

**THE RELATIONSHIP BETWEEN SUBJECTIVE AGE IDENTITY AND
PERSONALITY VARIABLES ACROSS THE ADULT LIFESPAN**

by

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ABSTRACT

The relationship between subjective age identity and ideal age, as measured by the Subjective Age Identity Scale (Hubley, 2004), and personality domains and facets, as measured by the NEO-PI-R (Costa & McCrae, 1992), was investigated in a sample of 210 adults ages 19 to 78. Subjective age and ideal age scores were regressed, using multiple standard regressions, on the NEO-PI-R domains and facets, respectively. Results indicated that 22% of the variance in subjective age identity scores was explained by personality domains whereas 27% was explained by personality facets. Specifically, two personality domains (Openness to Experience and Neuroticism) and one personality facet (Aesthetics) made significant unique contributions to the explained variance in subjective age scores. Very little variance in ideal age scores was explained by personality domains and facets (less than 10%). One domain (Openness to Experience) and two facets (Vulnerability to Stress and Values) made significant unique contributions to the explained variance in the ideal age scores. These findings are examined in the context of the previous research on the relationship between personality and subjective age and the importance of conducting both domain and facet level analyses when using the NEO-PI-R is discussed. Implications of the present findings for counselling and clinical work with persons facing age role transitions or other age related concerns (e.g., negative attitudes towards aging) are highlighted.

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CHAPTER I: INTRODUCTION

Problem Statement

Subjective age identity, defined as the age somebody feels or identifies with, represents a core psychological variable in the areas of human development, aging, and self-concept (Lee, 2006). The meaning that people assign to their chronological age is greatly determined by their subjective perceptions of age. Being 20, 45, or 80 years old has little meaning in itself and it has become progressively more apparent that it is not the objective measure of chronological age that people use in their most meaningful age self-evaluations, but the subjective measure of age identity. These age appraisals further influence people's feelings, behaviours, and interpersonal relationships to the extent that, in comparison with chronological age, subjective age has been identified as a better predictor of adults' health, well-being, social functioning, and longevity in several studies (Hubley & Russell, in press; Uotinen, Rantenen, Suutama, & Ruoppila, 2006).

Research interest in age identity began in the 1950s and 1960s when some researchers reported that many older adults tend to identify themselves as younger than their chronological age (Blau, 1956; Tuckman & Lorge, 1954; Zola, 1962). Initially, research in this area focused on older adults and subjective age has been correlated with age stereotypes, age and death denial, and fear of aging in older adults (Bultena, 1977). This focus had an impact on the development of the concept and only recently have researchers begun to address the issue of age identity with adolescents and younger adults, mainly focusing on social role transitions and psychosocial maturity (Galambos & Tilton-

Weaver, 2000; Galambos, Turner, & Tilton-Weaver, 2005). Over time, the number of variables associated with age identity in adults has increased and included variables such as well-being, quality of life, and different personality factors.

The role of personality traits in age identity has been examined in surprisingly few studies. Broadly defined as enduring patterns of thinking, feeling and behaving, our personality traits directly influence our self-concept (Costa & McCrae, 1998, 2006). Given the fact that age identity is an important aspect of the self-concept, it is likely that adults' age identity is shaped by personality variables. Indeed, a few studies have indicated that personality variables are significant predictors of subjective age both in adolescents and in older adults (Goldsmith & Heiens, 1992; Hubley & Hultsch, 1994, 1996; Kaufman & Elder, 2002; Montepare & Lachman, 1989; Montepare, 1996a). In addition to the scarcity of studies, researchers who have investigated this relationship have predominantly narrowed their quest to certain age groups (either adolescents or older adults) or to certain personality variables while ignoring others (Galambos & Tilton-Weaver, 2000; Galambos, et al., 2005; Hubley & Hultsch, 1994, 1996; Montepare & Lachman, 1989). Only one study (Braman & Larsen, 2001) has examined the role of personality variables across a significant portion of the adult life span (ages 30 to 90). However, this study is an unpublished conference presentation, it ignores most of the younger adults (i.e., ages 19 - 29), and the authors did not mention if they used the same personality and subjective age identity measures as previous studies.

Another major shortcoming of the previous studies is that they did not examine personality factors comprehensively, at the facet level. For example, the domain of Extraversion, according to Costa and McCrae (1992) is comprised of six facets (i.e., warmth, gregariousness, assertiveness, activity, excitement-seeking, and positive emotions). Without a facet level analysis, an understanding of the role of personality in age identity is limited. Knowing this information would allow us to be much more specific in examining the relative contribution of personality and other key variables (e.g., social role transitions, health). Knowing specifically which personality variables are predictors of adults' subjective age will contribute to a better understanding of the concept of age identity and it will also help to better target educational and clinical interventions with adults dealing with age related issues (e.g., retirement).

Purpose of the Study

The current research aims to examine the relationship between personality variables and subjective age identity in adults ages 19 to 80. Building on research by Hubley and Hultsch (1994; 1996), this study intends to determine more precisely which personality domains and facets are involved in adults' age identity.

CHAPTER II: LITERATURE REVIEW

This chapter presents a review of the literature in the area of subjective age and personality. It starts by outlining how subjective age has been conceptualized and measured in previous studies. This is followed by a presentation of the patterns of subjective age across the life span. Finally, a review of the empirical results regarding the relationship between subjective age and personality will be outlined. The research discussed in this chapter was obtained through a computer search of the EBSCOhost Research Database that includes specific databases such as PsycInfo, PsycArticles, Medline and CINAHL.

What is Subjective Age?

Terminology distinctions

Most frequently, subjective age identity (SAI) has been conceptualized as the age somebody feels or identifies with. Defined this way, subjective age is distinguished from chronological age (which is expressed as the amount of time that has passed since someone's birth), biological age (which is defined by an individual's present position with respect to his/ her potential life span), social age (reflected in the social roles an individual holds and which correspond to a certain age), and psychological age (which is reflected in the use of adaptive capacities of memory, learning, intelligence, skills, feelings, motivations, and emotions for exercising behavioural control or self-regulation) (Birren & Cunningham, 1985). Instead of being just a demographic variable like chronological age or a mere index like social or psychological age, subjective

age is largely determined by persons' age perceptions and the personal meaning they assign to age.

In research, subjective age has been investigated under different names: self-classification (Tuckman & Lavell, 1957), self-perceived agedness (Preston, 1968), personal age (Kastenbaum, Derbin, Sabatini & Artt , 1972), subjective age (Markides & Boldt 1983), perceived age (Linn & Hunter 1979), and age identification (Baum & Boxley 1983; Blau 1956; Bultena, 1978; George, Mutran, & Pennybacker, 1980). The term "cognitive age" has been alternatively used especially in marketing research by Barak and Stern (1986) and Barak (1987). The common theme in all of these terms is that subjective age represents a self-perception of age and, hence, it is an integral component of an individual's implicit theory of development and of self-concept (Steverink, Gerben, Westerhof, & Freya, 2001).

Measuring subjective age

Self-report measures represent the most traditional method to assess subjective age. Subjective age measures have ranged from a single item (Baum & Boxley, 1983; Cutler, 1982; Hubley & Hultsch, 1994) to a multi-item scale (Barak, 1987; Galambos et al. 2005; Hubley & Russell, in press; Montepare, 1996a; Montepare & Lachman, 1989). Until the late 1980s, self-report measures of subjective age were single-item measures.

Barak and Stern (1986) have identified several procedures for capturing subjective age in questionnaires. The first modality of measuring subjective age asks the participants about their age identity and participants report with which age group they mainly identify (e.g., young, middle-aged, old). A second way is

known as comparative age and participants report if they feel younger, older or the same as their chronological age or with how they have felt in the past (known as temporal comparisons; Braman, 2001). Stereotype age represents a third procedure of measuring subjective age. Participants compare themselves with a stereotypical person from a particular age category on several dimensions (known as a semantic differential). Other questionnaires ask about “feel age” and participants report how old they feel in years with no categories provided.

A turning point in measuring age identity is the article written by Kastenbaum et al. (1972) in which the authors outlined different ages and proposed an instrument for measuring age identity (i.e., “Ages of Me” instrument). More than a decade later, Barak and Stern (1986) defined the concept of cognitive age as the age one perceives one's self to be. In their view, and based closely on Kastenbaum et al. (1972), cognitive age encompassed four aspects: feel age (“I feel as though I am in my ...”), look age (“I look as though I am in my ...”), do age (“I do most things as though I were in my ...”), and interest age (“My interests are mostly those of a person in his/her ...”). In 1987, Barak and Schiffman developed the Cognitive Age Questionnaire as an instrument designed to measure cognitive age. In 1989, in writing about subjective age, Montepare was also influenced by the work of Kastenbaum et al. (1972) and defined subjective age as the age someone feels, looks, acts and wants to be (i.e., ideal age). Later, she also proposed a multi-item measure of subjective age (Subjective Age and Gender Scale), which was essentially based on the components outlined in Barak’s Cognitive Age Questionnaire (Montepare, 1996b). Since this time, researchers in the area of subjective age

have consistently employed Kastenbaum et al.'s (1972) conceptualization of SAI (Baum & Boxley 1983; Galambos & Tilton-Weaver, 2000, Galambos et al, 2005; Hubley & Russell, in press; Montepare & Lachman, 1989; Montepare, 1996a). More recently, the concept of subjective age has been enriched with items such as the age that others perceive or treat the respondent and expanded versions of desired age (Hubley & Russell, in press).

These modalities of capturing the concept of subjective age show that this concept has been consistently defined as an essentially relative construct that involves simple or multiple comparisons of a temporal (i.e., people compare to themselves at a previous age), social (i.e., people compare themselves with others) or ipsative nature (i.e., people compare different aspects of themselves), albeit indirectly.

In addition to self-report questionnaires, other ways of capturing subjective age that have been more recently developed include: focus groups (Lindsay & Hubley, 2006), card sorting technique (Braman, 2001), and image estimation method (Braman, 2001). These approaches aim to complement questionnaires in measuring subjective age and may offer different perspectives on the concept. However, these latter methods have not been extensively researched.

