-type scale ranging from "not at all" to "very much." The two remaining items inquire about the disadvantages and advantages of growing older, and the valence of individuals' experience of aging is rated on a 5-point Likert-type scale ranging from "indifferent" to "very bad" for disadvantages and from "indifferent" to "very good" for advantages. Interviewers' and independent second coders' ratings for these items were

significantly correlated and ranged from .49 to .77. The remaining five items assess

whether individuals feel happier or sadder currently than in the past, whether they feel

better or worse about themselves, the degree to which they feel that they have been able

to make choices in major life decisions, the degree to which they have been able to learn

from the experience of illness and the degree to which they have developed goals for the

future. These items are rated on a 5 -point Likert-type scale, with higher scores

indicating less experience of negative change and better quality of aging. Correlation

coefficients for primary coders' and independent second coders' ratings for these five

items were significant and ranged from .77 to .85. Internal consistency for this 10-item

measure was .60. Cronbach's alpha for the present sample was .60.

Autobiographical Memory (Phase 2, n = 71, in-laboratory)

The Autobiographical Memory Questionnaire (AMQ; Csank & Conway, 1994,

August; Blake, Holm, Conway, Csank, & Szynkarsky, 1997, August; M. Conway &

Csank, 1997, May) (Appendix I) is a 21-item self-report instrument that assesses people's

subjective sense of their own ability to remember autobiographical events and

experiences. The items tap into five categories of subjective evaluations: a general sense

of vivid and accurate recall for past experiences (e.g., "When I remember events from my

past, it feels as though I can remember all of the details of those experiences"), a sense of

ease of retrieval (e.g., "I can call to mind experiences from my past very easily whenever

I want"), a sense of good recall for various periods of life (e.g., "I feel that the memories I

have about my high school years are vivid and very accurate"), a sense of good recall for

different types of events (e.g., "My memories for the feelings or emotions I have had

during difficult experiences in my life are particularly vivid and clear"), and social

comparison that implies good recall (e.g., "When I reminisce with friends or family about experiences we have shared in the past, I find that I can remember the details of those events much better than they can").

A principal components analysis revealed that, although the items refer to several categories of subjective assessments, a one-factor solution was appropriate, all AMS items loading positively on a single factor, loadings ranging from .48 to .81. Cronbach's alpha, the internal reliability coefficient, was .94 and test-retest reliability for a 7-week period was very good (r = .87). Cronbach's alpha for the present sample was .91.

Perceived Control (Phase 2, n = 71, in-laboratory)

Personal control beliefs were measured using a 12-item scale (Lachman & Weaver, 1998) (Appendix J). Two different dimensions of control beliefs, competency and contingency, are assessed by this scale (Lachman & Weaver; Skinner, 1996). Competency beliefs refer to the individual's sense of efficacy in carrying out goals. In contrast, contingency beliefs refer to the degree to which one believes that factors beyond one's control do not interfere with the achievement of one's goals. Four items assess competency (e.g., "When I really want to do something, I usually find a way to succeed at it") and 8 items assess contingency (e.g., "Other people determine most of what I can and cannot do"). Participants indicated their degree of agreement with each of the statements on a 7-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (7). Items on the contingency scale were reverse scored. Higher scores reflect greater competency and contingency beliefs. Cronbach's alpha for the competency and contingency scales was reported as .70 and .86, respectively (Lachman & Weaver). For the present sample, the internal consistency was .76 for both scales.

Dispositional Coping (Phase 2, n = 71, in-laboratory)

A modified version of the dispositional coping inventory (Carver et al., 1989) was used in this study (Dalton, 2005), following Carver's (1997) suggestions (Appendix K). Participants were asked to rate the degree to which they use the presented coping strategies when they experience stressful events on a 4-point scale ranging from 1 ("I usually don't do this at all") to 4 ("I usually do this a lot"). In addition to the 14 subscales on the original battery, Carver (1997) suggested adding four items assessing humour and two items assessing self-blame, replacing two items focusing on emotion with items measuring venting, and replacing one item assessing sleep as a form of distraction with a more general distraction-related item. Only 13 of the 16 subscales resulting from the modifications were retained, because of the limited endorsement of the items from the Alcohol and Drug Use subscale and the minimal correlation of the Self-Blame and Restraint subscales with the other scales. The 13 subscales, consisting of four items each, formed four coping factors on the basis of confirmatory factor analyses (Dalton). Given the limited subsample size and the need to maintain an adequate participant-variable ratio for analyses, only one factor was used in the present study. The Problem-Focused Coping factor, which was selected on the basis of previous findings (Lazarus, 1996; Wrosch & Heckhausen, 2002), consisted of three subscales, Active Coping, Planning and Suppression of Competing Activities. Cronbach alphas for the three subscales and the Problem-Focused Coping factor were, .75, .84, .68 and .88, respectively.

Procedure

Administration of Interview and Questionnaires

The study was described over the telephone to all potential participants who had responded favourably to the recruitment methods. They were informed that their participation would require responding to a detailed interview during which they would be asked to reflect upon their lives and on the ways in which they had dealt with issues in life. They were told that they would be asked to discuss many different aspects of their lives, including some of a more personal or intimate nature and to complete a psychological test battery, consisting of an in-laboratory component and a take-home packet of questionnaires. Upon agreement to participate, appointments were made at the Adult Development and Aging Laboratory at Concordia University.

Eleven interviewers were trained to collect the data, completing pilot sessions to practice the administration while being observed through a one-way mirror by at least one and often two experienced interviewers who provided constructive feedback regarding interview style and standardized test administration procedures and skills. During this piloting period minor modifications were also made to the interview itself and to the interview protocol, the interview remaining, however, essentially unchanged. There were three male and eight female interviewers. Given the personal nature of the Life Reflection Interview, all participants were interviewed by a same-sex interviewer.

At the beginning of the interview, participants were informed of the purpose of the study, of the voluntary and confidential nature of their participation, and of the procedures that would be followed, including the audio-recording of interviews and note-taking on the part of the interviewer. Participants were then asked to sign a consent form

(see Appendix L).

Participants were tested individually. Because the regret-related study was part of a larger study, the testing session, which included the 75 minute interview, the completion of questionnaires and the administration of other unrelated measures, lasted approximately 3 hours. Testing sessions adhered to a predetermined order, beginning with the Life Reflection Interview, followed by the administration of a within-laboratory test battery and the presentation of instructions for the completion of an at-home test battery. The regret-related components of the test battery for the original sample ($N =$ 111) and for the subsample ($n = 71$) were presented above. At the end of the testing session, participants were thanked and arrangements were made for the interviewer to call the participant a week after the interview to check on the completion of the take-home package of questionnaires.

The follow-up telephone call served as an opportunity to again thank the participants for their involvement in the study, to respond to any questions they might have about the questionnaires or the interview, and to remind those who had not yet done so, to complete the questionnaires. Packages were returned by mail in self-addressed pre-stamped envelopes within a 1- to 2-week period by the 111 participants. The rate of return was 98%.

The well-being of participants was considered throughout the testing process. Breaks and refreshments were offered as needed during the testing session. If a participant raised personal concerns or problems either during the interview or when called back on the telephone, the team was consulted and referrals were made to a service agency when deemed appropriate.

Content Analysis of Lifespan Regrets

Transcription of interviews. All of the tape recorded interviews were transcribed for the purposes of content analysis. The average number of pages of the interview transcripts was 19.7 with a range of 11 to 41 pages.

Units of analysis. For the purposes of this study, the unit of analysis was defined as the response to a question. Within the context of the response to a question, however, there could be more than one idea unit (Kovach, 1991, 1995), that is, there could be more than one central meaning expressed. Specifically, if within the context of one response there were several statements of regret, these remained one idea unit if only one regret was being expressed. If, however, there was more than one regret expressed, each was considered a separate idea unit.

Development of coding scheme. The next step was the development of a valid coding scheme, that is, one that would capture, with limited distortion, the meaning that was intended by the participants in response to the questions. Although the use of an a priori coding scheme could have easily been justified given that several interview questions addressed regret directly in relation to specific life domains, this approach was rejected in favour of a bottom-up or inductive analysis as described by Miles & Huberman (1994). Immersion in the details of the data allows for the emergence of categories from patterns found in the text, without the constraints of predetermined categories. This seemed more appropriate for several reasons. Firstly, participants provided information about their regrets on the basis of their own personal conceptualizations of regret and not in response to a standardized definition of regret offered to them. It seemed necessary, therefore, to remain open to the personal meanings

attributed to those life experiences or events that participants considered regretful. In addition, responses to direct questions about regret in relation to a specific life domain did not necessarily address that domain. The most common example was when participants discussed occupation-related regrets when asked about their education or vice versa. Lastly, there were three sources of information about regret imbedded in the 72-question interview. Ten questions specifically addressed regret in relation to several life domains (e.g., "Looking back on it now, is there anything you regret about your choice of occupation?") and three questions promoted counterfactual thinking, and by extension, elicited expressions of regret by addressing "what might have been" (e.g., "If you could go back in time and talk to yourself when you were a young adult, what would you say? Is there something you have learned that you would have liked to know sooner?"). In addition, throughout the interview, participants were asked to reflect on various aspects of their lives, past and present. This reflective process allowed for the spontaneous emergence of regretful statements. Given these three sources of information about regret, the bottom-up method of analysis allowed for all regret related content to be treated in the same way, independent of the structure from which it emerged. The entire interview was, therefore, subjected to a content analysis for the presence of elicited and non-elicited regret-related statements. Although repetitions and anecdotal digressions were included in the content analysis, care was taken to respect the idea units defined above. This ensured that the same regret repeated within an analysis unit was not coded again and that different regrets within an analysis unit would be coded separately.

Coding of qualitative data – Identification of regret categories. In this study, a content analysis was performed which yielded qualitative data. It is important to

underline that this does not constitute qualitative research in that the sample size (N = 111), relative to the financial and human resources available for this study, precluded the possibility of making major modifications to the interview as a function of participants' responses, as would usually be done in a true grounded theory approach (Strauss & Corbin, 1990). The standardized interview protocol and content applied in this study were deemed appropriate for the sample size and allowed for the collection of qualitative data. The "frequency of lifespan regret" variable was derived from this qualitative data.

The coding of the qualitative data involved several steps. First, the author arrived at a preliminary coding scheme, in the following manner. Audio recordings were listened to, accompanied by the reading of written transcriptions of the interviews. The purpose of the coding was two-fold. First, regret statements had to be identified as such, as described below, that is, regret had to be defined for the purposes of this study. Then regret themes had to be identified. The coding scheme was achieved through a recursive movement between raw data and inferred categories until saturation was achieved, that is, until all further raw data could be classified without needing to identify additional categories. The content analysis of 41 transcripts, that is, 37% of the sample, was required to achieve saturation and arrive at a preliminary coding scheme. Transcripts were selected in small batches, the author selecting, in sequential order, samples of 10, 10, and 21 transcripts that were representative of interviewer and participant gender and age.

An independent coder then repeated the same procedure of inductive analysis employed by the author with the same 41 audio recordings and written transcriptions.

Percentage agreement for content codes – Author and independent coder. The coding schemes arrived at by the author and the independent coder were then compared,

first for the identification of regret statements and then for themes. The author identified 322 regrets, the independent coder 340. Inter-coder percentage agreement for the presence of regrets was .90 (calculated as number of agreements over total number of agreements plus disagreements). Discrepancies were discussed, allowing for clarification of the definition of regret for this study. A final number of 324 regrets was agreed upon. Regret themes were then compared. A total of twenty themes emerged between the two coders but were collapsed into 11 themes on the basis of two criteria, inclusiveness and equivalence of terms. Inclusiveness refers to one theme or series of themes being subsumed under another theme (e.g., "relationships: family" and "relationships: friends" are subsumed under "interpersonal regrets"). Equivalence of terms refers to the use of synonyms to represent a category of regrets (e.g., "character" regrets and "self" regrets referred to the same statements of regret, thereby rendering one term redundant). Inter-coder percentage agreement for content analysis was .87. It is important to note that this process allowed for the development of the coding scheme and the establishment of inter-coder consistency concurrently, as suggested by Miles and Huberman (1994).

Consolidation of the coding scheme – Coding manual. The next step in the procedure was the development of a table of regret themes (see Appendix M) and the elaboration of a coding manual (see Appendix N). Internal consistency, independence of categories, semantic precision and clarity, exhaustiveness of categories and parsimony were all addressed at this stage.

The coding manual provided the criteria for defining regret that emerged from the data and were employed for coding regrets in this study, as well as instructions and clarifications for coding regrets. Some examples were included for illustrative purposes.

In addition to the content themes and subcategories, regrets were distinguished by the following dimensions described in the manual: (a) spontaneity of expression (in response to a regret-related or counterfactual question versus spontaneously emergent), (b) directness of expression (direct versus inferred), (c) affective component (emotional content), (d) nature of regret (omission versus commission), (e) agency (what or who caused the regretted event or experience, i.e., self, other or circumstance), (f) object of regret (who is "done to", self or other), (g) temporal perspective (current or past regret regarding an event or experience occurring in the past, present or future) and (h) perception of controllability of the event that elicited regret (e.g., "I am losing my memory and I should have done more puzzles to prevent the decline" versus "I am losing my memory – that's life"). The coding manual helped to maintain the reliability of the application of the coding scheme by providing the coders with a reference that helped to elucidate distinctions between regrets and other affects.

Application of the coding scheme. A random sample of 30 interviews was then selected using a table of random numbers (Kirk, 1990). This represented 27% of the total sample. Coders B, the two trained undergraduate students who had participated in the coding of the intensity of lifespan regret described above, applied the coding scheme to 15 interviews each using written transcriptions and audio recordings. The author applied it to all 30. The two coders met with the author to discuss difficulties that arose, and adjustments to the coding manual were made as needed. Ambiguities were addressed and discrepancies in the intended meaning of dimensions were discussed and clarified. Inter-coder percentage agreement between Coder B_1 and the author for the presence of regret and for content themes was 89% and 85%, respectively, and between Coder B_2 and the

author was 87% and 93%, respectively.

Subsequently, Coders B both independently coded regrets for the remaining 81 participants, using the coding manual. To ensure adherence to the coding manual and to avoid drifting, weekly meetings were held with the author to present all difficulties that arose in the coding. The author independently coded the part of the transcript in question prior to comparing her coding with those of Coders B. Discrepancies in coding were then discussed until a consensus was reached. In the few cases where this was not possible, the majority view was upheld.

Percentage agreement for content codes – Coders B. Upon completion of the coding, inter-coder percentage agreement for the entire sample of 111 participants was established by randomly selecting 28 participants (25%) and comparing the independent codes assigned by Coders B for the presence of regrets (.94), the content themes (100% agreement) and subthemes (.98). See Table 1 for the inter-coder percentage agreement for the dimensions of regret.

Frequency of lifespan regret. The frequency of lifespan regret variable was derived from the content analysis which yielded a frequency of regrets for each participant, categorized by themes and by dimensions.

Table 1

Inter-Coder Percentage Agreement, Correlation, for Content Analysis: Dimensions of Regret (N = 111)

Dimension	Percentage Agreement	r
Spontaneity of Expression	0.96	
Directness of Expression	0.96	
Nature of Regret	0.97	
Agency	0.97	
Object of Regret	0.99	
Temporal Perspective	0.99	
Perception of Controllability	0.95	
Intensity		.87***

Note. Percentage agreement, correlation are used where applicable; ***$p < 001$.

RESULTS

The results of the study will be presented in three main sections. In the first

section, statistical analyses on the main quantitative study variables will be presented,

first for Phase 1 of the study ($N = 111$) and then for Phase 2 ($n = 71$). It is to be noted that

trends are included in the reporting of results. In the second section, the content analysis

of the qualitative regret data will be presented. The characteristics of participants' regrets

will be described. The third and final section will contain descriptive data derived from

the standardized measures and the content analysis of the open-ended Life Reflection

Interview comparing two contrast groups, that is, the participants with the fewest stated

regrets to those with the most regrets. Distinctions between these groups derived from a

qualitative, interpretative analysis of participants' expressed stance toward regret,

interpersonal relations and other aspects of life, will then be presented. All results

presented in the second and third sections are derived exclusively from Phase 1 of the

study.

Quantitative Data

Prior to conducting analyses, data were first screened for missing values, the

presence of univariate and multivariate outliers and for non-normal distributions.

Randomly scattered missing data (up to 5% of values) were replaced by the mean value

of the variable in question for the gender- and age-specific subsample to which the

participant belonged. A median split divided the participants into a younger and an older

age group (*Mdn* = 73 years). This approach to the problem of missing data is

recommended as an appropriate and conservative procedure for preserving data which

would otherwise be deleted in multivariate procedures (Tabachnick & Fidell, 2001).

Univariate outlier analyses were performed on all the variables and univariate

outliers were reduced to three standard deviations above or below the mean, as

recommended by Tabachnick and Fidell. Using a $p<.001$ criterion for Mahalanobis

distance, no multivariate outliers were identified. In addition, non-normal skewed

distributions of variables were transformed using square root transformations. This

transformation was performed for positive skewness for intensity and frequency of

lifespan regrets, frequency of regrets of omission, depression, intolerance of uncertainty

and number of emergent values, and for negative skewness for happiness and

dispositional optimism. The scores of all other variables were normally distributed.

Descriptive Statistics for Phase 1 Study Variables

Table 2 presents the means and standard deviations for the Phase 1 variables ($N =$

111). Table 3 presents the zero-order correlations among the demographic, psychosocial

and regret-related independent variables and the outcome variables, intensity and

frequency of lifespan regrets, depression, happiness, health and experience of aging.

Demographic and psychosocial variables and regret. The demographic variables

included in the study, age, years of education, socioeconomic status, gender and marital

status were not significantly correlated with intensity or frequency of lifespan regrets for

the current sample. Given the study sample size and the desire to maintain an adequate

participant-variable ratio for analyses as recommended by Tabachnick and Fidell (2001),

demographic variables were not entered into further analyses unless specifically relevant

to an outcome variable, namely, age in predicting experience of aging.

Three of the five personality variables (NEO) were significantly associated with

intensity of lifespan regrets. Neuroticism was found to be positively associated, and

Table 2

Descriptive Statistics for Phase 1 Study Variables (N = 111)

Variable	M	SD
Regret Intensity	9.55	3.33
Regret Frequency	6.29	4.55
Omission Regrets	3.33	2.91
Neuroticism	17.05	6.47
Extraversion	27.03	5.84
Openness	29.70	4.69
Agreeableness	33.52	4.52
Conscientiousness	32.06	6.47
Optimism	22.72	4.30
Intolerance of Uncertainty	48.96	12.60
Depression	10.38	7.34
Happiness	34.73	8.32
Health	2.82	0.96
Values	6.86	3.51
Experience of Aging	31.94	5.06

Note. *M* and *SD* based on raw scores.

Table 3

Pearson Correlations for Phase 1 Study Variables (N=111)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1) Intensity of Regret [a]	--															
2) Frequency of Regret [a]	.53***	--														
3) Omission Regrets [a]	.46***	.87***	--													
4) Age	-.07	.03	-.04	--												
5) Neuroticism	.42***	.32***	.28**	.10	--											
6) Extraversion	-.14	-.16†	-.11	-.08	-.40***	--										
7) Openness	.13	.12	.10	.02	-.12	.13	--									
8) Agreeableness	-.34***	-.16†	-.07	.10	-.32***	.28**	.16†	--								
9) Conscientiousness	-.23*	-.17†	-.13	-.14	-.37***	.43***	-.05	.29**	--							
10) Optimism [a]	-.15	-.05	-.02	-.13	-.53***	.33***	.28**	.39***	.18†	--						
11) Intolerance of Uncertainty [a]	.29**	.15	.14	.11	.40***	-.08	-.29**	-.23*	.01	-.35***	--					
12) Depression [a]	.39***	.31***	.32***	.10	.51***	-.22*	.02	-.34***	-.44***	-.36***	.29**	--				
13) Happiness [a]	-.32***	-.42***	-.39***	-.14	-.55***	.31***	-.03	.18†	.32***	.41***	-.13	-.56***	--			
14) Health	-.26**	-.24**	-.15	.00	-.16†	.24**	-.22*	.13	.21*	.08	-.13	-.24**	.20*	--		
15) Values [a]	-.17†	.12	.18†	-.17†	-.03	.20*	-.07	.01	.19*	.00	.16†	-.01	.07	.09	--	
16) Experience of Aging	-.25**	-.14	-.05	-.26**	-.19†	.23*	.02	.18†	.29**	.20*	-.04	-.35***	.30**	.20*	.42***	--

[a] square root; †$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

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conscientiousness and agreeableness were inversely associated with intensity of lifespan regrets. Openness to experience and extraversion were not significantly associated with intensity of lifespan regrets.

Of the five personality variables, only neuroticism was significantly associated with frequency of lifespan regrets, extraversion, agreeableness and conscientiousness all showing a negative trend. Openness to experience was not significantly associated with frequency of lifespan regrets. Intolerance of uncertainty was significantly positively correlated with intensity of lifespan regrets but not significantly associated with frequency of regrets and dispositional optimism was not significantly associated with either intensity or frequency of lifespan regrets. The number of values articulated was marginally significantly inversely correlated with intensity of lifespan regrets but not significantly associated with frequency of regrets.

Depression was significantly positively correlated with intensity and frequency of lifespan regrets. Happiness and health status were both significantly inversely correlated with intensity and frequency of lifespan regrets, and experience of aging was significantly inversely correlated with intensity of lifespan regrets but not significantly associated with frequency of lifespan regrets.

Intensity and frequency of regret. Intensity and frequency of regret were significantly positively correlated at a moderate level, $r = .53$, $p < .001$.

Predictors of Regret – Phase 1 (N = 111)

Two hierarchical multiple regression analyses were conducted to examine personality, dispositional traits and number of emergent values as predictors of intensity and frequency of lifespan regrets. Predictor variables were entered in the same sequence

for both analyses. The five NEO personality variables were entered in the first step, intolerance of uncertainty and dispositional optimism were entered in the second step and the frequency of emergent values was added in the third step.

