

ABSTRACT

Title of Dissertation: MEANING IN THE LIVES OF OLDER WOMEN: AN
ANALYSIS WITH HARDINESS, HEALTH, AND
PERSONAL PROJECTS

Susan E. Savage-Stevens, Doctor of Philosophy, 2003

Dissertation directed by: Professor Allan Wigfield
Department of Human Development

Wong's (1989) cognitive, affective, and motivational components of meaning in life were examined and supported applying personal projects methodology (Little, 1983), a meaning measure, hardiness, and functional health with 151 community based women over age 65 years. The most meaningful projects reported overall were mate/husband, caregiving, spiritual activities, and occupational/vocational pursuits. Previous factor analysis of the meaning measure had revealed that meaning is associated with framework (cognitive) and fulfillment (affective) factors. Principal components analysis of the personal projects also indicated cognitive and affective components for meaning which may be characterized as having core values and expressing personal integrity, and these were significantly correlated to the meaning measure. Cognitive framework in personal projects was associated with having values and beliefs, doing good for others,

contributing to the community, expressing one's true self, and having self-worth.

Affective fulfillment in personal projects was associated with the importance of the project, commitment to it and to its success, expectation that success will follow, and that it was "the right thing to do". Motivational elements, including hardiness, its components of commitment, control, and challenge, and functional health, revealed extensive and differing impacts upon the cognitive and affective components of meaning in both the meaning measure and personal projects. Even though findings question the stability of hardiness in old age, hardiness was significantly associated cognitively and affectively with the meaning measure; control was associated cognitively and affectively with personal projects; and commitment was associated with the meaningfulness of a particular project. With the meaning measure, functional health dimensions of energy, well being, mental and social health, and lack of physical limitation were associated with the cognitive component while the affective component included these plus physical health and lack of pain. In personal projects, only energy was significantly associated with the cognitive and affective components. The findings support considering meaning as being individually constructed and that personal projects methodology provides multiple pathways to examining how meaning in life among older women is assessed, expressed, and associated with motivational elements.

MEANING IN THE LIVES OF OLDER WOMEN:
AN ANALYSIS WITH HARDINESS, HEALTH, AND PERSONAL PROJECTS

by

Susan Elizabeth Savage-Stevens

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Advisory Committee:

Professor Allan L. Wigfield, Chair/Advisor
Assistant Professor Roger Azevedo
Dr. Ann Battle, Assistant Chair, Human Development
Professor James Byrnes
Professor and Chair John L. Caughey

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2003

DEDICATION

To the three people who have supported my growth and development in spite of my own uncertainties. With deeply felt gratitude to:

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Margaret S. Savage, for being my inspiration

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Chapter One: Introduction

Dramatic increases in the life span are being achieved today because of advancements in health, industrialization, and agriculture during the last 100 years (Barrow, 1996). Consequently, the proportion of elderly in the population, especially in the United States, is growing, and older women constitute the majority (67%) of the older population (Gale, 1994). This shift in the proportion of older adults is referred to as the graying of America, and it is without historical precedence (Barrow, 1996).

Larger numbers of elderly with increased life spans challenges social researchers and service providers to reconsider what it means to function well in old age (Buckwalter, 1991). One indicator of functioning well in old age is the ability of the elderly to live independently (Bayer, 2000; Gale and Templeton, 1995). A study by the American Association of Retired Persons (Bayer, 2000) found that 89% of older Americans prefer to continue living in their current residence, or within the same community, as long as they can. This phenomena is known as aging in place (Wister, 1990). Only 13% indicate that a move could be desirable to receive health support when such support became necessary (Bayer, 2000). Quite simply, older adults desire living independently or maintaining their ability to care for themselves in their own chosen environments (Barrett, 1998; Dyctwald, 1989; Dyctwald, Zitter, and Levenson, 1990; Gale & Templeton, 1995). The essential determinant of whether older persons are capable of living independently is their level of functional health (Gale & Templeton, 1995), and older women, with their higher levels of health decrements, are at higher risk for losing their independence.

The present study examines how older women living independently (hereafter

referred to as “older women”) express meaning in their lives. The study also examines the association of personality and health with meaning in the lives of older women. Focusing on older women, to the exclusion of men, is purposeful. Research has demonstrated that heterogeneity increases with aging (Nelson and Dannefer, 1992), suggesting that normative patterns in studies of aging need to be supplemented with examinations of variability. Research with both older men and women presents the risk of interpreting findings according to a normative bias, however, by assuming that the life experiences of men and women are more alike than different or are even the same. In addition, research has demonstrated that meaning is expressed differently among women (Bonder and Martin, 2000; Prasinis and Tittler, 1980), providing additional support for the current study.

Life Meaning

To Erikson (1963), individuals in old age may achieve their fullest expression by experiencing their lives as meaningful and worthwhile. No wonder, then, that gerontologists, who are concerned with aging throughout the life span and addressing the needs of the elderly (Rowe and Kahn, 1987), see meaning as a possible source of strength in a time of loss (Butler, 1963; Schulz, 1986). Gerontologists have found that meaning is strongly associated with those older adults who represent successful aging (Antonovsky, 1987; Birren, 1964; Butler, 1963; Cole, 1984; Reker, Peacock, and Wong, 1987; Reker and Wong, 1988; Wong, 1989, 1998), because they fare better with the aging process (Rowe & Kahn, 1987).

In spite of a strong research interest in meaning and old age, however, gerontologists have been hampered by the complexity of defining meaning in measurable

terms (Wong, 1989). Meaning represents what gives purpose and significance to life (Debats, 1998; Wong, 1989) and is individually constructed (Debats, 1998; Wong, 1989). Maslow (1968) regards meaning as a basic human need. Wong (1989) notes that meaning consists of cognitive, affective, and motivational components. The cognitive factor involves giving meaning to activities and life events; the affective component expresses the feelings of satisfaction achieved in experiencing life as worth living; and the motivational component emphasizes the factors involved in the pursuit and attainment of valued personal goals. Wong has not quantified his definition of meaning directly, however, concentrating his research on meaning enhancing strategies among the elderly (Wong, 1989), including reminiscence (Wong, 1989, 1995; Wong and Watt, 1991), optimism (Wong, 1989), religiosity (Wong, 1989, 1998) and commitment (Wong, 1989), and their relationship to successful coping.

The current study directly examines Wong's (1989) three components of meaning for the first time through quantitative analysis by exploring how each of these components of meaning is manifested in the lives of older women through their personal activities. Cognitive aspects of meaning to be examined are concerned primarily with having a framework for meaning and the types of activities that older women label as meaningful. Battista and Almond (1973) note that people whose lives have meaning have created a cognitive framework, i.e., a philosophy of life or set of goals for their lives, and this framework, in turn, permits the labeling of activities or events as meaningful (events, however, are beyond the scope of this study). Affective aspects of meaning for exploration center on the level of meaning fulfillment older women realize through their engagement in personal activities, for having a strong sense of meaning satisfaction

indicates that they value what they are doing or have done (Battista & Almond, 1973). Motivational aspects of meaning in the current study are concerned with the strength of the relationships between personality factors and health to meaning by older women, as personality factors and/or health may enhance or restrict the achievement of meaningful goals (Wong, 1989). These three components of meaning (Wong, 1989) in the lives of older women constitute a major focus for the current study and will be assessed through an examination of their personal activities, using a recent methodology referred to as personal projects (Little, 1983).

Personal Projects

According to interactionist theory, developmental outcomes result from interactions between individuals and their environment (Antler, 1982). The environment provides a context of demands, expectations, and preferences directed toward specific characteristics of individuals (Thomas and Chess, 1977). Individuals whose characteristics relate well to environmental expectations achieve positive developmental outcomes, while a lack of congruency between the demands of the environment and individual characteristics results in negative outcomes. Bronfenbrenner (1986) further postulated how individuals interact with their environment through his ecological theory. His theory views individuals as negotiating different systems within the environment that range from the most personal (the setting in which the individual lives) to the impersonal (cultural attitudes and ideologies) to the effects of time, timing, and history upon events.

Examining the environment in which an individual's transactions occur has been central to the interests of environmental psychologists (Russell and Ward, 1982; Stokols, 1982) and has led to an interest among personality psychologists to study individual

intentionally goal-directed actions, i.e., conation, and the contexts in which conation is enacted (Little, 1993, 1999a). The importance of studying intentional action is not limited to personality psychologists, however, for the study of conation has direct application to developmental, self, social, cognitive, comparative, and clinical psychological research (Little, 1993).

A number of units for the analysis of conation have been proposed, including current concerns (Klinger, 1977), personal strivings (Emmons, 1989), possible selves (Markus and Nurius, 1986), life tasks (Cantor and Kihlstrom, 1987), and personal projects (Little, 1983). Personal projects are seen as interrelated intentional acts that extend over time and whose purpose is to attain or maintain individual goals (Little, 1983). Personal strivings, possible selves, and current concerns are seen as being represented by more internal forces, and life tasks are expressed more externally (Little, 1998). By contrast with current concerns studies, personal projects research investigates temporally extended, relative acts. However, by concentrating upon those projects in which people are currently engaged, the acts analyzed in personal projects research are less extended than personal strivings, possible selves, and life tasks research.

By their very nature, personal projects are salient to the individual. The projects, themselves, may range from the mundane (“take out the trash”) to the magnificent (“end world terrorism”), the ordinary (“get a bath”) to the extraordinary (“get a life”), the solitary (“learn to paint oils”) to the communal (“learn to tango”), and all points in between. As conation, personal projects involve both inner aspirations and observable behavior directed towards desired outcomes (Little, 1983, 1999a) and are associated with personal features (including aspects of the personality), biological considerations where

appropriate (like health), as well as context (such as living environment) (Little, 1998).

As such, personal projects parallel the components of Wong (1989), even though they are limited to the study of meaning. Further, personal projects provides researchers with a unique unit for analysis which actively engages the environment over time (Argyle and Little, 1972) while providing insight into the activities that are important to the individual (Little, 1983).

Analysis of personal projects is particularly conducive to studying the role of meaning in the lives of older women. The methodology, itself, may be adapted to reflect aspects of meaning found in other studies (McGregor & Little, 1998), and the study participants, themselves, generate a list of their own current projects, responding to questions related to meaningfulness on each project (Little, 1983, 1987, 1993, 1999a). Previous studies have identified types of meaningful activities among adults as being connected to others (Burbank, 1992; Debats, 1998; Debats, Drost, and Hansen, 1993; DeVogler and Ebersole, 1980; Ebersole and DePaola, 1989; McGregor and Little, 1998; Orbach, Iluz, and Rosenheim, 1987); being involved in life (Debats, 1998); generativity, i.e., helping the next generation (Ebersole & DePaola, 1989; McGregor & Little, 1998); health (Ebersole & DePaola, 1989); pleasure (Ebersole & DePaola, 1989); spirituality (Bonder & Martin, 2000; Chamberlain and Zika, 1988; Orbach, Iluz, & Rosenheim, 1987); and especially among women, doing good for others (Bonder & Martin, 2000; Prasinos and Tittler, 1980). The inclusion of these multiple dimensions in the current study provides a comprehensive view of meaningful activities and allows for extensive comparisons of meaning levels. In addition, research has demonstrated that the quality of integrity in personal projects, identified through principal components analysis, has a

significant relationship to meaning overall (McGregor & Little, 1998). The integrity factor reflects those projects that are high in self-identity and have value, importance, and commitment. Factor analysis on personal projects in the current study may reveal additional factors associated with meaning framework and fulfillment, due to the additions and changes in the personal projects dimensions, thus strengthening our research understanding of “meaning-making”.