Summary

Different ways of measuring subjective age have led to slightly different conceptualizations of this concept. Nonetheless, all of these definitions have emphasized the relative nature of the concept (i.e., subjective age is always determined, explicitly or implicitly, in comparison with a referent) and they

have been largely descriptive in nature (i.e., the age somebody looks, feels etc.). More recently, Hubley and Russell (in press) have expanded on Montepare's concept of desired age (Montepare, 1996b) and have also added the "age treated by others" as another aspect of age identity.

Patterns in Subjective Age Identity across the Adult Life Span

One of the most frequent findings in the area of subjective age identity is the discrepancy between chronological age and subjective age, with the widest discrepancy seen at older ages and the smallest in persons in their mid-20s (Goldsmith & Heiens, 1992; Hubley & Hultsch, 1996; Kaufman & Elder, 2002; Montepare & Lachman, 1989; Smith & Baltes, 1999). With respect to the direction of this discrepancy, two major patterns have emerged from research: (a) adolescents and emerging adults, on average, tend to feel older than their actual age, whereas (b) adults in their 30s and up, on average, tend to feel younger than their chronological age. The change from an older felt age to a younger one, known as the cross-over effect, is most apparent around the age of 25 (Galambos, et al., 2005; Rubin, 2006).

Studies conducted in the area of subjective age with adolescents and emerging adults found a regular tendency for this age group to feel older than their chronological age (Galambos, et al., 2005; Montepare, 1991; Rubin, 2006). Montepare conducted a study with a sample of 105 men and women aged 17 to 21 and found that participants, on average, reported older age identities than their actual age but the amount of discrepancy that young adults experienced between subjective and chronological age was much smaller than that reported by older adults. In a sample of 190 university students aged 17 to 29, Galambos

et al. (2005) found a negative relationship between subjective and chronological age, with “younger” individuals tending to feel older than their actual age, on average, and with “older” individuals from the sample tending to feel younger than their chronological age, on average. This study also found that the best predictor for subjective age identity in young adults was psychosocial maturity, with higher levels of psychosocial maturity related to older felt ages and lower levels of psychosocial maturity linked to younger felt ages. At 25.5 years old, on average, a cross-over effect was revealed when the participants started reporting felt ages younger than their actual age (Galambos, et al., 2005). A tentative explanation for the cross-over effect has been formulated in relationship with progressively increased autonomy and with a change in the reference group for age after the stabilization of the new roles acquired during the transition from adolescence to adulthood.

The picture of subjective age is different with older adults. The majority of older adults report that they feel significantly younger than their actual age, on average, and many researchers have reported that the gap between subjective age and chronological age tends to widen as people grow older (Barak & Stern, 1986; Baum & Boxley, 1983; Goldsmith & Heiens, 1992; Hubley & Hultsch, 1994, 1996; Kastenbaum, et al., 1972; Kaufman & Elder, 2002; Montepare & Lachman, 1989). Two additional and apparently contradictory studies are worth noting, however. Uotinen, Rantanen, Suutame, and Ruopilla (2006) examined the stability of the discrepancy between subjective and chronological age in older adults and discovered that, for 451 community-dwelling adults from Finland aged 65 to 84, “no significant mean-level changes were observed in the

age discrepancy scores (feel age and chronological age) in approximately half of the participants over the 8-year time frame” (p. 232). The baseline discrepancy between chronological and felt age remained constant among 48% of the participants, with 26% reporting a younger felt age and 26% reporting an older felt age. In a sample of 1470 Danish adults aged 20 to 97 years of age, Rubin (2006) calculated the discrepancy between subjective and chronological age as a proportion of chronological age and found no increase in the discrepancy is seen after age 40, with older respondents tending to feel 20% younger than their actual age, on average. Thus, whether the discrepancy between subjective age and chronological age actually widens with age seems to depend on how one examines this relationship (i.e., in years cross-sectionally, changes in discrepancy over time longitudinally, or as a proportion cross-sectionally).

A few factors have been identified as having a significant influence on the width of the discrepancy between subjective age and chronological age. Although this research is fairly new, for adolescents and young adults, psychosocial maturity, experience of sexual abuse, and exposure to sensitive maternal disclosures (e.g., financial or job worries) and some personality variables (e.g., social affiliation, dominance) increased the discrepancy between chronological age and felt age in the sense that a significantly older felt age was found compared to that reported by their peers (Koerner, Kanyon & Rankin, 2006; Turner, Runtz, & Galambos, 1999). For older adults, gender, age anxiety, widowhood, purpose in life, satisfaction in life, fear of death and some personality variables (e.g., internal locus of control, extraversion) have been found to be related to the discrepancy between chronological age and subjective

age (Barak & Stern, 1986; Bultena, 1977; Hubley & Hultsch, 1994, 1996; Linn & Hunter, 1979; Montepare & Lachman, 1989; Montepare, 1991, 1996a).

Although there is evidence that personality variables tend to influence age identity both in younger and older people, the research in this area is still just beginning.

Subjective Age Identity and Personality

Research investigating the relationship between subjective age identity and personality variables has been mainly focused on some specific personality traits such as neuroticism and extraversion (as conceptualized by Eysenck), the Big Five personality factors (as described by Costa and McCrae), locus of control, self-esteem, dominance, confidence, social potency, and Type A personality.

Big Five personality factors such as extraversion, neuroticism, agreeableness, openness to experience and conscientiousness were scrutinized by Nilsson (1983), Hubley and Hultsch (1994; 1996), Braman and Larsen (2001), and Knol, Rieckmann, Scholz, and Schwarzer (2004). Nilsson (1983), in a cross-sectional study of older adults aged 70 to 79, found that a subjective age younger than chronological age is positively correlated with higher scores on extraversion and lower scores on neuroticism as measured by the Eysenck Personality Inventory.

Hubley and Hultsch (1994; 1996) examined the relationship between neuroticism, extraversion, and openness to experience, as measured by Costa and McCrae's (1985) NEO-PI Form S, and subjective age identity, as indicated by single-item measures of both felt age and ideal age. Hierarchical regression

analyses conducted on a sample of 355 community-dwelling adults (151 men and 204 women) aged 55 to 85 revealed that extraversion and openness to experience were both significantly correlated to the felt age measure ($r = -.29$ and $r = -.28$, respectively) whereas neuroticism was significantly correlated only to the ideal age measure ($r = -.13$). These results suggest that the more extraverted and open to experience a person is, the younger he or she feels whereas the more neurotic someone is, the younger he or she wants to be. Hubley and Hultsch did not examine agreeableness and conscientiousness in their study.

In research conducted by Braman and Larsen (2001) on an adult sample aged 30 to 90, in which they used the NEO-PI-R five domains, higher scores on extraversion, agreeableness, and openness to experience accounted for younger subjective ages across the adult lifespan. People who felt younger than their years tended to report being healthier, happier, and with fewer inhibitions. They also tended to be stable extraverts high in agreeableness and openness in relationships.

Conscientiousness, as measured by the NEO-PI-R (Costa & McCrae, 1992), was found as a predictor of younger felt ages in a sample of 134 patients aged 38 to 92 who underwent cataract surgery (Knol et al., 2004). This is the only study that indicates a relationship between conscientiousness and subjective age identity. Unfortunately, the study did not include the other four personality domains. The sample was also rather small given the broad range of the age group.

Locus of control represents one of the first personality traits to be explored in relationship with age identity. Younger age identities were usually associated with an internal locus of control, especially when other factors such as socioeconomic status (SES) or physical health were controlled (Baum & Boxley, 1983; Linn & Hunter, 1979). Hubley and Hultsch (1994), in a study involving 241 community dwelling adults aged 55 to 75, found younger subjective age identities in persons who had a sense of personal control over what happened to them (i.e., higher scores on internal locus of control).

Self-esteem and Type A personality showed positive correlations with age identity in young adults ages 20 to 29, in the sense that individuals with higher scores on Type A personality scores and self-esteem reported feeling older than their actual chronological ages (Sato, Shimonaka, & Nakazata, 1997).

Dominance, affiliation, confidence, and social potency were all positively correlated with an older age identity than chronological age in young adults. Montepare (1991) investigated the relationship between subjective age perception and these psychological correlates in a sample of 55 men and 60 women ages 17 to 21 by using the Subjective Age Questionnaire and Gough's Adjective Check List (ACL), a self-report measure of perceptions of self. Multiple regressions were conducted on gender sub-samples and on the entire sample to identify the best predictors of subjective age identity in young adults. The results indicated that, regardless of gender, young people's self-perceptions of being dominant, affiliative, confident, and socially potent were strongly correlated with being perceived by others as significantly older than their chronological age.

Summary

All of the studies that have investigated the relationship between personality and subjective age identity revealed that various personality variables influence subjective age identity from adolescence to old age. In persons over 30, extraversion, openness to experience, agreeableness, conscientiousness, and an inner locus of control were all significantly and positively related to subjective ages lower than chronological ages whereas neuroticism was negatively related to younger ideal ages. In persons younger than 30, Type A personality, dominance, affiliation, confidence, and social potency were all positively correlated with an older age identity.

Limitations of the Previous Studies

Overall, for all of the age groups that were investigated with respect to the relationship between personality and subjective age identity, these preliminary conclusions are based on only a few studies. For example, only three studies have investigated the relationship between any of the Big Five personality factors and subjective age.

Among these studies, there is a high heterogeneity in terms of the personality traits researched, measures employed, and samples used. Therefore, it is hard to consider the findings from different studies comparable even if they measure similar personality traits (e.g., there are conceptual differences between neuroticism from the perspective of Eysenck's theory as compared to that of Costa and McCrae). No study has focused on the entire adult age range when exploring the relationship between personality variables and subjective age identity using the same measures for personality and for subjective age identity,

respectively. In conclusion, a more thorough examination of the role of personality variables in subjective age identity across the entire adult lifespan is needed.