Predicting intensity of lifespan regrets. The results of this analysis are presented in Table 4. A total of 34.7% of the variance in intensity of lifespan regrets was explained by the independent variables in the last step with a significant R^2 change, $F(8, 102) = 6.77, p < .0001$. In the first step, neuroticism ($t = 3.89$, p < .001) and openness to experience ($t = 2.43$, p < .05) were significant positive predictors of intensity of lifespan regrets and agreeableness ($t = -2.82$, p < .01) was a negative predictor, together explaining 26.9% of the variance, F change $(5, 105) = 7.71, p < .0001$. Extraversion and conscientiousness did not contribute significantly to the explained variance in intensity of lifespan regrets. In the second step, with the major personality variables (NEO) controlled, intolerance of uncertainty was a significant positive predictor of intensity of lifespan regrets ($t = 2.14$, p < .05), F change $(7, 103) = 3.31, p < .05$, but dispositional optimism did not contribute significantly to the variance explained. Neuroticism, agreeableness and openness to experience remained significant. The addition of number of emergent values in the third step explained an additional 3.4% of the variance, F change $(8, 102) = 5.32$, p < .05. The results indicate that individuals who had higher scores on neuroticism, openness to experience and intolerance of uncertainty and lower scores on agreeableness and fewer emergent values had more intense lifespan regrets.

Predicting frequency of lifespan regrets. The results of this analysis are presented in Table 4. A total of 13.9% of the variance in frequency of lifespan regrets was

Table 4

Summary of Hierarchical Regression Analyses for Phase 1 Variables Predicting Intensity and Frequency of Regret (N = 111)

Variable	Intensity				Frequency			
	B	$SE\ B$	β	ΔR^2	B	$SE\ B$	β	ΔR^2
Step 1				.27***				.14**
Neuroticism	.03	.01	.37***		.04	.02	.30**	
Extraversion	.01	.01	.07		-.01	.02	-.03	
Agreeableness	-.03	.01	-.26**		-.02	.02	-.08	
Openness	.02	.01	.21*		.04	.02	.17^t	
Conscientiousness	.00	.01	-.04		-.00	.02	-.02	
Step 2				.04*				.02
Neuroticism	.03	.01	.35**		.05	.02	.34**	
Extraversion	.00	.01	.04		-.01	.02	-.06	
Agreeableness	-.03	.01	-.26**		-.02	.02	-.10	
Openness	.03	.01	.23**		.03	.02	.17^t	
Conscientiousness	.00	.01	-.06		.00	.02	-.02	
Intolerance of Uncertainty	.13	.06	.22*		.10	.11	.10	
Dispositional Optimism	.10	.07	.15		.21	.14	.18	
Step 3				.03*				.02
Neuroticism	.03	.01	.35**		.05	.02	.33**	
Extraversion	.01	.01	.07		-.01	.02	-.09	
Agreeableness	-.03	.01	-.27**		-.02	.02	-.10	
Openness	.03	.01	.23**		.03	.02	.17^t	
Conscientiousness	.00	.01	-.04		-.01	.02	-.04	
Intolerance of Uncertainty	.15	.06	.25**		.08	.11	.07	
Dispositional Optimism	.10	.07	.15		.20	.14	.18	
Emergent Values	.14	.06	-.19*		.19	.12	.15	

$^t p < .10.$ $*p < .05.$ $**p < .01.$ $***p < .001.$

explained by the independent variables in the first and only step with a significant R^2 change, $F(5, 105) = 3.40, p < .01$. Neuroticism was a significant positive predictor ($t = 2.90, p < .01$) and openness to experience ($t = 1.87, p < .10$) was marginally significant as a positive predictor of frequency of lifespan regrets. Extraversion, agreeableness and conscientiousness did not contribute significantly to the explained variance in frequency of lifespan regrets, nor did intolerance of uncertainty, dispositional optimism or frequency of emergent values. The results indicate that individuals who had higher scores on neuroticism and openness to experience had a higher number of lifespan regrets.

Intensity and Frequency of Regret as Predictors of Psychological and Physical Well-Being – Phase 1 (N = 111)

A series of hierarchical regressions was conducted to examine the impact of intensity and frequency of lifespan regret on psychological and physical well-being. The indicators of psychological well-being were depression, happiness and the quality of the experience of aging, and health status for physical well-being. Rather than testing for intensity and frequency of lifespan regrets separately, as the correlations did not suggest collinearity, both were included sequentially in the same regression analyses. The sequence of entry of predictors was the same for most of these analyses. Where some modifications are made, they are described. The five NEO personality variables were entered in the first step, intolerance of uncertainty and dispositional optimism were entered in the second step, frequency of lifespan regrets was included in the third step and intensity of lifespan regrets was added in the fourth step. Values have not been found to be associated with depression, happiness or health status (Pushkar et al., 2003) nor has reminiscence with prosocial functions been found to predict psychological and physical

indices of well-being (Cappeliez & O'Rourke, 2006). Given correlations between emergent values, and depression, happiness and health status in the present study of .01, .07 and .09, respectively, this variable was not included as a predictor of these indicators of psychological and physical well-being. It was, however, included as a predictor of the experience of aging given previous empirical support for this relationship (Pushkar et al.).

Predictors of depression. A hierarchical multiple regression analysis was conducted to examine intensity and frequency of lifespan regrets as predictors of depression above and beyond personality and dispositional variables. The results of this analysis are presented in Table 5. A total of 36.1% of the variance in depression was explained by the independent variables in the first, and only step with a significant R^2 change, $F(5, 105) = 11.88, p < .0001$. Neuroticism ($t = 4.37, p < .0001$) and conscientiousness ($t = -3.17, p < .01$) were significant predictors of depression, positive and negative respectively, and agreeableness was a marginal negative predictor of depression ($t = -1.93, p < .10$) in the first step. Extraversion and openness to experience did not significantly contribute to the explained variance in depression. The addition of intolerance of uncertainty and dispositional optimism in the second step accounted for an additional 2.9% of the variance, with a marginally significant F change $(7, 103) = 2.47, p < .10$. The effect of agreeableness dropped out in the second step. Frequency and intensity of lifespan regret did not contribute significantly to the explained variance in depression. The direction of the effects in the first and only step with a significant R^2 change indicates that having higher scores on neuroticism and lower scores on conscientiousness and agreeableness was associated with higher levels of depression.

As discussed earlier, older adults have been found to have greater difficulty

Table 5

Summary of Hierarchical Regression Analysis for Variables Predicting Depression (N=111)

Variable	B	$SE\ B$	β	ΔR^2
Step 1				.36***
Neuroticism	.07	.02	.39***	
Extraversion	.02	.02	.09	
Agreeableness	-.04	.02	-.17[t]	
Openness	.02	.02	.07	
Conscientiousness	-.05	.02	-.29**	
Step 2				.03[t]
Neuroticism	.05	.02	.28**	
Extraversion	.02	.02	.09	
Agreeableness	-.02	.02	-.11	
Openness	.03	.02	.12	
Conscientiousness	-.06	.02	-.32***	
Intolerance of Uncertainty	.21	.12	.15[t]	
Dispositional Optimism	-.19	.15	-.12	
Step 3				.02
Neuroticism	.04	.02	.23*	
Extraversion	.02	.02	.10	
Agreeableness	-.03	.02	-.11	
Openness	.03	.02	.10	
Conscientiousness	-.06	.02	-.32***	
Intolerance of Uncertainty	.19	.12	.14	
Dispositional Optimism	-.23	.15	-.14	
Frequency of Regret	.18	.11	.14	
Step 4				.00
Neuroticism	.04	.02	.21[t]	
Extraversion	.02	.02	.10	
Agreeableness	-.02	.02	-.09	
Openness	.02	.02	.08	
Conscientiousness	-.06	.02	-.31***	
Intolerance of Uncertainty	.17	.13	.12	
Dispositional Optimism	-.24	.15	-.15	
Frequency of Regret	.14	.12	.11	
Intensity of Regret	.19	.23	.08	

[t]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

disengaging from regrets of omission than those of commission, disengagement from

undoing omission regrets predicting lower levels of depression (Wrosch et al., 2005).

Although frequency of lifespan regrets of omission is a component of the overall

frequency of lifespan regrets count, therefore a redundant variable, it was considered

important to assess the differential impact of frequency of regrets of omission on

depression. Entering the latter variable into a separate analysis avoids problems of

singularity caused by entering redundant variables into a single analysis (Tabachnick &

Fidell, 2001). A second hierarchical multiple regression analysis predicting depression

was therefore conducted to examine the frequency of lifespan regrets of omission as a

predictor of depression above and beyond personality and dispositional variables. The

results of this analysis are presented in Table 6. The predictor variables were the same as

in the previous regression, with frequency of lifespan regrets of omission replacing total

frequency of lifespan regret.

A total of 42.4% of the variance in depression scores was explained by the

independent variables at the last step with a significant R^2 change, $F(8, 102) = 9.39$, $p <$

.0001. As in the previous regression analysis, neuroticism and conscientiousness were

significant predictors of depression, positive and negative respectively, and intolerance of

uncertainty was a marginally significant positive predictor of depression. Frequency of

lifespan regrets of omission, added in the third step, was a significant positive predictor

of depression ($t = 2.44$, $p < .05$) above and beyond the personality and dispositional

variables, F change $(8, 102) = 5.94$, $p < .05$. The addition of intensity of lifespan regret in

the last step did not contribute significantly to the explained variance in depression. The

direction of the effects indicates that having higher scores on neuroticism, a higher

Table 6

Summary of Hierarchical Regression Analysis for Variables Predicting Depression with Regrets of Omission (N=111)

Variable	B	$SE\ B$	β	ΔR^2
Step 1				.36***
Neuroticism	.07	.02	.39***	
Extraversion	.02	.02	.09	
Agreeableness	-.04	.02	-.17[t]	
Openness	.02	.02	.07	
Conscientiousness	-.05	.02	-.29**	
Step 2				.03[t]
Neuroticism	.05	.02	.28**	
Extraversion	.02	.02	.09	
Agreeableness	-.03	.02	-.12	
Openness	.03	.02	.12	
Conscientiousness	-.06	.02	-.32***	
Intolerance of Uncertainty	.21	.12	.15[t]	
Dispositional Optimism	-.19	.15	-.12	
Step 3				.03*
Neuroticism	.04	.02	.22*	
Extraversion	.02	.02	.10	
Agreeableness	-.03	.02	-.12	
Openness	.03	.02	.10	
Conscientiousness	-.06	.02	-.32***	
Intolerance of Uncertainty	.18	.12	.13	
Dispositional Optimism	-.24	.15	-.16	
Regrets of Omission	.29	.12	.20*	
Step 4				.00
Neuroticism	.04	.02	.20[t]	
Extraversion	.02	.02	.10	
Agreeableness	-.03	.02	-.10	
Openness	.02	.02	.09	
Conscientiousness	-.06	.02	-.32***	
Intolerance of Uncertainty	.17	.12	.12	
Dispositional Optimism	-.25	.15	-.16	
Regrets of Omission	.26	.13	.18*	
Intensity of Regret	.13	.23	.06	

[t] $p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

frequency of lifespan regrets of omission and lower scores on conscientiousness was associated with higher levels of depression.

Predictors of happiness. A hierarchical multiple regression analysis was conducted to examine intensity and frequency of lifespan regrets as predictors of happiness after covarying the effects of personality and dispositional variables. The results of this analysis are presented in Table 7.

A total of 43.5% of the variance in happiness scores was explained by the independent variables in the last step with a significant R^2 change, $F(8, 102) = 9.80, p < .0001$. In the first step, only neuroticism significantly and negatively predicted happiness ($t = -5.29, p < .0001$), explaining 32.8% of the variance. Extraversion, openness to experience, agreeableness and conscientiousness did not significantly contribute to the explained variance in happiness. The addition of intolerance of uncertainty and dispositional optimism in the second step accounted for an additional 3.2% of the variance, F change $(7, 103) = 2.55, p < .10$, dispositional optimism ($t = 2.18, p < .05$) having a significant positive effect on happiness. Frequency of lifespan regrets ($t = -3.68, p < .001$) accounted for an additional 7.5% of the variance in happiness above and beyond the personality and dispositional variables, F change $(8, 102) = 13.54, p < .001$. The addition of intensity of lifespan regret at step four did not contribute significantly to the explained variance. Frequency of lifespan regret and neuroticism remained significant negative predictors and dispositional optimism a significant positive predictor of happiness. The results indicate that individuals who had a lower number of lifespan regrets, were lower on neuroticism and higher on dispositional optimism, had higher levels of happiness.

Table 7

Summary of Hierarchical Regression Analysis for Variables Predicting Happiness (N=111)

Variable	B	SE B	β	ΔR^2
Step 1				.33***
Neuroticism	-.10	.02	-.49***	
Extraversion	.02	.02	.09	
Agreeableness	.00	.03	-.02	
Openness	-.02	.02	-.09	
Conscientiousness	.02	.02	.11	
Step 2				.03[t]
Neuroticism	-.08	.02	-.43***	
Extraversion	.01	.02	.06	
Agreeableness	-.02	.03	-.05	
Openness	-.03	.02	-.11	
Conscientiousness	.02	.02	.12	
Intolerance of Uncertainty	.11	.13	.08	
Dispositional Optimism	.36	.16	.22*	
Step 3				.08***
Neuroticism	-.06	.02	-.33**	
Extraversion	.00	.02	.04	
Agreeableness	-.03	.02	-.08	
Openness	-.02	.02	-.06	
Conscientiousness	.02	.02	.11	
Intolerance of Uncertainty	.16	.13	.11	
Dispositional Optimism	.44	.16	.27**	
Frequency of Regret	-.40	.12	-.29**	
Step 4				.00
Neuroticism	-.06	.02	-.32**	
Extraversion	.01	.02	.04	
Agreeableness	-.03	.03	-.09	
Openness	-.02	.02	-.06	
Conscientiousness	.02	.02	.11	
Intolerance of Uncertainty	.16	.13	.11	
Dispositional Optimism	.45	.16	.27**	
Frequency of Regret	-.40	.12	-.29**	
Intensity of Regret	-.05	.24	-.02	

[t]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Predictors of Experience of Aging. A hierarchical multiple regression analysis was conducted to examine intensity and frequency of lifespan regrets as predictors of the quality of experience of aging after covarying the effects of age, personality and dispositional variables. The results of this analysis are presented in Table 8. In this analysis, age was entered in the first step, the remaining variables then entered in the same sequence as in previous analyses, with frequency of emergent values added in a last step.

A total of 30.4% of the variance in the experience of aging was explained by the independent variables in the last step with a significant R^2 change, $F(11, 99) = 3.93, p < .0001$. Age in the first step accounted for 6.7% of the variance, F change $(1, 109) = 7.76, p < .01$. Although the second step was significant, F change $(5, 104) = 2.29, p < .05$, accounting for an additional 9.3% of the variance, only age significantly predicted the experience of aging at this step $(t = -2.55, p < .01)$. The five NEO personality variables did not contribute to the prediction of the experience of aging nor did intolerance of uncertainty, dispositional optimism or frequency of lifespan regrets. Intensity of regret, entered in the fifth step, significantly and negatively predicted the experience of aging $(t = -2.28, p < .05)$. Emergent values entered in the sixth step significantly and positively predicted the quality of experience of aging $(t = 3.62, p < .0001)$. With the addition of emergent values, intensity of regret did not remain a significant predictor of experience of aging. The results indicate that individuals who were younger and who had more emergent values experienced a more positive quality of experience of aging.

Predictors of health status. A hierarchical multiple regression analysis was conducted to examine intensity and frequency of lifespan regrets as predictors of health

Table 8

Summary of Hierarchical Regression Analysis for Variables Predicting Quality of Experience of Aging (N=111)

Variable	B	$SE\ B$	β	ΔR^2
Step 1				.07**
Age	-.21	.08	-.26**	
Step 2				.09*
Age	-.19	.08	-.24**	
Neuroticism	-.03	.08	-.03	
Extraversion	.08	.09	.10	
Agreeableness	.13	.11	.12	
Openness	-.01	.10	-.01	
Conscientiousness	.13	.08	.17	
Step 3				.01
Age	-.19	.08	-.23*	
Neuroticism	-.01	.10	-.02	
Extraversion	.07	.09	.08	
Agreeableness	.12	.12	.11	
Openness	-.01	.11	-.01	
Conscientiousness	.13	.09	.17	
Intolerance of Uncertainty	-.27	.61	-.05	
Dispositional Optimism	.58	.76	.09	
Step 4				.01
Age	-.19	.08	-.23*	
Neuroticism	.01	.10	.01	
Extraversion	.07	.09	.08	
Agreeableness	.11	.12	.10	
Openness	.00	.11	.00	
Conscientiousness	.13	.09	.17	
Intolerance of Uncertainty	.32	.62	.06	
Dispositional Optimism	.67	.77	.10	
Frequency of Regret	-.46	.54	-.08	

$^t p < .10.\ ^*p < .05.\ ^{**}p < .01.\ ^{***}p < .001.$

Table 8 (continued)

Summary of Hierarchical Regression Analysis for Variables Predicting Quality of Experience of Aging (N=111)

Variable	B	$SE\ B$	β	ΔR^2
Step 5				.04*
Age	-.21	.08	-.26**	
Neuroticism	.06	.10	.07	
Extraversion	.08	.09	.09	
Agreeableness	.05	.12	.04	
Openness	.05	.11	.05	
Conscientiousness	.12	.08	.15	
Intolerance of Uncertainty	.63	.62	.11	
Dispositional Optimism	.78	.75	.12	
Frequency of Regret	.10	.58	.02	
Intensity of Regret	-2.60	1.14	-.27*	
Step 4				.09***
Age	-.15	.08	-.19*	
Neuroticism	.05	.09	.06	
Extraversion	.02	.09	.02	
Agreeableness	.08	.11	.07	
Openness	.05	.10	.04	
Conscientiousness	.10	.08	.12	
Intolerance of Uncertainty	.14	.60	.02	
Dispositional Optimism	.84	.71	.13	
Frequency of Regret	-.53	.58	-.10	
Intensity of Regret	-1.14	1.15	-.12	
Emergent Values	2.36	.65	.35***	

$^t p < .10.$ *$p < .05.$ **$p < .01.$ ***$p < .001.$

status after covarying the effects of personality and dispositional variables. The results of this analysis are presented in Table 9.

A total of 14.0% of the variance in health status was explained by the independent variables in the first and only step with a significant R^2 change, $F(5, 105) = 3,42, p < .01$. Openness to experience significantly and negatively ($t = -2.82, p < .01$) and extraversion marginally and positively ($t = 1.81, p < .10$) predicted health status. Neuroticism, agreeableness and conscientiousness did not significantly contribute to the explained variance in health status. The addition of intolerance of uncertainty, dispositional optimism, and frequency and intensity of lifespan regret did not increase explained variance. The direction of the effects indicates that having higher scores on extraversion and lower scores on openness to experience was associated with better health.

Descriptive Statistics for Phase 2 Study Variables

As stated above, the first goal of the present study was to explore the differential impact of personality, dispositional and other relevant variables on frequency and intensity of regret in older adults. To recapitulate briefly, in Phase 2 of the study, two dispositional variables, perceived control and problem-focused coping, were examined. On the basis of findings that people with a sense of life control tend to reminisce less frequently, perceive their reminiscence as pleasant (Fry, 1991) and engage in reminiscence that is predictive of well-being (Wong & Watt, 1991), it was predicted that perceived control may negatively relate to levels of regret. It was also suggested that given that those who tend to engage in upward counterfactuals may also tend to use problem-solving coping (Carver et al., 1989), problem-solving coping may be positively

Table 9

Summary of Hierarchical Regression Analysis for Variables Predicting Health (N=111)

Variable	B	$SE\ B$	β	ΔR^2
Step 1				.14**
Neuroticism	-.01	.02	-.06	
Extraversion	.03	.02	.19[t]	
Agreeableness	.02	.02	.08	
Openness	-.05	.02	-.26**	
Conscientiousness	.01	.02	.08	
Step 2				.03
Neuroticism	.00	.02	.02	
Extraversion	.04	.02	.21*	
Agreeableness	.01	.02	.06	
Openness	-.06	.02	-.31**	
Conscientiousness	.02	.02	.10	
Intolerance of Uncertainty	-.22	.11	-.20[t]	
Dispositional Optimism	.00	.14	.00	
Step 3				.02
Neuroticism	.01	.02	.07	
Extraversion	.03	.02	.20[t]	
Agreeableness	.01	.02	.04	
Openness	-.06	.02	-.28**	
Conscientiousness	.02	.02	.10	
Intolerance of Uncertainty	-.20	.11	-.19[t]	
Dispositional Optimism	.03	.14	.03	
Frequency of Regret	-.15	.10	-.14	
Step 4				.01
Neuroticism	.01	.02	.09	
Extraversion	.03	.02	.21*	
Agreeableness	.00	.02	.02	
Openness	-.06	.02	-.27**	
Conscientiousness	.01	.02	.10	
Intolerance of Uncertainty	-.18	.12	-.17	
Dispositional Optimism	.04	.14	.04	
Frequency of Regret	-.11	.11	-.11	
Intensity of Regret	-.18	.22	-.10	

[t] $p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

related to levels of regret. Based on the positivity bias, it was predicted that perceived autobiographical memory would be associated with lower levels of regret.

Table 10 presents the means and standard deviations for the Phase 2 variables ($n =$ 71). Table 11 presents the zero-order correlations among the additional regret-relevant dispositional variables, that is, perceived control, autobiographical memory and dispositional coping and the outcome variables, intensity and frequency of lifespan regrets.

Dispositional variables, autobiographical memory and regret. Perceived control and autobiographical memory were significantly and negatively associated with intensity of lifespan regrets. Problem-focused coping was not significantly associated with intensity of regret.