The pursuit of individually created meaningful goals (Wong, 1989), as well as an individual’s ability to adapt well, or not, to life, may be affected by a number of factors, including inherent characteristics of the personality and the realities of current health, a factor particularly relevant to older populations. The current study examines the relationship of personality and health to the expression of meaning in older women with an emphasis upon hardiness (Kobasa, 1979) and functional health (Ware and Sherbourne, 1992).

Hardiness

According to Magnani (1990) and Ponzo (1992), psychological hardiness is an antecedent to successful aging and consists of three components, namely commitment, control, and challenge (Gentry and Kobasa, 1984; Kobasa, 1979). Individuals high in hardiness perceive that they can control their life plan and outcomes through choice, ability, and motivation. Also, hardy individuals are motivated by the challenges of life by being open to change and being cognitively flexible. Further, highly hardy individuals are committed to their belief systems as well as the sense of purpose that guides their actions and lives towards meaningful goals. Developmentally, Maddi and Kobasa (1984, 1991) have indicated that hardiness emerges and strengthens in childhood and extends into

adulthood, allowing individuals to interpret life events, especially stressful ones, as guides to, or facilitators of, meaningful action (Gentry & Kobasa, 1984). Indeed, the three qualities associated with hardiness remain well-preserved through life into old age and are equal in strength to – sometimes better than – those same skills in younger people (Foster, 1997).

Some researchers (Blaney, 1985; Blaney and Ganellen, 1990; Carver, 1989; Funk, 1990; Hull, Van Treueren and Virnelli, 1987) assert that hardiness may not represent a single construct, as its three components of commitment, control, and challenge are usually regarded as distinct (Blaney & Ganellen, 1990). The construct has extensive common usage over years of research (Funk, 1990), however, even though an empirical rationale for the relationship of the three components to a hardiness model has not been established (Carver, 1989; Funk, 1990).

Qualitative research has demonstrated that hardiness is related to higher levels of personal meaning among the oldest-old (Adams, 1998). Further, research has shown that meaning is associated with each of the challenge (Caress, Luker, and Owens, 2001; Jensen, Back-Pettersson, and Segesten, 2000), commitment (Britt, Adler, and Bartone, 2001), and control (Newcomb and Harlow, 1986; Reker, Peacock, & Wong, 1987; Taylor, 1993) aspects of hardiness suggesting that hardy individuals may be referred to as “meaning-makers”. The current study examines the association of hardiness in older women with meaning framework and fulfillment, as well as the relationship between its components of commitment, control, and challenge (Kobasa, 1979) to types and factors associated with meaningful activities. How older women high in hardiness may be considered “meaning-makers” is also considered.

Research also demonstrates that hardiness has positive, direct effects upon physical health (Bartone, Ursano, Wright, and Ingraham, 1989; Funk, 1990; Gale, 1994; Holahan and Moos, 1985; Hull, Van Trueren, & Virnelli, 1987; Kobasa, 1979; Kobasa, Maddi, and Kahn, 1982; Kobasa and Puccetti, 1983; Okun, Zautra, and Robinson, 1988; Wiebe and McCallum, 1986) and mental health (Allred and Smith, 1989; Cohen and Edward, 1989; Funk, 1990; Funk and Houston, 1987; Gale, 1994; Kobasa, 1982; Kobasa, Maddi, & Kahn, 1982; Maddi & Kobasa, 1984; Pagana, 1990; Wiebe, 1991) and is associated with positive health practices (Maddi & Kobasa, 1984; Nagy and Nix, 1989; Wiebe & McCallum, 1986).

Clearly, hardiness has a strong impact upon meaning and health, and the researchers listed above have attested to high levels of health among hardy individuals. The relationship between hardiness upon health is beyond the scope of the current study, for it is the consideration of the association of health with meaning in the lives of hardy older women that is essential to the structure of the study.

Health

The strong association of age with health decrements and chronic disabilities underscores the necessity of examining the association of older women's health with meaning (Rowe & Kahn 1987). There are many areas of health concerns among the elderly, including physical, mental, and social difficulties as well as functional limitations, and these are generally referred to as functional health (Ware & Sherbourne, 1992). Although health-related decrements, especially physical decrements, increase with age, health problems among the elderly are not necessarily a function of the aging process (Rowe & Kahn, 1987). Not every aged person experiences health difficulties, nor

is health a necessarily imperative factor in the lives of the elderly though it is a central factor. Still, the importance of measuring health in research with an aging population cannot be overstated, and extending research inquiries beyond a generalized health measure with the elderly is warranted.

Research has demonstrated that older women have much lower levels of functional health (Arber and Ginn, 1993; Barer, 1994), higher levels of chronic illness and disability (George, Fillenbaum, and Palmore, 1984; Szinovacz, 1982), and more institutionalization (Wingard, 1987). Indeed, the low levels of functional health among older women makes them particularly vulnerable to losing their ability to live independently (Gale & Templeton, 1995), for they are less likely to recover from a disability than men (Beckett, Brock, Lemke, Mendes de Leon, Guralnik, Fillenbaum, Branch, Wetle, and Evans, 1996; FortHofer, Janz, Dodge, and Clark, 2001). Although the association of health with meaning has not been examined, having meaning in life is related to higher levels of health, especially mental health (Battista & Almond, 1973; Debats, 1990, 1996; Debats, Drost, & Hansen, 1995; Debats, van der Lubbe, and Wezeman, 1993; Prasinios and Tittler, 1984; Zika and Chamberlain, 1987, 1992). The current study is the first to examine the association of functional health with meaning in the lives of older women.

Purpose and Significance of the Present Study

The purpose of the present study is to provide an in-depth look at meaning in the lives of older women. To enhance our understanding of meaning in the lives of older women, the current study examines Wong's (1989) three components of meaning, described as cognitive, affective, and motivational components. The cognitive component

of meaning will be analyzed according to levels of meaning framework and the types and factors of personal projects considered meaningful by older women. Examination of the affective component of meaning will consider levels of meaning fulfillment achieved by older women and personal projects factors associated with meaning fulfillment. In addition, two aspects of the motivational aspect of meaning will be explored: the association of older women high and low in hardiness and functional health with meaning (including types of projects, meaning framework and fulfillment, and personal projects factors associated with meaning), as well as the strength of the relationship between the hardiness components of commitment, control, and challenge (Kobasa, 1979) to each of the factors associated with meaning in the current study. As previously noted, research with both older men and women risks interpreting findings according to normative bias, based on an assumption that men and women experience life in alike or similar ways. Studying older women exclusively permits us to view these life differences in a manner that is specific and personally salient to older women (Churchman, 2000), thus extending our research knowledge of this important aging population.

The present study examines a number of factors associated with successful aging, including meaning (Wong, 1989, 1998), activity (Brandtstadter and Wentura, 1995; Burgess, 1960), hardiness (Adams, 1998; Kobasa, 1979; Magnani, 1990; Ponzo, 1992; Stones, Stones, and Kozma, 1987; Walton, 1999), and health (Gale, 1994; Rowe & Kahn, 1987) providing a comprehensive view of how one construct, life meaning, is expressed in the lives of older women and the relationship of hardiness, health, and personal projects to life meaning. No previous study has provided such an integrative, comprehensive view of the relationship of these factors to meaning.

Further, the examination of personal projects (Little, 1983) provides knowledge for understanding the array of pursuits which are important in the daily lives of people. In particular, personal projects allow the examiner a glimpse into the personally salient endeavors of special populations, such as college-aged youth or older women (Little, 1987; Little, Lecci, and Watkinson, 1992). This study seeks to extend our knowledge of older women through a consideration of the personal projects they find meaningful. Indeed, without the recent development of personal projects methodology, such research could not be conducted.

Further, the current study extends our understanding of the role of hardiness in the lives of older women. Previous studies have shown that hardiness is related to higher levels of meaning in life (Adams, 1998; Maddi & Kobasa, 1984), however, no study, to date, has directly examined the role of hardiness in influencing life meaning. Understanding how some older women experience higher levels of meaning at the end of life may result in services and interventions that can enhance the quality of life for many.

Finally, while the examination of multiple areas of health, known as functional health, demands application in studies of older populations, it is not extensively done. Understanding the association of functional health with meaning should provide important information on how to retain or recreate meaning in the face of increasing health difficulties. Such information may help elders define more achievable goals that are still meaningful while adapting to health changes with age. This study represents a critical step forward to understanding the association of health factors that affect meaning in the lives of older women.

Certainly, aging challenges researchers, practitioners, and service providers to

help the elderly continue to age successfully (Rowe & Kahn 1987). Enhancement of meaning may be one of the areas of potential personal growth available to the elderly in spite of continuing decrements (Wong, 1989). Clearly, prolonging the lives of the elderly, and older women in particular, serves no purpose unless they can continue to express meaning in their lives (Wong, 1989). Examining how hardiness, health, and personal projects are related to the cognitive, affective, and motivational aspects of meaning will extend our research knowledge and contribute significantly to our understanding of meaning in life among those at the end of life. As such, this study will be of value to the older women, families, researchers, and service providers for our aging population.

The Research Questions

To deepen our understanding of meaning in the lives of older women, the current study addresses Wong's (1989) three components of meaning, i.e., cognitive, affective, and motivational, in relation to hardiness, health, and personal projects. Three aspects of the cognitive component of meaning will be analyzed: the relationship of older women to having a framework for meaning; the types of activities that older women label as meaningful; and the identification of the factors of personal projects dimensions related to meaning framework. The affective component of meaning will be explored by examining the levels of meaning fulfillment older women achieve through their personal projects and the identification of personal project factors associated with meaning fulfillment. The motivational aspect of meaning will be examined by considering the association of levels of hardiness and functional health with meaning in older women, including types of projects, levels of meaning framework and fulfillment, and the personal projects factors associated with meaning framework and fulfillment.

Exploration of the motivational aspect of meaning will also center on the strength of the relationship between the three components of the construct of hardiness, i.e., commitment, control, and challenge (Kobasa, 1979), to meaning factors for framework and fulfillment and to personal project factors associated with meaning framework and fulfillment.

According to Battista and Almond (1973), meaning implies that individuals have a commitment to their own concept of meaning in life and that this commitment provides a framework for viewing their lives. In addition, individuals view their lives as fulfilling or related to their life concept and experience significance, relatedness, or integration as a consequence of framework.

Having a framework for meaning also enables individuals to cognitively appraise their activities as meaningful or worthwhile (Little, 1983; 1987; 1993; 1999a), thus providing a means by which individuals can view their lives as fulfilling meaning. Examining the personal projects (Little, 1983) of older women permits an understanding of the types of activities or projects that are meaningful to them. Further analysis, applying principal components analysis to the measure for meaning (Debats, 1998), creates clear criteria for cognitive (i.e., framework) and affective (i.e., fulfillment) components of meaning. Similarly, factors resulting from principal components analysis of personal projects may be related to factors associated with meaning framework and fulfillment. Previous research has established a significant relationship between the project factor of personal integrity, representing significant, self-identified values and commitment, and meaning (McGregor & Little, 1998). The emergence of an integrity factor in the current analysis is expected, as well as other factors related to the expression

of meaning resulting from alterations in the methodological questions with the current study.