Purpose and Research Questions for the Present Study

The overall purpose of the current research was to examine the role of personality variables, as measured by Costa and McCrae's (1992) NEO-PI-R, in subjective age identity in a sample of men and women across the adult lifespan (specifically between the ages of 19 and 80 years).

The strengths of this research over previous studies are that it: (a) included all five personality domains as measured by the NEO-PI-R, (b) explored these personality domains in more depth by also examining them at the facet level (e.g., neuroticism consists of the facets of anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability), and (c) included a sample that covers a wide range of the adult span.

The research questions that directed this study were:

1. Which of the Big Five personality *domains* explain a significant amount of variance in subjective age identity and ideal age scores and, more specifically, how much of the variance in these dependent variables is explained by these domains?
2. Which of the Big Five personality *facets* explain a significant amount of variance in subjective age identity and ideal age scores, and more specifically, how much of the variance do they explain?

CHAPTER III: METHODOLOGY

Participants

The sample consisted of 141 women and 69 men who ranged in age from 19 to 78 years ($M = 43.09$, $SD = 12.82$) recruited using convenience sampling from a community population in the Greater Vancouver area. The sample was 81% Caucasian, 7.1 % East Asian, 3.8% African, 2.4% Hispanic, 1.4% South Asian, 1% West Asian, 0.5% Aboriginal and 0.5 % South East Asian. Of the total sample, 66.2 % had 13 or more years of education, 14.3% had 9 to 12 years of education, and 6.7% had eight years or less. Overall, 16.7% of participants reported being in excellent health, 33.3% in very good health, 28.6 % in good health, 13.9 % in fair health, 4.8% in poor health, and 0.5% in very poor health.

Research participants were recruited through posters (See Appendix A), in-person or e-mail announcements, and snowball sampling (i.e., word of mouth notification of the study by the researcher or study participants). Posters were placed at different locations such as: colleges, universities, community or recreation centres, churches, and seniors' homes. Announcements about the study were made in several classes at the University of British Columbia and in two senior homes in Coquitlam and Vancouver.

Methods

Research Design and Variables

This study employed a quantitative, cross-sectional, and correlational research design and it used self-report measures to gather data about personality variables, subjective age, and ideal age in adults.

The dependent variables were subjective age identity, as measured by the Subjective Age Identity Scale (Hubley & Russell, in press) and ideal age, as measured by a single item question. The independent variables of this study were represented by five personality domains and 30 personality facets, as measured by the NEO-PI-R (Costa & McCrae, 1992).

Materials

Each variable of interest was assessed through the self-report measures described below.

Subjective Age Identity Scale. Subjective age identity was assessed using the Subjective Age Identity Scale (SAIS; Hubley & Russell, in press- see Appendix C). This scale measures physical age, mental age, social age, look age, ideal age, and the age one is treated. Based on a factor analysis, a mean subjective age identity score was obtained for each participant by averaging the scores on each of the items, except ideal age and the age others treat me. Ideal age typically does not load on the same factor and is often treated as a separate variable whereas I decided that the item “other people treat me as though I am...” was not appropriate for the focus of the present study¹. Higher scores on the SAIS items indicated older subjective age identities relative to chronological age.

The NEO-PI-R. The NEO PI-R is the standard questionnaire measure of the Five Factor Model of human personality. It was developed through repeated factor analytic research on both clinical and normal adult populations (Costa & McCrae, 1992). The NEO PI-R measures five major domains of personality and

¹ Unpublished research by Dr. Hubley suggested that a significant number of adults do not think of this question in terms of age (July 18, 2008).

30 facets (i.e., there are six facets that define each domain) which allow for a comprehensive assessment of normal adult personality.

The NEO PI-R Form S is a self-administered questionnaire that contains 240 items and three validity items and requires a 6th grade reading level. Each item is rated on a 5-point Likert-type scale ranging from “strongly disagree” to “strongly agree”.

Demographic Questionnaire. The purpose of the demographic questionnaire was to provide descriptive information about the participants. Information was collected about the following variables: age, birth date, gender, level of education, ethnic/racial/cultural background, and overall health status (see Appendix D).

Procedures

Approval for this research was obtained from the UBC Behavioural Research Ethics Board (BREB). This was a minimal risk study with no harmful consequences to participants expected from completing the measures. A Questionnaire Cover Sheet (see Appendix B) was attached to each testing package to describe the study and to ensure the voluntary participation in the study.

Participants completed the questionnaires individually or in a group format, in the following order: SAIS, NEO-PI-R, and the demographic questionnaire. The estimated duration for completion of the whole package for each participant was about 40-60 minutes. Participants were allowed to take the questionnaire packet home and return it at a date and time agreed upon with the researcher. Alternatively, participants completed the questionnaires at the Adult

Development and Psychometrics Lab at the University of British Columbia.

Participants were given the option of receiving feedback about the overall results of the study and given the opportunity to participate in future follow-up research (see Appendix E).

Participants' anonymity was preserved by using identification numbers instead of names on questionnaires. Access to data was restricted to members of Adult Development and Psychometrics Lab and data was kept in a locked location.

CHAPTER IV: RESULTS

Subjective Age Composite Score

Principal component analysis (PCA) was conducted on the six items of the Subjective Age Identity Scale (SAIS) to determine whether it was appropriate or not to use a mean score based on these items with this particular sample. Two items were not included in the PCA. Item 8 measuring ideal age was not expected to load on the same factor as the other items and item 7 measuring age treated was discarded because it was considered inappropriate for this age group.

In accordance with the suggested guideline of 5 to 10 cases per item (Gorsuch, 1983), the sample size for this study after eliminating the missing data (N= 206) was considered sufficient to conduct factor analysis. The data met the minimum Kaiser-Meyer-Olkin criteria of .60 for sampling adequacy (KMO = .77). In addition, Bartlett's Test of Sphericity was significant, chi squared = 502, $p < .001$, confirming that the correlation matrix was not an identity matrix (Pett, Lackey, & Sullivan, 2003).

The PCA revealed two components. The first component had an initial eigenvalue of 2.988 and explained 49.71% of the total variance in the item responses whereas the second component had an initial eigenvalue of 1.049 and explained 17.28% of the total variance in the item responses. Given the fact that PCA has a tendency to over-factor and that the second component had an eigenvalue close to 1.00, this was further explored using a parallel analysis.

A parallel analysis was conducted using Monte Carlo PCA to generate a random data set with six variables and $N = 206$ with 100 replications². In a parallel analysis, the number of components is indicated by the number of eigenvalues obtained with the current data set whose values exceed those obtained from a randomly generated data set. The parallel analysis supported a one-factor solution.

Given these results, a PCA forcing one component was conducted. The one component had an initial eigenvalue of 3.3 and explained 41.62% of the total variance in the item responses. Thus, a mean SAIS score was computed for each respondent by averaging the scores on the six items.

Reliability Estimates for Subjective Age and Personality Variables

Internal consistency, as estimated by Cronbach's alpha, for the SAIS mean scores was .79 in the present sample. Internal consistency coefficients for NEO-PI-R Form S ranged from .78 to .83 for domains and from .47 to .87 for facets in the present sample (Tables 1 and 2).

Table 1

Internal Consistency Coefficients for NEO-PI-R Personality Domains

Domain	Cronbach's Alpha
Neuroticism	.79
Extraversion	.82
Openness to Experience	.83

² $N = 206$ was the final sample size for PCA after the missing values were excluded from the analysis.

Domain	Cronbach's Alpha
Agreeableness	.83
Conscientiousness	.83

Table 2

Internal Consistency Coefficients for NEO-PI-R Personality Facets

Domains	Facets	Cronbach's Alpha
Neuroticism	N1: Anxiety	.74
	N2: Hostility	.74
	N3: Depression	.68
	N4: Self-Consciousness	.47
	N5: Impulsivity	.69
	N6: Vulnerability to Stress	.79
Extraversion	E1: Warmth	.80
	E2: Gregariousness	.75
	E3: Assertiveness	.76
	E4: Activity	.74
	E5: Excitement Seeking	.58
	E6: Positive Emotions	.73
Openness to Experience	O1: Fantasy	.81
	O2: Aesthetic	.81
	O3: Feelings	.82
	O4: Actions	.66

Domains	Facets	Cronbach's Alpha
	O5: Ideas	.87
	O6: Values	.77
Agreeableness	A1: Trust	.80
	A2: Straightforwardness	.76
	A3: Altruism	.78
	A4: Compliance	.74
	A5: Modesty	.69
	A6: Tender-mindedness	.67
Conscientiousness	C1: Competence	.59
	C2: Order	.54
	C3: Dutifulness	.58
	C4: Achievement	.77
	C5: Self-Discipline	.82
	C6: Deliberation	.70

Correlational Analysis

The correlations between the personality domains/facets and the SAIS mean score were computed (Table 3 and 4). Personality domains/facets that showed a statistically significant relationship with SAIS mean scores were kept in the subsequent regression analyses.

Table 3

Correlations between NEO-PI-R Personality Domains and SAIS Mean Score

NEO- PI-R Personality Domains	SAIS Mean Score
Neuroticism	.293 ^{**}
Extraversion	-.241 ^{**}
Openness to Experience	-.365 ^{**}
Agreeableness	-.268 ^{**}
Conscientiousness	-.265 ^{**}

^{**} p < .01

Table 4

Correlations between NEO-PI-R Personality Facets and SAIS Mean Score

NEO –PI-R Factors	NEO-PI-R Facets	SAIS Mean Score
Neuroticism	N1: Anxiety	.060
	N2: Hostility	.258 ^{***}
	N3: Depression	.250 ^{***}
	N4: Self-Consciousness	.205 ^{**}
	N5: Impulsivity	.179 [*]
	N6: Vulnerability to Stress	.307 ^{***}
Extraversion	E1: Warmth	-.325
	E2: Gregariousness	-.210 ^{**}
	E3: Assertiveness	-.154 [*]
	E4: Activity	-.277 ^{***}

NEO –PI-R Factors	NEO-PI-R Facets	SAIS Mean Score
	E5: Excitement Seeking	-.060
	E6: Positive Emotions	-.210**
Openness to Experience	O1: Fantasy	-.151*
	O2: Aesthetics	-.366***
	O3: Feelings	-.250***
	O4: Actions	-.333***
	O5: Ideas	-.281***
	O6: Values	-.256***
Agreeableness	A1: Trust	-.213**
	A2: Straightforwardness	-.154*
	A3: Altruism	-.245***
	A4: Compliance	-.175*
	A5: Modesty	-.129
	A6: Tender-mindedness	-.285***
Conscientiousness	C1: Competence	-.316***
	C2: Order	-.225**
	C3: Dutifulness	-.214**
	C4: Achievement	-.151*
	C5: Self-Discipline	-.236**
	C6: Deliberation	.001

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

Further, the correlations between personality domains/facets and ideal age were computed (Table 5 and 6). Again, domains and facets showing

statistically significant correlations with ideal age were kept in the subsequent regression analyses.