Whereas autobiographical memory was significantly and negatively associated with frequency of lifespan regrets, perceived control was not. Problem-focused coping showed a positive trend with frequency of lifespan regrets.

Predictors of Regret - Phase 2 ($n = 71$)

A second set of two hierarchical multiple regression analyses was conducted to examine perceived control, autobiographical memory and dispositional problem-focused coping as predictors of intensity and frequency of lifespan regret. The first step of these analyses controls for the variables previously found to be predictive of intensity or frequency of lifespan regret, as described below. The other steps were consistent for both analyses, with perceived control added in the second step, autobiographical memory entered in the third step and problem-focused coping, in the fourth step.

As described earlier, the 71 participants who constituted the Phase 2 subsample

Table 10

Descriptive Statistics for Phase 2 Study Variables (n = 71)

Variable	M	SD
Regret Intensity	9.55	3.33
Regret Frequency	6.29	4.55
Years of Education	15.00	3.38
Socioeconomic Status	55.13	14.03
Neuroticism	16.51	6.69
Openness	30.25	4.74
Agreeableness	34.03	4.26
Intolerance of Uncertainty	48.96	12.60
Perceived Control	58.66	10.75
Autobiographical Memory	66.29	11.96
Problem-Focused Coping	0.01	0.99
Values	6.86	3.51

Note. *M* and *SD* based on raw scores.

Table 11

Pearson Correlations for Phase 2 Study Variables (n=71)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1) Regret Intensity [a]	--											
2) Regret Frequency [a]	.51***	--										
3) Years of Education	.06	.10	--									
4) Neuroticism	.40****	.32**	.04	--								
5) Openness	.14	.12	.18	-.10	--							
6) Agreeableness	-.31**	-.14	.01	-.30**	.13	--						
7) Intolerance of Uncertainty [a]	.36**	.16	-.02	.45***	-.36**	-.32**	--					
8) Perceived Control	-.43***	-.19	.00	-.54***	.33**	.38****	-.32**	--				
9) Autobiographical Memory	-.32**	-.29**	-.12	-.22^t	-.09	.21^t	-.11	.16	--			
10) Problem-Focused Coping	.00	.22^t	-.06	-.22^t	.09	.08	-.02	.19	.19	--		
11) Values [a]	-.19	.09	-.08	-.09	-.06	-.04	.11	.18	.05	.29**	--	
12) Socioeconomic Status	-.10	.08	.60***	-.07	.15	.02	-.04	.09	-.23^t	-.00	-.02	--

[a] square root; $^t p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

had significantly more education and significantly higher socioeconomic status than the 40 participants who did not return. Given the small Phase 2 subsample size, the inclusion of these two demographic variables in the analyses would result in a participant-variable ratio for analyses that surpassed that recommended by Tabachnick and Fidell (2001). To control for their potential impact, however, hierarchical multiple regression analyses predicting intensity and frequency of regret were conducted first with years of education and socioeconomic status in the first step and then again without them and the results were compared. The analyses that follow are reported without these two demographic variables because they did not predict levels of regret and had no impact on the results. For the same reason, that is, the compromise of an adequate participant-variable ratio for analyses, hierarchical multiple regression analyses predicting intensity and frequency of regret were conducted controlling for emergent values, but since there was no effect, will not be reported.

Predicting intensity of lifespan regret. The results of Phase 1 of the study indicated that individuals who had higher scores on neuroticism, openness to experience and intolerance of uncertainty and lower scores on agreeableness and fewer emergent values had more intense lifespan regrets. The results of the Phase 2 regression analysis predicting intensity of lifespan regret are presented in Table 12. A total of 39.5% of the variance in intensity of lifespan regrets was explained by the independent variables at the last step with a significant R^2 change, $F(5, 65) = 8.5, p < .0001$. Neuroticism, agreeableness, openness to experience and intolerance of uncertainty were entered in the first step of the analysis. Neuroticism ($t = 2.13, p < .05$), openness to experience ($t = 2.68, p < .01$) and intolerance of uncertainty ($t = 2.32, p < .05$) were significant positive

Table 12

Summary of Hierarchical Regression Analysis for Phase 2 Variables Predicting Intensity of Regret (n=71)

Variable	B	$SE\ B$	β	ΔR^2
Step 1				.30***
Neuroticism	.02	.01	.25**	
Agreeableness	-.02	.01	-.18	
Openness	.03	.01	.30**	
Intolerance of Uncertainty	.18	.08	.29*	
Step 2				.09**
Neuroticism	.01	.01	.06	
Agreeableness	-.01	.01	-.09	
Openness	.04	.01	.40***	
Intolerance of Uncertainty	.19	.07	.31**	
Perceived Control	-.02	.01	-.39**	
Step 3				.03^t
Neuroticism	.00	.01	.04	
Agreeableness	-.01	.01	-.07	
Openness	.04	.01	.38***	
Intolerance of Uncertainty	.19	.07	.31**	
Perceived Control	-.02	.01	-.39**	
Autobiographical Memory	-.01	.00	-.17^t	
Step 4				.01
Neuroticism	.01	.01	.06	
Agreeableness	-.01	.01	-.07	
Openness	.04	.01	.36***	
Intolerance of Uncertainty	.18	.07	.29*	
Perceived Control	-.02	.01	-.39**	
Autobiographical Memory	-.01	.00	-.19^t	
Problem-Focused Coping	.06	.05	.10	

$^t p < .10.$ $^* p < .05.$ $^{**} p < .01.$ $^{***} p < .001.$

predictors of intensity of lifespan regrets, together explaining 30.3% of the variance. Agreeableness did not contribute significantly to the explained variance. With the major personality variables and intolerance of uncertainty controlled, perceived control was a significant negative predictor of intensity of lifespan regrets ($t = -3.14$, $p < .01$), explaining an additional 9.2% of the variance, F change $(5, 65) = 9.85$, $p < .01$. Openness to experience and intolerance of uncertainty remained significant, but neuroticism did not. Autobiographical memory was a marginal negative predictor of intensity of lifespan regrets ($t = -1.74$, $p > .10$). The addition of problem-focused coping did not contribute significantly to the variance explained. The results indicate that individuals who had higher scores on openness to experience and intolerance of uncertainty and lower scores on perceived control had more intense lifespan regrets.

Predicting frequency of lifespan regrets. The results of Phase 1 of the study indicated that individuals who had higher scores on neuroticism and openness to experience had a higher number of lifespan regrets. The results of the Phase 2 regression analysis predicting frequency of lifespan regret are presented in Table 13. A total of 27.8% of the variance in frequency of lifespan regrets was explained by the independent variables at the last step with a significant R^2 change, $F(5, 65) = 5.02$, $p < .001$. Neuroticism ($t = 2.93$, $p < .01$) was a significant positive predictor of frequency of lifespan regrets in the first step. Openness to experience did not contribute significantly to the explained variance, nor did the addition of perceived control contribute to the explained variance. Autobiographical memory, entered on the third step, was a marginal negative predictor ($t = -1.80$, $p > .10$) and problem-focused coping, entered in the fourth step, was a positive significant predictor of frequency of lifespan regrets ($t = 3.09$, $p <$

Table 13

Summary of Hierarchical Regression Analysis for Phase 2 Variables Predicting Frequency of Regret (n=71)

Variable	B	$SE\ B$	β	ΔR^2
Step 1				.13**
Neuroticism	.05	.02	.34**	
Openness	.03	.02	.16	
Step 2				.01
Neuroticism	.04	.02	.29*	
Openness	.04	.03	.18	
Perceived Control	-.01	.01	-.10	
Step 3				.04^t
Neuroticism	.04	.02	.25^t	
Openness	.03	.03	.16	
Perceived Control	-.01	.01	-.08	
Autobiographical Memory	-.02	.01	-.21^t	
Step 4				.11**
Neuroticism	.04	.02	.30*	
Openness	.03	.02	.13	
Perceived Control	-.01	.01	-.10	
Autobiographical Memory	-.02	.01	-.26*	
Problem-Focused Coping	.34	.11	.34**	

$^t p < .10.$ $^* p < .05.$ $^{**} p < .01.$ $^{***} p < .001.$

.01), the latter explaining an additional 10.6% of the variance, F change $(5, 65) = 9.54$, p $< .01$. With the entry of problem-focused coping, autobiographical memory became a significant negative predictor of frequency of lifespan regrets ($t = -2.37, p > .05$). The results indicate that individuals who had higher scores on neuroticism and problem-focused coping and lower scores on autobiographical memory had a greater number of lifespan regrets.

Content Analysis: Qualitative Data

In this section, the qualitative data derived from the content analysis of the Life Reflection Interview in Phase 1 are presented. Regret themes, subthemes and dimensions of regret are described, and frequency and percentage of regret-related statements expressed by participants are presented. Gender and age effects on themes, nature of regret (omission vs. commission) and controllability are also presented.

Regret Themes

The coding manual for regrets (see Appendix N) provides the definition of regrets employed for this study, as well as the instructions for their classification.

Most commonly cited regret themes. Of the 111 participants interviewed in the study, only three (2.7%) reported having no regrets at all. Content analysis of the interviews resulted in the identification of 698 participant statements of regret. The average number of regrets expressed by the participants was 6.3 ($SD = 4.6$, range $= 0$ to 21). A total of thirteen regret themes emerged from the analysis, including an *unspecified* category, and all themes were divided into subthemes. Two themes, *interpersonal: family* and *interpersonal: other*, were merged, reducing the total number of themes to twelve. Seven regret themes were expressed by more than 20% of participants. Regret about

losses constituted the most commonly expressed regret theme, cited by 70.3% of participants, followed very closely by regret about education, cited by 69.4% of participants. The next most commonly expressed regret themes were, in descending order, self-related regrets (48.6%), occupation (35.1%), finances (31.5%), interpersonal regrets (29.7%) and parental status (23.4%). The five remaining themes were expressed by fewer than 20% of the participants and were, in descending order, marital status (18.9%), marriage (18%), children (12.6%) and retirement (9%), followed by unspecified regrets.

Regret Subthemes

The three most commonly cited regret themes were, in descending order, losses, education and self-related regrets. The subthemes for these three themes are summarized below. The subthemes for all themes can be found in Appendix M.

Losses-related subthemes. The losses theme was defined very broadly, allowing for a series of wide-ranging subthemes. These included regrets about the loss of current activities and life pleasures, the loss of physical and mental capacities, the loss of close relationships, as well as anticipated losses triggered by confronting one's mortality.

Education-related subthemes. In relation to education, there were several subthemes that emerged from the content analysis. These included regrets about the personal, financial and social constraints that interfered with pursuit of further education, regrets about choices made in relation to the content or area of study, regrets about the quality of education received and about the personal qualities that limited participants' assiduity and application to their studies.

Self-related subthemes. Several subthemes related to the self emerged from the content analysis. These included regrets about one's health and self-care, regrets about one's underdeveloped skills, both interpersonal and instrumental or technical, regrets about one's personal qualities, and regrets about not having engaged sufficiently in enjoyable activities.

Dimensions of Regret

Spontaneity of expression (in response to a regret-related or counterfactual question versus spontaneously emergent). There were three sources of information about regrets imbedded in the 72-question interview. Ten questions specifically addressed regrets in relation to several life domains and three questions promoted counterfactual thinking by addressing "what might have been," hence eliciting statements of regret. In addition, throughout the interview, participants were asked to reflect on various aspects of their lives, past and present. This reflective process allowed for the spontaneous emergence of regretful statements. Almost half of the 698 regret statements identified emerged spontaneously from the non-regret related questions ($N = 332$, 47.6%), that is, from the reflective questions. The remaining regret statements were divided between those in response to the questions specific to regrets ($N = 249$, 35.7%) and those that were in response to the questions that promoted counterfactual thinking ($N = 117$, 16.8%).

Directness of expression (direct versus inferred). Of the 698 regrets identified, 69.5% ($N = 485$) were expressed as direct regrets, that is, they either contained the word regret or they contained a clearly stated counterfactual formulation of regret such as "I wish I had..." or "I should have...". Of the total number of regrets, 35.7% ($N = 249$) included the word 'regret' within the statement. The remainder of the regrets 30.5% ($N =$

213) were identified by the coders as a regret through inference based on the content of the wording and the context in which it was situated.

Affective component. In addition to the words used, attention was paid to the emotional content, both as expressed in the verbal content and in the voice. The verbal content of 60.5% ($N = 422$) of the regrets contained an expression of negative affect and 76.1% of the regrets ($N = 531$) were considered to have been expressed with negative affect in the voice.

Nature of regrets: action (omission versus commission) and character. A little over half of the expressed regrets ($N = 370$, 53 %) were regrets of omission, that is, regrets about things not done. Although this result does not initially seem to provide support for the findings in the literature that suggest that the majority of regrets are regrets of omission (Gilovich & Medvec, 1994; Gilovich et al., 1993; Savitsky, Medvec & Gilovich, 1997, among others), the definition of regret within our study is broader, including regrets that are not related to specific actions. Removing the 190 regrets for which the omission versus commission dimension was not relevant (e.g., regrets about one's character, regrets about circumstances), the 370 regrets of omission represent 72.8% of the action-related regrets ($N = 508$). Only 17.3% of the regrets ($N = 121$) were regrets of commission, the remainder being indeterminate. Character regrets represent 10.7% ($N = 75$) of the total number of regrets.

Agency of regrets (what or who caused the regretted event or experience, i.e., self, other or circumstance). Do older adults regret mostly those things for which they feel responsible? Responsibility for the regretted event or experience was attributed exclusively to the self for under half of the regrets expressed ($N = 322$, 46.1%) and to

others or circumstance for 51.4% of the expressed regrets, so that these participants were as likely to regret events or experiences for which they felt responsible as those for which they did not.

Object of regrets. Do older adults regret only things that affected them directly or do they also regret things that affected others? The vast majority (92.9%, $N = 649$) of regrets expressed affected the participant, that is, had the self as object, either exclusively or in a small number of cases ($N = 38$), in addition to another person. Only 44 regrets (6.3%) were about situations that affected exclusively another person.

Temporal perspective (current or past experience of regret regarding an event or experience occurring in the past, present or future). As would be expected, the vast majority of regrets were about events or experiences that occurred in the past ($N = 507$, 72.6%). It is of interest, however, that over a quarter of the regrets expressed by these older adults (25.6%, $N = 179$) were related to current events or experiences. An additional 10 regrets (1.4%) were related to future events, that is, 10 regrets were anticipatory and reflected concern for life situations after the individual's death.

Participants described almost all of their regrets ($N = 676$, 96.8%) as being experienced in the current moment, that is, they were experiencing the affective component of regret in their daily lives at the time of the interview. A very small number of regrets ($N = 20$, 2.8%), however, were described as having being experienced in the past and no longer experienced in the present. "I used to regret ...."

Perception of controllability of the regretted event or experience (controllable versus uncontrollable). As participants described their regrets they often expressed whether they believed that they had had control over the regretted matter. For example, "I

am losing my memory and I should have done more puzzles to prevent the decline"

versus "I am losing my memory – that's life." The majority of regrets ($N = 421$, 60.3%)

were perceived to have been outside the control of the participants, a quarter ($N = 175$,

25.1%) of regrets were perceived as controllable, and perceived control could not be

determined for 14.6% ($N = 102$) of the regrets.

Gender and Age Effects for Regret Themes

A series of univariate ANOVAs was used to test for gender and age differences

for regret themes, followed by the use of post-hoc tests when necessary. The analyses

were restricted to the themes that had been expressed by over 20% of the sample, that is,

regrets related to losses, education, self, occupation, finances, interpersonal relations and

parental status.

Gender differences. Given its association with gender, education was used as a

covariate for education- related regrets. With years of education controlled, the results of

an ANCOVA revealed a main effect for gender in relation to regrets about education,

men ($M = 1.48$, $SD = 1.21$) having significantly more education-related regrets than

women ($M = .96$, $SD = .90$), $F(1, 106) = 6.45$, $p < .05$. For all other regret themes

examined, the results of ANOVAs revealed that there were no significant gender effects,

men and women having equal numbers of regrets. This finding held even for themes for

which differences might have been anticipated, such as self-related regrets, occupation-

related regrets, and interpersonal regrets.

Age differences. Although there were no significant age differences in relation to

regret themes, the results revealed a trend for older individuals to have more regrets about

interpersonal relations, $F(1, 107) = 2.91$, $p < .10$ and a trend for younger individuals to

have more regrets about occupation, $F(1, 107) = 3.14, p < .10$. Because age and socioeconomic status were not correlated, there was no need to control for the latter.

Although there were no age and gender differences in relation to regrets about parental status, an ANOVA was used to test for the significance of parental status differences in addition to gender and age. Individuals without children had significantly more regrets about parental status ($M = 1.00$, $SD = .97$) than did those with children ($M = .21$, $SD = .54$), $F(1, 103) = 9.69, p < .01$. There was a two-way gender by age interaction, $F(1, 103) = 5.09, p < .05$, but post hoc Scheffé tests did not reveal significant between-group differences. Given that the vast majority of members of this cohort had children, the discrepancy between the number of participants in this study with children ($n = 95$) and those without ($n = 16$) is representative of the population.

Gender and Age Effects for Dimensions of Regret

Perceived controllability and the nature of regrets (omission vs. commission) were examined as proportions of total regrets rather than raw frequencies, thereby providing a measure of the salience of these dimensions of regret. Where necessary, proportions were arc sin transformed to achieve a more normal distribution, a method previously used by Roese et al. (2006). Analysis of variance was then used to assess gender and age effects.

Control. The proportion of regrets over which individuals expressed having control versus not having control was examined for gender and age effects. A main effect for gender revealed that women ($M = .68$, $SD = .28$) had a significantly higher proportion of regrets over which they expressed having no control than did men ($M = .53$, $SD = .32$), $F(1, 107) = 6.86, p < .01$. The interaction between gender and age group was also

significant, $F(1, 107) = 3.86, p < .05$. A post-hoc Scheffé revealed that younger males $(M = .46, SD = .28)$ had a significantly lower proportion of regrets over which they felt they had no control than did younger women $(M = .72, SD = .28)$. Older men $(M = .61, SD = .34)$ did not differ significantly from older women $(M = .65, SD = .28)$ in relation to perceived controllability of regrets.

Omission versus commission. Whereas no main effects of gender or age were found for the proportion of regrets of omission, a significant main effect of age was found for the proportion of regrets of commission, $F(1, 107) = 5.38, p < .05$. The results indicate that younger individuals $(M = .21, SD = .24)$ had a significantly higher proportion of regrets of commission than did older individuals $(M = .12, SD = .14)$.

Participants with the Fewest and with the Most Regrets:

A Comparative Description

In this final results section, participants with the most frequent $(f > 14)$ and with the fewest $(f < 2)$ stated regrets are first described in relation to demographic variables and predictor and outcome variables derived from Phase 1 of the study. Phase 2 predictor variables are not included given the small subsample size and the corresponding reduction in the number of low- and high-regret participants for whom data are available. Distinctions between low- and high-regret participants' views of regret, of interpersonal relationships and of self as described in the Life Reflection Interview are then summarized.

The low-regret group consisted of all participants with no expressed regrets $(n = 3)$ or with only one expressed regret $(n = 8)$. This group of 11 participants represents the lower 10% of the total sample and was adequate in size to allow for an in-depth

exploratory qualitative analysis. The high-regret contrast group was selected to provide a number of participants equal to that of the low-regret group. There were 11 participants with 15 or more expressed regrets and these participants constituted the high-regret group. It is of note that the cut-off points for inclusion in the groups were based on group size and not on assumptions about the number of regrets, per se. As such, to give a specific example, no assumptions were made about 15 regrets being distinct from 14 regrets.

To begin, the high- and low- regret groups were descriptively compared on demographic variables. Both groups had equal numbers of men and women, five and six, respectively, and were similar in age ($M = 73.45$, $SD = 7.24$ and $M = 72.09$, $SD = 5.72$, respectively), years of education ($M = 13.64$, $SD = 3.78$ and $M = 12.91$, $SD = 2.88$, respectively), and socioeconomic status ($M = 51.52$, $SD = 14.74$ and $M = 50.92$, $SD = 11.06$, respectively). Marital status seemed to distinguish between the two groups, seven of the low-regret participants being married (63.6%), whereas only three of the high-regret participants were married at the time of testing (27.3%), four being divorced and four widowed. Note that for the overall sample, there were no differences in frequency of regret for married versus unmarried participants. Participants in both groups also had similar numbers of children ($M = 2.18$, $SD = .98$ and $M = 2.82$, $SD = 1.47$, respectively).

The high- and low- regret groups were then descriptively compared on predictor and outcome variables. Means and standard deviations for the high- and low-regret groups are presented in Table 14. The following pattern emerged. The groups appeared similar on degrees of extraversion, openness to experience, agreeableness, conscientiousness, optimism, health and quality of experience of aging. Participants in

Table 14

Descriptive Statistics for High- and Low-Frequency of Regret Contrast Groups (n = 11 for each group) for Predictor and Outcome Variables Derived from Phase 1

Variable	High-Regret		Low-Regret	
	M	*SD*	*M*	*SD*
Neuroticism	22.18	7.40	13.55	7.10
Extraversion	24.67	4.04	26.49	4.04
Openness	30.02	4.15	30.00	3.23
Agreeableness	34.65	2.58	35.27	4.29
Conscientiousness	30.34	6.87	32.27	7.66
Optimism	21.30	3.49	23.36	4.06
Intolerance of Uncertainty	52.44	10.37	40.64	10.11
Depression	11.33	6.54	5.18	2.79
Happiness	30.11	7.35	41.27	2.97
Health	2.45	1.00	3.36	0.57
Experience of Aging	31.63	5.15	31.64	5.60

Note. *M* and *SD* based on raw scores. Higher scores indicate more of each construct.

the high- compared to the low-regret group did seem to have higher scores on neuroticism, intolerance of uncertainty and depression, and lower scores on happiness. It is of interest that whereas participants in the high- compared to the low-regret group appeared to have higher scores on depression and lower scores on happiness, both measures of affective components of subjective well-being, their scores on the Experience of Aging Index, a measure that taps into the cognitive component of subjective well-being, did not seem to differ from those of the low-regret group.