Other factors in the lives of individuals are associated with meaning by affecting people's ability to attain meaningful goals. Such factors may enhance or inhibit the process of meaning making and are particularly important when studying an older population (Wong, 1989). Research has shown that one such factor, personality traits (Schmutte and Ryff, 1997; Siegler and Brummett, 2000), has been linked to outcomes of personal meaning, and that the personality trait of hardiness constitutes "an important route" (Wong, 1989, p. 520) to positive outcomes of meaning (Adams, 1998; Maddi & Kobasa, 1984). In the current study, hardiness is expected to associate with meaning positively. Further, older women high in hardiness are expected to demonstrate high levels of meaning in their lives. Research, however, has not directly established the relationship of hardiness to meaning. Examination of the association of hardiness with meaning framework and fulfillment, as well as to projects factors associated with meaning, will clearly elucidate the relationship of hardiness to meaning for the first time.

In addition to hardiness, health is a particularly significant factor which may be associated with the ability of older women to attain meaningful goals (Rowe & Kahn, 1987). The current study explores the association of physical, mental, and social health, also known as functional health, (Ware & Sherbourne, 1992) with meaning among older women for the first time. Two aspects of the health findings will be of particular interest to the delivery of services to older women, namely, how those older women with health decrements continue to express meaning in their lives and what health decrements are most related to the diminution of meaning in the lives of older women.

Overall, the current study's exploration of the expression of meaning in the lives of older women through the examination of its three components (Wong, 1989) has become possible for the first time with the application of personal projects methodology (Little, 1983). The questions asked in this study will result in comprehensive and integrative data that will contribute significantly to our understanding of the expression of meaning in the lives of older women and are as follows:

1. What types of projects are personally meaningful to older women?
 - A. In what types of meaningful projects do hardy vs. nonhardy older women engage?
 - B. What is the relationship of functional health to meaningful projects in which hardy vs. nonhardy older women participate?
2. What are the factors for meaning in life?
 - A. What is the relationship of hardiness and health in older women to the LRI-R (Debats, 1998) factor loading for meaning framework?
 - B. What is the relationship of hardiness and health in older women to the LRI-R (Debats, 1998) factor loading for meaning fulfillment?
3. What are the personal project factors associated with meaning in life (i.e., framework and fulfillment)?
 - A. What is the relationship of hardiness and health in older women to the personal projects factor loading associated with meaning framework?
 - B. What is the relationship of hardiness and health in older women to the personal projects factor loading associated with meaning fulfillment?
4. What is the relationship of the meaning factors (i.e., framework and fulfillment)

to the three components of hardiness, specifically

- A. What is the relationship of the meaning factor associated with LRI-R (Debats, 1998) framework to the three components of hardiness?
 - B. What is the relationship of the meaning factor associated with LRI-R (Debats, 1998) fulfillment to the three components of hardiness?
5. What is the relationship of the personal projects factors associated with meaning to the three components of hardiness, specifically
- A. What is the relationship of the personal projects factor(s) associated with meaning framework to the three components of hardiness?
 - B. What is the relationship of the personal projects factor(s) associated with meaning fulfillment to the three components of hardiness?

Definition of Terms

Aging – the developmental process of growing and becoming older (Hooyman and Kiyak, 1996).

Aging in Place – individuals remain in their chosen environment as they age (Wister, 1990)

Conation – individual intentionally goal-directed actions (Little, 1993, 1999a) *Functional*

Health – levels and limitations of physical, mental, and social health (Solomon, Skobieranda, and Gragg, 1993; Ware & Shelbourne, 1992)

Generativity – promoting and guiding the next generation (Erikson, 1968)

Gerontology – the multidisciplinary approach of research and study of the physical, psychological, and social aspects of aging (Hooyman & Kiyak, 1996)

Hardiness – a personality construct possessing three characteristics: commitment,

control, and challenge (Kobasa, 1979)

Independent living – having the ability to care for oneself (Barrett, 1998)

Older adults – individuals over the age of 65 years (Neugarten, 1972)

Oldest-old – individuals 85 years and older (Riley and Riley, 1986)

Personality traits – individuals' inherited tendencies manifested as consistent patterns of behavior, thoughts, and feelings (McCrae and Costa, 1990)

Personal meaning – having a framework for meaning in life and achieving life goals (Battista & Almond, 1973)

Personal projects – the personally salient activities in which individuals are currently engaged (Little, 1983)

Primary identity – the most common form of identity that people prefer (McGregor & Little, 1998)

Purpose in life – the belief that one's life has purpose and meaning (Ryff, 1989a, 1989b, 1989c, 1995)

Resilience – theoretical construct, often applied loosely to hardiness, referring to children to describe overcoming and adapting successfully to life events despite threatening circumstances thanks to outside support from at least one adult (Beardslee, 1990; Masten, Best, and Garmezy, 1990; Mishra, Aldwin, Colby, and Oseas, 1991)

Well-being – an overall feeling of happiness (Schmutte & Ryff, 1997)

Chapter 2: Literature Review

This chapter reviews the literature concerning the defining characteristics, operationalizations, and manifestations of the concepts of meaning, personal projects, hardiness, and functional health to demonstrate the contribution of extant literature to the empirical and theoretical bases of the current study. Beginning with life meaning, this review then examines the literature on each of the other structural concepts included in the study, namely personal projects, hardiness, and functional health. Finally, this chapter explores how the relationships of these elements create an integrative approach to understanding the cognitive, affective, and motivational components of life meaning (Wong, 1989).

Life Meaning

This section considers the concept and significance of life meaning which constitutes the central theme of this study.

The importance of having meaning in life has been emphasized throughout history. Aristotle emphasized the concept of *eudaimonia* in which a good life is one that flourishes, achieving its potential through meaning and purpose (1998). Yet, current society appears to be awash in meaninglessness, as evidenced by the nihilistic literature of Camus and others, the “No Exit” world of meaninglessness of the playwright-philosopher, Sartre, and increased therapeutic complaints (Yalom, 1980). Indeed, Maddi (1970) notes the pervasiveness of an existential sickness in modern life stemming from the failure to find meaning in life, even though being without meaning in life is to “have nothing to live for, nothing to struggle for, nothing to hope for” (Wolman, 1975, p. 151).

According to Frankl (1969, 1973, 1976), meaning is quite simply essential for life. As an inmate at Auschwitz during World War II, Frankl realized that survival required being able to find meaning in suffering. Inmates found meaning in living to see others, to tell others about the horrors of their existence, for revenge, or to complete some life project. For Frankl, surviving gave meaning to his anguish, and he affirmed that optimism, commitment, and self-transcendence allow one to retain their integrity and sanity under the most trying conditions. In fact, his logotherapeutic approach to clinical psychology emphasizes the centrality of meaninglessness in depression and neurosis and that the will to meaning is a universal motive (1969).

Maslow (1968) regards meaning as a basic human need, for meaning represents what gives purpose and significance to life (Debats, 1998). These qualities, in turn, convey value and worth, peace of mind, and self-respect (Flanagan, 1996). Indeed, the seeking of meaning is a primary motivation in life, expressing the deepest elements of our human nature (Frankl, 1969; Wong, 1998) and a fundamental quality of optimal functioning (Ryff, 1989a; Ryff and Singer, 1998). Meaning in life is seen as individually constructed (Wong, 1989), for there is no single life meaning that is appropriate for everyone, nor is there only one way to achieve a sense of meaningfulness towards life (Debats, 1998). Hocking (1957) differentiates between the events that create meaning and the total meaning out of which specific life aspects gain meaning. Yalom (1980) speaks of two forms for meaning: terrestrial meaning as representing purpose and goals to be fulfilled and cosmic meaning as a spiritual ordering of the world and universe. Becker (1992) emphasizes the importance of choosing and pursuing meaningful activities. In

other words, life meaning may be seen as a value-based cognitive system, constructed by each individual, which can potentially result in self significance and satisfaction (Wong, 1989) and lead to a life lived well (Ryff & Singer, 1998).

According to Wong (1989), philosophers and academics approach the study of life meaning differently. Philosophers are concerned with the meaning *of* life while academics typically are characterized by their interest in meanings *in* life. Reker and Wong (1988) emphasize the importance of including both approaches to life meaning in research, and these approaches are reflected in Wong's (1989) description of the three components of life meaning, consisting of cognitive, affective, and motivational factors. The cognitive factor involves having beliefs that create a framework for meaning and applying that a personally determined value and belief system of meaning to ascribe meaning to activities and life events. The affective component expresses the feelings of satisfaction achieved in experiencing life as worth living and is most closely associated with Erikson's (1963) final challenge in life: to experience one's life as worthwhile and meaningful. The motivational component emphasizes those elements that enhance or restrict the pursuit and attainment of valued personal goals.

Having a framework for life meaning constitutes the base from which life meaning may be explored. A framework for life meaning is essential for identifying activities and events as meaningful and to pursuing and fulfilling meaningful goals. The current study examines having a framework for life meaning and achieving it; exploring the daily activities associated with meaning, including types and factors; and the association of personality traits and health with meaning in the lives of older women.

Daily activities serve as the central module through which life meaning is expressed, and one method for examining daily activities is known as personal projects (Little, 1983).

Personal Projects

This section examines the operationalization of personal projects as they relate to the salient experiences of individuals in their daily lives. In addition, the section applies the personal projects methodology to desired behavioral outcomes to establish the value of personal projects methodology to the exploration of life meaning.

Personal projects are goal-directed units (Little, 1983, 1992, 1998) of personally salient conation, or the individual's inner desires and intentionally goal-directed actions (Little, 1993, 1999a), through which personal dispositions (e.g., personality and health) and what the environment will allow are expressed (Little, 2000). A core assumption of personal projects research emphasizes that the relationship between personal projects and personal/environmental factors, as well as with projects' outcomes, is reciprocal (Little, 1999b). Omodei and Wearing (1990) have noted that personal projects provide a "valid representation" (p. 768) of the ways in which people experience and structure their lives. As such, they may reflect a wide range of possibilities, from a daily preoccupation, such as "pick up something for dinner", to a grand passion, such as "write the next great American novel". When personal projects fit well with personal and environment factors, desired outcomes such as the "next great American novel" can be achieved (Thomas & Chess, 1977), and personal projects research focuses particularly on outcomes related to adaptation and well being, such as meaning or happiness, reflective of their personality psychology origins (Little, 1999a).

While personal projects research has strong ties to personality research, it is important to developmentalists, as well (Little, 1999a). Developmentally, personal projects change and adapt over time, and their examination can provide researchers with valuable insight to better serve the needs of special populations, like elderly women. For instance, developmental changes related to age and health may make desired goals difficult to achieve. An analysis of personal projects can enhance the possibility of attaining desired outcomes through modifications and intervention at the personal, project, or outcome level. Indeed, the adaptability of the personal projects methodology permits not only a view of change over time but change at any time to better meet the needs of the individual (Little, 2000). Therefore, personal projects research can become a means to positive change from many sources, including professional intervention, in addition to providing a methodology for in-depth exploration of how behavioral outcomes are achieved (Little, 1989, 2000; Little, Lecci, & Watkinson, 1992).

In order to assess the personal projects, themselves, study participants are asked to generate a list of ten personal projects and then rate each project on multiple dimensions. Little (1989) has emphasized that five components – meaning, structure, efficacy, community, and stress – of personal projects have theoretical implications for outcomes of adaptability and well being. These five components represent the core structure of personal projects analysis to which other dimension questions may be added, depending upon the interest of the researcher. Factor analysis has generally supported these five components even though differences between specific dimensions may be found from one study to the next (Little, 1987).