Table 5

Correlations between NEO-PI-R Personality Domains and Ideal Age

NEO- PI-R Personality Domains	Ideal Age
Neuroticism	-.107
Extraversion	.047
Openness to Experience	.163*
Agreeableness	.102
Conscientiousness	.127

*p <.05

Table 6

Correlations between NEO-PI-R Personality Facets and Ideal Age

NEO –PI-R Factors	NEO-PI-R Facets	Ideal Age
Neuroticism	N1: Anxiety	-.048
	N2: Hostility	-.175*
	N3: Depression	-.079
	N4: Self-Consciousness	-.048
	N5: Impulsivity	-.124
	N6: Vulnerability to Stress	-.210**
Extraversion	E1: Warmth	.057
	E2: Gregariousness	-.056
	E3: Assertiveness	-.009
	E4: Activity	-.014

NEO –PI-R Factors	NEO-PI-R Facets	Ideal Age
	E5: Excitement Seeking	.127
	E6: Positive Emotions	.124
Openness to Experience	O1: Fantasy	.097
	O2: Aesthetics	.028
	O3: Feelings	.108
	O4: Actions	.084
	O5: Ideas	.196**
	O6: Values	.225**
Agreeableness	A1: Trust	-.020
	A2: Straightforwardness	.050
	A3: Altruism	.143*
	A4: Compliance	.123
	A5: Modesty	.031
	A6: Tender-mindedness	.076
Conscientiousness	C1: Competence	.166*
	C2: Order	.018
	C3: Dutifulness	.116
	C4: Achievement	.077
	C5: Self-Discipline	.150*
	C6: Deliberation	.034
** p <.05, * p <.01		

Multiple Regression Analyses

A series of separate standard regression analyses were conducted to determine whether all of the NEO-PI-R personality domains and facets that had shown a statistically significant bivariate relationship with SAIS mean scores and ideal ages, respectively, are needed to explain a significant proportion of the variance in each of these dependent variables. SAIS mean scores were regressed on the NEO-PI-R domains (first regression) and on the personality facets (second regression). Finally, the ideal age scores were regressed on the NEO-PI-R domains (third regression) and on the personality facets (fourth regression). Prior to reporting the regression results, assumptions regarding sample size, multicollinearity and singularity, outliers, normality, linearity, homoscedasticity, and independence of residuals were examined and met.

Regression of SAIS Mean Scores on NEO-PI-R Domains

All five of the personality domains measured by the NEO-PI-R showed statistically significant ($p < .05$) bivariate relationships with SAIS mean scores and, thus, were kept in the regression analysis. Results of the standard regression analysis showed that the five personality factors together explained 22% of the variance in SAIS mean scores, $F(5, 172) = 9.42, p < .001$. However, of the five personality domains, only Openness to Experience and Neuroticism made significant, unique contributions to the explained variance (Table 7). Based on the β values, Openness to Experience ($\beta = -.396$) showed a negative relationship with SAIS mean scores whereas Neuroticism ($\beta = .175$) showed a positive relationship with SAIS mean scores.

Table 7

Regression of SAIS Mean Scores on NEO-PI-R Domains

Variable	B	Standard Error	β	Sig	Zero Order Correlation
Neuroticism	.005	.002	.175	.038	.254
Extraversion	.004	.003	.153	.132	-.227
Openness to Experience	-.010	.003	-.396	.000	-.349
Agreeableness	-.004	.002	-.108	.144	-.258
Conscientiousness	-.004	.003	-.149	.087	-.296

Regression of SAIS Mean Scores on NEO-PI-R Facets

Only 15 of the 30 personality facets measured by the NEO-PI-R showed a statistically significant bivariate relationship with SAIS mean scores after a Bonferroni correction was applied to reduce Type I error given the large number of the correlations computed ($p < .002$ was used as a cut-off). Thus, only those facets that correlated significantly with SAIS mean scores at $p < .002$ were kept for the regression analysis. Results of the standard regression analysis showed that the 15 personality facets together explained 27% of the variance, $F(15, 185) = 4.12, p < .001$. Of these 15 personality facets, however, only one facet (O2: Aesthetics) made a statistically significant ($p < .05$), unique contribution to the explained variance in SAIS mean scores (Table 8). The β of $-.246$ showed a negative relationship between Aesthetics and SAIS mean scores.

Table 8

Regression of SAIS Mean Scores on NEO-PI-R Facets

Variable	B	Standard Error	β	Sig	Zero Order Correlation
N2: Hostility	.015	.014	.117	.274	.227
N3: Depression	.006	.010	.054	.535	.223
N6: Vulnerability to Stress	.009	.014	.066	.535	.285
E1: Warmth	3.552E-5	.014	.000	.998	-.297
E4: Activity	-.011	.011	-.092	.329	-.284
O2: Aesthetics	-.026	.010	-.246	.007	-.379
O3: Feelings	.001	.014	.008	.947	-.241
O4: Actions	-.012	.013	-.082	.359	-.315
O5: Ideas	-.005	.010	-.048	.629	-.296
O6: Values	.010	.013	.071	.466	-.252
A3: Altruism	.021	.016	.142	.189	-.245
A6: Tender-mindedness	-.025	.014	-.167	.079	-.295
C1: Competence	-.008	.016	-.056	.622	-.310
C2: Order	-.021	.011	-.167	.059	-.267
C5: Self-Discipline	.003	.012	.026	.806	-.258

Regression of Ideal Age Scores on NEO-PI-R Domains

Of the five personality domains measured by NEO-PI-R, only Openness to Experience showed a statistically significant bivariate relationship with the ideal age scores and, thus, was kept for the regression analysis. Results of the standard regression analysis showed that Openness to Experience explained almost 3% of the variance in the ideal age scores, $F(1, 194) = 5.26, p = .023$. Openness to Experience also made a significant, unique contribution to the explained variance in ideal age scores (Table 9). The β of .163 showed a positive relationship between Openness to Experience and ideal age scores.

Table 9

Regression of Ideal Age Scores on NEO-PI-R Domains

Variable	B	Standard Error	β	Sig	Zero Order Correlation
Openness to Experience	.004	.002	.163	.023	.163

Regression of Ideal Age Scores on NEO-PI-R Facets

Only two (N6: Vulnerability to Stress and O6: Values) out of the 30 personality facets measured by the NEO-PI-R showed statistically significant ($p < .002$) bivariate relationships with ideal age scores and, thus, were kept for the regression analysis. Results of the standard regression analysis showed that these two personality facets together explained 7% of the variance in ideal age scores, $F(2, 199) = 7.30, p < .001$. Each of these two facets made a statistically

significant ($p < .05$), unique contribution to the explained variance (Table 10).

Based on β , O6: Values ($\beta = .171$) showed a positive relationship with ideal age scores whereas N6: Vulnerability to Stress ($\beta = -.146$) showed a negative relationship with ideal age scores.

Table 10

Regression of Ideal Age Scores on NEO-PI-R Facets

Variable	B	Standard Error	β	Sig	Zero Order Correlation
N6 :Vulnerability to Stress	-.019	.010	-.146	.050	-.210
O6: Values	.023	.010	.171	.022	.225

CHAPTER 5: DISCUSSION

The present study aimed to address two sets of questions: (a) which of the Big Five personality *domains* explain a significant amount of variance in subjective age and ideal age scores and how much of this variance do they explain, and (b) which of the Big Five personality *facets* explain a significant amount of variance in subjective age and ideal age scores and how much of the variance do they explain.

Previous research has recognized the significant role that personality variables play in subjective age identity (Braman & Larsen, 2001; Hubley & Hultsch, 1994, 1996; Knol et. al, 2004; Nilsson 1983). These studies have identified the particular Big Five personality factors and other personality variables (i.e., locus of control, self-esteem, and sociability) as important contributors to subjective age identity. Nonetheless, the limited research in this field has not investigated the relationship between personality and subjective age either (a) comprehensively (i.e., only some personality variables have been selected in studies) and (b) consistently (i.e., studies have employed different measures of the research variables and different samples in terms of age - usually either older adults or very young adults). These shortcomings make findings tentative, preliminary and difficult, if not impossible, to compare across samples.

The present study attempted to address some of these challenges and, thus, I examined the relationship between subjective age and personality variables in a sample that covered most of the adult lifespan. I also deliberately

chose to use the NEO-PI-R to measure personality in order to make it easier to compare the present results with those of previous studies. In addition, I included all NEO-PI-R personality domains and facets in order to offer a comprehensive account of the role of personality variables in age identity.

In this chapter, I will: (a) discuss the study results within the context of previous research on the relationship between personality variables and age identity, (b) formulate interpretative hypotheses for the present findings, (c) highlight the strengths and limitations of this study, (d) indicate future research directions, and (e) discuss the implications of this research for counselling and clinical work.

Subjective Age Identity and NEO-PI-R Domains

In the present study, the personality domains measured by the NEO-PI-R explained approximately one quarter (22%) of the variance in the SAIS mean scores. The amount of variability in subjective age scores explained by personality domains in this sample is quite respectable. For example, previous research suggested that personality variables and subjective health together may explain roughly half of the variance in subjective age identity scores (Hubley & Russell, in press; Uotinen et al., 2006). Given the fact that the personality domains measured by the NEO-PI-R are basic personality dispositions, this result indicates that the most general personality tendencies are significantly related to adults' subjective age evaluations. In a broader sense, this result suggests that research aimed at formulating a comprehensive explanation of variables related to adults' self-concept should take personality variables into account.