Qualitative Interpretation of Attitudinal Styles

The results presented in this final section are derived from the low- and high-regret participants' responses to the entire Life Reflection Interview, that is, not restricted to regret specific questions, and represent the author's personal and subjective interpretation of these responses as meaningful communications about attitudes and beliefs that may influence the levels of expressed regret. This section is exploratory in nature.

The methodology involved repeated reading of the entire interview transcripts of the 11 low- and 11 high-regret participants until attitudinal commonalities and differences emerged. In contrast to the content analysis of lifespan regrets described above, in this analysis no attempts were made to identify regret themes, that is, the content of regrets, but rather to identify and describe attitudes characterizing how participants think about regrets, themselves, interpersonal relations and other aspects of life. These attitudes are summarized and examples are provided, at times in the words of the participants. It is of note that the responses of most low-regret participants could be synthesized in a coherent manner on the basis of commonalities that emerged much more

easily than the responses of the majority of high-regret participants. The latter were more likely to defy this type of treatment, remaining more disparate and diffuse, rendering group commonalities more elusive.

Conscious and effortful process. The most striking regret-related attitude that emerged from the interviews was one commonly expressed by low-regret participants who seemed to employ conscious and effortful techniques to avoid having regret, that is, they talked about regret as an active choice. In the words of one low-regret participant, "I never regret anything because regret makes you worry and I don't want to." Two participants referred to a conscious attitude, the first saying "It is totally outside of my thinking to go back and think about what I could have done and what would have happened," the other stating "My philosophy on life has always been to look ahead, not to look back." Still another low-regret participant characterized himself, saying "I'm the type of person that if I can't have it, I don't have any regrets." This focus on a deliberate regulation of regret appears to be characteristic of a more generalized emotion regulation style (see Gross & Thompson, 2007) and thus extended to other emotions as well. For example, one low-regret participant stated "My mother was a great worrier and this is why I said I'm going to forget about it and not be the way she was." There was little evidence of this type of emotion regulation in the transcripts of the high-regret participants.

Focus on silver linings and mitigating or compensatory aspects of life experiences. Both low- and high-regret participants made reference to their personal past, and specifically to early life difficulties such as family backgrounds characterized by parental neglect and physical or psychological illness. What distinguished between

the two groups was the tendency for low-regret participants to move quickly away from the description of the problems to a description of mitigating circumstances or later life experiences that counteracted the negative early experience. In other words, they were able to identify a positive aspect of the experience, that is, a silver lining, or to identify a person or experience that was helpful. For example, one low-regret participant noted the importance of the influence of his wife and her family on him as compensation for earlier difficulties. In his words "So my wife, her family, the environment had a very great effect on me." Another described the difficulties of her father leaving when she was 10 but was able to quickly shift to what she interpreted as advantages of being alone with her mother. "She always taught us to… she used to call it to stand on our own two feet."

In contrast to low-regret participants, high-regret participants tended to focus on the negative aspects of childhood as if those early life events had not yet been worked through and lingered on as sources of difficulty. As an 84 year old male participant said "And I was always well cared for physically but I did not have close parental guidance or people to whom I could relate….I missed that then…..I miss it now." The tenacity of regret for the high-regret participants is reflected in this statement by a male participant about his own father: "…my dad died at 91 and he was still unhappy that he was unable to help us go to college. He was still saying that to me 3 or 4 days before he died, that he regretted it."

The capacity common to low-regret participants to identify the silver linings of difficult situations extended to their own mistakes, as well. As one low-regret participant said "I think I would do the same thing again, you know if I would be young again…..each thing that happens in your life is there for a reason and you learn from it.

You know for me each difficulty was another little stepping stone to go further so I cannot say I regret anything that happened."

Normalization and minimization of difficulties. In general, low-regret participants as compared to high-regret participants more commonly used downward counterfactuals, thereby comparing themselves to people who were worse off. They also normalized cognitive changes and softened the impact of physical changes. In the words of one low-regret participant, "So these are changes, but you adapt you know. [The changes] come slowly; it doesn't come all at once." Low-regret participants also tended to describe themselves as healthy despite identified health problems. One participant said "Yes I take insulin twice a day but it's well under control." Another rated his health as "good" (4) on a 5-point scale ranging from "very poor" (1) to "very good" (5), but listed diabetes, arthritis, hypertension and glaucoma as current health conditions. Another low-regret participant, expressing no concern about his health despite several illnesses, added "The doctor worries, not I."

Positive illusions and positivity bias. In terms of their self-perception, low-regret participants generally saw themselves as improving with age. For example, one participant saw herself as better at cross-word puzzles than in the past, whereas others saw themselves as stronger, more active and in better health. "I don't feel any older than when I was 50 to tell you the truth," said one participant. Another said, "I'm stronger and can do things that I couldn't do in my 40's." Some of these participants explicitly perceived themselves as still young, one saying "You're only as old as you feel." It is notable, however, that despite a youthful attitude, good reality testing was manifested in statements about no longer lifting heavy objects or doing other physical activities that

were deemed too strenuous for their actual physical condition at the time of the interview. High-regret participants generally expressed more difficulty with their health.

The following statement made by a low-regret participant exemplifies the positivity bias. He said that he has a selective memory, "The bad things I've put aside and the only things that I remember are the good things. That's the philosophy that I took." This participant describes the positivity bias as if it is the product of a conscious and effortful process of emotion regulation.

Belief in a benign and helpful world. While acknowledging the difficulties of aging, the low-regret participants also expressed a belief in the helpfulness of others. One participant described the hardships of being alone but then went on to recount stories of relative strangers noticing that she wasn't home when she should have been and sending, in one case, a friend, in another, the police to check on her. Another participant, focusing on one's capacity to manage, concludes that help is available when needed. "Depend on yourself, but if you need help you can always ask for it and someone will come along and do something for you to help you."

Acceptance of what one can't change. "…I suppose when I was younger I probably felt that I wanted a lot of things and that I wanted to achieve them and I didn't think that I'd learn to be so tolerant and accept things, accept things that I couldn't change." This attitude of acceptance of what cannot be controlled permeated the interviews of low-regret participants in relation to topics such as the possible loss of autonomy and eventual death. In relation to the former, one participant said "…we don't know what's in store for us but I don't worry about it, I'll take it when it comes, I mean there's nothing you can do about it anyway…" In relation to death, different wording

expressed a common attitude. Four participant responses follow. "Why worry about it because you know it's going to happen"; "It's a fact you know. We have to face facts"; "I live while I live and I'll die when the time comes"; "This and taxes, they're inevitable." This pragmatic acceptance of the inevitable and its attendant preclusion of worry were not as evident in the interviews of the high-regret participants. The latter group was characterized more by a feeling of resignation than of acceptance.

The low-regret participants tended to describe instances of problem-solving in the past, presumably when the problems to be dealt with could be controlled. They also described themselves as currently active, involved in both ongoing planning of retirement and in volunteerism.

Attitude toward interpersonal relations. A belief in the importance of interpersonal relationships was imbedded in the interviews of low-regret participants and in some cases expressed as lessons learned from various life domains including work. Several participants stated that what they had learned from work and family roles was to understand people and different points of view, to handle people and to not be selfish. An emphasis on tolerance, compromise and cooperation as important aspects of relationships was commonly expressed. In the words of the low-regret participants, "You have to put some water in your wine... you've got to give and take." "I know I can compromise. I think it's best to give in to some things. Married couples have to do that one way or the other or otherwise the marriage won't work. So there's a lot of compromising in marriage." "Well, we do have to cooperate, and give and take and be tolerant." As stated above, the majority of low-regret participants were married whereas only a minority of high-regret participants were married.

View of self. Low-regret participants did not seem to have had fewer difficulties, but did seem to have attitudes that differed from those of the high-regret participants. Several low-regret participants described themselves as having been fortunate in life. Others described themselves as having been able to accept life. As one participant said, "...I'm able to accept life as it comes around. I'm not a worrier that's for sure. So you know I was always okay with my life even in difficult times." Another participant described a belief that things will turn out alright. "It's difficult to deal with certain things sometimes, but if you deal with them, usually they come out okay."

In their narratives, high-regret participants gave more attention to weaknesses than strengths. As one participant said "I always felt I was capable of doing more." They also seemed to be less self-forgiving. A low-regret participant was able to say "The decisions I made then were immature decisions. You can't regret anything like that." A high-regret participant, however, said "I was an incompetent, incompetent manager of my own financial affairs." The essence of the contrast in general self-concept between the low- and high-regret participants was distilled in the following two statements, expressed by a low- and a high-regret participant respectively, "I have a happy attitude" versus "I'm one of the half empty not the half full people."

To summarize, both low- and high-regret participants appear to have had difficulties in their lives, but the low-regret participants seem to have been able to adjust more readily, perhaps facilitated by a greater belief in their ability to be masters of their own fate, to consciously and intentionally choose to have no or few regrets and to be forward rather than backward looking, and by a greater capacity to cognitively restructure experiences to derive positive meanings, to engage in downward counterfactuals, to

accept what they cannot control and to remember themselves as problem solvers. It is of note that some high-regret participants expressed regret before the first direct regret questions were even asked and that high-regret participants spoke much more than the low-regret participants during the interview, the average number of words being 12,437 ($SD = 5049$) and 6,465 ($SD = 2828$), respectively.

DISCUSSION

The main purpose of this dissertation was to expand upon the scientific

knowledge about regret in older adults by applying a broad-based empirical approach

using quantitative and qualitative methods. The specific goals were manifold and

included (1) the exploration of the differential impact of demographic, personality,

dispositional and other relevant variables on intensity and frequency of regret, (2) the

examination of the impact of both intensity and frequency of regret on the psychological

and physical well-being of older adults while controlling for personality and dispositional

variables, (3) the examination of regret themes and dimensions of regret as spontaneously

expressed within the context of an in-depth life history interview, and (4) the

identification of profiles of low- and high-regret participants in an attempt to arrive at a

fuller understanding of the processes involved in regret.

In most studies examining the impact of regret on psychological (Jokisaari, 2004;

Lecci et al., 1994; McKee et al., 2005; Torges et al., 2005; Wrosch & Heckhausen, 2002)

and physical well-being (Wrosch, Bauer, et al., 2007; Wrosch et al., 2005; Wrosch et al.,

2006), regrets were determined by providing a pre-established list, by restricting the

frequency of regret responses or by asking about the most severe regret. The present

study was a rare study methodologically, able to contribute to the body of research by

exploring both intensity and frequency of regret as expressed spontaneously within the

context of a life history interview with a sample of older adults just large enough to

permit quantitative analyses and uncommonly large, yet not too unwieldy, to allow for

qualitative analyses. Typically, qualitative research is conducted with many fewer

participants than the 111 interviewed in this study. For example, a recent qualitative

study on suffering in older adults (Black & Rubinstein, 2004) had 40 participants. The current study was also the first with older adults to include all of the Big Five personality traits along with several dispositional variables, autobiographical memory and values as predictors of both intensity and frequency of regret, and to control for these personality and dispositional variables in examining the impact of regret on psychological and physical well-being.

Similarities and Differences in Intensity and Frequency of Regret

The present dissertation provides the first known attempt to examine both intensity and frequency of regret in older adults in one study. The examination of the strength of the association between intensity and frequency of regret, the similarities and differences in the patterns of their relations with predictor variables and their differential impact on psychological and physical well-being in older adults allow for a greater understanding of the construct of regret. Given no previous findings for comparison with the current ones, the results themselves are of interest.

The Association between Intensity and Frequency of Regret

The findings revealed a correlation of moderate magnitude between intensity and frequency of regret as measured in this study. This moderate association between intensity and frequency of regret is consistent with the overall findings that the predictors of intensity and frequency of regret did not have identical patterns, nor did intensity and frequency of regret have identical predictive patterns in relation to psychological and physical well-being. These results do not suggest the presence of what could be referred to as dispositional regret, that is, a regretful attitude or tendency or trait-like phenomenon that characterizes an individual and is stable across situations and would presumably

involve both intensity and frequency.

Patterns of Relations to Predictor Variables

Demographic variables

The results indicated that the demographic variables included in this study, age, years of education, socioeconomic status, gender and marital status, were not significantly associated with either intensity or frequency of total lifespan regret. In relation to age, these findings support Wrosch and Heckhausen (2002) who found that age did not predict intensity of regret. The findings do not, however, support the regret literature (Jeffries & Konnert, 2002; Kovach, 1991, 1995) suggesting that age may be negatively associated with frequency of regret. Although there is no evident explanation for this inconsistency, methodological differences among these studies may contribute in part to the difference in findings. More research is required to better understand the association between age and regret at different stages of older adulthood.

Previous findings of a negative association between years of education, socioeconomic status, and levels of regret (Holohan et al., 1999; Schieman et al., 2005) were not supported in this study. The relatively high educational level of participants and the specific composition of the lifespan regret variables which measured regrets across life domains may help to explain the discrepancy in findings.

The examination of the contrast low- and high-regret groups permitted a further exploration of demographic variables in relation to two extremes in frequency of regret. Age did not distinguish between these two groups. The only demographic variable that did distinguish between the low- and high-regret groups was marital status, the majority of participants in the low-regret group being married, whereas the majority in the high-

regret group were not married at the time of the interview. This is of interest because marital status was not associated with levels of regret for the full sample, a caveat being that the finding in the full sample was established statistically and the finding in the contrast groups was suggested descriptively. Nonetheless, four of the high-regret and only one of the low-regret participants were divorced. Marital status has been identified as the demographic variable with the strongest effect on happiness (Argyle, 1999). R. E. Lucas (2005) has suggested that individual differences in personality may influence the adaptation to divorce, intensifying and prolonging the effects. It is possible that the mechanisms that result in an inability to adapt to divorce may be similar to those that render individuals prone to having regret.

Regret themes and dimensions were also examined for gender and age differences. A surprising finding was that men had significantly more education-related regrets than women with years of education controlled. This finding contradicts previous studies that found that regrets about education were most frequently cited by women compared to men across the adult lifespan, that is, in young and middle age (Lecci et al., 1994), in middle and older age (Timmer et al., 2005) and over age 50 (DeGenova, 1996). The narrower and more advanced age of the participants in the present study (range = 65 to 92 years), may contribute to the discrepant results. Having been educated prior to the current modern resurgence of feminism, the women in this sample may, in general, perceive their roles in a more stereotypical way, that is, they may not think about the potential impact of higher education on other aspects of their current lives. Whereas for men of that cohort, educational aspirations were linked to occupational aspirations, for most women, educational aspirations were linked to marital aspirations (Levinson, 1996).

A second finding of interest is related to perceived controllability of regrets. Women had a significantly higher proportion of regrets compared to men over which they expressed having had no control. Conversely, men were more likely than women to regret events and experiences over which they believed they had had control. This result conforms to expectations and validates related research findings that, compared to women, men express a greater sense of general life control (Lachman & Weaver, 1998; Feingold, 1994) and that life satisfaction is associated with control for men (Bourque, Pushkar, Bonneville & Beland, 2005). There has been no evidence of gender differences in relation to control in the regret-specific literature. It is interesting that Gilovich & Medvec (1994) created a category of regrets of circumstance beyond the individual's control, but found that very few expressed regrets could be included in that category. In contrast, Erikson et al. (1986) found that regret was expressed in the face of lost capacities and acquired weaknesses that accompany the aging process. Clearly these latter regrets can be viewed as regrets of circumstance over which participants have no control. In the current study, the majority of regrets, 60.3%, were coded as uncontrollable.

Post hoc analyses revealed an interaction whereby younger men compared to younger women had a significantly lower proportion of regrets over which they felt they had no control, but older men and women did not differ. As men age, they appear to become more similar to women in relation to their perception of the control they have over regrettable events and experiences. This supports findings that older adults compared to younger adults express having less control (Turk Charles, Reynolds, & Gatz, 2001). It is also consistent with Wrosch and Heckhausen's (2002) conclusion that

external regret-specific attributions of responsibility by older adults serve a protective function given the reduced opportunities to effect change with increasing age. In other words, it might be helpful for older adults to perceive regretted events and experiences as not having been within their control.

Gender role stereotypes might have led us to anticipate a difference between men and women in relation to interpersonal regrets but equal proportions of men and women had family-related interpersonal regrets and there were no significant gender differences in the frequency of these regrets. Although men did express interpersonal regrets about children, support was not found for the commonly held belief that men, looking back on their lives, regret having spent so much time at work and so little time with their children. This is in contrast to previous findings that more men cited the regret of not having spent more quality time with family (Kinnear & Metha, 1989), men compared to women placed family activities higher on their list of things they would have done more of (DeGenova, 1992) and the majority of men wished they had spent less time worrying about their job (DeGenova, 1996). Earlier research suggested that men in midlife feel more successful in their work if they are in single career marriages and have children (Osherson & Dill, 1983). Given the relatively elevated socioeconomic and educational level of our sample, the large percentage of married men with children and the social expectations for this cohort, it is possible that work satisfaction served as the main measure of life success and that these men did not consider that being home more would have been a viable option.

Personality variables (The Big Five)

In Phase 1 of the study, only one of the Big Five personality traits, that is, neuroticism, significantly predicted both intensity and frequency of lifespan regret, both

positively. Openness to experience also positively predicted both intensity and frequency of regret, but significantly and marginally, respectively. The association between neuroticism and levels of regret is consistent with findings derived from studies on reminiscence and counterfactual thinking, in which neuroticism is positively associated with bitterness revival (Cully et al., 2001), obsessing about a negative past (Cappeliez & O'Rourke, 2002), experiencing more negative affect during reminiscence (Webster, 1994, 1999) and tending to engage in upward counterfactuals (Kasimatis & Wells, 1995). It is also consistent with research findings on emotion regulation (John & Gross, 2007) that people high on neuroticism not only find their emotions difficult to control, but inadvertently increase their negative emotions and are unable to avoid negative-emotion contexts.

Openness to experience may contribute to regret in several ways. Firstly, it has been shown to be linked to a desire for behavioural exploration and stimulation which may lead to behaviours that can later be regretted (Ozer & Benet-Martínez, 2006; Trull & Sher, 1994). Individuals who are more open to experience may also be more likely to experience regret because of an increased tendency to fantasize about life alternatives and an increased capacity to find alternatives attractive. This would render them more susceptible to speculate about the paths not chosen. Another aspect of openness to experience is a perceptual and affective openness, the latter including openness to one's own emotional experience in the moment (McCrae & Costa, 1987; Rothbart, Ahadi & Evans, 2000; John & Gross, 2007). It is possible that participants who are higher on openness to experience are also more emotionally expressive when describing their life experiences and convey their regret with a greater intensity which is perceptible to the

listener.

A third Big Five personality trait, agreeableness, predicted intensity of lifespan regret but not frequency, participants who were more agreeable having less intense regret. This finding supports previous findings in the reminiscence literature (Cully et al., 2001) that agreeableness is negatively correlated with bitterness revival. It is also reasonable to suggest that people who are agreeable might be better in interpersonal relations and in dealing with the tribulations of everyday life, thereby having lower levels of regret. But why agreeableness does not predict frequency of regret as well as intensity is not clear. It is possible that the very nature of high agreeableness results in a conversational style that minimizes negative affect to such a degree that the affect associated with a stated regret is muted, the more agreeable, the less intensity of expression.

Dispositional and other relevant variables

Two other variables never before examined in relation to regret predicted intensity but not frequency of regret in Phase 1 of the study. Intolerance of uncertainty and number of emergent values predicted intensity of regret, positively and negatively, respectively. Given that the decision-making process which is often at the source of regret can be fraught with uncertainty and ambiguity, that the aging process with its attendant changes and losses can be characterized as uncertain and that the testing process, per se, can be perceived as uncertain (van den Hoonaard, 2005), it is not surprising that older adults who are more intolerant of uncertainty would express more intense regret. As for the relation between emergent values and intensity of regret, the results support previous findings that values are positively associated with quality of life (Borglin et al., 2005; Pushkar et al., 2003) and that the absence of values in later life can

result in negative affect (Fry, 1991). It seems logical that the more values individuals have, the less likely they are to engage in activities that would lead to intense regret.

In Phase 2 of the study, three additional variables were assessed as predictors of intensity and frequency of lifespan regret, perceived control, dispositional problem-solving coping and autobiographical memory. As in Phase 1 of the study, the patterns of prediction of intensity and frequency of lifespan regret differed. Individuals with higher scores on openness to experience and intolerance of uncertainty and lower scores on perceived control and autobiographical memory had more intense lifespan regret. Neuroticism lost its predictive efficacy in relation to intensity of regret with the entry of intolerance of uncertainty and perceived control, probably because of its shared variance with the latter variables. Problem-solving coping did not add to the prediction of intensity of lifespan regret. In contrast, frequency of lifespan regret was predicted by neuroticism, autobiographical memory and problem-focused coping. Individuals with higher scores on neuroticism and problem-focused coping and lower scores on autobiographical memory had more frequent lifespan regret.

Neuroticism and openness to experience both predicted frequency and intensity of regret in the larger Phase 1 sample but in the Phase 2 subsample, neuroticism predicted only frequency of regret and openness to experience, only intensity. Nonetheless, it is noteworthy that these two personality variables partially maintain predictive roles in relation to regret with different sets of predictors.

Scores on the Autobiographical Memory Questionnaire were the only ones to predict both measures of regret in Phase 2, negatively and marginally predicting intensity and significantly predicting frequency of lifespan regret. These results address the very

nature of regret which cannot exist without autobiographical memory, a construct that can be conceptualized as the bedrock of regret. The negative direction supports previous findings that suggest that autobiographical memory may serve a regret minimizing and satisfaction maximizing function (Mather & Johnson, 2000; Mather et al., 2000), a self-enhancing function (M. Conway, 2001) and an emotion-regulating function via a positivity bias. The Life Reflection Interview engaged participants in an autobiographical memory narrative which does not provide a veridical reflection of past life events but rather a reconstruction. The Autobiographical Memory Questionnaire assesses people's subjective sense of their ability to remember vividly and accurately, easily, across time and across types of experiences and finally, as compared to the capacity of others to remember. It does not assess actual memory capacity but one's judgement thereof. In other words, by assessing confidence in one's memory, it can be construed as assessing an aspect of self-efficacy. It could be argued that individuals with higher self-efficacy might evaluate their capacity to remember more highly and that additionally, memories evoked would be of a more positive nature, hence resulting in further self-enhancement (Christensen, Wood, & Barrett, 2003) and reducing the experience of regret intensity and frequency.