Personal projects may be analyzed quantitatively or qualitatively at the single project level, individual level, or the group level according to their cognitive, behavioral, and/or affective aspects (Little, 1989, 1993). Most typically, personal projects undergo normative analysis using project dimension and factor means as vectors to assess relationships between project dimensions or to mean scores on other antecedent or outcome measures, such as personality traits or well being, respectively (Little, 1989).

Personal projects analysis has been applied successfully to numerous outcome measures. Indeed, personal projects research has contributed much to our understanding of how behavioral outcomes are attained (Little, 1983, 1987, 1989, 1993; 1996; 1998, 1999b; 2000; McGregor & Little, 1998; Omodei & Waring; 1990; Palys & Little, 1983; Ruehlman and Wolchik, 1988; Yetim, 1993). For example, Omodei and Wearing (1990) employed personal projects with a small sample of 39 adults to examine whether being goal-directed or experiencing involvement toward a goal is more linked to feelings of subjective well-being, or overall happiness (Schmutte & Ryff, 1997). The results indicate that subjective well-being may be achieved through either goal-direction or involvement and that well-being is associated with positive affect with either choice.

Outcomes of well being are strongly linked to the personal project dimension of control (Little, 1999b). Study findings indicate that smaller scale projects generally result in higher levels of project control and that older populations (over age 60 years) generally participate in smaller scale projects. Little (1989) suggests that participating in smaller projects helps explain why older participants are significantly more likely to report that

their projects are more meaningful, less stressful, more manageable, more supported by others, and more efficacious than those of younger populations.

Further, Christiansen, Backman, Little and Nguyen (1999) found that the achievement of well-being is associated with personal projects that are low in stress and difficulty, are associated with efficacy, and are making progress. In a study of personal projects and the perception of life satisfaction ("I am/am not satisfied with my life right now"), Palys and Little (1983) compared a sample of 178 university students with a sample of 72 community based individuals. Findings indicate that, in spite of the differences in the two samples, people perceive, organize, and structure their personal projects in ways that are related to their perceptions of life satisfaction. Highly satisfied people have projects that are more currently salient and short term, more enjoyable, more engrossing, and less difficult while more likely sharing project control and responsibility with others. Individuals with low life satisfaction engage in projects that are more long range, more difficult, less enjoyable, and lack interpersonal involvement.

Further investigation by McGregor and Little (1998) establishes that project efficacy, the belief that one's personal projects are attainable and likely to be successful, is significantly correlated with well being among younger adults. The authors also conducted a retrospective analysis with senior 120 middle-aged managers regarding this relationship, and results indicate a compelling shift. Efficacy is no longer a factor in well being but integrity, or being consistent with individual core values, is now significantly related to a sense of well-being. This shift is significant, for it indicates that integrity, not goal achievement, becomes more important with age, thereby supporting the contention

of Erikson (1959) that developmentally around midlife, people become more concerned with assisting the achievements of others (i.e., generativity) and integrity. The findings underscore the importance of understanding how different age groups developmentally create desired outcomes in their lives.

The current study is concerned with the relationship of personal projects to meaningful outcomes. Indeed, the exploration of personal projects permits us not only to see how meaning “is lived out in the reality of people’s lives” (p. 207) (Little, 1998), but also to understand the relationship of associations that may enhance or detract from the ability to create meaning. One such association may involve personality traits, examined in the current study as hardiness.

Hardiness

This section reviews the literature concerning the operationalization of hardiness in research. Further, it explores the relationship of hardiness to aging and older women, followed by an examination of hardiness’ relationship to measurable outcomes.

The personality trait concept of hardiness (Kobasa, 1982) emphasizes mental health (Funk, 1990), an approach that has its roots in the work of the humanist theorist, Maslow (1970), whose work on self-actualization in individuals has similarities to the three components of hardiness (i.e., commitment, control, and challenge) (Campbell, Amerikaner, Swank, and Vincent, 1989). Like self-actualizing people, hardy individuals feel a sense of mission and focus outside themselves (i.e., commitment). They sense that they have control over life events (i.e., control) and view change as challenging or exciting (i.e., challenge). Self-actualizing descriptors, however, are much more extensive

and expansive (Maslow, 1970) than the three components of hardiness, and they are difficult to measure. Hardiness (Kobasa, 1982), on the other hand, has been measured extensively.

Aging studies have demonstrated that hardiness is associated with psychological strength in the elderly (Adams, 1998; Foster, 1997). In an examination of older adults with age-related and other health decrements, Foster (1997) found that control aspects of hardiness in older people are associated with self-discipline, persistence, prudence, and pragmatism. Commitment dimensions of hardiness are associated with creative productivity, social networking, health, and attractiveness. Challenge qualities of hardiness are found in anticipation and adaptability.

The psychological strength of hardiness to other desirable personality traits as measured by the NEO Personality Inventory (NEO-PI) (Costa & McCrae, 1985, 1992a) has been demonstrated in 241 undergraduate students (103 men, 138 women), aged 18 to 41 years (median = 18.7 years) (Ramanaiah, Sharpe, and Byravan, 1999). Findings indicate that individuals high in hardiness are noted by their significantly higher scores on traits of extraversion or outwardly expressed energy; openness to experience or curiosity and self-expression; conscientiousness or goal-driven behavior domains; and significantly lower neuroticism or emotional instability scores when compared to the low hardiness group. Openness to experience and conscientiousness traits emerged as the two major factors discriminating between the high and low hardiness groups, significant at the $p < .001$ level.

Research has demonstrated that hardiness has positive, direct effects upon health (Hull, Van Trueren, & Virnelli, 1987; Kobasa, 1979; Wiebe & McCallum, 1986).

Kobasa's (1979) initial study on the hardiness construct with executive managers indicates that hardy people of all ages believe that they can influence their life experience (including their health), are flexible and curious, believe in what they are doing, and are able to cope accordingly. People who have highly stressful careers but remain healthy have a strong sense of their capabilities, values, and goals, as well as a belief in their importance. Further studies have supported the robust relationship between hardiness and health (Holahan & Moos, 1985; Kobasa & Puccetti, 1983; Kobasa, Maddi, & Kahn, 1982), especially through the component of control (Okun, Zautra, & Robinson, 1988; Rodin, 1986) and an association with positive health practices (Maddi & Kobasa, 1984; Nagy & Nix, 1989; Wiebe & McCallum, 1986).

Research demonstrates that hardiness is associated with high functional health among 110 community-based women, with a mean age of 75 years (Gale, 1994). Findings indicate that hardiness directly contributes significantly to physical health ($p < .05$), with increasingly significant findings to independent health (or being able to live on one's own) ($p < .01$), and psychosocial health, namely anxiety and depression ($p < .001$).

Research also demonstrates that hardiness has a direct, positive effect upon mental health (i.e., depression) (Funk & Houston, 1987). Hardy individuals use adaptive coping (Cohen & Edwards, 1989) to the point of transforming difficult events into personal growth opportunities (Kobasa, 1982; Maddi & Kobasa, 1984). Adults high in hardiness cope actively and optimistically, using less regressive coping, such as

avoidance or hiding (Kobasa, 1982; Kobasa, Maddi, & Kahn, 1982; Maddi & Kobasa, 1984). Further, hardy individuals have been found to differ from low-hardy persons in that they appraise their life experiences as challenging and lower in threat (Pagana, 1990) and view threatening events more positively than non hardy individuals (Allred & Smith, 1989; Wiebe, 1991).

Hardy middle-aged individuals simply appraise more of their life events as controllable, experience fewer of their life events as undesirable, and feel that each event requires less adjustment than do nonhardy individuals (Rhodewalt and Zone, 1989). Yet, according to Rhodewalt and Agustsdottir (1984), both hardy and nonhardy undergraduate students report similar types of events in their lives with equal numbers of events described as uncontrollable. Hardy subjects, however, consider a larger proportion of their experiences as positive and controllable than nonhardy individuals. Further, impairment is associated to a much lesser extent with uncontrollable, moderately controllable, and undesirable events among the hardy participants, suggesting that hardy individuals evaluate situations as less stressful than nonhardy persons and suffer fewer negative consequences.

Hardy individuals also employ social support to adapt to life events (Kobasa, 1987; Nagy & Nix, 1989), and this combination of hardiness and social support has a positive effect upon health (Kobasa, Maddi, Puccetti, and Zola, 1985; Kobasa & Puccetti, 1983). Research shows that older adults high in hardiness involve themselves socially more than nonhardy elders by actively seeking social support (Lockner, 1999). Hardy women have higher levels of family social support than nonhardy women (Holahan &

Moos, 1985), although, not surprisingly, older women overall report fewer social contacts and lesser valuable relationships as they age and experience more disability.

Hardy women, aged 72 to 98 years, engage in strategies to deal with disability and chronic illness (Neary, 1999). The older women indicate that disability, not aging itself, is their greatest concern and causes a reduction of the number of resources they now have in life. They employ strategies from the past that successfully managed difficult experiences. These women use control strategies to preserve their independence to delay, as much as possible, the possibilities of nursing home placement or becoming a burden to family members. Further, they respond to challenge with flexibility, adaptability, and resourcefulness, and manifest their commitment to themselves through facing life pragmatically, with self-confidence and determination.

The construct of hardiness is not without criticism, however. Concerns over appropriate categorization of high and low hardiness levels (Carver, 1989; Funk, 1990) and a possible confound with neuroticism (Costa & McCrae, 1992b) have been noted (Allred & Smith, 1989; Funk, 1990; Funk & Houston, 1987; Rhodewalt & Zone, 1989). The current study employs recommendations of Funk (1990) to address these concerns and are described in the following chapter. Further, while a question of whether hardiness is as applicable to women as men has been raised (Schmied and Lawler, 1986), Rhodewalt and Zone (1989) clearly demonstrated that the effects of hardiness in women are similar to those in male populations.

The current study examines the relationship of hardiness to meaning. As a personality association, hardiness in older women is expected to contribute positively to

meaning. Another association, however, may have a negative relationship with meaning in older populations. That association is health.

Health

This section examines the literature on health with an emphasis on functional health and aging, and its operationalization.

According to activity theory, maintaining physical, mental, and social endeavors supports successfully aging and adjusting (Burgess, 1960) and measuring the strength of these three dimensions is important to aging research. Functional health involves the examination of multiple areas – particularly the physical, mental, and social areas – of health involved in being able to carry out the tasks of one’s life (Ware & Sherbourne, 1992). Physical health relates to perceptions of one’s physical abilities (Snider, 1980) or one’s ability to perform increasingly difficult physical tasks (Guralnik, Branch, Cummings, and Curb, 1989). Mental health involves the possible effects of anxiety and depression and their association with daily activities (Ware & Sherbourne, 1992). Social health is concerned with the possible association of physical and emotional problems upon normal social activities. While a general health question such as “How do you rate your health today, compared to a year ago?” may provide some health information for any study, assessing functional health in the current study addresses the complexities of health status in the elderly by providing fuller, more detailed information of the effects of health upon their lives.

Research on aging and perception of health status, however, reveals some interesting contradictions. Older adults, especially those with few symptoms and high

levels of education, subjectively perceive their health in a more positive manner than adults of younger years (Cockerham, Sharp, and Wilcox, 1983; Ferraro, 1980; Ferraro and Feller, 1996; Mechanic and Angel, 1987), and these generalized perceptions increase with advancing age in direct contradiction to objective findings (Mitrushima and Satz, 1991; Svanborg, Sixt, Sundh, and Thornton, 1988). As example, African-American women, whose functional limitations and morbidity are higher than White populations, are the least likely to consider their health concerns problematic (Ferraro & Feller, 1996). This adjustment in health perception with age is generally attributed to older persons' willingness to accept disability, handicaps, and impairment as normal for their advanced age, although the dominance of financial stress with aging appears to be more significant than health factors among African-American older women. Consequently, any measure of functional health applied to older populations may expect that specific areas of health may indicate health difficulties, while overall measurement of general health may be optimistically skewed.