In the present study, however, not all of the NEO-PI-R personality domains made significant contributions to the variability in SAIS mean scores. In fact, only Openness to Experience and Neuroticism made significant unique contributions to the variability in SAIS mean scores. As noted by looking at β , higher scores on the Openness to Experience domain tended to be related to feeling younger, on average, than one's chronological age whereas higher scores on Neuroticism domain tended to be related to feeling older, on average, than one's chronological age.

The key current result that is consistent with previous research is that Openness to Experience has been indicated as a relevant factor in subjective age identity by most of the previous studies (Braman & Larsen, 2001; Hubley & Hultsch, 1994, 1996). However, the contribution of this domain to the explained variance in the SAIS mean scores in the present sample was higher in comparison to other samples. This may be partly due to the different subjective age measures used across studies or to the broader age range used in the present study.

Several findings from the current study differ from previous research. First, Neuroticism was found to be a significant contributor to subjective age in the present study, but not in most other studies except that conducted by Braman and Larsen (2001). Participants' age may have influenced this result. Research investigating stability and change in personality traits notes that Neuroticism consistently and significantly decreases with age (Caspi & Roberts, 2001, 2005; Ready & Robinson, 2008; Roberts, Robins, Caspi, & Trzesniewski, 2003). It could be that older adults (the focus of previous research) showed less

variability in Neuroticism scores than might be seen in the present sample, thus resulting in Neuroticism not emerging as a significant contributor to age identity in these other studies. Given the very limited research, however, it is impossible to determine if such differences in variability existed and if they are of a significant magnitude to explain the different pattern of results across the studies. This hypothesis needs to be tested, ideally in longitudinal studies.

Second, Extraversion, which has been found to contribute significantly to subjective age scores in previous studies (Braman & Larsen, 2001; Hubley & Hultsch, 1994, 1996; Montepare, 1996), did not make a significant unique contribution in this study. This result may be due to: (a) age of the sample, and (b) the relationship between Extraversion and Openness to Experience. In terms of age, the present study covered a wide age range whereas past research that has found Extraversion to play a role in subjective age identity focused mainly on older adults. Research has shown that, for older adults, keeping themselves socially active represented a cornerstone value that greatly contributed to a healthy lifestyle. For middle aged adults, this is not a salient developmental task (Erikson, 1959). Involvement in social activities may be connected to aspects of Extraversion such as activity, gregariousness, and assertiveness. Thus, variability in Extraversion may be more strongly connected to social activity, a healthy lifestyle, and one's age identity in older adults than in the broader range of adults in the present study. Another factor is that Extraversion and Openness to Experience were quite highly correlated in this sample ($r = .68$). While this correlation is not high enough to suggest multicollinearity, it may be possible

that the Openness to Experience domain has assumed some of the explanatory variance of Extraversion in terms of explaining the subjective age scores.

Finally, Conscientiousness and Agreeableness did not make any contribution to the variability in the subjective age scores. Conscientiousness was identified as an important contributor to subjective age in one study (Knol et al., 2004). However, in that study, Conscientiousness was investigated alone and not in relationship with the other NEO-PI-R personality domains. Moreover, the sample was limited to individuals having cataract surgery and was relatively small. Thus, those results may be specific to that sample, especially given that Conscientiousness is known to be involved in health related behaviours (Caspi, et al., 2005; Ready & Robinson, 2008).

Agreeableness was found to be an important contributor to subjective age in one study (Braman & Larsen, 2001). However, this study did not report the statistical analysis employed, the sample characteristics, or how much of the variability in subjective age was actually explained by Agreeableness. Therefore, it is difficult to make a comparison between the results of that study and the present one.

Possible Role of Openness to Experience

In the present study, people who scored high on the Openness to Experience domain reported feeling, on average, younger than their chronological age. Openness to Experience represents the overall ability to remain open to novelty and the desire to try new experiences (Costa & McCrae, 1992). This personality domain encompasses two different aspects: one that is motivational (i.e., seeking new experiences for their own sake) and one that is

structural (i.e., having permeable and flexible mental structures that allow for the continuous accommodation of new information). Thus, high scorers on Openness to Experience tend to be both willing to engage in new experiences and flexible in terms of approaching these new experiences. The psychological theory closest to what the Openness to Experience domain targets is Jung's theory regarding a person's basic relationship with information. According to this theory, at a very basic level, persons differ in the ways they enter in contact with information; some people engage with new information in a very structured way (the judging type) whereas others just take in the information without attempting to organize it (the perceptive type). Those persons who are less structured and more present in the experiential flow (the perceptive type) tend to operate more freely with the information and manifest a lower tendency to achieve closure or to quickly form new structures (Jung, 1933). These people also have a greater tolerance for uncertainty and ambiguity. In Costa and McCrae's terminology, these persons are more open to experience. Next, I will try to suggest some possible interpretative hypotheses for the findings of the present study in relation to Openness to Experience.

Habituation theory. A possible explanation for the findings of the present study may be suggested by the habituation theory espoused by Kastenbaum (1984). Essentially, Kastenbaum regarded aging as a habituation process; that is, the more accustomed people become to their own experiences and values, the older they become and feel. Kastenbaum wrote that the first sign of aging is when the assimilation processes (i.e., changing the experience to match previous mental structures) take over the accommodation processes (i. e.,

changing the mental structures to accommodate new experiences). When assimilation becomes predominant within one's mental make-up, internal cognitive structures freeze and no new structures are formed. Mentally and experientially, people literally grow older into their inner structures of treating new information. Gradually, these old structures become outdated and eventually overwhelmed by the novelty of the experience. Being overwhelmed by new information and not dealing effectively with it also contributes to feeling older.

Habituation theory may offer some suggestions regarding the relationship between life changes and subjective age. Some studies have shown that the number of role transitions or life changes in one's life are connected with older subjective ages in middle aged adults, but the research focused just on the quantity of transitions and did not address impact and coping resources/strategies. It may be that it is not the transitions or changes in themselves that are problematic but how people deal with them - that is, either by assimilation or accommodation. It could be that only those who are closed and rigid feel older and overwhelmed by changes and transitions whereas people who are more open may still sustain younger age identities even in face of important life changes.

More recent studies from neuroscience have also connected mental flexibility to feeling younger and have suggested the possible interpretation that mental flexibility throughout adulthood allows for a better preservation of cognitive processes from younger ages which, in turn, leads to younger age evaluations (Baltes, Staudinger, & Lindenberger, 1999). It is known that people

evaluate their ages based on some of their cognitive performances and so it is likely that somebody who estimates that he or she has the same memory as when he or she was younger would report feeling younger.

Subjective time experience. New experiences that create changes within mental structures have also been associated with a subjective experience of inner richness and with the subjective perception of time contraction - that is, the experience of feeling like the time that has passed was shorter than it actually was (Bernsten & Hall, 2004). It is possible that people who score high on Openness to Experience and have been involved in various experiences throughout their life may have acquired a sense of time contraction that makes them feel younger.

Age representation and age evaluations. It could be that the representation and evaluation of age and aging are different for those people who are more open to experience in comparison to those who are more closed. This hypothesis makes sense in light of the structural aspect of Openness to Experience; that is, persons who are open to experience develop mental structures that are more fluid and more permeable. It is likely that these structures are also applied to how people relate to their age. Thus, persons who are more open to experience may have developed more fluid age representations which are, in consequence, less affected by common age markers (e.g., anniversaries, retirement). Given that no research has yet investigated this issue, this hypothesis needs to be tested in future qualitative studies because it is impossible to say how people made those decisions about their ages in the present sample.

Social construction of age identity. Subjective age is a socially constructed concept (George, et al., 1980). Therefore, it is influenced by the persistent incentives of the Western “ageless” culture to seek variety and keep the pace fast in order to stay and feel young. For example, Barak (1987) found that people who felt younger were more likely to buy the newer brands of products and to explore different choices. Thus, it is possible that a certain amount of the self-reported Openness to Experience of the participants in the current sample came from this specific cultural tendency that is automatically connected with feeling younger. In this case, it may be that some of Openness to Experience is actually confounded with social motivations or expectations.

Measuring subjective age. In this study, subjective age was measured in comparison to chronological age. Chronological age is routinely associated not only with certain developmental tasks and physical changes but also with various social stereotypes. Becoming chronologically older is usually negatively and stereotypically devalued in the Western society. From a social perspective, comparing subjective age with chronological age asks, in fact, about the amount of deviation from societal expectations and stereotypes that surround the representation of the chronological age. People who are open to experience are more likely to depart from the social norms and stereotypes. Hence, they may report that they belong to younger age categories because they are more inclined to disagree with the social stereotypes.

Possible Role of Neuroticism in Subjective Age

In the present study, people who obtained higher scores on Neuroticism tend to report feeling, on average, older relative to their chronological age than

did individuals who scored lower on this domain. Neuroticism is a personality variable that has been extensively researched and is relatively well explained by various theories of personality - especially the neurophysiological theories of personality (Cattell, 1957; Eysenck, 1947). Neuroticism represents the propensity to experience predominantly stressful emotions like anxiety, depression, embarrassment, and anger. It also indicates a more general, pervasive vulnerability to stress usually combined with limited coping strategies (Costa & McCrae, 1992, 1998).

The relationship between Neuroticism and SAIS mean scores in the present study may be explained by the fact that, usually, people high in neuroticism not only over-react to stressful stimuli, but they also have poorer coping skills (Eysenck, 1947). This combination may quickly deplete their limited resources which, in turn, may lead to feeling exhausted and worn out. It is not uncommon that these people also complain of physical symptoms that are automatically associated with older ages (e.g., fatigue, back pain, decreased level of physical stamina; Birren & Cunningham, 1985). Because body states play an important role in age evaluations (Steverink, et al., 2001), a person who feels exhausted and physically uncomfortable is more likely to feel older than his/her actual age.