Two other variables that predicted lifespan regret were perceived control, individuals with higher scores having less intense lifespan regret, and individuals with higher scores on problem-focused coping having more frequent lifespan regret. These results were both consistent with hypotheses. One of the premises of lifespan developmental theory is that people strive to maintain control over their environment. With increasing age, however, opportunities to effect change on the environment are

reduced (Wrosch & Heckhausen, 2002) and the adoption of strategies that allow older adults to effect internal, rather than external change becomes more adaptive. For example, external control attributions may be protective in situations that are not controllable. As reported above, the younger male participants in the present study were more likely to retrospectively interpret regretful experiences to have been within their control compared to the other participants. In addition, the qualitative data in this study revealed that responsibility for the regretted event or experience was attributed exclusively to the self for slightly less than half of the regrets expressed (46.1%) so that overall, these participants were as likely to regret events or experiences for which they felt responsible as those for which they did not.

In this study, the controllability of expressed regrets was coded qualitatively. In addition, a global perceived control measure was used to predict intensity and frequency of regret. This latter measure reflects a global disposition toward feeling that one has control over one's life, that one is able to achieve one's goals and that nothing uncontrollable will interfere with this achievement of goals. It is this global belief in one's competency that negatively predicted intensity of regret. This is consistent with findings that internal locus of control positively predicts life satisfaction in the oldest-old (Berg, Hassing, McClearn, & Johansson, 2006). It can be argued that older people who are high on global dispositional perceived control are better able to control the ways in which they interpret their life experiences, resulting in lower intensity of regret. It is also possible that people higher on control beliefs felt more confident in the interview situation and were better able to control their emotional responses in the moment.

Another way of achieving internal rather than external change is through a

selective use of coping strategies, problem-focused coping not being a strategy of choice for older adults. The results confirm this. Problem-focused coping predicted more frequent lifespan regret. The very act of remembering the things that one regrets engages one in the process of reminiscence. Reminiscence researchers have been systematically examining types and functions of reminiscence. In a recent series of studies on reminiscence in older adults, Cappeliez and colleagues have investigated personality predictors of functions of reminiscence (Cappeliez & O'Rourke, 2002), functions of reminiscence as predictors of positive and negative aspects of mental health controlling for personality traits (Cappeliez, O'Rourke, & Chaudhury, 2005) and finally, functions of reminiscence as predictors of mental and physical health (Cappeliez & O'Rourke, 2006). Findings related to reminiscence for problem-solving are of particular relevance.

Reminiscence for problem-solving, as defined by Webster (1993, 1997), involves remembering past experiences to solve current problems and to cope. Whereas reminiscence for problem-solving was initially not found to be related to mental health (Cappeliez et al., 2005), it did contribute positively to well-being in the third of Cappeliez' articles cited above. This inconsistency might have resulted from Cappeliez and colleagues' further revision and refinement of their conceptual model of reminiscence functions (Cappeliez & O'Rourke, 2006). In the revised model, all reminiscence functions fall within three broader categories of functions. The problem-solving function, the identity function and death preparation all fall within the positive self-functions category. This categorization results in a shift in the conceptualization of problem-solving away from the more concrete focus on retrieval of past problem-solving experience to deal with current problems to an emphasis on the positive representation of

self as a competent person. As one of several reminiscence functions subsumed under the rubric of positive self-functions, the problem-solving function contributed positively to psychological and physical well-being. On the surface, this finding appears to contradict the results in this dissertation. On closer inspection, however, the contradiction is supplanted by an important distinction between active attempts at coping versus retrieval of memories of having coped. Whereas active engagement in problem-solving coping may result in failure, thereby precluding a healthier disengagement from a blocked goal and reducing self-esteem and attendant feelings of self-efficacy and competence, reminiscing about problem-solving may serve to enhance self-esteem and increase a feeling of self-efficacy and competence. The actual expression of this positive sense of self may take the form of disengaging from a blocked goal and choosing to reengage in another goal, rather than trying to overcome the original blocked goal (Wrosch et al., 2003). Recent findings indicate that better ability to disengage from blocked goals predicts lower levels of self-reported health problems across the adult lifespan (Wrosch, Miller, Scheier, & Brun de Pontet, 2007). We would argue that the ability to distinguish between previous problem-solving capacities and currently feasible responses to situational demands may be one of the hallmarks of acceptance of the aging process.

Patterns of Relations to Indices of Well-Being

The results of the current study provided some support for previous findings that regret predicts psychological well-being in older adults, positively predicting depression (Coleman, 1999; Wrosch et al., 2005) and negatively predicting life satisfaction (DeGenova, 1993; Jokisaari, 2004; Kinnear & Metha, 1989; Metha et al., 1989; Torges et

al., 2005). Intensity and frequency of lifespan regret did not have similar or equal predictive effects on the three indices of psychological well-being examined, that is, depression, happiness and experience of aging. Neither regret measure provided support for findings related to physical well-being (Torges et al.; Wrosch & Heckhausen, 2002; Wrosch et al., 2005).

Psychological well-being

Although intensity and frequency of total lifespan regret did not predict depression in the current study after controlling for personality and dispositional variables, frequency of regrets of omission did, so that participants who had more regrets of omission and who were higher on neuroticism and lower on conscientiousness were more depressed. Regrets of omission can be considered psychologically incomplete (Savitsky et al., 1997). They have been perceived to have greater consequences than regrets of commission (Gilovich & Medvec, 1995) and are harder to disengage from (Wrosch et al., 2005). Given that in the present study regrets of omission represented over half (72.8%) of the action-related regrets (excluding regrets about one's character or about circumstances) as is typical of previous research (e.g., Jokisaari, 2003, Hattiangadi et al., 1995), their impact on depression is all the more important given some of the implications of depression for the elderly. Research on the relation between age and depression has not yielded a consistent picture (Charles & Carstensen, 2007), some researchers finding older adults to have lower depression scores than young adults (Wrosch et al., 2005), others finding a developmental pattern suggesting stability until about age 70 followed by an increase in depressive symptoms (Rothermund & Brandtstädter, 2003b). Still others have found the increase in depressive symptoms with

age to be a modest one (Fiske, Gatz, & Pedersen, 2003), with current health status and negative life events explaining most of the relation between age and depressive symptoms. Fiske et al. also found new negative life events but not new illness to contribute further to depression. This is consistent with the finding that pain and increasing disability contribute to depression onset rather than to its persistence or increase (Harris, Cook, Victor, DeWilde, Beighton, 2006). Depressed older adults compared to middle-aged adults appear to have a higher risk of further episodes of depression (Mitchell & Subramaniam, 2005). Although older adults may be biologically vulnerable to depression (Krishnan, 2002), individual differences in the management of life changes have been found to mediate the age effects on depression (Rothermund & Brandtstädter, 2003a; Wrosch et al., 2005) and older adults may be more responsive to psychological and social intervention (Wrosch, Bauer, et al., 2007), perhaps more than are mid-life adults (Blazer, 2005). The picture that emerges from these studies is one of an increased vulnerability in older adults to depressive states with potential for a cycle of depressive episodes. Given the serious implications of depression for older adults, further attention needs to be paid to regrets of omission among the elderly.

Although intensity of lifespan regret did not contribute to the prediction of happiness, frequency of regret did, so that individuals who had a lower number of regrets and were lower on neuroticism and higher on dispositional optimism were happier. The impact of frequency of regret on happiness is consistent with some previous regret-related studies (DeGenova, 1993; Jokisaari, 2004).

Whereas depression and happiness are affective measures of psychological well-being, the Experience of Aging Index draws upon a cognitive judgement of well-being.

Frequency of lifespan regret did not contribute to the quality of the experience of aging. In contrast, intensity of lifespan regret did add to the prediction of the experience of aging when it was entered into the regression analysis, but with the addition of frequency of emergent values, intensity of regret ceased to be a significant predictor. The results of this first study to examine the relation between regret, emergent values and the Experience of Aging Index, indicated that younger individuals with a greater number of emergent values had a higher quality experience of aging. That age would predict the quality of the aging experience seems self-evident given the losses, health-related conditions and general life difficulties that accrue with advancing age. The findings also indicated that emergent values had a stronger effect on the quality of experience of aging than did the intensity of regret. Frequency of regret had no predictive power. How can we understand the stronger impact of emergent values on the experience of aging?

It can be argued that, in large measure, most older adults may have already processed the negative events in their lives so that these events have diminished in importance, the negativity associated with them no longer emerging as the most salient aspect when these events are being recounted (Webster & Gould, 2007). In parallel fashion, regrets, as residual expressions of these negative events, may also largely be processed. This would, in part, explain why most participants did not have a large number of regrets nor, overall, were their regrets very intense. With aging come shifts in life tasks and roles (Ozer & Benet-Martínez, 2006), so that these participants no longer had family and work responsibilities but were at a stage where their focus was on the maintenance of self and home as independent, albeit older, adults.

Webster and Gould (2007) found that when asked to describe a specific memory

that was a turning point in life, older participants tended to provide Life Review responses, that is, generic types of responses in which they described a series of events rather than a specific one. Participants who provided Life Review responses were also more likely to reminisce for Death Preparation and for Teach/Inform. These researchers suggested that older adults may integrate their life experiences in such a way as to derive life lessons which can then be intentionally transmitted to the younger generation in the form of existential lessons that teach about values, goals and meaning. This might, in part, explain why the relation between emergent values and the experience of aging is a stronger one than that between regret and the experience of aging.

Physical well-being

In relation to physical well-being, the findings of this dissertation did not support a role for either intensity or frequency of lifespan regret in the prediction of health status. This is counter to recent findings that regret does have an impact on physical health, both self-reported (Torges et al., 2005; Wrosch & Heckhausen, 2002; Wrosch et al., 2005) and using biological markers (Wrosch, Bauer, et al., 2007). Torges et al. examined the impact of regret on health in people in their 60's. Because the youngest participants in the present study were 65 years old at the time of the interview and ranged up to age 92, it is possible that the age difference might have some explanatory value, in that the younger sample might not yet have acquired many of the illnesses which are more prevalent in later years. Also, methodologically, the present study and the Torges et al. study are quite different, the latter categorizing regrets into missed opportunities and lifestyle regrets and then assessing the association between the number of categories, that is, none, one or two, and physical health. Wrosch and colleagues (Wrosch & Heckhausen; Wrosch et al.,

2005) examined the most severe regrets of omission and commission, again a methodologically distinct study that might preclude direct comparison. In addition, the one study that used biological markers to assess the impact of regret on the health of older adults (Wrosch, Bauer, et al., 2007) found researchers measuring diurnal cortisol and examining cold symptoms and sleep problems. These health problems are not the chronic age-normative health problems found in the current study (e.g., hypertension, diabetes, arthritis, among others) and so are not comparable.

To summarize, frequency of regret contributed to the prediction of happiness and frequency of regrets of omission contributed to the prediction of depression, both outcome variables measuring affective components of psychological well-being. Intensity of regret did not contribute to the prediction of these variables. The differential impact of frequency and intensity of lifespan regret on happiness parallels that of frequency and intensity of positive affect associated with life events on happiness, frequency having a stronger effect (Argyle, 1999; Diener, Colvin, et al., 1991; Diener, Sandvik, et al., 1991; Diener & Seligman, 2002; Lyubomirsky et al., 2005). This impact held for both self-report and other measures of well-being (Diener, Colvin, et al.). Stones and Kozma (1994) found no relation between total affect intensity and happiness. Explanations for this phenomenon in relation to positive affect have been proffered. One explanation is that intense positive emotions are rare, often have countervailing costs (Diener, Sandvik, et al.) and often depend on psychological conditions which would have resulted in intense negative emotions had circumstances not turned out favourably (Diener, Colvin, et al.). The effect of intense pleasant emotions may be attenuated by the countervailing unpleasant emotions. Thus, the amount of time one experiences mild or moderate

pleasant affect can have a greater influence than the rare intense moments. Happy people may be more sensitive to pleasurable opportunities and also better able to perceive any routine activity as motivating, hence being able to build their happiness on the basis of the mundane (Lyubomirsky et al., 2005). Consequently, it is possible that frequently repeated positive experiences throughout daily life may have a greater cumulative effect than fewer more intense positive experiences that are less likely to be repeated. For example, positive experiences such as sharing conversation or coffee with a spouse or walking the dog in pleasant surroundings can become embedded within the routine of daily life and provide frequent opportunities to experience positive affect. Whether or not one can generalize or extrapolate from these arguments concerning positive affect to regret, which is a negative affect, is not clear. Whereas some researchers (Diener, 1994; Diener, Smith & Fujita, 1995; Isaacowitz & Smith, 2003) have found that although not fully independent, positive and negative affect have unique variation and differing patterns of correlations with other variables, others have found strong positive correlations between the frequency of pleasant and unpleasant emotions (Schimmack & Diener, 1997; Schimmack, Oishi, Diener, & Suh, 2000).

Distinguishing Between the Low- and High-Regret Contrast Groups

The majority of participants in this study had low levels of regret. Principles of lifespan personality development (Caspi, Roberts, & Shiner, 2005) may shed additional light on this. The maturity principle refers to normative developmental changes that result in people becoming more agreeable, conscientious and emotionally stable across their life course. In addition, there is an attendant reduction in openness to experience. This increase in functional maturity would be associated with less regret. People who are more

agreeable, conscientious and emotionally stable are also less likely to change, these traits being correlated with personality consistency in conformity with the cumulative continuity principle that suggests that personality stabilizes with age, people remaining who they are as they age. Caspi and colleagues state that people who are more agreeable, conscientious and stable have been found to be more resilient, better able to manage life challenges and better able to recuperate from life's difficulties and disappointments, hence promoting the continuity of these traits. It could be added that these traits would render them less susceptible to having regret. Continuity is also promoted by niche building which is a process whereby people seek out environments that are correlated with their traits, leading to a more satisfactory person-environment fit.

In this study, a pattern of quantitative results emerged from the Phase 1 and 2 analyses. Less favourable functioning, that is, higher neuroticism, intolerance of uncertainty and depression, and lower happiness, was associated with higher levels of regret. This validates research findings (Turk Charles & Carstensen, 2007) that higher scores on neuroticism in older adults are associated with declining life satisfaction and result in less effective emotion regulation (John & Gross, 2007).

The personal narratives of both the low- and high-regret groups reveal lives replete with hardships and difficulties. No one had been spared the vicissitudes of life. What emerged most forcefully as a feature that differentiates the groups is the attitudinal style of the low-regret participants, which, although presenting intra-group differences, had marked commonalities that distinguished them from the high-regret participants. There is an expression of agency and competency, of being able to manage and adjust, of being actively engaged in life and being forward looking. There is an implied self-

acceptance and acceptance of reality while at the same time there is a self-perception based on an illusion of being younger than one's age. The responses of the low-compared to the high-regret participants were characterized by greater emotion regulation, one of the possible manifestations being the more direct and succinct responses to interview questions. This brief description derived from the qualitative analysis of the interview is redolent of an early description of successful aging (Coleman, 1986) that emphasized the importance of integrating past experiences, living fully in the present while keeping the future in mind and adopting or developing a belief system that provides life with a sense of coherence, purpose and meaning. The profile of the low-regret participants seems to correspond to this description of successful aging.

<div align="center">Practical Implications</div>

Who are we if we don't remember? And what is the quality of our lives if we don't share what we remember? Many researchers have devoted themselves to questions similar to these since Butler (1963, 1971, 1974) conceptualized the Life Review as a universal process inherent to aging that allows past conflicts to resurface and to be resolved. Large scientific literatures, theoretical and empirical, have developed in the areas of autobiographical memory (e.g., Pasupathi, 2003; Pasupathi & Mansour, 2006; Pasupathi et al., 2006), reminiscence (e.g., Cappeliez & O'Rourke, 2006; Cappeliez et al., 2005; Pasupathi & Carstensen, 2003; Webster, 1997, 1998, 2003; Webster & Gould, 2007; Webster & McCall, 1999), life reflections (e.g., Staudinger, 2001) and narrative (e.g., Bruner, 1999), all of which examine, from a different perspective, the common beliefs that every person has a story to tell, that it is an individual and personal story and that it is in the telling of the story that something happens. These beliefs may have

contributed to the use of interviews in two different contexts, the qualitative research interview and the clinical interview in the form of Life Review Therapy (e.g., Rylands & Rickwood, 2001), reminiscence therapy (e.g., Haight, 1991; Watt & Cappeliez, 2000) and narrative therapy (Angus & McLeod, 2004).

In the present study, participants were invited to tell their stories within the context of an in-depth life history interview. There was a series of specific questions about regret across life domains but there was also room for the spontaneous expression of regret. Just under half of the regret statements emerged spontaneously from non-regret related questions. This demonstrates the value of the method in eliciting a broader number and range of regrets than would have resulted from exclusively asking directly.

The responsiveness of participants should not, however, be taken for granted. Just as some participants may respond favourably to being viewed as experts in their own lives, others may assume that the researcher knows what he/she is looking for and wonder if their answers conform to expectations. Previous qualitative research findings with older adults are inconsistent. Van den Hoonaard (2005) found some older widows to experience the interview process as a difficult one, their discomfort expressed in concerns about not responding correctly, requests for reassurance and clarification and preparation of responses prior to the interview. In addition, the perception of interviewers as strangers has been reported to result in the conscious withholding of the more private aspects of participants' lives (Erikson et al., 1986). In contrast, Russell (1999) found the interview context to facilitate intimate emotional disclosure, some participants stating a willingness to disclose in a way that they could not with either relatives or friends. These contradictory findings underline the need to be sensitive to the individual needs of

research participants.

Overall, the life reflection process has been viewed positively. Staudinger (2001) describes it as a meta-regulatory process which results in insight which can help to regulate development. The structured examination of feelings and life events which constitutes life review has been found to help to master depression in older adults (Haight, Coleman, & Lord, 1995; Wong & Watt, 1991), perhaps by facilitating the derivation of meaning from losses and failures and promoting the acceptance of mistakes and weaknesses. The helpfulness of life reflection in the presence of another has been stressed (Staudinger), as has the clinical effectiveness of dyadic compared to group life review (Haight et al.). In addition, there is evidence of the beneficial impact of experimental disclosure on psychological and physical health (Frattaroli, 2006), written self-disclosure as a treatment intervention has been associated with health benefits (e.g., Pennebaker, 1997; Pennebaker & Seagal, 1999) and written and oral processing of a negative life experience have been found to be associated with improved life satisfaction (Lyubomirsky, Sousa, & Dickerhoof, 2006). Furthermore, there is evidence that oral disclosure in the presence of an experimenter has advantages over tape-recording (Frattaroli, 2006) and over thinking about negative or traumatic events (Nolen-Hoeksema, McBride, & Larson, 1997; Nolen-Hoeksema, Parker, & Larson, 1994). The support offered by these findings for in-depth interviewing of older adults seems evident.

To write or talk about problems requires that one's ideas be organized, which in turn requires some emotional control. Our participants have probably already had much time talking and perhaps, even writing about regretted events and experiences across their lifespan, and this might reduce long term negative affect. Reminiscing in the presence of

the interviewer during the Life Reflection Interview may have allowed additional working through of difficult material from the past, leading to increased self-understanding, insight and a reduction in regret for most participants.

It is possible, however, that participants higher on neuroticism, when confronted with questions about difficult aspects of life, may begin to ruminate rather than adopt a reflective attitude, thereby increasing focus on the negative and possibly even increasing regret in the moment. This would be consistent with findings that reminiscence for revival of old problems can be associated with lower life satisfaction and greater psychiatric distress (Cappeliez et al., 2005). Interviewers would need to be aware of this possibility.

<div align="center">Limitations of the Study</div>

Although this dissertation makes contributions to the literature on regret, there are several limitations that are worth noting. The first is that this study was based on a sample composed of well educated, relatively healthy and financially comfortable older adults living independently in the community. This sample is not representative of the full range of the aging population and this may limit the generalizability of results. At the same time, however, there is evidence of a small group of participants, the high-regret group, with unfavourable functioning, thereby indicating that there was variability in functioning.

The sample size was at once very large and very small. On the one hand, it was large for a qualitative study, rendering the coding of the interviews very labour intensive. On the other hand, the sample size did limit the types of statistical procedures that could be employed. A larger sample would have allowed for path analyses that could examine

with greater specificity the relationships between regret, predictor and outcome variables, but would have prohibited the qualitative analysis of interviews.

That the interview procedure allowed for the gathering of a wealth of information is unquestioned. The procedure used, however, did entail providing specific life domain categories of regret and this may have inherent demand characteristics, participants wishing to project a favourable impression of themselves by providing the interviewer with what they believe is wanted from them (Roese & Summerville, 2005). The presentation of these domains during the interview may have resulted in recall cuing and subsequent inflated frequencies of regrets in these areas throughout the interview. An advantage of presenting domains across the lifespan, however, was that it probably counteracted the reminiscence bump effect, that is, a tendency for most memories to come from one developmental phase, usually adolescence and early adulthood (Rubin & Schulkind, 1997; Rybash, 1999; Webster & Gould, 2007). In the present study there was a forced attention to the important domains across the entire lifespan for all participants.

Finally, the cross-sectional design of the study does not allow us to make causal inferences. For example, just as it is possible that having higher levels of regret may result in people being less happy, the converse is equally possible, that is, that happier people have lower levels of regret. In addition, the Phase 2 analyses are based on retrospective prediction of levels of regret, that is, measures were used to predict regret one year earlier. Although the predictors were dispositional in nature and hence, should not have changed notably within the span of a year, we are not in a position to say the same of regret, since we do not know how regret may change over time in older adults.