In contrast to older men, women over the age of 65 years, who live seven more years on average, have much lower levels of functional, especially physical, health (Arber & Ginn, 1993; Barer, 1994), have more special health needs, chronic illness, disability, and a lack of social and financial resources (George, Fillenbaum, & Palmore, 1984; Szinovacz, 1982). Even though they avail themselves of more health services, older women experience more institutionalization (Wingard, 1987) and are more likely not to recover from a disability than men (Beckett et al., 1996; FortHofer, Janz, Dodge, & Clark, 2001). Further, a high proportion of older women live alone, are unmarried or

widowed, and exercise less control over their own environment than older men (Barer, 1994). Men, on the other hand, experience fewer functional decrements, have more independence, and more environmental control, even though they are much more likely to experience life-threatening conditions (Wingard, 1987). Indeed, as Gale and Templeton (1995) have noted, functional health is an essential determinant of the capacity to live independently, and older women, with their higher levels of health decrements, are at higher risk for losing their independence.

Mental health factors are also an issue with aging. Although research indicates that mental health overall remains remarkably stable in spite of aging and most chronic disease (Singer, Hopman, and MacKenzie, 1999), descriptive studies have shown that depression levels (Barefoot, Mortenson, Helms, Avlund, and Schroll, 2001; Newman, Engel, and Jensen, 1991a; Roberts, Kaplan, Shema, and Strawbridge, 1997) and anxiety (de Beurs, Beekman, Deeg, Van Dyck, and van Tilburg, 2000; Feingold, 1994) are significantly higher for older women. According to Barefoot, Mortenson, Helms, Avlund, and Schroll (2001), however, women do not demonstrate increases in depression with age, but men do, with the percentage of men reporting depression equaling that of women at age 80 years. Roberts, Kaplan, Shema, and Strawbridge (1997) found some increase in depressive symptoms among older women with age, although the form that depression in older women takes changes from one of depressive symptoms (which decrease with age) to increased enervation and decreased interest in things (Newman, Engel, & Jensen, 1991a, 1991b). These changes have been shown to be related to increases in severity of physical disability (Bruce, Seeman, Merrill, and Blazer, 1994;

Heidrich, 1998; Roberts, Kaplan, Shema, & Strawbridge, 1997) or recent widowhood (Byles, Feldman, and Mishra, 1999), not age. In the Australian Longitudinal Study on Women's Health, 34.5% of the 12,624 women participants (aged 70-75 years) were widowed with 13.5% being widowed in the last year (Byles, Feldman, & Mishra, 1999). The results show that recently widowed women demonstrate increased mental and physical health needs during the first year following the death of their spouses but return to generally previous levels thereafter. Research on 1,002 severely disabled older women, however, indicates that lower levels of disability correspond to lower depression and anxiety, although other factors, such as being Black, having higher income, and enhanced psychosocial involvement, positively influence symptomatology (Pennix, Guralnik, Simonsick, Kasper, Ferrucci, and Fried, 1998). Severe disabilities take their toll with higher levels of depression, anxiety, unhappiness, and loss of autonomy.

Freedom from depression and having close personal relationships are strongly related to psychosocial health in older women (Strawbridge, Cohen, Shema, and Kaplan, 1996). Indeed, the presence of a social network is significant for older women's physical health (Michael, Colditz, Coakley, and Kawachi, 1999). In a study of 56,436 older female nurses (aged 55 to 72 years), physical health was correlated to health behaviors and social network characteristics (Heidrich, 1998). Results indicate that significant decrements in physical health are associated with negative health behaviors such as smoking, being overweight, alcohol consumption, and sedentary behavior across all ages. Yet, controlling for health behaviors, age, education, race, and co-morbidity, social network factors of having close relatives, friends, and a confidant strongly predicts higher physical health

functioning among these older women. And the strength of these relationships as meaningful remains stable, in spite of declines in physical health.

Like hardiness, functional health levels in older women are expected to have association with meaning. The current study will contribute to our research knowledge of the motivational component of meaning by indicating the associations with both hardiness and functional health to enhance or restrict life meaning in the lives of older women. One of the ways in which hardiness and health may be associated with life meaning is through their association with meaning framework, one aspect of the cognitive component of meaning.

Framework for Life Meaning

Numerous approaches have been proposed to measure life meaning, including well being (Debats, 1996; Reker, Peacock, & Wong, 1987; Ryff, 1989a; Zika & Chamberlain, 1992) and life purpose (Reker, Peacock, & Wong, 1987; Ryff, 1989a) surveys. Research demonstrates, however, that these approaches, in fact, may assess other dimensions, especially those of affect and happiness (Debats, 1998; Little, 1998; McGregor, 1994; McGregor & Little, 1998), thus necessitating a means of measuring life meaning that is componentially consistent with its construction.

In its most fundamental form, life meaning represents having a cognitive framework for meaning, such as a philosophy of life, a set of life goals, or a meaningful perspective on life (Battista & Almond, 1973; Wong, 1989). Indeed, Wong (1989) asserts that a cognitive framework represents one of the three components of meaning. Research findings have confirmed the importance of having a framework for meaning through its

association to a sense of control and coherence (Antonovsky, 1987) and psychological health (Zika & Chamberlain, 1987). Having a clear framework for meaning in life allows individuals to recognize meaning as it occurs in the daily activities and events of life and to experience a sense of meaning fulfillment.

Research to date has not examined the association of hardiness, a personality trait which reflects the motivational component of meaning (Wong, 1989), with the formation of a meaning framework. However, having a framework for meaning has been correlated to other personality traits with the NEO-PI of Costa and McCrae (1985, 1992a). Research demonstrates that the purpose in life subscale (e.g., framework for life meaning) in Ryff's (1989a) well-being measure is linked to four different domains of personality traits among middle-aged adults (Schmutte & Ryff, 1997; Siegler & Brummett, 2000). Having purpose in life correlates positively to extraversion and conscientiousness, is somewhat related to agreeableness, and is negatively related to neuroticism. In particular, purpose in life correlates significantly with extraversion's aspects of warmth, gregariousness, assertiveness, activity, excitement, and positive emotions and with the competence, order, dutifulness, achievement, self-discipline, and deliberation qualities of conscientiousness. Purpose in life also correlates significantly with three descriptors of agreeableness – namely, trust, altruism, and compliance. And purpose in life correlates negatively and significantly with anxiety, hostility, depression, self-consciousness, impulsiveness, and vulnerability in neuroticism. The study underscores the relationship of positive personality traits to having a framework for meaning and suggests that qualities

associated with hardiness, particularly those related to commitment which parallels aspects of conscientiousness may be related to meaning framework.

Further, no research to date has examined how functional health may be associated with meaning framework in the lives of older women, another aspect of the motivational component of meaning. Research has shown, however, that having a framework for meaning in life is related to desirable mental health outcomes. Meaning in life has a stronger relationship to positive well-being dimensions, such as happiness and self-esteem (Debats, 1996; Zika & Chamberlain, 1992). Having a framework from which to create meaning is associated with psychological health improvement (Zika & Chamberlain, 1987) and stress reduction (Thompson, 1991). Indeed, people with higher levels of personal meaning also have a higher resistance to stress for they are able to find meaning through successfully coping with stressful events (Debats, Drost, & Hansen, 1995). In clinical populations, a profound lack of personal meaning may, in fact, indicate an increased risk for suicide if not treated appropriately (Klinger, 1977; Lifton, 1979; Petrie and Brook, 1992; Yalom, 1980). Indeed, seeking meaning can help individuals overcome crises by providing an avenue to interpret crises in a positive manner (Jaffe, 1985) and may underscore the importance of meaning in the lives of older individuals (Wong, 1989).

The current study examines the strength of the framework for life meaning possessed by older women, thereby increasing our understanding of one aspect of the cognitive component for meaning (Wong, 1989), namely that of having a philosophy or set of values that give meaning to life. It also examines the association of hardiness and

functional health with framework for meaning to increase our understanding of the motivational component for meaning. Another component of meaning is concerned with affective aspects which are demonstrated in levels of meaning fulfillment that older women achieve (Wong, 1989). The literature on meaning fulfillment is explored next and includes further exploration of the motivational component for meaning by examining the association of hardiness and health to achieving fulfillment of meaning.

Fulfillment of Life Meaning

Fulfillment of life meaning involves those individuals who see their lives as fulfilling or having fulfilled their life goals. These people value what they are doing or have done and the feelings of significance, integration, and relatedness that result (Battista & Almond, 1973). Higher levels of fulfillment are significantly related to levels of happiness and self-esteem (Battista & Almond, 1973) and predict positive psychotherapeutic outcomes (Debats, 1996).

Similar to meaning framework, levels of meaning fulfillment are associated with the motivational components of meaning. One intriguing study by Adams (1998) considers resilience, a concept typically applied to children and adolescents, and meaning among the oldest-old. Resilience refers to overcoming and successfully adapting to transitions in life in spite of threatening circumstances (Beardslee, 1990; Masten, Best, & Garmezy, 1990; Mishra, Aldwin, Colby, & Oseas, 1991) and is most strongly reflected in the control aspect of hardiness (Maddi & Kobasa, 1984). The results of this study, however, clearly demonstrate more than just the control component of hardiness; it really appears to discuss the association of hardiness with meaning fulfillment in life. The

findings indicate that the hardy oldest-old feel compelled to create meaning throughout their lives, have an existential sense of self-fulfillment, which give a sense of perseverance, stamina, and courage (Adams, 1998) which are consistent with the commitment component of hardiness (Maddi & Kobasa, 1984), and are essential to living life according to a philosophy or set of values (Battista & Almond, 1972), particularly if those values are highly individualistic (Adams, 1998). Further, the oldest-old face their lives with self-determinism which is associated with challenge (Maddi & Kobasa, 1984). Indeed, the oldest-old demonstrate the control aspect of hardiness through being self-determined, overcoming a lifetime of difficulties, and focusing on what they can control, including their health, in order to experience meaning fulfillment in their lives (Adams, 1998). Interestingly, the study found that as their health deteriorates and their pain increases, the desire for control among the oldest-old becomes a desire to be finished with life. In addition, Carmel (2001) has noted that older women, in particular, have a significantly lower desire to live than older men.

Other research speaks to the motivational association of hardiness with meaning fulfillment. With regards to control, Reker, Peacock, and Wong (1987) have shown that women see life as more controllable than men which, when combined with having a purpose in life and being able to create meaning in one's life in the future, predicts a sense of well-being. On the other hand, a lack of control among adolescents is associated with high levels of stress and meaninglessness that result in negative outcomes, such as substance abuse (Newcomb & Harlow, 1986). Peacekeeping soldiers in Bosnia demonstrated that being involved in meaningful work during and after deployment was

directly related to hardiness, particularly in the commitment dimension (Britt, Adler, & Bartone, 2001). Patients with recurrent cancer indicate that their ability to adjust to (i.e., control) their illness is correlated to their having a clear perception of its meaning (i.e., commitment) (Taylor, 1993), while others have found that challenge is related to finding meaning in the illness (Caress, Luker, & Owens, 2001; Jensen, Back-Pettersson, & Segesten, 2000).