Subjective Age and Personality Facets

All of the previous studies that have examined the role of personality variables in subjective age identity have scrutinized only the role of personality domains and have ignored the role of personality facets. Therefore, the results obtained in this sample are the first of this kind. Previous research on NEO-PI-R

domains and facets in other areas (outside of subjective age research) informed my decision to specifically examine the contributions of NEO-PI-R facets to subjective age scores. Studies that have examined personality variables measured by the NEO-PI-R in relationship with different psychological variables and have conducted both domain and facet level analysis have reported that the facet level analysis yielded results that were much more specific and accurate for the variables scrutinized (Paunonen, 1998; Paunonen & Ashton, 2001). Personality domains are abstract, higher order constructs that have a more distal relationship with actual behaviours and attitudes than facets. Thus, conducting only a domain analysis may be misleading or inaccurate. Specifically, in previous studies, although it has appeared that a whole domain had a significant relationship with the variables under scrutiny, when data were analyzed at the facet level, only one or two facets showed a significant relationship rather than all of the facets composing the domain (Ashton, Jackson, Paunonen & Rothstein, 1995). On the other side, although a domain may not have showed a significant relationship with the variable under scrutiny, one of the facets may have (Paunonen, 1998; Paunonen & Ashton, 2001). In addition, the NEO-PI-R manual states that, in the case of conflicted results, the facet level interpretations should override domain level interpretation.

As a response to these observations, a facet level analysis was conducted using data from the present sample. Multiple standard regressions of SAIS mean scores on the NEO-PI-R personality facets showed that only one facet (O2: Aesthetics) made a unique contribution to the age identity scores. Thus, although a whole domain (Openness to Experience) was found to be related to

age identity, in fact only one facet (Aesthetics) of this domain made a statistically significant, unique contribution to the subjective age scores. This finding supports the necessity of examining the personality facets to accurately understand what exactly is involved in explaining construct variance. Based on the β value associated with Aesthetics in the present study, scoring higher on this facet was associated with feeling younger than one's chronological age.

Possible Role of Aesthetics

The β shows that the higher one's scores on Aesthetics, the younger one feels. Aesthetics is defined in the NEO-PI-R manual in extremely general terms as the appreciation of art and beauty (Costa & McCrae, 1992). No operational or more specific descriptions were available from the manual. The analysis of the content of the items that make up the O2 facet suggests that visual, auditory, kinesthetic and emotional experiences were sampled, although not in a very balanced manner. Research in the field of the psychology of aesthetic experience notes that appreciation of art and beauty is a complex dialectical sequence of events that involves (a) the presence of sensorial stimuli, usually visual or auditory, (b) a perceptual connection with images and/or sounds either created by an artist or appearing spontaneously in nature, (c) an emotional resonance with those sensorial stimuli (e.g., from pleasant to being completely captured by the experience), and (d) an appraisal of the content of the experience as beautiful.

From these descriptions, it becomes evident that "appreciation of art and beauty" involves a complexity of psychological processes that may elucidate the

initially surprising result that Aesthetics is the only facet involved in subjective age identity.

Aesthetic experience, autobiographical memory and feeling young.

Neuropsychologically, the aesthetic experience is mainly supported by the association areas in the temporo-parietal cortex and prefrontal cortex (Blood & Zatorre, 2001; Epstein, 2004). Almost the same areas have been found to be involved in accessing and processing autobiographical memories: “results have indicated that autobiographical recollection is mediated by a distributed fronto-temporo-parietal system, with the anteromedial prefrontal cortex positioned to integrate sensory information with self-specific information” (Epstein, 2004, p. 63). Autobiographical memories are memories about personal identity that cognitively involve the association of present sensorial cues with personal meanings and sensorially encrypted past events. It is the type of memory intimately connected with the self-concept and identity. Furthermore, the easy accessibility of these autobiographical memories has been connected with feeling younger because the easy access creates a subjective experience of “it was just yesterday” (Rubin, Wetzler, & Nebes, 1986). In other words, the more accessible distant autobiographical memories are, the younger the person feels.

At the same time, aesthetic experiences imply a personal and meaningful connection with the object of art, a personal understanding of the work of art that assigns meaning to works based on that which is communicated directly from the material of the work (the objectified knowledge) and through memory and imagination (mediating knowledge) (Epstein, 2004). This connection requires access to autobiographical experiences. It may be possible that people

who are naturally open to a variety of aesthetic experiences use more of that part of the brain that activates autobiographical memories. As a result, these persons may tend to feel younger.

Sequential versus simultaneous processing. Appreciation of art and beauty involves a particular mode of relating to information, more specifically, through non-verbal processes that require simultaneous, non-sequential processing. Research in neuropsychology has indicated that, roughly speaking, in the human brain there are two distinct pathways of relating to and processing information: (a) sequential and verbal processing (mainly the left hemisphere), and (b) simultaneous and experiential processing (mainly the right hemisphere) (Panksepp & Bernatzky, 2002). Other authors have made the distinction between symbolic (verbal) and representational (images) modes of accessing and treating information (Tellegen & Atkinson, 1974).

Sequences are important time markers because human beings cannot estimate time duration directly but only by reference to an order of events (temporal sequences) and discontinuity (perceived change). Basically, the duration and the passing of time, essentially aging, are estimated by creating and appraising sequences of events. Tracing the events in ordered sequences creates temporal narratives. It may be possible that people who use more sequential verbal processing may have a greater awareness of the time that passes and a subsequent sensation of feeling older coming from the impression that “if so many things have happened, a long time must have passed”. In contrast, persons who are open to aesthetic experiences that are essentially non-sequential and

predisposed to trans-temporal experiences may have a weaker sense of time passing and aging and, as a result, tend to feel younger.

Content of the aesthetic experience. Aesthetic experiences are not just pleasant sensations that stimulate specific areas of the brain. The goal of most artwork is to transcend the temporal limitations, to express universal emotions, and to inspire essential human experiences. People who seek and are open to aesthetic experiences may have time and age perceptions that are significantly different from those of people who are more realistic and temporally connected with present reality. It is hard to estimate what “younger than my age” might mean for these persons. It may be that young is a sort of transitory atemporality offered by the transcendent character of artwork. Maslow’s (1968) theory of peak experiences suggested that the experience of beauty is lived as an out of time experience that radically interrupts the time flow, as a moment of grace which feels like eternity. People who are naturally inclined to have these experiences may be less aware of the passing of time and may have a more deep-seated feeling of being/staying younger.

Ideal Age and Personality Domains

In the present sample, Openness to Experience explained almost 3% of the variance in the ideal age scores. Higher scores on the Openness to Experience domain are, on average, related to an ideal age older than one’s chronological age.

This finding differs from the results of Hubley and Hultsch (1994, 1996) which is the only other research to have previously investigated the role of personality variables measured by NEO-PI-R in ideal age scores. They found

that only Neuroticism made a significant contribution to the variance in the ideal age scores. Given these limited and mixed results, further studies examining the role of Neuroticism and Openness to Experience in ideal age are warranted.

Possible Role of Openness to Experience

The relationship between Openness to Experience and ideal age in the present study may be explained by the fact that, for open-minded people, the aging process may represent a valuable experience in itself, probably because they connect aging with new experiences. It would be important in future studies to determine how open-minded people conceptualize age and aging. It may be that, for these people, aging and being older represent a new set of experiences that are intrinsically valuable.

The structural aspect of Openness to Experience also suggests that open-minded people possess permeable, fluid mental structures that allow them to better tolerate contradictions and contaminations between different alternatives. People high in Openness to Experience tend to better tolerate uncertainty and doubt. On the other hand, close-minded persons tend to develop more rigid belief systems with thick walls between different pieces of information. With respect to ideal ages, it could be that the more closed people do not allow time for exploration and may take uncritically the prevalent cultural assumption that only being young is good and, in so doing, they transform it into a value that affects their preferences. Open-minded participants may be more tolerant and open toward future experiences, including aging.

Ideal Age and NEO-PI-R Facets

No previous study has examined the role of personality variables in ideal age scores at the facet level. In the present study, multiple standard regressions of ideal age scores on NEO-PI-R facets showed that 7 % of the variability in ideal age scores can be explained by the facets and that only two facets (O6: Values and N6: Vulnerability to Stress) made significant, unique contributions to the variability in ideal age scores.

Given that Openness to Experience made the only statistically significant domain level contribution to ideal age scores, it is interesting that O6: Values was the only significant facet involved from this domain. The β shows that the higher one's scores on Values, the older the age one would choose.

It is also noteworthy that, although Neuroticism as a domain did not make a significant unique contribution to ideal age scores, one of its facets did (N6: Vulnerability to Stress). This result supports what was previously noted in literature about the necessity of conducting a facet level analysis in addition to domain level analysis. Recall that Hubley and Hultsch (1994; 1996) found that Neuroticism made a significant contribution to the variance in the ideal age scores. Because these authors did not conduct a facet level analysis, it is impossible to know if this facet was responsible for the contribution of Neuroticism to ideal age scores or if there were other Neuroticism facets involved.

Possible Role of Vulnerability to Stress (N6)

In the present study, the higher one's scores on Vulnerability to Stress, the younger age one would choose to be relative to one's chronological age. According to Costa and McCrae (1992), persons who score higher on the

Vulnerability to Stress facet are prone to self-defeating responses to stress, feel incapable of handling themselves well under duress, and are more likely to display hopelessness, dependence, or panic when demands multiply. A highly vulnerable person would be less likely to act calmly, confidently, and independently under high pressure and uncertainty.

In this study, persons who scored high on this facet expressed the desire to be, on average, significantly younger relative to their chronological age. This preference may be attributed to the anxious anticipation of the expected stressors that most likely accompany getting older. These normative stressors may appear overwhelming for the limited coping strategies of these persons. Moreover, uncertainty and the unknown usually create a lot of psychological distress in these persons' lives. As a result, they may definitely prefer something known (younger is definitely known) over the unknown (getting older). In addition, their gloomy and relatively shortened view of the future due to their dispositional hopelessness may also justify the tendency in the high scorers to positively over-value the past (younger) over the future (older). A variable that may act as mediator between N6 and the preference to be younger could be fear of aging and death and this needs to be explored in future research (Bultena, 1978).