Directions for Future Research

The first suggestion for future research is related to the measurement of regret. In the present study, observer based ratings of intensity of regret were used rather than self-reported ratings. External judgements of intensity of regret have been made before, with a small number of elderly participants (Gilovich & Medvec, 1994, 1995) and with middle-aged adults (Loewenstein et al., 1981; Savitsky et al., 1997). In the latter study, Savitsky and colleagues had severity of regret rated by both external judges and the participants, the only known study in which this was done. The present study is the only one in which three independent groups of coders rated intensity of regret. Typically, regret has been assessed through self-report measures. There is no consensus as to whether self-report measures are preferable in general. One argument in favour of self-report measures is that the individual has access to feelings that are not available to the external observer (Rothbart, Ahadi, & Evans, 2000). Arguments in favour of external judges include that inherent to self-report measures is an increased risk of response set biases (Lyubomirsky, Tkach, & Dimatteo, 2006; Watson & Walker, 1996) and self-reports measure primarily the cognitive component of affect (Diener, 1994). Diener adds that people differ in the degree to which they attend to their emotions and there are some people who deny or ignore their emotional state. For these people, nonverbal channels of emotional expression such as motoric, physiological, facial and vocal evidence of affective responses may provide indicators of intensity of affect that are more accurate than self-reports. A multimethod approach to assessing regret may, therefore, be preferred. In future research, it would be important to have both observer based and self-reported ratings of intensity of regret to provide a more comprehensive picture of regret. The

association between these ratings may also be revelatory.

In this study, all regret-related information was derived from the in-depth interviews. The study was designed to allow for the concurrent integration of qualitative and quantitative analyses. Whereas qualitative data were derived from the analysis of the interviews, that is, using a bottom-up approach, the standardized quantitative measures were theory based. In future research, a variant of this methodological approach could be fruitful. Given the dimensions of regret that were defined using the bottom-up approach and the richness of the descriptive profiles of the low- and high-regret participants, a two stage methodology in which a qualitative stage precedes a quantitative one is suggested. The results of the qualitative analysis could be used to complement a theory-based selection of standardized measures. The specific qualitative data gleaned from the content analysis can be used in conjunction with theory to inform the selection of standardized measures. This sequential qualitative-quantitative integration would allow for the empirical validation of the qualitative based interpretations. With this structure, the sample size could vary for the two stages of the study, the qualitative stage having a smaller and more normative sample size thereby facilitating the coding of this data. In contrast, the quantitative analyses which follow could involve a much larger sample size that would render the data accessible to other types of statistical tests.

The larger sample size suggested above would address one of the limitations of the present study and permit an alternate statistical treatment of the variables examined. In this study, a series of separate multiple regression analyses was run with intensity and frequency of lifespan regret initially as criterion and then as predictors of several indices of well-being. In path analysis, intensity and frequency of regret could be examined as

mediators of the relation between the personality and dispositional predictor variables and the well-being outcome variables. Examining a path between intensity and frequency of regret would help to further elucidate the relation between these two aspects of regret.

The examination of distinctions between the low- and high-regret contrast groups yielded many possible differences. Among these were two which led us to identify another variable that might be linked to regret but was not investigated in the current study. The two differences are emotion-regulation and marital status, specifically, the larger number of divorced individuals among the high-regret participants. The latter can be construed as the concrete expression of an underlying attitude toward relationships. The centrality of relationships is consistent with Coleman's work on reminiscence (1998, 1999; Coleman, Ivani-Chalian, & Robinson, 1998) in which he found that explanations of life coherence among older adults relied heavily on life themes concerning relationships. Given the discrepancy in marital status in the low- compared to the high-regret group, attachment seems to be an important construct to explore. A recent focus on attachment across the adult lifespan (Antonucci, 1994; Rothbard & Shaver, 1994) has led to an examination of its impact on significant interpersonal relations (Antonucci, Akiyama, & Takahashi, 2004; Antonucci, Lansford & Akiyama, 2001; Shaver & Mikulincer, 2004) and chronic illness (Wright, Hickey, Buckwalter, & Clipp, 1995) in older adults, and emotion regulation (Mikulincer, Florian & Tolmacz, 1990; Mikulincer, Shaver, & Pereg, 2003; Shaver & Mikulincer, 2007) and reactions to stressful events (Mikulincer & Florian, 1998) in adults. If high-regret individuals manifest difficulties in emotion regulation and in relationships, then it is possible that attachment difficulties may predict

regret.

Finally, given the current research focus on autobiographical memory and reminiscence and related findings that when information is to be shared, thereby making it interpersonally relevant, memory is enhanced in older adults (Hess, Rosenberg, & Waters, 2001), a longitudinal design would allow for the evaluation of the impact of the interview process on the expression of regret in older adults and may also contribute to our understanding of causality in relation to the outcome variables.

Conclusion

The findings of this study show that overall, relatively healthy, educated older adults do not have very high levels of regret, that intensity and frequency are differentially predicted by personality, dispositional and other relevant variables, that a significant amount of variance in both intensity and frequency of regret remains unexplained by the predictor variables, that frequency and not intensity of lifespan regret predicts the affective components of psychological well-being, specifically, depression and happiness and that neither intensity nor frequency of regret predict physical well-being.

In the overview to this dissertation, it was stated that regrets provide a mirror of the individual's interpretation of and relationship to past life events. The intensive life history interview used in this study allowed for the exposition of both, by evoking a free and spontaneous expression of feelings and beliefs that facilitated the measurement of self-defined regret. It is possible that the interview process may provide an opportunity for the working-through of negative life experiences in the presence of an interested and involved listener. This process may, thereby, by its very nature, contribute to the

integration and synthesis of negative life experiences in a way that promotes the derivation of meaning from these experiences.

Nonetheless, a minority of this sample of generally healthy and functional older adults does appear to have a very large number of regrets and less favourable functioning in the form of higher neuroticism, intolerance of uncertainty and depression, and lower happiness. The incidence of frequency of regret could be used as a signal for identifying older adults who may be at risk.

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Appendix A

Life Reflection Interview

Life Reflection Interview

1. I see from the information sheet that you were born in...So you are now...

2. How far did you go in school?

3. **(If participant went on past high school level, ask)**:
   What did you study in university?

4. Thinking back to your education, what do you think was the most valuable lesson you learned from your schooling?

5. Did your studies serve you well later on? Why?

1	2	3	4	5
Not at all	a little	some	a lot	very much

6. Looking back on it now, is there anything you regret about your studies?

1	2	3	4	5
Not at all	a little	some	a lot	very much

7. What was your major occupation?

8. What did you do in your job as a.....?

9. Were you able to make a choice in regard to your occupation and position you held?

1	2	3	4	5
Not at all	a little	some	a lot	very much

10. Do you consider yourself to have been successful in your work?

1	2	3	4	5
Not at all	a little	some	a lot	very much

11. Looking back on it now, is there anything that you regret about your choice of occupation?

1	2	3	4	5
Not at all	a little	some	a lot	very much

12. What did working as a.....teach you?

13. In what year did you retire from being a ....?

14. Did you feel that you had a choice in the decision to retire?

1	2	3	4	5
Not at all	a little	some	a lot	very much

14a. What was the retiring experience like for you?

1	2	3	4	5
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

15. Now that you are retired, do you worry about having enough money?

1	2	3	4	5
Not at all	a little	some	a lot	very much

16. How is your financial situation now, compared to when you or your spouse were employed?

1	2	3	4	5
Much worse Now	A little worse Now	Same	A little Better	Much Better

17. Would you describe your financial situation as being?

1) **Very difficult; I can't manage at all.**
2) **Difficult, I can't afford some necessities**
3) **Fairly difficult, I can't afford many luxuries**
4) **Not bad, I can manage**
5) **Fairly comfortable, I can afford all the necessities**
6) **Comfortable, I can afford everything I need as well as some luxuries**
7) **Very comfortable, I can afford everything I need or want**

18. Thinking back to when you were younger and were starting to think ahead to your retirement years, are you now in the financial situation that you hoped to be in?

1	2	3	4	5
Much worse	**worse**	**as expected**	**a little better**	**much better**

18a. Do you regret not having made more preparations?

1	2	3	4	5
Not at all	**a little**	**some**	**a lot**	**very much**

19. Regarding your finances, do you feel that you did all you could, that you did the best you could?

1	2	3	4	5
Not at all	**a little**	**some**	**a lot**	**very much**

19a. What makes you say that?

20. Are you married?

20a. How long have you been.....?

21. Marital status is an important aspect of many people's lives. Would you say that you are (**choose: happily married / happily single / happily divorced / have adjusted to being a widow/er**)?

1	**2**	**3**	**4**	**5**
Not at all	**a little**	**some**	**a lot**	**very much**

22. Regarding your decision to (**choose: marry, remain single**), do you have any regrets?

1	**2**	**3**	**4**	**5**
Not at all	**a little**	**some**	**Yes**	**very many**

23. (**If divorced, ask**) Do you have any regrets about getting divorced?

1	**2**	**3**	**4**	**5**
Not at all	**a little**	**some**	**Yes**	**very many**

24. Regarding your first marriage, do you have any regrets about having married that person?

1	**2**	**3**	**4**	**5**
Not at all	**a little**	**some**	**Yes**	**very many**

25. Regarding your first marriage, do you have any regrets about having divorced that person?

1	**2**	**3**	**4**	**5**
Not at all	**a little**	**some**	**Yes**	**very many**

26. How do you think your life would have been different if you had made a different decision (regarding your marital status)?

27. What have you learned about other people as a result of being (**ask where applicable: married, single, divorced, widowed**)?

28. What have you learned about yourself as a result of being (**ask where applicable: married, single, divorced, widowed)?**

29. **(If S is married)** Do you think that your spouse is happy in his/her marriage?

1	**2**	**3**	**4**	**5**
Not at all	**a little**	**some**	**a lot**	**very much**

30. What is/was your spouse's major occupation?

31. Do you have children?

32. How many children do you have?

33. Do you feel that you were able to make a choice in terms of having or not having children in your life?

1	**2**	**3**	**4**	**5**
Not at all	**a little**	**some**	**a lot**	**very much**

34. Do you sometimes think of how your life would have gone if you did not have children?

1	**2**	**3**	**4**	**5**
Not at all	**a little**	**some**	**a lot**	**very much**

34a. How do you think your life would have been different?

35. Overall, how are your children doing?

1	**2**	**3**	**4**	**5**
very bad	**bad**	**mixed**	**good**	**very good**

35a. **(probe)** Are they financially stable and independent?

35b. **(probe)** Are they married?

35c. **(probe)** Do they have children?

36. When did your children leave home?

36a. **(probe)** How was this experience for you?

1	2	3	4	5
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

37. Did any of your children return to living at home?

37a. How many children returned home?

37b. When did they return home?

37c. How was this experience for you?

1	2	3	4	5
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

38. I assume that your children are adults now. Are you emotionally close to one or more of your children?

1	2	3	4	5
Not at all	a little	some	a lot	very much

39. Although many people talk about the joys of having children, some report experiencing anxiety and disappointment in their children. Do you sometimes regret having had children?

1	2	3	4	5
Not at all	a little	some	a lot	very much

40. What are the rewards of having brought up your children?

41. What have you learned as a result of being a parent?

1	2	3	4	5
indifferent	a little bad	somewhat bad	quite bad	very bad

42. Some research studies show that people who choose not to have children are just as happy as people who did. Do you sometimes regret not having had children?

1	2	3	4	5
Not at all	a little	some	a lot	very much

42a. Why?

43. What are the positive aspects of not having children?

44. Not having had children may have led you to have a different perspective on things. What lessons, if any, have you learned as a result of not being a parent (ie. being childless).

45. Do you have family members with whom you feel close?
That you can count upon for help, understanding, support?

1	2	3	4	5
Very little	a few	some	a lot	very much

46. Do you have family members who count on you for help, support and understanding?

1	2	3	4	5
Very little	a few	some	a lot	very much

47. What has being a member of a family taught you?

1	2	3	4	5
indifferent	a little bad	somewhat bad	quite bad	very bad

48. Do you have friends with whom you feel comfortable, whom you can do things with and count upon?

1	2	3	4	5
Very little	a few	some	a lot	very much

48a.) How long have you known these people?

1	2	3	4	5
Not at all	a little	Somewhat Long	Long	very long

48b.) We're interested in how you met these people. Are these friends that you've met through various groups and organizations or people who you've met on your own?

1	2	3	4	5
Not at all	a little	some	a lot	very much

49. Have any new people come into your life recently?

50. I'd like to talk a bit about your health. How is your health?

51. How would you rate your health at the present time?

1	2	3	4	5
very poor	poor	fair	good	very good

52. Do you have any health problems?

(**If S says none, say**) Really! You have no health problems at all?

53. Do you take any medication?

**IF PARTICIPANT INDICATES SOME HEALTH SYNDROME, ASK 54, 55, 56
IF NOT, GO TO ITEM 57**

54. How long have you had these problems?

55. What effect does this have on you?

1	2	3	4	5
indifferent	**a little bad**	**somewhat bad**	**quite bad**	**very bad**

56. Although health problems can be distressing, some people report that they've learned something about life as a result. Have you learned anything about life as a result of your health problems?

1	2	3	4	5
Not at all	**a little**	**some**	**a lot**	**very much**

57. As you grow older, your physical capacities change. That is, we aren't as quick or strong or we can't do the same kinds of activities as much as we did when we were younger. Are there any physical activities that you now have to do differently or that you have stopped doing?

57a. (**If participant reports changes, ask**) When did you first notice these changes?

58. Many older people worry about their memories, about blocking on names, losing their train of thought and so on. Have you noticed any changes in your mental activities as you've gotten older?

1	2	3	4	5
Not at all	a little	some	a lot	very much

If 1: None? Really, no change at all?

58a. What are these changes you see?

58b. When did you first notice these changes?

58c. Do you regret these changes?

1	2	3	4	5
indifferent	a little regrets	some regrets	many	Very Much

59. One of life's greatest difficulties is experiencing the loss of a loved one. Have you lost any close family members in the recent past?

59a. **(If yes)** When was this?_____ **(fill in the year)**

60. Unfortunately, as people get older they often experience the loss of a close friend? Have any close friends passed away in the recent past?

60a. **(Interviewer fills in how many)** _____

61. Do you ever think about dying?

1	2	3	4	5
Not at all	a little	some	a lot	very much

62. People have different experiences with their own aging. Many things change; some for the better and some for the worse. What have been the disadvantages of your growing older? What are the most difficult parts of your life right now?

1	2	3	4	5
indifferent	a little bad	somewhat bad	Bad	very bad

63. If you could go back in time and talk to yourself when you were a young adult, what would you say? Is there something you have learned that you would have liked to know sooner?

64. Now that you've reached your age, what do you consider to be the most important qualities to have as a person, or to cultivate in young people?

65. If your family and friends were discussing you, what would they consider to be your best characteristics, the things you have to offer others?

66. Overall, do you think that you are happier or sadder now with your life than when you were younger?

66a. Why?

67. Do you do anything differently now from the way that you did when you were younger, I don't mean in terms of physical activities, but in the way that you behave with and relate to other people?

1	2	3	4	5
Not at all	a little	some	a lot	very much

If answer to #67 is not 1, interviewer rates how positive or negative these changes have been:

1	2	3	4	5
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

68. Do you do anything differently now from the way that you did when you were younger in your emotional life? For example, have you learned more about how your emotions work, how to control them, or do you think that emotionally you are the same as you were when you were younger?

1	2	3	4	5
Not at all	a little	some	a lot	very much

If answer to #68 is not 1, interviewer rates how positive or negative these changes have been:

1	2	3	4	5
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

69. Do you feel that you have changed in the way you think and feel about yourself?

1	2	3	4	5
Not at all	a little	some	a lot	very much

If answer to #69 is not 1, interviewer rates how positive or negative these changes have been:

1	2	3	4	5
Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive

70. What do you want to do now at this stage of your life? Are there particular goals you have in mind? Or plans for the future?

71. In your personal experience, what have been the advantages of your growing older? What are the best parts of your life right now?

1	2	3	4	5
indifferent	a little good	somewhat good		good	very good

72. Any final thoughts? Is there anything we haven't discussed that you would like to? Is there anything else you'd like to say?

Appendix B

The NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1989)

NEO

There are no "right" or "wrong" answers. Please read each item carefully and circle the answer which corresponds best to your opinion. Answer every item. If you change your mind please erase. Remember, there are no right or wrong answers.

<u>Scale:</u>

1	2	3	4	5
strongly disagree	disagree	neutral	agree	strongly agree

1.	I am not a worrier.	1 2 3 4 5
2.	I like to have a lot of people around me.	1 2 3 4 5
3.	I don't like to waste my time daydreaming.	1 2 3 4 5
4.	I try to be courteous to everyone I meet.	1 2 3 4 5
5.	I keep my belongings clean and neat.	1 2 3 4 5
6.	I often feel inferior to others.	1 2 3 4 5
7.	I laugh easily.	1 2 3 4 5
8.	Once I find the right way to do something, I stick to it.	1 2 3 4 5
9.	I often get into arguments with my family and co-workers.	1 2 3 4 5
10.	I'm pretty good about pacing myself so as to get things done on time.	1 2 3 4 5
11.	When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.	1 2 3 4 5
12.	I don't consider myself especially "light-hearted."	1 2 3 4 5
13.	I am intrigued by the patterns I find in art and nature.	1 2 3 4 5
14.	Some people think I'm selfish and egotistical.	1 2 3 4 5
15.	I am not a very methodical person.	1 2 3 4 5

	1	2	3	4	5
	strongly disagree	disagree	neutral	agree	strongly agree

16. I rarely feel lonely or blue.   1 2 3 4 5

17. I really enjoy talking to people.   1 2 3 4 5

18. I believe letting students hear controversial speakers
    can only confuse and mislead them.   1 2 3 4 5

19. I would rather cooperate with others than
    compete with them.   1 2 3 4 5

20. I try to perform all the tasks assigned to
    me conscientiously.   1 2 3 4 5

21. I often feel tense and jittery.   1 2 3 4 5

22. I like to be where the action is.   1 2 3 4 5

23. Poetry has little or no effect on me.   1 2 3 4 5

24. I tend to be cynical and skeptical of others' intentions.   1 2 3 4 5

25. I have a clear set of goals and work toward them
    in an orderly fashion.   1 2 3 4 5

26. Sometimes I feel completely worthless.   1 2 3 4 5

27. I usually prefer to do things alone.   1 2 3 4 5

28. I often try new and foreign foods.   1 2 3 4 5

29. I believe that most people will take advantage of
    you if you let them.   1 2 3 4 5

30. I waste a lot of time before settling down to work.   1 2 3 4 5

31. I rarely feel fearful or anxious.   1 2 3 4 5

32. I often feel as if I'm bursting with energy.   1 2 3 4 5

1	2	3	4	5
strongly disagree	disagree	neutral	agree	strongly agree

33. I seldom notice the moods or feelings that
    different environments produce.   1 2 3 4 5

34. Most people I know like me.   1 2 3 4 5

35. I work hard to accomplish my goals.   1 2 3 4 5

36. I often get angry at the way people treat me.   1 2 3 4 5

37. I am a cheerful, high-spirited person.   1 2 3 4 5

38. I believe we should look to our religious authorities
    for decisions on moral issues.   1 2 3 4 5

39. Some people think of me as cold and calculating.   1 2 3 4 5

40. When I make a commitment, I can always
    be counted on to follow through.   1 2 3 4 5

41. Too often, when things go wrong, I get discouraged
    and feel like giving up.   1 2 3 4 5

42. I am not a cheerful optimist.   1 2 3 4 5

43. Sometimes when I am reading poetry or looking at a
    work of art, I feel a chill or wave of excitement.   1 2 3 4 5

44. I'm hard-headed and tough-minded in my attitudes.   1 2 3 4 5

45. Sometimes I'm not as dependable or reliable as I should be. 1 2 3 4 5

46. I am seldom sad or depressed.   1 2 3 4 5

47. My life is fast-paced.   1 2 3 4 5

48. I have little interest in speculating on the nature of
    the universe or the human condition.   1 2 3 4 5

49. I generally try to be thoughtful and considerate.   1 2 3 4 5

50. I am a productive person who always gets the job done.   1 2 3 4 5

1	2	3	4	5
strongly disagree	disagree	neutral	agree	strongly agree

51. I often feel helpless and want someone else to solve my problems.   1 2 3 4 5

52. I am a very active person.   1 2 3 4 5

53. I have a lot of intellectual curiosity.   1 2 3 4 5

54. If I don't like people, I let them know it.   1 2 3 4 5

55. I never seem to be able to get organized.   1 2 3 4 5

56. At times I have been so ashamed I just want to hide.   1 2 3 4 5

57. I would rather go my own way than be a leader of others.   1 2 3 4 5

58. I often enjoy playing with theories or abstract ideas.   1 2 3 4 5

59. If necessary, I am willing to manipulate people to get what I want.   1 2 3 4 5

60. I strive for excellence in everything I do.   1 2 3 4 5

Appendix C

The Life Orientation Test (LOT; Scheier & Carver, 1985)

The Life Orientation Test (Revised)

Read each statement, and indicate the extent to which you agree or disagree with that statement, using the following alternatives. Be as accurate and honest as you can. Try not to let your answer to one question influence your answer to the other questions. There are no correct or incorrect answers. Answer according to your own feelings, rather than how you think most people would answer.