Although no study to date has examined the association of functional health with meaning fulfillment, the literature demonstrates that people who achieve more of their meaningful goals in life have significantly higher levels of mental health, including self-esteem (Debats, 1990, 1996; Prasinis & Tittler, 1984), happiness (Battista & Almond, 1973; Debats, 1990, 1996; Zika & Chamberlain, 1988), and life satisfaction (Battista & Almond, 1973; Debats, 1990; Zika & Chamberlain, 1988), while those low in life meaning fulfillment demonstrate more anxiety (Debats, 1990), psychological distress (Debats, van der Lubbe, & Wezeman, 1993), depression (Debats, 1990; Debats, van der Lubbe & Wezeman, 1993), interpersonal insensitivity (Debats, van der Lubbe & Wezeman, 1993), and lack enthusiasm (Debats, 1990).

Research has shown that attaining high levels of meaning appear to be associated with having multiple sources to achieve it (Debats, 1998). Yet, older adults express a stronger sense of having a life purpose, even as their ability to create future meaning decreases (Reker, Peacock, & Wong, 1987). Women demonstrate that they have a stronger drive to find meaning in their lives than men, although levels of meaningfulness

among adults are not affected by sex (Baum and Stewart, 1990), age (Baum & Stewart, 1990; Debats, 1990), or educational level (Debats, 1990).

Clearly, having a framework for life meaning is strongly associated with fulfillment of meaning. Having both a framework for life meaning and a sense of fulfillment significantly is significantly associated with mental health among undergraduate students, including happiness (Debats, 1990), life satisfaction and positive affect (Chamberlain & Zika, 1988), self-esteem and generously caring (i.e., agapic) attitudes (Prasinos & Tittler, 1984), as well as lower levels of stress (Debats, Drost, & Hansen, 1995). Further examination of their meaning framework and fulfillment, however, has indicated that happiness and self-esteem are most strongly expressed through meaning fulfillment (each at $p < .001$) (Debats, 1996). Lower scorers on both dimensions of life meaning have higher levels of depression and anxiety (Debats, 1990) and a stronger history of therapeutic involvement and duration (Battista & Almond, 1973).

Still, one concern about framework and fulfillment of meaning in life must be noted. Individuals with an “abnormal” philosophy in life among psychotic patients may indicate that their lives have a high level of personal life meaning (Debats, 1998; Roberts, 1991). Roberts (1991) has indicated that once begun, medication denies these patients meaning because they sink into high levels of depression and meaninglessness. Further, Frankl (1973) emphasizes that meaning is irrelevant without the experience of a personal crisis. In other words, a life without crisis presents little opportunity to experience meaning. Young individuals may have little or no opportunity to experience meaning

because their lives have lacked crisis, however, older adults have experienced many “meaning-making” opportunities in their lives.

Examining levels of meaning fulfillment experienced by older women in the current study deepens our understanding of the cognitive component of life meaning. Examining the associations of hardiness and health with meaning fulfillment provides further information regarding the motivational component of meaning. With the application of the personal projects methodology to life meaning, researchers have a means for increasing the depth of their understanding of the cognitive component of meaning through examining the types of daily activities older women find meaningful. The next section examines the literature on the types of activities considered meaningful and the association of hardiness and functional health with types of meaningful activity involvement.

Types of Meaningful Personal Projects

According to Hocking (1957), life meaning may be created, on the one hand, or assigned. Expression of meaning occurs primarily through our daily activities, operationalized in this study as personal projects (Little, 1983). One of the ways personal projects may be analyzed is according to the types of activities considered meaningful, a cognitive component for meaning (Wong, 1989). Little (1993) has developed a “meaning” component in personal projects analysis (based on questions asked) which was developed from the perspective that the pursuit of personal projects is only meaningful if the projects are worthwhile (Little, 1993); generate positive effect, like enjoyment (Little, 1999a); are high in self-identity; are consistent with personal values;

absorb the participant; and are considered acts of importance (Little, 1992, 1998). A number of studies have supported the salience of the personal project's meaning component (Little, 1987, 1989, 1993; Little, Lecci, & Watkinson, 1992), and a review of 1,500 participants across multiple personal projects studies clearly demonstrates that personal projects are meaningful (Little, 1998). Mean ratings of the five meaning dimension questions well exceed the mid-point (lowest rank, 6.07 for enjoyment with 5 as midpoint), with importance and value-congruency dimensions as the strongest indicators.

An examination of the types of projects in which people engage indicates, not surprisingly, that some projects are more meaningful than others (Little, 1987) and that those projects of highest meaning reflect our connectedness to others. A study of 234 adolescents reveals that connectedness, as represented by community service, relationship, sex, and spiritual projects, scores highest on the meaning factor (i.e., that the project is important), while home maintenance, reading, and academic tasks have the lowest levels of meaning scores. A similar examination has not been conducted previously with older populations.

In other studies, research participants selectively report that sources of meaning in life for adults are those types of activities that characterize involvement in life, both positively (as in love and independent pursuits) and negatively (as in death and divorce), as well as events that might be perceived either way (like work or birth) (Debats, 1990). Being connected to others through having a partner either through marriage or by arrangement increases individuals' level of life meaning (Debats, Drost, & Hansen, 1993;

De Vogler & Ebersole, 1980). Indeed, when people are asked what has the most important meaning in their lives, they mention the importance of relationships for fulfilling their sense of meaning (Debats, 1998), and this is especially true among older adults (Burbank, 1992; De Vogler & Ebersole, 1981; Orbach, Iluz, & Rosenheim, 1987). Meaning in life for older adults also includes spirituality (Bonder & Martin, 2000; Orbach, Iluz, & Rosenheim, 1987; Chamberlain & Zika, 1988) and doing good for others among older women (Bonder & Martin, 2000; Prasinis & Tittler, 1984). The oldest-old indicate that continuing to stay active both physically and mentally and living independently gives meaning to their lives (Fallon, 1998). A examination of elders married more than 50 years living in trailer parks emphasized relationships most, then health, pleasure, and service to others as being related to meaning in decreasing importance (Ebersole & DePaola, 1989). The current study's format for personal projects inquiry includes the above outcomes for meaning as project dimensions in order to provide a cohesive view of the types of personal projects that older women find meaningful, thus extending our knowledge of the cognitive component of meaning.

Some research has considered meaning's motivational component by examining associations with types of activities considered meaningful. While the current study is the first to examine the relationship between hardiness and types of meaningful activities, a significant relationship between personality traits to the meaning component of personal projects has been established (Little, Lecci, & Watkinson, 1992). In a study of 147 university students, dimensions of the meaning component correlate significantly with three of the five personality traits, measured by the NEO-PI (Costa & McCrae, 1985,

1992a), i.e., conscientiousness, openness to experience, and neuroticism (negatively related). Conscientiousness, the trait encompassing goal-driven behavior (Costa & McCrae, 1992a, Piedmont, 1998), correlates significantly with four of the five dimensions of meaning, including importance ($p < .01$), enjoyment ($p < .001$), value congruency ($p < .001$), and absorption ($p < .001$) (Little, Lecci, & Watkinson, 1992). The trait of openness to experience, which reflects curiosity and creative self-expression (Costa & McCrae, 1992a; Piedmont, 1998), correlates significantly at the $p < .01$ level with meaning dimensions of enjoyment and value congruency only (Little, Lecci, & Watkinson, 1992). And the emotional instability of neuroticism (Costa & McCrae, 1992b; Piedmont, 1998) displays a significant negative relationship to the meaning component's dimension of enjoyment at the $p < .001$ level (Little, Lecci, & Watkinson, 1992). The importance of the findings between personal projects and personality traits clearly provides “theoretically coherent links” (p. 518) between personality traits and personal project assessment (Little, Lecci, & Watkinson, 1992). Further, the two strongest indicators for meaning, conscientiousness and openness to experience, found by Little, Lecci, and Watkinson (1992) are also the two strongest personality trait indicators associated with hardiness, as found by Ramanaiah, Sharpe, & Byravan (1999), suggesting a strong relationship between hardiness and the meaning components of personal projects.

The current study will extend our understanding of what types of personal projects are most – and least! – meaningful for older women, further extending our understanding of the cognitive component of meaning. Additionally, it extends our

knowledge of the motivational component of meaning by examining, for the first time, the association of hardiness and health with the types of personal projects older women consider meaningful. The motivational association of hardiness with meaning in life may also be examined as the relationship between these two constructs and will be examined next.

Hardiness Factors Associated with Life Meaning

Exploring the association of levels of hardiness in older women with meaning framework and fulfillment allows us to examine the motivational (i.e., hardiness), cognitive (i.e., framework), and affective (i.e., fulfillment) components of meaning (Wong, 1989). An additional relationship between these three components may be established, however, and concerns the relationship of the factors identified as meaning framework and meaning fulfillment through principal components analysis to the individual components of hardiness, namely commitment, control, and challenge (Kobasa, 1979). While previous research has established a relationship between aspects of hardiness and meaning as lived out in people's lives (Adams, 1998; Maddi & Kobasa, 1984), the current study extends that knowledge by examining the factorial links between the constructs of hardiness and meaning for the first time, providing important empirical knowledge of the relationship between hardiness' commitment, control, and challenge aspects (Kobasa, 1979) to meaning framework and fulfillment (Battista & Almond, 1973).

Theoretic links may also be established between personal projects factors and meaning framework and fulfillment, by examining the relationship between factors

associated with both. Additionally examining the relationship between the construct components of hardiness (Kobasa, 1979) and the factors associated with life meaning found in personal projects may further enhance our knowledge of life meaning.

Personal Projects Factors Associated with Life Meaning

Personal projects research has included a meaning component, which identifies projects as being worthwhile (Little, 1993), and this component has been related extensively to outcome measures of well being and quality of life (Brunstein, 1993; Little, 1987, 1989, 1993; Little, Lecci, & Watkinson, 1992; McGregor & Little, 1998; Omodei & Waring, 1990; Palys & Little, 1983; Ruehlman & Wolchik, 1988; Yetim, 1993). A meta-analysis of personal projects studies reveals, however, that the meaning component, with the exception of the enjoyment dimension being modestly significant, is a poor predictor of well being (Wilson, 1990). Instead, efficacy and freedom from stress, dimensions not associated with the meaning component, consistently demonstrate a very robust relationship with well being.

In order to gain an understanding of the relationship of project meaning to well being, McGregor and Little (1998) expanded the number of meaning dimension questions and factor analyzed both the project dimensions and a variety of well being and meaning outcome measures in a two-part study with university students. Analysis of the outcome measures produced a two factor solution, happiness (i.e., an enthusiastic and exciting life) and meaning (i.e., having purpose and goal clarity), although happiness strongly dominated most of the outcome measures.

Principal components analysis of the project dimensions yielded five factors (eigenvalues greater than one) which loaded as efficacy, integrity, self-benefit, fun, and external support factors (McGregor & Little, 1998). Correlations between project and well being factors with the first group of participants indicated that the efficacy factor is significantly correlated with happiness ($p < .001$) and that the integrity factor is significantly correlated with meaning ($p < .007$). Integrity factor dimensions involved questions about importance, commitment, self-identity, and value-congruency. Repeating the study with another group of university students, however, indicated that efficacy not only correlated significantly with happiness but with meaning ($p < .001$), as well. Regression analysis revealed, however, that integrity partially mediates the relationship between efficacy and meaning.