Possible Role of Values (O6)

In the present study, the higher one's scores on Values, the older one would choose to be relative to one's chronological age. The "Values" facet (O6) of the Openness to Experience domain indicates the readiness to re-examine traditional social, religious, and political values versus the tendency to

uncritically conform to external value systems. Thus, people who score high on this facet tend to be politically liberal, tolerant of diversity, and more open to different cultures and lifestyles. Persons lower in “Values” are more dogmatic, intellectually closed, and conservative.

In the present study, people scoring higher on this facet would tend to choose older ages relative to their chronological age whereas people scoring lower in Values would tend to choose younger ages relative to their chronological age. It is not surprising that this particular personality facet explained a significant percentage of variance in the ideal age scores given the preferential and evaluative nature of the question “Ideally, I would chose to be...” Ideal age as a concept pertains to a desire, a value, a preference and it only makes sense that the respondents expressed their values in answering to this question.

Given the fact that values are acquired in the process of socialization and acculturation, these results can be interpreted from a social-constructivist perspective. Age and aging are essentially social constructs. In Western society, they have been charged with negative value and linked to images of decrepitude and diminished worth, which, in turn, leads to societal ageism (Steverink et al., 2001). This social appraisal inevitably undermines people’s feelings of personal value as they age. In this context, it is likely that people who are more prone to take in and conform to societal values and are less open to exploring alternative values and beliefs may strongly prefer younger ages. In contrast, people who are more open to different values may consider age and aging from a different

perspective and may show more flexibility around the societal dictate that only being young is good and valuable.

Strengths of the Study

This thesis has two key strengths that allow it to stand out from previous research on subjective age identity and personality.

First, I conducted a systematic investigation using all the NEO-PI-R personality domains and facets together. Therefore, this study may be regarded as a first attempt to unify and systematize research in the area of subjective age identity and personality in adults. Moreover, this is the first time a facet level analysis of NEO-PI-R domains has been conducted in subjective age area. Facet level analysis not only offers a more specific account of how personality variables are involved in age identity but it also confirmed that domain level analysis may be misleading. That is, only one facet of the Openness to Experience domain was involved in SAIS mean scores, although the whole domain was a predictor, and, although Neuroticism as a whole domain did not contribute to the explained variance in ideal age scores, one of its facets did.

Second, I decided to examine the relationship between personality variables, subjective age, and ideal age in a sample that comprised nearly the entire adult lifespan. Recall that previous research studies tended to focus on only part of adulthood (e.g., young adults, older adults).

The present study has confirmed some important findings from previous studies with this sample of adults aged 19 to 78 years. For example, Openness to Experience appears to make a significant contribution to subjective age identity

scores and Neuroticism, or at least one of his facets, appears to be involved in ideal age.

This thesis also makes important contributions to the literature. First, not all facets of a domain necessarily contribute to subjective age or ideal age scores. This was seen with both Openness to Experience (O2: Aesthetics) and Neuroticism (no facets) in SAIS mean scores and with Openness to Experience (O6: Values) in ideal age scores. Moreover, even when a domain does not contribute significantly to the variability on the dependant variable, one of its facets may, as seen with Neuroticism (N6: Vulnerability to Stress) and ideal age.

Limitations of the Study

There are four key limitations associated with this study that need to be raised. The first limitation has to do with the Big Five Model of personality. In this study, I aimed to conduct a systematic investigation of the personality variables in an adult sample. In order to allow for a certain degree of comparability with previous studies, I chose the NEO-PI-R as a personality measure in my thesis because several studies in the past have investigated the Big Five factors using NEO-PI-R. However, it is important to recognize that, as with many research decisions, there was a trade-off in this decision mainly in terms of the ability to interpret the study results.

As Costa and McCrae (1997) recognized, the Big Five personality model is not a theory of personality but rather it represents an empirical model of human basic dispositions derived through factor analytic procedures. Therefore, the content of each of these five factors is largely descriptive and not explanatory. The strength of the Big Five personality model is not its ability to

explain personality traits and their psychological correlates in a comprehensive theory of personality (like those formulated for example by Eysenck, Cattell or Millon) but its capacity to offer an integrative and comprehensive framework for personality research.

In terms of content, the Big Five model of personality consists of a huge taxonomy of words that express psychological states, attitudes, characteristics or behaviours that has proven its clinical utility and predictive ability (McAdams & Pals, 2006; McCrae & Costa, 1997, 1999). Nonetheless, philosophers of science argue that it is theory which provides the conceptual glue that binds a classification nosology together and that makes it possible to assign meaning to research findings. Theoretical principles are critical and not a merely descriptive venture that observe and categorize the phenomena. “The ideal of a classification scheme is one which ‘inheres’ in the subject domain that is not ‘imposed’ on it by committee consensus or statistical methodology. Such a system would be not only sufficient with respect to the phenomena of a subject domain, but also logically necessary.” (Hempel, 1965, p. 146-147).

Unfortunately, there is no such personality theory connected with the Big Five model and this situation has created many challenges for the interpretation of the present study results. That is, virtually any interpretation of these findings has to draw its meaning from other theories or empirical findings.

Another aspect that posed difficulties for discussing the meaning of the present results is the fact that it is unrealistic to expect direct explanatory interpretations from the Big Five factors to their psychological correlates (in this case, subjective or ideal age) because personality factors represent the higher

order, and thus the most abstract, entities. In the case of the present study, the simple statement that people who are more Open to Experience feel younger does not add any content in terms of understanding a merely statistical relationship. To go further in the interpretation and ask, for example, why or how Openness to Experience is related to younger age identities is a task beyond the Big Five model and requires reference to other theories or empirical findings and, ultimately, the use of a different research model (e.g., Structural Equation Modelling).

Second, another potential limitation comes from the methodological approach used, in the sense that quantitative questionnaires may be less rich than qualitative interviews in understanding how participants think and decide about the answers they provide in self-report measures. Self-report measures rely heavily on participants' introspection and self-awareness, which may lead to biased results. For example, depending on their level of self-awareness, participants may inadvertently not report some information or they may modify the content or intensity of that information according to a social desirability expectation.

Third, the size and composition of the present sample also have an impact on the results. Although the sample size ($N = 210$) is within the appropriate sample size range for the type of analyses that were conducted, it is still at the lower end of this range. Therefore, recruiting more participants may help clarify and consolidate some of the present findings. The sample also consisted largely of White, Western, and well-educated people. Although this confers sample homogeneity and, thus, it makes the conclusions more firm with

respect to this sub-population, it also precludes any extrapolation of these findings to other samples (e.g., different cultures). Hence, the present findings should be regarded as temporally and culturally bound.

Finally, although the original intention of this study was to include the single-item measure of age identity used in Hubley and Hultsch (1994, 1996) together with the multiple item measure that was used, this did not happen due to an error in compiling the questionnaire materials. Thus it is difficult to compare the present findings with those of Hubley and Hultsch because subjective age was measured differently and it is expected that this may have impacted the results.

Future Research Directions

Although the results of the present study support the role of the Openness to Experience domain in subjective age identity scores across different samples, they also suggest that more systematic research needs to be conducted with different adult samples using the same measures in order to elucidate the possible role of other personality domains or facets in age identity. Of particular importance will be to further investigate the role of Extraversion and Neuroticism in subjective age identity and the role of Openness to Experience and Neuroticism in ideal age scores given the mixed results obtained in studies up to now. Further research is also needed to systematically investigate the role of personality facets in subjective age. Moreover, although this study aimed initially to reduce the number of personality variables that need to be kept in future research, it is difficult to be confident in firmly recommending to drop certain personality domains and facets at this stage of the research.

Given these diverse results across samples and all of the methodological limitations of previous studies (i.e., heterogeneity of samples and measures, very restrictive samples in terms of age), one of the necessary future research goals would be to conduct more systematic investigations about relationship of personality, subjective age, and ideal age on adult samples of different ages, using the same measures and same analysis in order to replicate and validate some of the findings.

In fact, to clarify whether different personality variables have a differential effect on different age groups (i.e., younger, middle-aged, or older adults), future research should aim to recruit large enough samples to carry out analyses of variance between different age groups and regression analyses per age group in order to explore more specifically whether different personality domains or facets are more relevant than others at certain ages. By clarifying this issue, the practical implications of these findings may be better articulated and implemented.

It is possible that personality variables do not always have a direct impact on subjective age and ideal age but rather their action may be mediated or moderated by other variables (e.g., the role of neuroticism in age identity may be mediated or moderated by attitudes towards death or fear of aging variables). Some of these variables have not been researched yet.

Previous research by Hubley & Russell (in press) and Uotinen et al. (2006) suggests about half of the variance in subjective age scores is explained by personality variables and health. Given that half of the variance in subjective age scores is still left unexplained, it is recommended that future research

include psychosocial variables (i.e., role transitions) together with personality variables and self-rated health in order to estimate their relative contribution to the explained variance in age identity. This way a better conceptual understanding and practical applications are possible.

Implications for Education and Counselling

A better understanding the role of personality domains and facets in subjective age identity across the adult life span has implications for education and clinical/counselling work because age identity represents an important aspect of people's self-concept and subjective age evaluations have a significant impact on adults' health, well-being and self-image (Baltes et al., 2003).

Educationally, understanding what personality variables play a role in age identity at different ages may assist in designing appropriately targeted educational programs for adults. For example, knowing that Openness to Experience is significantly related to younger age identities throughout adulthood and that, subsequently, a younger age identity is connected with more time spent in learning, educators may choose to deliver educational programs in a way that emphasizes independent discovery, curiosity, and diversity instead of a structured and highly predictable environment. In this way, adult educators may increase the positive outcomes of their programs.