1 = I disagree a lot
2 = I disagree a little
3 = I neither agree nor disagree
4 = I agree a little
5 = I agree a lot

____ 1. In uncertain times, I usually expect the best.

____ 2. It's easy for me to relax.

____ 3. If something can go wrong for me, it will.

____ 4. I'm always optimistic about my future.

____ 5. I enjoy my friends a lot.

____ 6. It's important for me to keep busy.

____ 7. I hardly ever expect things to go my way.

____ 8. I don't get upset too easily.

____ 9. I rarely count on good things happening to me.

____10. Overall, I expect more good things to happen to me than bad.

Appendix D

*The Memorial University of Newfoundland's Scale of Happiness
(MUNSH; Kozma & Stones, 1983)*

MUNSH

We are interested in how things are going these days. Please, answer "YES" if the item is true for you, "NO" if it does not correspond to you, or "DON'T KNOW" if you do not know or are unsure.

In the past month have you ever felt:

	1 YES	2 NO	3 DON'T KNOW
1. on top of the world?	___	___	___
2. in high spirits?	___	___	___
3. particularly content with your life?	___	___	___
4. lucky?	___	___	___
5. bored?	___	___	___
6. very lonely or remote from other people?	___	___	___
7. depressed or very unhappy?	___	___	___
8. flustered because you didn't know what to do?	___	___	___
9. bitter about the way your life has turned out?	___	___	___
10. generally satisfied with the way your life has turned out?	___	___	___

The next 14 questions have to do with more general life experiences. Please indicate whether these statements are true for you.

	1 YES	2 NO	3 DON'T KNOW
11. This is the dreariest time of my life.	___	___	___
12. I am just as happy as when I was younger.	___	___	___
13. Most of the things I do are boring or monotonous.	___	___	___
14. The things I do are as interesting to me as they ever were.	___	___	___
15. As I look back on my life, I am fairly well satisfied.	___	___	___
16. The things are getting worse as I get older.	___	___	___
17. I often feel lonely.	___	___	___
18. Little things bother me more this year.	___	___	___
19. I like living in this city (town, etc.).	___	___	___
20. I sometimes feel that life isn't worth living.	___	___	___
21. I am as happy now as I was when I was younger.	___	___	___
22. Life is hard for me most of the time.	___	___	___
23. I am satisfied with my life today.	___	___	___
24. My health is as good as, or better than most people's my age.	___	___	___

Appendix E

The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977)

CES-D

Directions: Below is a list of ways you may have felt or behaved. Please tell me how often you have felt this way during the past week.

Use the following scale: 0 - Rarely or none of the time (less than 1 day)
1 - Some or a little of the time (1-2 days)
2 - Occasionally or a moderate amount of the time (3-4 days)
3 - Most or all of the time (5-7 days)

During the past week:

_____ 1. I was bothered by things that usually don't bother me.

_____ 2. I did not feel like eating; my appetite was poor.

_____ 3. I felt that I could not shake off the blues even with help from my family and friends.

_____ 4. I felt that I was just as good as other people.

_____ 5. I had trouble keeping my mind on what I was doing.

_____ 6. I felt depressed.

_____ 7. I felt that everything I did was an effort.

_____ 8. I felt hopeful about the future.

_____ 9. I thought my life had been a failure.

_____ 10. I felt fearful.

_____ 11. My sleep was restless.

_____ 12. I was happy.

_____ 13. I talked less than usual.

_____ 14. I felt lonely.

_____ 15. People were unfriendly.

_____ 16. I enjoyed life.

_____ 17. I had crying spells.

_____ 18. I felt sad.

_____ 19. I felt that people dislike me.

_____ 20. I could not get going.

Appendix F

The Intolerance of Uncertainty Scale (IUS; Freeston, Rhéaume, Letarte, Dugas, Ladouceur, 1994)

Original French Version:
Freeston, M.H., Rhéaume, J., Letarte, H., Dugas, M.J., & Ladouceur, R. (1994): Why do people worry? *Personality and Individual Differences, 17,* 791-802.

English Version:
Buhr, K., Dugas, M. J. (2002). The intolerance of uncertainty scale: psychometric properties of the English version. *Behavior Research and Therapy, 40,* 931-945.

IUS

You will find below a series of statements which describe how people may react to the uncertainties of life. Please use the scale below to describe to what extent each item is characteristic of you. Please circle a number (1 to 5) that describes you best.

	Not at all characteristic of me	Somewhat characteristic of me	Entirely characteristic of me

1. Uncertainty stops me from having a firm opinion

1................2................3................4.............. 5

2. Being uncertain means that a person is disorganized

1................2................3................4.............. 5

3. Uncertainty makes life intolerable

1................2................3................4.............. 5

4. It's unfair not having any guarantees in life

1................2................3................4.............. 5

5. My mind can't be relaxed if I don't know what will happen tomorrow.

1................2................3................4.............. 5

6. Uncertainty makes me uneasy, anxious, or stressed

1................2................3................4.............. 5

7. Unforeseen events upset me greatly.

1................2................3................4.............. 5

8. It frustrates me not having all the information I need

1................2................3................4.............. 5

9. Uncertainty keeps me from living a full life

1................2................3................4.............. 5

10. One should always look ahead so as to avoid surprises

1................2................3................4.............. 5

11. A small unforeseen event can spoil everything, even with the best of planning

1................2................3................4.............. 5

12. When it's time to act, uncertainty paralyses me

1................2................3................4.............. 5

13. Being uncertain means that   1................2................3................4.............. 5

I am not first rate

14. When I am uncertain, I can't
go forward.

1.........…...2…….......……3……......…...4…….….….. 5

15. When I am uncertain I can't
function very well.

1.........…...2…….......……3……......…...4…….….….. 5

16. Unlike me, others always
seem to know where they
are going with their lives

1.........…...2…….......……3……......…...4…….….….. 5

17. Uncertainty makes me
vulnerable, unhappy, or sad

1.........…...2…….......……3……......…...4…….….….. 5

18. I always want to know what
the future has in store for
me

1.........…...2…….......……3……......…...4…….….….. 5

19. I can't stand being taken by
Surprise

1.........…...2…….......……3……......…...4…….….….. 5

20. The smallest doubt can stop
me from acting

1.........…...2…….......……3……......…...4…….….….. 5

21. I should be able to organize
everything in advance

1.........…...2…….......……3……......…...4…….….….. 5

22. Being uncertain means that
I lack confidence

1.........…...2…….......……3……......…...4…….….….. 5

23. I think it's unfair that other
people seem sure about their
future.

1.........…...2…….......……3……......…...4…….….….. 5

24. Uncertainty keeps me from
sleeping soundly

1.........…...2…….......……3……......…...4…….….….. 5

25. I must get away from all
uncertain situations

1.........…...2…….......……3……......…...4…….….….. 5

26. The ambiguities in life
stress me

1.........…...2…….......……3……......…...4…….….….. 5

27. I can't stand being
undecided about my future. 1.........…...2…….......……3……......…...4…….….….. 5

Appendix G

Emergent Values (Pushkar, Basevitz, Conway, Mason, & Chaikelson, 2003)

EMERGENT VALUES

Utilitarian value with a focus on self-interest and happiness:

"It is good to pursue a university degree because it is useful for employment".

Deontological value based on a belief in the intrinsic value of actions:

"I always believed in the work ethic".

Virtue ethics based on a focus on the cultivation of character:

"[With age] you develop patience and a sense of proportion as to what is important and what isn't so important".

Care ethics based on the belief that people are connected and that one responds to the needs of others:

"I think it's important that whatever I do as a grandmother, I'm also teaching my grandchildren".

Appendix H

Experience of Aging (Pushkar, Basevitz, Conway, Mason, & Chaikelson, 2003)

THE EXPERIENCE OF AGING QUESTIONS

A. Five questions rated by interviewers

Question 58: Have you noticed changes in mental abilities?

Question 68: Do you do anything differently in your emotional life?

Question 69: Have you changed in the way you think and feel about yourself?

Question 62: What are the disadvantages of growing older?

Question 71: What have been the advantages of growing older?

B. Five questions rated by coders

Questions 9, 14, 33: Were you able to make a choice in regard to occupation, retirement, having/not having children?

Question 56: Have you learned anything about life as a result of health problems?

Question 66: Are you happier or sadder now?

Question 69: How positive or negative are changes in thinking and feeling about self?

Question 70: Do you have goals or plans?

Appendix I

The Autobiographical Memory Questionnaire
(AMS; Csank, P., & Conway, M., 1994, August)

ABMQ

Please decide whether you agree or disagree with each statement below. Indicate the extent to which you agree or disagree by circling the appropriate number on the scale.

1. When I remember events from my past, it feels as though I can remember all the details of those experiences.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

2. When I reminisce with friends or family about experiences we have shared in the past, I find that I can remember the details of those events much better than they can.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

3. In general, I have difficulty remembering experiences from my past.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

4. I feel that the memories I have about my high school years are vivid and very accurate.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

5. My memories for my first days of elementary school are clear and I can remember many of the thoughts and feelings that I had.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

6. When I look at photographs taken of myself in childhood, I have difficulty remembering when and where a particular photograph was taken and the events that were happening at the time.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

7. I have a clear memory for some of my birthdays in my childhood.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

8. I can call to mind experiences from my past very easily whenever I want.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

9. When people tell me about something that I said or did in the past, I usually remember it well.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

10. I tend to only remember very significant, important or meaningful events from my past (e.g., tragic events, great accomplishments, or surprises etc.).

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

11. I am sometimes quite amazed by the accuracy and clarity of my memory for experiences in my life.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

12. If I were to try, I could probably remember some of the things that happened to me before I was three years old.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

13. My memory for my past is almost like a book that I can open and look through whenever I wish.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

14. I find it easy to remember the things I thought about and believed when I was an adolescent.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

15. I find it quite difficult to remember how I felt or the emotions I had when I was a child.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

16. If I were to try, I could probably remember almost everything I have done in the past three years.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

17. Memories from my past often enter my mind "out of the blue" without me even having to try.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

18. I have a very good memory for most of the things I did when I was sixteen years old.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

19. My memories for the feelings or emotions I have had during different experiences in my life are particularly vivid and clear.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

20. I find it very easy to remember most of the things I did in my childhood.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

21. I usually remember even the most "everyday" or neutral experiences in my life.

1	2	3	4	5
STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE

Appendix J

Perceived Control (Lachman & Weaver, 1998)

PC

Directions
On the next page is a series of attitude statements. Each represents a commonly held opinion. Read each statement, decide if you agree or disagree and the strength of your opinion, and then circle the appropriate number.

1	2	3	4	5	6	7
Disagree Strongly	Disagree somewhat	Disagree a little	Don't know	Agree a little	Agree somewhat	Agree strongly

1. I have little control over the things that happen to me.
    1   2   3   4   5   6   7

2. What happens to me in the future mostly depends on me.
    1   2   3   4   5   6   7

3. There is really no way I can solve all the problems I have.
    1   2   3   4   5   6   7

4. There is little I can do to change many of the important things in my life.
    1   2   3   4   5   6   7

5. I can do just about anything I really set my mind to.
    1   2   3   4   5   6   7

6. I often feel helpless in dealing with the problems of life.
    1   2   3   4   5   6   7

7. Sometimes I feel that I'm being pushed around in life.
    1   2   3   4   5   6   7

8. When I really want to do something, I usually find a way to succeed at it.
    1   2   3   4   5   6   7

9. Whether or not I am able to get what I want is in my own hands.
    1   2   3   4   5   6   7

10. Other people determine most of what I can and cannot do.
    1   2   3   4   5   6   7

11. What happens in my life is often beyond my control.
    1   2   3   4   5   6   7

12. There are many things that interfere with what I want to do.
    1   2   3   4   5   6   7

Appendix K

Dispositional Coping Inventory (Carver et al., 1989)

DC

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to deal with stress. This questionnaire asks you to indicate what you generally do and feel, when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Then respond to each of the following items by circling one number on your answer sheet for each, using the response choices listed just below. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU—not what you think "most people" would say or do.

Indicate what YOU usually do when YOU experience a stressful event.

1	2	3	4
I usually don't do this at all	I usually do this a little bit	I usually do this a medium amount	I usually do this a lot

1. I think about how I might best handle the problem.	1	2	3	4
2. I keep myself from getting distracted by other thoughts or activities.	1	2	3	4
3. I learn to live with it.	1	2	3	4
4. I use alcohol or other drugs to make myself feel better.	1	2	3	4
5. I get comfort and understanding from someone.	1	2	3	4
6. I force myself to wait for the right time to do something.	1	2	3	4
7. I admit to myself that I can't deal with it, and quit trying.	1	2	3	4
8. I make jokes about it.	1	2	3	4

	1 I usually don't do this at all	2 I usually do this a little bit	3 I usually do this a medium amount	4 I usually do this a lot

9. I pray or meditate.	1	2	3	4
10. I refuse to believe that it has happened.	1	2	3	4
11. I concentrate my efforts on doing something about the situation I am in.	1	2	3	4
12. I try to get advice or help from other people about what to do.	1	2	3	4
13. I feel a lot of emotional distress and I find myself expressing those feelings a lot.	1	2	3	4
14. I turn to work or other activities to take my mind off things.	1	2	3	4
15. I look for something good in what is happening.	1	2	3	4
16. I think hard about what steps to take.	1	2	3	4
17. I focus on dealing with this problem, and if necessary let other things slide a little.	1	2	3	4
18. I get used to the idea that it happened.	1	2	3	4
19. I try to lose myself for a while by drinking alcohol or taking drugs.	1	2	3	4
20. I discuss my feelings with someone.	1	2	3	4
21. I hold off doing anything about it until the situation permits.	1	2	3	4
22. I reduce the amount of effort I'm putting into solving the problem.	1	2	3	4
23. I laugh about the situation.	1	2	3	4

	1	2	3	4
	I usually don't do this at all	I usually do this a little bit	I usually do this a medium amount	I usually do this a lot

24. I seek God's help.	1	2	3	4
25. I act as though it hasn't even happened.	1	2	3	4
26. I take additional action to try to get rid of the problem.	1	2	3	4
27. I ask people who have had similar experiences what they did.	1	2	3	4
28. I get upset and let my emotions out.	1	2	3	4
29. I go to movies or watch TV, to think about it less.	1	2	3	4
30. I learn something from the experience.	1	2	3	4
31. I try to come up with a strategy about what to do.	1	2	3	4
32. I put aside other activities in order to concentrate on this situation.	1	2	3	4
33. I accept that this has happened and that it can't be changed.	1	2	3	4
34. I use alcohol or other drugs to help me get through it.	1	2	3	4
35. I get emotional support from others.	1	2	3	4
36. I restrain myself from doing anything too quickly.	1	2	3	4
37. I just give up trying to reach my goal.	1	2	3	4
38. I make fun of the situation.	1	2	3	4

	1 I usually don't do this at all	2 I usually do this a little bit	3 I usually do this a medium amount	4 I usually do this a lot			

	1	2	3	4
39. I put my trust in God.	1	2	3	4
40. I pretend that it hasn't really happened.	1	2	3	4
41. I do what has to be done, one step at a time.	1	2	3	4
42. I talk to someone who could do something concrete about the problem.	1	2	3	4
43. I get upset, and am really aware of it.	1	2	3	4
44. I sleep more than usual.	1	2	3	4
45. I try to grow as a person as a result of the experience.	1	2	3	4
46. I make a plan of action.	1	2	3	4
47. I try hard to prevent other things from interfering with my efforts at dealing with this.	1	2	3	4
48. I accept the reality of the fact that it has happened.	1	2	3	4
49. I drink alcohol or take drugs, in order to think about it less.	1	2	3	4
50. I talk to someone about how I feel.	1	2	3	4
51. I make sure not to make matters worse by acting too soon.	1	2	3	4
52. I give up the attempt to get what I want.	1	2	3	4
53. I joke around about it.	1	2	3	4

	1 I usually don't do this at all	2 I usually do this a little bit	3 I usually do this a medium amount	4 I usually do this a lot

54. I try to find comfort in my religion or spiritual beliefs.	1	2	3	4
55. I say to myself "this isn't real".	1	2	3	4
56. I take direct action to get around the problem.	1	2	3	4
57. I talk to someone to find out more about the situation.	1	2	3	4
58. I let my feelings out.	1	2	3	4
59. I daydream about things other than this.	1	2	3	4
60. I try to see it in a different light, to make it seem more positive.	1	2	3	4
61. I try to ignore the difficulties by looking at the good things in life.	1	2	3	4
62. I take action to try to make the situation better.	1	2	3	4
63. I do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	1	2	3	4
64. I tell myself the situation isn't worth getting upset about.	1	2	3	4
65. I blame myself for things that happen.	1	2	3	4
66. I get help and advice from other people.	1	2	3	4
67. I tell myself there's nothing more I can do so I might as well stop worrying.	1	2	3	4
68. I express my negative feelings.	1	2	3	4

	1 I usually don't do this at all	2 I usually do this a little bit	3 I usually do this a medium amount	4 I usually do this a lot

69. I tell myself that I can put up with the problem as long as everything else in my life is okay.	1	2	3	4
70. I give up the attempt to cope.	1	2	3	4
71. I say things to let my unpleasant feelings escape.	1	2	3	4
72. I criticize myself.	1	2	3	4

Appendix L

Consent Form

ID#_____

CONSENT FORM

I, _____, consent to participate in the study on peoples'
reflections about their lives and on the worries that people experience, which is being
conducted by Drs. Pushkar, Conway, Chaikelson, Mason, and by Paul Basevitz, of the
Centre for Research in Human Development at Concordia University.

I understand that:

1. Participation in this study will involve completing an interview about my
   reflections on my life and maintaining a diary of the worries that I experience for
   one week. I will also be asked to complete a number of questionnaires and
   measures, which include readings of my blood pressure as I perform a task. These
   blood pressure recordings will be painless, safe, and non-invasive (no needles are
   involved), requiring only the placement of a blood pressure cuff around my arm.

2. The interview will be audiotaped so that responses may be reliably scored.

3. Any information that is learned about me or anyone else through my participation
   in the study will be confidential. The results of the study will be available only to
   the investigators, who may use the results for scientific purposes such as
   publication in a scientific journal or presentation at a scientific meeting, as long as
   I am not identified as a participant in the study.

4. My participation is completely voluntary and I may withdraw from the study at
   any time.

5. My decision whether or not to participate will in no way affect my eligibility to
   participate in any future studies.

6. I will receive an explanation of the findings of the study when they become
   available.

Date: _____   Signature_____

Appendix M

Table of Regret Themes and Subthemes

Summary of Regret Themes and Subthemes

Themes	% Participants indicating	Subthemes
Losses	70.3	Activities/ Life's pleasures Autonomy Capacities Close relationships Role in life Time/ Future time Youth
Education	69.4	Area of study/ content Institution Lack of freedom to choose Not having pursued further Personal qualities Quality Social aspects Timing
Self	48.6	Choices made Health/ Self-care Interpersonal skills Lack of skill/ incompetence/ underachievement Personal qualities Role in life Self-development/ Enjoyment of life
Occupation	35.1	Choices made Lack of freedom to choose Lack of skill/ incompetence/ underachievement Nature/ requirements of the work Personal qualities Timing
Finances	31.5	Choices made Financial constraints/ Limited resources Financial situation Lack of knowledge/ incompetence/ underachievement

Summary of Regret Themes and Subthemes (continued)

Themes	% Participants indicating	Subthemes
Finances (continued)		Personal qualities Unspecified
Interpersonal	29.7	How perceived by others Lack of encouragement Lack of extended family Parenting skills Relationship between spouse and child(ren) Relationship with family members
Parental Status	23.4	Being childless Gender/ Number of children Having had children Timing
Marital Status	18.9	Divorce / Separation Having married Having remarried Not having married Not having remarried
Marriage	18.0	Choices made Timing Unspecified
Children	12.6	Choices made Lack of emotional well-being Lack of skill/ incompetence/ underachievement Marital status Personal qualities
Retirement	9.0	Lack of freedom to choose Losses Process of retirement Unspecified
Unspecified		

Note. Subthemes are presented in alphabetical order and not in order of frequency.

Appendix N

Coding Manual

Coding Manual for Regrets

For the purposes of this study, a very broad and inclusive definition of regret will be used. Since participants provide information about their regrets on the basis of their own personal conceptualizations of regret and not in response to a standardized definition of regret offered to them, a broad definition is necessary to allow us to encompass the participants' natural expressions of regret. The semi-structured interview allows for a contextualization of regret, that is, participants' reflections on a variety of life domains allows for the emergence of statements of regret within the context of their personal histories. From this perspective, regret can be seen as the expression of one aspect of the personal meaning one attributes to life experiences or events.

Sources of Regret for Present Study

There are three different sources of regret-related information imbedded in the interview. They are coded as queried (01), queried-counterfactual (queried-cf) (02) and emergent (03), respectively. (See spontaneity of expression below.) Counterfactual thinking is defined in the cognitive and emotional components of regret section below.

- *Queried* refers to six specific questions about regret in relation to different life domains. They are:
  - question #6, education
  - question #11, occupation
  - question #18a, finances
  - questions #22 or 23-25, inclusive, marital status
  - questions #39 or #42, parental status
  - question #58c, mental changes
- *Queried-cf* refers to three questions, one of which, question #63, requires participants to reflect on what they would have liked to have known sooner. This question promotes counterfactual thinking and hence, elicits statements of regret. Two additional questions that promote counterfactual thinking inquire about "how things might have been." These are questions #26 and #34(a).
- *Emergent* refers to all other questions. Throughout the interview, participants are asked to reflect on various aspects of their lives, past and present. This reflective process allows for the spontaneous emergence of regretful statements. The entire interview is, therefore, subjected to a content analysis for the presence of non-elicited regret-related statements.

Defining Regret

Definition of Regret

The definition that best conforms to the needs of this study is that of Landman (1993). Much of the conceptual and definitional regret-related material below is based on Landman's work. She argues for the following extended definition:

"Regret is a *more or less* painful cognitive and emotional state of feeling sorry for misfortunes, limitations, losses, transgressions, shortcomings, or mistakes. It is an experience of felt- reason or reasoned-emotion. The regretted matters may be sins of commission as well as sins of omission; *they may range from the voluntary to the uncontrollable and accidental*; they may be actually executed deeds or entirely mental ones *committed by oneself or by another person or group*; they may be moral or legal transgressions or morally and legally neutral; and the *regretted matters may have occurred in the past, present, or future*" [italics added]. (p. 36)

The italicized parts of the quotation underline certain aspects of the definition of regret.