The current study extends the work of McGregor and Little (1998) by conducting principal components analysis on the dimensions of personal projects used in the present study. The project factors will then be correlated to a meaning measure (Debats, 1998) in order to determine what project factors are associated with having a framework for meaning, as well as fulfilling life meaning. Previous research has indicated a relationship between the project factor of integrity and meaning (McGregor & Little, 1998), however, the meaning factor consisted of only three questions. The current study will extend our understanding of the relationship of projects factors, including integrity, to two components of meaning, namely, meaning framework (a cognitive component) and meaning fulfillment (an affective component).

Additional relationships to life meaning will be identified through an examination of the relationship of the three components of hardiness, i.e., commitment, control, and challenge (Kobasa, 1979), to the factors associated with meaning in personal projects in order to clearly elucidate the qualities of personal projects that are linked to hardiness and meaning. Doing so, further deepens our research understanding of the relationship between hardiness and meaning as manifest in daily pursuits. Relating hardiness components to meaningful personal project factors as well as to meaning framework and fulfillment will provide researchers with an integrative, holistic understanding of meaning in the lives of older women for the first time.

Chapter 3: Method

Participants

The current study examined 151 women over the age of 65 years (mean age: 77.83 years) living independently as participants. Size of study population was consistent with the published personal projects methodology study (McGregor & Little, 1998) applying factor analysis to look at meaning in life upon which this study was based and calculated according to the widely used N:variable minimum ratio of 5:1 for principal components analysis (Barrett and Kline, 1981; Tabachnick and Fidell, 1989). The size of the current sample equals or parallels personal projects studies in top-tier published studies using outcome measures (Little, 1992; McGregor & Little, 1998; Palys & Little, 1983).

At the time of participation, 88 of the older women lived in the community (58.28%); 62 lived independently in a retirement community (41.06%); and one lived in a trailer park (0.66%). A majority of 74 women were widowed (49.67%); 55 were married (35.76%); 16 were divorced, and 6 had never married (14.57% for both). The length of time widowed stretched from 13 months to 40 years. Ethnically, 143 participants were White (94.7%); two each were African American, Asian, and Hispanic; and one each were Native American or “other” (not described) (5.28% total). Curiously, while many more ethnic minority participants agreed to participate in the study, very few actually completed it. In terms of work status, 123 participants were retired (81.46%); two continued to work full time while seven worked part-time (5.96% for both); 13 described themselves as homemakers; two were unemployed; one was disabled; and three rated

themselves as “other” (one described herself as writing a book and doing volunteer work while the other two did not elaborate). Educational levels extended from one with less than seven years of schooling to 25 with graduate degrees; others included one with junior high experience; three with some high school; 27 having graduated high school; 47 with some college; 25 as college graduates; 22 with some graduate of professional training; and 25 with graduate degrees. In all, 78.82% of the older women had some college or professional level training or greater.

The participants were divided into high ($M = 3.32$; $SD = .13$) and low hardy ($M = 2.82$; $SD = .46$) groups following Funk’s (1990) recommendation of determining high hardiness as those who score above the median on each of the three hardiness components, i.e., commitment, control, and challenge. Low hardiness equates to those who scored below the median on all three hardiness components. Demographic information by count and percentage concerning marital status, ethnicity, educational level achieved, and work status according to level of hardiness is represented in Table 1.

Table 1.

Demographics of Study Participants (N = 151) According to Level of Hardiness

Demographics	High Hardiness	Low Hardiness	Total
Marital Status:			
Never married	0 (0.00%)	6 (3.97%)	6 (3.97%)
Married	17 (11.26%)	37 (24.50%)	54 (35.76%)
Widowed	11 (7.28%)	64 (42.38%)	75 (49.67%)
Divorced	4 (2.65%)	12 (7.95%)	16 (10.60%)
Ethnicity:			
African American	1 (0.66%)	1 (0.66%)	2 (1.32%)
Asian	0 (0.00%)	2 (1.32%)	2 (1.32%)
Hispanic	0 (0.00%)	2 (1.32%)	2 (1.32%)
Native American	0 (0.00%)	1 (0.66%)	1 (0.66%)
White	31 (20.53%)	112 (74.17%)	143 (94.70%)
Other	0 (0.00%)	1 (0.66%)	1 (0.66%)
Education:			
Under 7 years	0 (0.00%)	1 (0.66%)	1 (0.66%)
Junior high	0 (0.00%)	1 (0.66%)	1 (0.66%)
Some high school	0 (0.00%)	3 (1.99%)	3 (0.99%)
High school	4 (2.65%)	23 (15.23%)	27 (17.88%)
Some college	12 (7.95%)	35 (23.18%)	47 (31.13%)
College graduate	3 (1.99%)	22 (14.57%)	25 (16.56%)
Professional training	4 (2.65%)	18 (11.92%)	22 (14.57%)
Graduate degree	9 (5.96%)	16 (10.60%)	25 (16.56%)
Work status:			
Full time job	0 (0.00%)	2 (1.32%)	2 (1.32%)
Part time job	5 (3.31%)	2 (1.32%)	7 (4.64%)
Retired	25 (16.56%)	98 (64.90%)	123 (81.46%)
Unemployed	0 (0.00%)	2 (1.32%)	2 (1.32%)
Homemaker	2 (1.32%)	11 (7.29%)	13 (8.61%)
Disabled	0 (0.00%)	1 (0.66%)	1 (0.66%)
Other	0 (0.00%)	3 (1.99%)	3 (1.99%)
Where live:			
Community	25 (16.56%)	63 (41.72%)	88 (58.28%)
Retire community	7 (4.64%)	55 (36.42%)	62 (41.06%)
Other	0 (0.00%)	1 (0.66%)	1 (0.66%)

Chi square analyses revealed some significant differences in older women's level of hardiness and some of the demographics characteristics. A two by two analysis consisting of ranking by age (above and below the mean of 77.83 years) and by level of hardiness demonstrated that women high in hardiness ($M = 75.08$ years) were significantly more likely to be younger than low hardy women ($M = 78.58$ years), $\chi^2 (1, N = 151) = 7.09, p < .01$. Hardy older women were significantly more likely to be married than low hardy women compared to any other marital status, $\chi^2 (1, N = 151) = 5.33, p < .05$. Level of hardiness by level of education above to below graduate degree status indicated that high hardy older women were also significantly more likely to have earned a graduate degree, $\chi^2 (1, N = 151) = 3.40, p < .05$. Level of hardiness to level of working (part-time or any other working status) demonstrated that hardy women are significantly more likely to be working part time, $\chi^2 (1, N = 151) = 11.09, p < .01$. Significant differences were also noted in living arrangements. Hardy older women were significantly more likely to live within the community, $\chi^2 (1, N = 151) = 6.58, p < .01$, than low hardy older women, while low hardy older women were found to significantly prefer living in a retirement community, $\chi^2 (1, N = 151) = 6.18, p < .05$ compared to those who were high in hardiness.

Procedure

Participants were sought through personal contacts; colleagues; volunteer organizations (the Shady Side Rural Heritage Society, Inc./Captain Salem Avery House Museum and the Annapolis and Anne Arundel County Conference and Visitors' Bureau);

in neighborhoods; seniors only apartments; retirement communities; the Anne Arundel County Department of Aging; and the South County Senior Center, Edgewater, Maryland. Participant recruitment occurred in two ways: either through individual solicitation or through group presentations. Potential participants in the study were informed of the purpose of the study in writing, assured of strict confidentiality, and instructed that they may withdraw from the study at any time. A signed consent form explaining the purpose of the study was obtained from each participants.

Group presentations were conducted at the retirement apartments and communities, at County Department of Aging programs, and at numerous classes offered by the Senior Center. These presentations explained the scope of the study and covered all of the points of the phone interview, ending with a request to those who were eligible and interested to participate. Those interested in participating were then given the study package, consisting of the cover letter explaining the purpose of the study (see Appendix A), the Consent Form (See Appendix B), the study measures with instructions for each, and a stamped return envelope to the researcher. Each package was assigned a code to ensure confidentiality.

The study was designed to allow older women to participate in one of two ways: either by completing the forms at their own pace individually at home, returning the completed forms in a stamped envelope addressed to the researcher or in a single sit-down engagement with a group. The pilot study was conducted with three individuals one-on-one with the investigator. When the official study began, two groups (37 older women total) completed the study forms in one 90 to 120 minute sitting. Participants in

these two groups found the group method difficult because the lengthiness of the forms was very fatiguing for the elderly. When asked if they would have preferred to complete the forms on their own time as individuals, they unanimously agreed “yes”. Indeed, a number of participants claimed that they would not have participated in the study if they had known it would involve so much work for such a long period of time. Others complained of eye, mental, and body stress with the group procedure. Consequently, the method of completing the forms independently at the participant’s own pace was adopted for the rest of the study (114 participants).

Measures

The data for this study result from the administration of a package of assessments containing background and demographic information, the Life Regard Index Revised (LRI-R) (Debats, 1990) for meaning, the Personal Projects Analysis (PPA) (Little, 1983) for salient daily activities, the Dispositional Resilience Scale (DRS) (Bartone, Ursano, Wright, & Ingraham, 1989) to measure hardiness, and the Medical Outcomes Study Short Form Health Survey (SF-36) (Ware & Sherbourne, 1992) for functional health.

Background and demographic information. Older women living independently completed a questionnaire seeking general information for each including age, marital status, ethnicity, education level achieved, work status, and type of living arrangement (see Appendix C). Specifically, marital status requested with an additional question asking the date widowed for those whose husbands were dead. Possible ethnicity categories consisted of African American, Asian, Caucasian, and “ethnicity not listed”. Education level achieved was indicated according to “no high school”, “some high

school”, “high school graduate”, “some college”, “college graduate”, “some graduate coursework”, and “graduate degree”. Options for living arrangement included “community (city, town, suburb, rural)”, “retirement community”, and “other (describe)”.

Meaning. Previous factor analysis research on the Purpose in Life (PIL) meaning measure (Crumbaugh and Maholick, 1964) by McGregor and Little (1998) suggested that meaning in life consists of two elements: having values and purpose as well as having clear goals and aims to guide behavior. Only three items in the PIL, however, reflected these two elements. Consequently, a meaning measure that extended these two elements was sought. The 28-item Life Regard Index Revised (LRI-R) (Debats, 1998) was selected as the measure for life meaning, because it consists of two subscales which provide a cognitive appraisal of meaning in life, including measuring the degree to which individuals have a meaningful framework or life goals for their life and the degree to which individuals consider that they are fulfilling or have fulfilled their life goals or meaning framework (Battista & Almond, 1972; Debats, 1998) (see Appendix C). Also, the LRI-R (Debats, 1998) was selected for use in the current study because it parallels the cognitive and affective components of meaning according to Wong (1989), contributing to the evaluation of Wong’s approach to meaning.

The LRI-R strengthens the original LRI of Battista and Almond (1973) methodologically by randomizing item order and narrowing the response alternatives to three – from “don’t agree” (1), “no opinion” (2), to “agree” (3) – to avoid possible consequences found in an extreme response set (Wiggins, 1973). Scoring involves four subscales: positive or negative meaning framework and positive or negative meaning

fulfillment (Debats, 1990). Cronbach alphas for the measure equal .86 for the Index overall, .80 for fulfillment and .79 for framework (Debats, 1990). Test-retest reliability equals .80 for the Index, .73 for framework, and .79 for fulfillment (Debats, van der Lubbe, & Wezemen, 1993). Discriminant construct validity indicates a significant level ($p < .001$) of happiness and life satisfaction with high scores on the measure (Debats, 1990), and concurrent validity with the Purpose in Life Scale of $p < .01$ for both framework and fulfillment (Zika & Chamberlain, 1992).