In the clinical context, if one is counselling persons who face difficulties regarding age transitions (e.g., emerging adults, middle-age transition, retirement) or other age-related issues (e.g., health concerns, career options), and knows that Openness to Experience is negatively correlated with age identity, then the counsellor, by increasing the client's exploratory horizons, may

improve his/her age evaluations, and, subsequently, his/her perceived ability to deal with those age transitions or concerns. Another possible way of applying the role of Aesthetics in age identity in counselling is to incorporate more metaphorical, narrative and creative strategies for exploring, reframing and changing some of the clients' age related difficulties. Counsellors may encourage clients to engage in self-expressive activities (e.g. painting, journaling, dancing) or in receptive aesthetic contexts (e.g., contemplating artwork or natural beauty). These interventions may stimulate the development of a more balanced sense of age identity that in turn may increase clients' general well-being and efficacy.

If it is known that persons high in Vulnerability to Stress are likely to prefer younger ideal ages instead of adjusting to the natural aging demands, then counsellors may target their counselling interventions towards the reduction of the amount of stress in clients' life and towards the development of more efficient coping strategies in order to encourage that client to better accept his or her age demands. In addition, by being aware that a value component is significantly related to the adults' ideal age evaluations, a counsellor may engage the client in a process of value clarification and value reconstruction that may be beneficial in coping with issues related to aging or reframing his or her attitudes towards aging. For example, a client who experiences a fear of aging may be helped by envisioning new experiences and meanings around aging (increasing Openness to Experience) and by developing alternative coping strategies with own life stressors (reducing Vulnerability to Stress).

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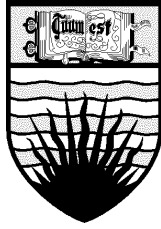
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Appendix A

Poster for Participants' Recruitment



The University of British Columbia
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ADULTS (19+) NEEDED FOR ***STUDY OF AGE IDENTITY AND PERSONALITY!***

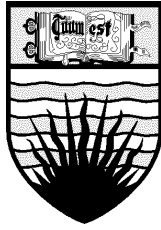
Men and women ages 19 years and older are needed to take part in an exciting research project. Dr. Anita Hubley, a professor at the University of British Columbia (UBC) and Mihaela Launeanu, MA student at UBC, are conducting a study about the role of personality in the ages you look and feel and want to be.

In this study, you will need to complete one questionnaire about different personality characteristics and some short questionnaires about the different ages that you look and feel (e.g., do you feel the same, older, or younger than your age?) as well as a demographic sheet. You can complete the questionnaires either at UBC or in another mutually convenient location. This study will take approximately 40 – 60 minutes.

If you have any questions about the study or would like to take part, please call and leave a message for Mihaela Launeanu at the Adult Development and Psychometrics Lab at UBC at 604-822-5250.

Thank you!

Appendix B



The University of British Columbia
Dept. of Educational and Counselling Psychology, and
Special Education
2125 Main Mall, Vancouver, BC, Canada V6T 1Z4
Tel: (604) 822-8229 Fax: (604) 822-3302

Questionnaire Cover Sheet

The purpose of this Cover Sheet is to ensure that you understand the purpose of this study, what you are being asked to do, and your rights as a participant.

Subjective Age and Personality Variables across the Adult Life Span

Principal Investigator. Dr. Anita Hubley, Associate Professor in the Department of Educational and Counselling Psychology and Special Education at the University of British Columbia, is the principal investigator.

Co-Investigator. Mihaela Launeanu, Master's student in the Department of Educational and Counselling Psychology and Special Education at the University of British Columbia.

Purpose. This study, which is being conducted for Mihaela Launeanu's graduate thesis, will help us better understand the relationships between the ages people look and feel (called "subjective age") and different personality characteristics.

What is required. You will be asked to complete some short questionnaires asking about the different ages you look, feel and want to be, a personality measure and a demographic sheet.

How long does it take. The entire session is expected to take approximately 40-60 min.

Potential risks. There are no known risks associated with participating in this research.

Monetary Compensation. Participants in this study will not receive monetary compensation for their time, but they may be reimbursed for the typical cost of parking while taking part in the study.

Anonymity/Confidentiality. Your name will not be recorded on any of your questionnaires. Instead, you will be assigned an identification number that will appear on each of your questionnaires. The questionnaires will be kept in a

locked room at UBC. Research assistants working in the Adult Development and Psychometrics Lab sign an oath agreeing to protect the confidentiality of all study participants.

Important information. If you have any questions or would like further information about this study please contact Dr. Anita Hubley at 604-822-9223 (office) or Mihaela Launeanu at 604-822-5250 (Lab). If you have any concerns about your rights or your treatment as a research participant, please contact the Director of the UBC Office of Research Services and Administration at 604-822-8598.

Consent

Completion and submission of the study questionnaires indicate that you understand the conditions of your participation and you have agreed to participate in this study.

Appendix C

SUBJECTIVE AGE IDENTITY SCALE (SAIS)

(Hubley, 1998; 2004; 2007)

Sometimes people feel different (older or younger) than they actually are in years. For each statement below, please circle the number that best describes the way you feel about your age right now.

	Much younger than my age	Somewhat younger than my age	About the same as my age	Somewhat older than my age	Much older than my age	This statement makes no sense to me
1. Right now, I feel.....	1	2	3	4	5	9
2. Physically, I feel.....	1	2	3	4	5	9
3. Mentally, I feel.....	1	2	3	4	5	9
4. Socially, I feel.....	1	2	3	4	5	9
5. Others tell me I look.....	1	2	3	4	5	9
6. To myself, I think I look...	1	2	3	4	5	9
7. Other people treat me as though I am.....	1	2	3	4	5	9
8. Ideally, I would like to be.....	1	2	3	4	5	9

Appendix D

Personal Demographic Form

Please answer the following demographic questions as accurately as you can. All the information that you provide on this form is confidential. This information is collected for the purpose of describing the study sample.

1. Age: _____ years
2. Date of Birth: _____ 19_____
(month) (date)
3. Are you:
- ☐ male
- ☐ female
4. What is the highest level of education that you have?
- ☐ 0-8 years schooling
- ☐ Some high school (no diploma)
- ☐ High school graduate (received diploma or G.E.D.)
- ☐ Some college/university, but no degree
- ☐ College/university graduate (received degree)
- ☐ Graduate/professional studies
- ☐ Other (please specify): _____
5. What is your primary ethnic/racial/cultural background? (please check one x only)
- ☐ Aboriginal / First Nations (includes Métis, Inuit)
- ☐ African (e.g., South Africa, Nigeria, Kenya)
- ☐ East Asian (e.g., Chinese, Japanese, Korean, Taiwanese)
- ☐ Hispanic, Latin American (e.g., Latino, Mexican)
- ☐ Pacific Islander (e.g., Australia, New Zealand, New Guinea)
- ☐ South Asian (e.g., Indonesian, East Indian, Filipino)
- ☐ Southeast Asian (e.g., Cambodian, Filipino, Vietnamese)
- ☐ West Asian (e.g., Afghan, Arab, Iranian, Iraqi, Turkish)
- ☐ White (e.g., Caucasian, Anglo, European origin)
- ☐ Other (please specify): _____

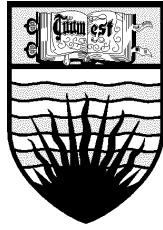
(Note: Please do not record *nationality*, such as “Canadian”, for this question.)

6. How would you rate your health?

- ☐ Very poor
- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very good
- ☐ Excellent

7. Today's date is: _____ , _____ 2008
(day) (month) (date)

Appendix E



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Subjective Age and Personality Variables across the Adult Life Span

Permission to Contact for Feedback and Follow-Up Research

1. Feedback. If you would like a summary of the overall study results to be sent to you when the research is completed, please provide an e-mail or mailing address below:

2. Future Research. If feasible, we may want to conduct a follow-up study in the future, involving the participants in this study. Please, indicate whether you are willing to be contacted for a future study and your preferred contact info (e.g., e-mail, phone number, mailing address).

☐ Yes, I'd be fine with you contacting me about any follow-up studies. I can be contacted at:

☐ No, I'd rather not be contacted about any follow-up study.

Principal Investigator. Dr. Anita Hubley, Associate Professor in the Department of Educational and Counselling Psychology and Special Education at the University of British Columbia, is the principal investigator.

Co-Investigator. Mihaela Launeanu, Master's student in the Department of Educational and Counselling Psychology and Special Education at the University of British Columbia.

Appendix F

CERTIFICATE OF APPROVAL - MINIMAL RISK

PRINCIPAL INVESTIGATOR: Anita M. Hubley	INSTITUTION / DEPARTMENT: UBC/Education/Educational & Counselling Psychology, and Special Education	UBC BREB NUMBER: H08-00548
INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:		
Institution		Site
UBC		Vancouver (excludes UBC Hospital)
Other locations where the research will be conducted: Participant's home or in a private location at a health centre, church, community centre		
CO-INVESTIGATOR(S): Mihaela Sorana Launeanu		
SPONSORING AGENCIES: UBC Faculty of Education		
PROJECT TITLE: Subjective Age Identity and Personality Variables in Older Adults: A Study in Educational Gerontology		

CERTIFICATE EXPIRY DATE: April 4, 2009

DOCUMENTS INCLUDED IN THIS APPROVAL:	DATE APPROVED: April 4, 2008	
Document Name	Version	Date
<u>Advertisements:</u>		
Recruitment Poster	1	March 6, 2008
<u>Questionnaire, Questionnaire Cover Letter, Tests:</u>		
SAIS (Subjective Age Identity Scale)	N/A	January 1, 2007
Questionnaire Cover Sheet (revised)	2	March 26, 2008
Personal Beliefs and Experiences (MC-SDS X2)	1	March 7, 2008
DAM (Desired Age Measure)	N/A	August 31, 2006
Permission to contact	N/A	March 7, 2008
Demographic Questionnaire	N/A	March 7, 2008
Questionnaire Cover Sheet	1	March 6, 2008
<p>The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.</p> <p style="text-align: center;"><i>Approval is issued on behalf of the Behavioural Research Ethics Board and signed electronically by one of the following:</i></p> <hr style="width: 50%; margin: 10px auto;"/>		