Negative affect. "*...more or less painful...*" reminds us that although regret always includes an emotional component, that is, a "regretfulness", the statement of regret as expressed through the verbal content and the vocal tone does not always convey strong affect. The affective expression of regret may range from mild to intense, as can the actual experience of regret. To classify a statement as an expression of regret, pay attention to the presence or absence of affect, not to the intensity.

Controllability. "*...they may range from the voluntary to the uncontrollable and accidental...*" Although we often think of regrets in relation to control, we are including regrets about things over which we have no control. Having control is not a criterion for defining regret. We can regret a life circumstance, as long as it personally significant.

Agency. "*...committed by oneself or by another person or group...*" This reminds us that the agent of the regretful event need not be the self.

Time. "*...regretted matters may have occurred in the past, present, or future...*" The regret itself may also be experienced in the present, the past, or through anticipation, in the future. Both need to be indicated. When the regretted matter occurs is indicated first. The time that the regret is experienced is indicated second. Regrets that are or have been experienced occasionally, as indicated by statements like "I sometimes regret" or "there have been times I regret", have the additional third indicator if Occ (Occasional).

Cognitive and emotional components of regret. Landman (1993) describes regret as having both a cognitive and an emotional component, but not being reducible to either. She asserts that the cognitive aspect, in the form of a counterfactual thought or a critical judgment, is a necessary but not sufficient component of regret.

What is counterfactual thinking? It is a form of thinking that requires the individual to imagine outcomes or situations that are different from or even contrary to the actual state of affairs, i.e., different from actual fact. In counterfactual thinking, the actual is compared to the possible. The individual asks him/herself what might have been under other circumstances or how an outcome might have turned out differently. For example, one could ask oneself what might have happened had one selected a profession that is different from one's own. Counterfactual thinking involves an evaluative comparison,

that is, an evaluation of whether the imagined outcome would have been better or worse than reality.

In parallel fashion, emotion is an essential but not sufficient component of regret. When something is regretted, it is taken personally, that is, the individual cares about that which is regretted. It is this personal implication in the form of caring that is inherent to the experience of regret and that renders regret an emotion. Regret can, therefore, be construed as a counterfactual thought to which a negative affective component has been added.

Given that regret is composed of a cognitive and an affective component, it is not always possible to determine whether or not what is being expressed is regret solely on the basis of the words used. The tone of voice may be essential to distinguish between a recitation or description of difficulties versus an expression of regret regarding these difficulties. The interview questions that fall most directly into this category of difficulty are #57, #61, #62, and #63. This last question forces us to distinguish between a philosophical or value statement, statement of beliefs and personal regret. We must ask if the person is talking in the third person: "one" or "you" or in the first person "I"?

Context is a very important element to consider. A statement that is unclear as to whether or not it is an expression of regret, within the context of an interview in which no regrets related to that theme are stated, is less likely to be an expression of regret and can be coded as *no regret*. When there have been other expressions of this particular theme-related regret, the statement is more likely an expression of regret and will be coded as one.

An elaborated description of having difficulty accepting something is a reference to regret as defined for the purposes of this study.

When participants' responses contain many instances of rationalization or justifications of behaviour, events or experiences, fewer regrets may be found. Regret can be conceptualized as the failure or absence of dissonance reduction.

For a statement to be an expression of regret, it does not have to take both decision outcome and decision process into consideration. Either can suffice. For example, one can regret not having had more options, just as one can regret the choice one made.

Distinguishing Regret from Other Emotions

Landman describes regret as being cognitively elaborated and having a stronger cognitive appraisal component than do many other emotions, such as sadness or anger. This could result in regret producing, in relative terms, a less immediate emotional response to an event or experience. Relative to related emotions such as remorse and guilt, "...regret may often...be experienced more as a matter of "cool" cognitive assessment than of "warm" emotional reactivity" (p. 37).

Regret versus disappointment. Landman (1993) underlines the role of expectations as a feature distinguishing disappointment from regret. The notion of a failure of expectation is inherent to disappointment but not to regret. As an example, "...it is more precise to say that I am disappointed with than that I regret an unexpected negative outcome. The child is disappointed when the Tooth Fairy forgets his third lost tooth. The child's parents regret the lapse" (p.47).

Two examples of the distinction between regret and disappointment as defined in the current study follow. In response to question #71, participant #37 states: "I had figured I would be...I'd be taking courses and doing...being much more active than I am now." The participant had an expectation of herself which she has not realized and so she is disappointed with herself. This is an example of disappointment and not of regret because there is a clearly stated expectation that has not been realized.

The second example is provided by participant #56 in response to question #39 and in contradistinction to the example above, involves the express use of the word disappointment. The participant states: "I'm disappointed in my daughter...I really feel very sad about that because I felt that she had everything going for her...I really felt that she was going to really do something with her life...". Once again, a frustrated expectation is at the root of the emotion, thereby rendering it an example of disappointment and not regret.

In summary, expectations may be viewed as leading to disappointments; wishes for alternate outcomes, to regrets.

Regret versus sadness. Sadness and regret may be hard to distinguish in some cases. Whereas regret may imply personal agency or responsibility in some instances, the broader definition being used in the present study and by Landman (1993) is not restricted to this aspect of regret. Sadness may be attached to a specific situation or state, for example, feeling sad about "...the loss of desirable entities or states" (Landman, 1993, p.48) or may be expressed as a more general and context-free affective state, such as sorrowfulness, unhappiness and moodiness. Although there is overlap between sadness and regret, Landman suggests that regret may concern both losses of desirable states and "... the gaining of undesirable entities or states" (p.48). She adds that regret, in contrast to sadness, may at times contain a connotation of having made a mistake.

Regrets regarding circumstances can more readily be distinguished from feelings of sadness or feeling sorry about the circumstances when:
- there is an implication that the circumstance can be imagined otherwise, that is, an alternative is implied; and
- the circumstance has a personal impact. One is sad or sorry that one's father died. One regrets, however, that one's father died at the time that one wanted to pursue one's education. This would hold equally for regret about another. For example, "I regret that my husband died just before my daughter's graduation."

An example to help distinguish sadness from regret can be found in the response of participant 105 to question #48. The participant states: "Unfortunately most of the people I've been friendly with...of the four couples that traveled and square danced...I'm the only male alive. They died over the last several years. So I have no close male friends. The people I worked with are gone..." This is not coded as regret for the following reasons. He does not state that he misses these people nor does he state that he wishes it was otherwise, that is, no alternative is suggested. Furthermore, from a contextual perspective, later in the interview he goes on to talk about having people to socialize with through his wife's bridge club.

Regret versus remorse. Landman suggests that although remorse and regret are closely linked, there are some distinctions. Remorse is linked to a sense of guilt, therefore, by implication, it requires a sense of responsibility and personal agency. This is not true for regret. Something can be regretted even if it is caused by circumstance or by another person. Remorse is also more associated with acts that are morally questionable; regret, with acts that can be morally neutral. Remorse is restricted to the past; regret may apply to the past, the present and the future. Whereas regret may apply to thoughts and attitudes, remorse applies to external actions that have negative impact on others. Another distinction between regret and remorse is their relationship to undoing. Whereas regret is not necessarily accompanied by a desire to undo the regret-inducing earlier event or experience, remorse "...require(s) that the person would undo the antecedent event (if that were possible)" (p.51). The distinctions between regret and remorse as presented here can easily lead to the conclusion that remorse is subsumed under regret, the latter being the broader and more encompassing emotion. See co-occurrence of negative emotions, below, for further instructions on how this distinction will be dealt with for this study.

Regret versus guilt. The distinguishing feature between regret and guilt that is underlined by Landman is that guilt, similarly to remorse, tends to be linked to moral failings. Regret is not. The same limitations in distinguishing regret and remorse apply to the distinction between regret and guilt and are dealt with in the next paragraph.

The co-occurrence of negative emotions. Although Landman suggests that regret, while subsuming some of the defining features of disappointment, sadness, remorse and guilt is still distinguishable from them, it has also been demonstrated that negative emotions such as, anger, depression and anxiety, may cluster together (Diener & Emmons, 1985). It is reasonable to imagine that regret, disappointment, sadness, remorse, guilt might co-occur, rendering the distinction more difficult. In these situations, coders and author will review the regret in question and will attempt to arrive at consensus. If this is not possible, the regret will be eliminated.

Identifying Regret

Conditional forms, in general, are to be inspected for the presence of regrets. Conditional forms include *would, could, should* as well as *if*. More specifically, the following phrases most likely herald the presence of regret:

I wish... followed by past or conditional tense
I should have...
I would have liked...
It would have been better if...
X instead of Y
I could have...
If only...
I'd have preferred...
It was a mistake...

Note that the presence of a counterfactual thought does not, however, suffice to be considered regret. An example of a counterfactual thought without an affective component can be found in the response of participant #105 to question #06. "I often wondered what my education would have been like if I'd stayed in England. It would have been quite different I'm sure." This is not an expression of regret. It is a statement of difference but without an affective valence, that is, there is no suggestion that education in England would have been better or worse.

Unhappy life events, mistakes, transgressions, missed opportunities and failures of omission, such as, not studying hard enough or not trying harder to make more friends, are all themes that should be subjected to examination as potential regrets.

Dimensions of Regret

In addition to content themes and subcategories, regrets are to be distinguished by the following dimensions:
- spontaneity of expression (in response to a regret-related or counterfactual question versus spontaneously emergent);
- directness of expression (direct versus inferred);
- the use of the word regret (presence, absence or denial);
- the use of a clearly articulated counterfactual thought (presence, absence);
- the presence of negative affect (content, voice);
- intensity of regret $(1 - 5)$;
- temporal perspective (current or past regret regarding an event or experience occurring in the past, present or future);
- nature of regret (omission versus commission and character regrets);
- agency (what or who caused the regretted event or experience, i.e., self, other or circumstance);
- object of regret (who is "done to", self or other); and
- perception of controllability of the event that elicited regret (e.g., "I am losing my memory and I should have done more puzzles to prevent the decline" versus "I am losing my memory – that's life").

Spontaneity of Expression – The Source
Spontaneity of expression is determined solely by the source of the regret statement, that is, whether it is in response to a regret-related (Queried; 01), counterfactual

(Queried-cf; 02) or non-regret related question (Emergent; 03). The latter is referred to as a spontaneously emergent expression of regret. The speed and tone of response, that is, aspects of the style of response, are not taken into consideration to code spontaneity.

Directness of Expression

Regrets can be expressed in a direct fashion or they can be inferred.

Direct regrets. For a regret statement to be coded as *direct*, at least one of the three following conditions must be met. Direct regrets are coded 04.
- The word regret must be used by the participant.
- Participant responds to a regret-related question in the affirmative, using the word "yes" in their response.
- Participant uses clearly identifiable counterfactual statements.

Inferred regrets. The following are conditions for coding a regret statement as *inferred.* Inferred regrets are coded 05.
- All other statements that seem regretful without adhering to the three conditions above. This holds equally for responses to regret-related questions.
- Inferred regrets will be distinguished from other emotions, such as disappointment and sadness.
- When really uncertain, this statement, coded independently by both coders will then be recoded by the author.
- Examples of inferred regrets:
  Maybe it would be nice if I had done it earlier.
  I definitely took myself too seriously as a young person.

Use of Word "Regret"

The presence of "regret" is coded 06, its absence, 07 and the denial of regret is coded 60.

Counterfactual Thought

The use of a clearly articulated counterfactual thought is coded 08 if present, 09, if not. The latter would most likely be coded as inferred rather than directly expressed regrets.

Negative Affect

To determine negative affect, both verbal content of the responses and vocal cues will be considered. There are people for whom words used and affective tone as expressed through vocal cues are not consistent. When it is difficult to determine the presence of negative affect, the second coder and the author will independently listen to the tape and consensus will be attempted.

Negative affect - content. The following are to be noticed:

- use of negatively-charged words to describe the regret, such as, awful, sorry, mistake, sad, difficult/hard
- use of the word regret, which is, by definition, a word which expresses negative affect
- counterfactual statements on their own are not sufficient for negative affect content, except "mistake", "sorry", "regret". "I wish" is not negative affect.

Negative affect - content is coded Yes (10) or No (11).

Negative affect - Voice. The use of the voice to express affect is important.

- The affective tone need not be there for the whole statement. It can change for a single word.
- There can be a drop in volume or pace. There can be sighing.
- The presence of laughter does not preclude concomitant negative affect. A laugh can be a nervous or defensive laugh.
- Someone who responds in a sad tone all the time (even when discussing non-regrets), will still be coded as Yes (10) for negative affect.

Negative affect - voice is coded Yes (12) and No (13).

Intensity of Regret

The criteria for judging intensity of regret include the use of negative affective words, the tone of voice, and the regret itself. Intensity is coded on a five-point scale from 1 (14) to 5 (18).

- To rate intensity, first imagine that the degree of intensity falls into one of the three following categories, low, medium or high. Once this categorical judgment is arrived at, intensity is then to be rated on a five-point scale where low is 1 or 2, medium is 3, and high is 4 or 5.
- Statements of self-recrimination may tend to be more intense.
- Degree of responsibility expressed for the regretted event or experience may have impact on intensity.

Temporal Perspective

Time of event. Was the regretted experience or event in the past, is it current, that is, in the present or ongoing, that is, in the past but continuing into the present or is it something that is anticipated in the future? A regretted event can be coded as Past (19), Present (20), Future (21), Past and Present (22), Present and Future (23) and Not Applicable (n/a) (24).

Time of regret. Was the regret felt in the past or present and is the felt emotion described as being occasional or more stable? The felt experience of regret can be coded as Past (25), Present (26), Future (27), Past and Present (28), Past-Occasional (29), Present-Occasional (30) and Not Applicable (n/a) (31).

Nature of Regret – Regrets of Action (Omission versus Commission)

Regrets of *omission* and *commission* refer to regrets of action, that is, regrets about things done or not done. To determine if an expression of regret is one of *omission* or *commission*, first and foremost, attention must be paid to the participant's wording. *Omission* and *commission* coding can be applied to the following types of regrets.

- Regrets involving actions by self, other or circumstance, that is, regrets where there is an attributable agency even when the agent is not the self.
- Regrets involving characteristics of self, for example, *I wish I had been more assertive* could be seen as a regret of *omission*; *I wish I had been less aggressive*, a regret of *commission*.
- Some regrets could be interpreted as regrets of loss or regrets of action, that is, regrets of *omission* or *commission*. For example, *I wish my children hadn't moved away*, is a regret of commission, the children having actively moved away. The theme may be one of *loss*.
- Specific cases:
    Timing of Marriage:
    - When participants say it was too soon or they were too young, they are regretting acting too soon. This is interpreted as *commission*.
    - When participants say it was too late or they were too old, they are regretting acting too late, that is, they are regretting their earlier lack of action. This is interpreted as *omission*.
    Spacing of children:
    - When participants say that their children are too closely spaced, they are saying that they had children too soon. This is interpreted as *commission*.
- An expression of regret may be coded *indeterminate* when the wording is not specific to either *omission* or *commission*.
    For example, *I wish it would have been different*. It is really not clear whether this refers to *omission* or *commission*.
- Some themes, such as death, do not lend themselves to the distinction between *omission* and *commission* and are coded as *not applicable (n/a)*.

Regrets of action are coded as Omission (32), Commission (33), Indeterminate (34), and n/a (35).

Nature of Regret - Character Regrets

Character regrets reflect states of being on a personal level. They refer to one's traits or aspects of self and may refer to oneself or to another. Character regrets do not necessarily refer to one's actions. For example, I can be shy, and I can regret my shyness. My son can be shy, and I can regret his shyness (because it touches me directly and causes me pain). If an expressed regret is about a specific action, it is not a character regret, even if it is caused by or associated with a character trait. For example, I can be shy, but regret not making more friends. This latter is a regret of omission, not character. Character regrets can be coded three ways, Yes (36), No (37), n/a (38).

Agency

Agency refers to who or what caused the regretted event or experience. There is an implied attribution of responsibility. Because of the overlap with attribution, we will use agency and we will not use the the locus of control dimension, that is, internal/external nor the stability dimension, that is, stable/unstable.

Note that to determine agency, contextual cues may be used. Agency has five separate codes, Self (39), Other (40), Circumstance (41), Self and other (42), n/a (43).

Self as agent. This refers to acts one commits one's self. For example, "I didn't go to medical school because I didn't have the grades to get in." Note that this statement itself does not constitute a statement of regret. The wish for it to have been otherwise needs to be expressed.

"I made a mistake. I bought a house in the wrong neighborhood." In this example, it is the actor who is also seen as responsible for the regretted action.

Other as agent. This refers to regrets about what others have done. An example would be parents regretting their children's actions or a spouse regretting the other spouse's actions.

Agency can also refer to who is held responsible for the regretted event or experience, hence overlapping with attribution. For example, "I couldn't go to medical school because my parents said that women do not go to medical school and forbade it." It is the actor who has not gone to medical school but the parents who were responsible for this.

- Note in the wording of the regret statement whether it is not going to medical school that is regretted or the parents' involvement in the situation that is regretted.

Circumstance as agent. This refers to situations in which circumstance was perceived to have had impact on what the participant could or could not do.

- Circumstances could include but are not restricted to: the times, biology (gender, race, illness), financial or economic situation, family situation with its attendant constraints/responsibilities, work requirements/conditions, the war, chance events or accidents.
- There is an implied lack of freedom to choose when circumstance is viewed as agent. For example, "I couldn't go to medical school because my father died at that time."
- Note that the state of the world can be viewed as awful but that this state of affairs can be considered to be regretted only when it has an impact on the individual in a way that is personally meaningful. For example, "Times were hard" is a general statement but does not express regret. "Times were hard. I regret that we were poor" describes the personal impact of the circumstance. The circumstance is the content of the regret.

Agency defaults. The following common regrets are coded as follows in relation to agency:

Marriage/Divorce: Self (39)
Having children/Not having/Number: Self (39)

Timing of Kids: Circumstance (41)

Object of Regret

This refers to who is affected by the regretted matter and its consequences. In other words, who was the regretted event or experience done to? Was it the self or another? Self can be the object of the regret, as can other. For some regrets, both self and other can be the object of the regret. There are some regrets for which object is not relevant.

- Note that the participant's phenomenological experience of the regret is not included as a consequence of the regretted matter; rather, there must be an indication or implication of a direct impact on the participant's life.
- Note that to determine object of regret, contextual cues may be used.

Object of regret is coded as Self (44), Other (45), Self and Other (46), n/a (47).

When the regretted event is a death, it can be coded differently in relation to object depending on how it is categorized from the perspective of theme. When it is categorized as:

- social isolation ("I've been so lonely since he died"), the object is coded as Self (44).
- unfulfilled potential of the deceased ("He had so much to live for"), the object is coded as Other (45).
- When there is no explanation or elaboration, the default coding for object is Other (45).

For common interpersonal regrets, the default coding for object is:

- Marriage & Divorce: Self (44)
- Having/Not having/Timing of Children: Self (44)
- Parenting Skills: Other (45)
- Emotional Distance: Self & Other (46)

Perceived Control of Regretted Event or Experience

This refers to the perceived control from the perspective of the participant, that is, even if the agent is *other*, the control refers to the participant's perception of his control over the situation. The coder's judgement about whether or not something is controllable is not relevant. We are not coding whether or not a situation is controllable, but whether or not the participant believes it is. Perceived control is coded as yes (48), no (49) or indeterminate (50).

- If there is no indication as to whether or not the individual believed they could have controlled the situation/outcome, i.e. when we can not be sure, it is coded as indeterminate.
- Exceptions to indeterminacy:
  - Physical and mental changes are coded as No control (49), unless otherwise specified. For example, "I am losing my memory and I should have done more puzzles to prevent the decline" versus "I am losing my memory – that's life". In this case, the former statement reflects that the participant believes that it would have been possible to exert control over mental decline. It is therefore coded Yes control (48). This is not true for the second participant.

- There are specific situations in which controllability is obvious and no mention is made of having been able to have possible control over the situation. For example, "My friends moved away." This is coded as No control (49).
- Statements such as "I should have" and "I made a mistake" without describing elements that would have eliminated the possibility of control, indicate that the participant believes that the situation could have been controlled. These would be coded Yes control (48). In contrast, "I wish" does not necessarily imply that there was no control.
- Stable character traits are coded by default as No control (49), unless, as with mental changes above, the participant clearly states how the modification of a trait could have been controlled.
- If the agent is circumstance, there is no control, but the opposite is not necessarily true (you could have no control and still have self as agent
- Regrets related to addiction are coded as Indeterminate (50), unless otherwise stated by the participant.

Attribution

There are two major dimensions to attribution, locus of control and stability. There is considerable overlap between agency, controllability and attribution as defined for the present study, and attribution will therefore be dropped. The codes for attribution went from 51 to 59.

Regret Themes

All regret themes and sub-themes and corresponding codes are found in the Table of Content Themes.

- In relation to Education: Note that Area of study, 02(01-15) refers to higher education whereas Content refers to elementary and high school studies.
- In relation to Education, a regret about not having had something available or the general quality of education, 02(59-64) is to be coded as a regret of circumstance and not as omission/commission-other.
- In relation to Self: To distinguish between Self-development/Enjoyment of life, 12(40-48) and Lack of skills/Incompetence, 12(17-24),
  - Self-development/enjoyment of life refers to more process-oriented general life experiences, such as not pursuing interests, not achieving potential, not travelling, whereas
  - Lack of skills/competence refers more to the acquisition of specific skills.
- In relation to Self: Self-Perception needs to be distinguished from Self-Image/Self Care, 12(06-10). The latter is physical. Self-Perception needs to be collapsed with Personal Qualities, 12(25-34).
- In relation to Finances, Choices made, 03(01-13) refers to the expression of a specific decision made, whereas Lack of competence/knowledge, 03(24-34) refers to underachievement.