Salient daily activities (Personal Projects). This study applies the methodology of Personal Projects Analysis (PPA) (Little, 1983) to consider the relationship between salient daily activities and factors associated with meaning in older women (see Appendix E). The methodology, while not strictly standardized, involves several basic steps that are adaptable to the practical or theoretical concerns of any particular study (Little, 1999a). First, participants are asked to generate a list of ten personal projects (salient daily activities) in which they are currently engaged or going to begin within the next month (Little, 1983). Participants are instructed to take ten (10) minutes to list current projects, during which they typically list some fifteen (15) projects apiece (Little, 1999a), and then are asked to select ten (10) projects that, as a whole, provide the most complete information about their lives (McGregor & Little, 1998). Second, to attain data on goal characteristics, participants in this study then rate each project on 30 dimensions or questions, using a 11-point scale, ranging from “not at all” (“0”) to “very much” (10). The 30 dimensions chosen demonstrate a theoretical or empirical relationship to the subject under analysis (i.e., meaning in life), and most have been developed in previous

studies, such as project importance, value congruency, and self-identity with projects that have meaning (Little, 1983, 1989; McGregor & Little, 1998; Palys & Little, 1983).

While the questions for each category of personal projects may be found in Appendix E, some of the types of projects reported in the current study and associated with a number of the dimensions include the following:

- Activities of daily living – my day, rise early stay busy sleep well
- Health/body – exercise and weight training; exercise more; water aerobics, hot tub, exercise
- Reading – read at least two challenging books monthly; read more history novels instead of mysteries
- Family – sort and distribute family photos; pen pal with grandchildren
- Community – volunteer at local hospital; volunteer drive, Caring Network
- Hobbies – finish counted stitch project; listen to the news; design a wedding dress for a Victorian doll
- Estate/Home – end possession of personal firearms; recycle papers/garbage; mow the grass; clean out files
- Recreation – play Mah Jong; play bridge; crossword puzzles
- Vacations/trips – attend Elderhostels; England trip
- Metaprojects – reduce cost of prescription drugs
- Cultural aesthetic – visit museums, archeological digs, etc.; concerts, plays, museums
- Classes– attend autobiography classes; learn Spanish; learn computer s kills

- Mate/husband – steady boyfriend; spend time with husband

The resulting data was subjected to two forms of analysis. First, principal components analysis with varimax rotation, retaining eigenvalues over one, were conducted with the responses to the 30 dimensions per project to apply to correlational and chi squares procedures with other measures. Second, the projects reported by the participants were assigned wherever possible to one of 21 categories that had been applied by Little (1987) as a means of coding the projects with a sample of college-aged students.

Because PPA is a methodology and not a test (Little, 1983), reliability is not an issue. Indeed, this method is designed to examine individual changes in projects over time. A high level of reliability would indicate that the method is not successful. Further, the variability of questions involved from one study to the next make establishment of validity contingent upon the study at hand through significance of correlations to previously established measures involved. Similarly, internal consistency levels depend upon comparative measures. For instance, a previous study on life meaning with personal projects established a Cronbach's alpha for meaning in personal projects and the Purpose in Life Scale (a meaning in life measure) of .90 (McGregor & Little, 1998).

Hardiness. The Dispositional Resilience Scale (DRS) (Bartone, Ursano, Wright, & Ingraham, 1989) consists of 45 items which provide separate evaluations for the three dimensions of hardiness, i.e., commitment, control, and challenge (Kobasa, 1979; Maddi & Kobasa, 1984) (see Appendix F) that have been confirmed through principal components analysis (varimax rotation) (Bartone, Ursano, Wright, & Ingraham, 1985).

Items were answered on a four point scale ranging from “Not true at all” (0) to “Completely true” (3). Following the recommendation of Funk (1990) in his meta-analysis of hardiness research, a composite score for hardiness was achieved through determining the median scores for each of the hardiness components, i.e., commitment, control, and challenge, and retaining those who score above the median on all three components as hardy. Those low in hardiness score below the median on at least one component to all three. Previous studies (Kobasa, 1979, Maddi & Kobasa, 1984) have added all of the scores together and then made a median split into high and low hardiness groups, allowing for the possibility that a participant classified as high in hardiness may only be above the median for one component. Another way of denoting hardiness has involved adding the scores and keeping the upper third as hardy and the lower third as nonhardy, eliminating those in the middle scoring range (Rhodewalt & Zone, 1989).

Regarded as a “third-generation” scales for measuring hardiness, the DRS (Bartone et al., 1989) employs several improvements over previous hardiness scales (Funk, 1990). The DRS (Bartone et al., 1989) includes fifteen positively keyed items, in contrast to older scales with 100% negative indicators. Further, the DRS (Bartone et al., 1989) has an equal number of items to measure each of the components of hardiness which allows for the use of raw scores for tabulation and was not present in older scales. The internal consistency levels of the scale surpass previous scales and range from .62 to .82 (Bartone, Ursano, Wright, & Ingraham, 1989). The overall Cronbach’s reliability alpha equals .85.

Functional Health. The 36-items of the SF-36 assess physical, mental, and psychosocial health areas in detail, including physical functioning, limitations due to health problems, bodily pain, social functioning, mental health (general), role limitations due to emotional problems, vitality, and general health perceptions (Ware & Sherbourne, 1992) (see Appendix G). Response choices vary according to the question asked: for instance, responses may require a “yes” or “no” answer (questions 4 and 5) or range from “excellent” to “poor” among others. Each of the subscales are scored separately and range from “0” for lowest functioning level to “100” for highest level. Applied to a general practice population, reliability coefficients range from .74 to .93 for each dimension, construct validity is supported, and Cronbach’s alpha exceeds .85 for all components, except social functioning (.73) (Brazier, Harper, Jones, O’Cathain, Thomas, Usherwood, and Westlake, 1992).

Analysis

Question 1: What types of projects are personally meaningful to older women?

To identify categories of personal projects that are meaningful to older women, the individual projects listed by each participant were placed, where possible, into the 21 generic categories established in previous research with adolescents (Little, 1987, 1989) which reliably coded 94 percent of projects. The raters discussed any discrepancies and mutually agreed upon the proper category for each one. Discrepancies generally resulted when a reported activity could be assigned to more than one potential category, such as “Go sailing with family”. The raters agreed to assign such projects to the first activity listed, resulting in a 100% agreement. These generic categories included interpersonal,

recreational, health, cultural, family, intrapersonal, and spiritual pursuits, among others. Because this study examines older women, however, some change in project classification identified in the pilot study was appropriate to more clearly reflect the life experiences of this population. The category of “intrapersonal” was extended to include the “activities of daily living (ADL)”, such as bathing, grooming, bedmaking, eating, and other daily personal maintenance endeavors, as all intrapersonal projects fit the ADL classification. The adolescent “boyfriend/girlfriend” category was changed to that of “mate/husband”. The separate categories of “occupational” and “vocational” were combined, as very few women over 65 years of age continue to work. They do, however, shop, as indicated in to pilot study, so this category was added. Further, the adolescent category of “good time/drink/drugs” was deleted and a category for “caregiving” was created to more closely reflect elderly experience.

Absolute and relative frequency levels for each generic category were tabulated to obtain information on the categorical types of personal projects in which older women engage. In order to understand which personal projects are most meaningful according to older women, a mean project dimension score for item number 14 of the personal projects dimensions (see Appendix E) which asks: “How personally meaningful is this project to you?” was tabulated for each of the generic categories. The resulting information provides a simple overview of what categories of personal projects are considered personally meaningful by older women.

Question 1A: In what types of meaningful projects do hardy vs. nonhardy older women engage? Study participants were divided into hardy and nonhardy groups based

on their responses on the DRS (Bartone et al., 1989). Those participants in the hardy group demonstrated above median scores on each of the three hardiness dimensions (i.e., commitment, control, and challenge) (Kobasa, 1979) according to the recommendation of Funk (1990). Nonhardy group members included all those who fail to achieve median scores on all three dimensions of hardiness. Personal projects of participants in the two groups were sorted according to generic categories. All of the generic categories of personal projects found above were then broken out according to hardy and nonhardy older women in order to establish absolute and relative frequency differences, as well as the mean project dimensional scores for meaning (according to responses to personal projects question #14, “How meaningful is this project to you?”). Further, strength of association between level of hardiness, as well as its components of commitment, control, and challenge, with level of participation by activity were established through chi square analyses.

Question 1B: What is the relationship of functional health to meaningful projects in which hardy vs. nonhardy older women participate? The categories of meaningful personal projects were divided into high and low groups according to their functional health scores (overall and by individual dimensions of physical, mental, and psychosocial health) on the SF-36 (Ware & Sherbourne, 1992). Because each participant could report up to 10 projects per person, providing up to 10 responses to question #14 (“How meaningful is this project to you?”) but only respond to the measure for functional health once, the following procedure was applied to permit chi square analyses. It was assumed that the responses to the SF-36 (Ware & Sherbourne, 1992) were independent and would

remain the same no matter which project was reported by each participant. Therefore, the functional health responses were replicated to match the number of projects per person (up to 10 times maximum). Then, univariate ANOVA analysis was conducted according to type of project, level of hardness and level of each functional health dimension as the independent variables upon the dependent variable of project meaning (#14) in order to identify any significant interactions between hardness and functional health to project.

Question 2: What are the factors for meaning in life? Battista and Almond's (1973) LRI scale for framework and fulfillment of life meaning has been subjected to principal components factor analysis by Zika and Chamberlain (1988) and again, in the revised form, by Debats (LRI-R) (1990), retaining those factors whose eigenvalues are greater than one. The LRI and LRI-R scales differ only in two regards. LRI (Battista & Almond, 1973) questions that had been sequenced with positively phrased questions followed by negatively phrased ones were randomly sequenced in the LRI-R (Debats, 1990, 1998) to avoid rank order effects. Further, shorter 3-point Likert-scales were employed to avoid extreme response set effects, according to the recommendation of Wiggins (1973). The current study applied the principal components analysis by Debats (1990) for the LRI-R which resulted in a two factor model for meaning, i.e., framework and fulfillment, as originally established by Battista and Almond (1973) and is presented in Table 14.

Question 2A: What is the relationship of hardness and health in older women to the LRI-R (Debats, 1990) factor loading of meaning framework? LRI-R meaning framework was examined in several ways. The strength of the relationship between

hardiness and the LRI-R (Debats, 1990) meaning framework (hereafter referred to as “LR meaning framework”) factor scores was identified through correlation analysis.

Similarly, each of the functional health dimensions were correlated with the LR meaning framework factor scores. Chi square analyses demonstrated the strength of the association between the levels of hardiness and each of the functional health dimensions with the level of LR meaning framework. Univariate ANOVA analyses with level of hardiness and each of the functional health dimensions as independent variables upon the dependent variable of LR meaning framework factor scores was also conducted, however, those results may be found in Appendix H.

Question 2B: What is the relationship of hardiness and health in older women to the LRI-R (Debats, 1990) factor loading of meaning fulfillment? As with question 2A, meaning fulfillment was examined in similar ways. Correlational analyses identified the strength of the relationship between hardiness and the LRI-R (Debats, 1990) meaning fulfillment (hereafter “LR meaning fulfillment”) factor scores, as did each of the functional health dimensions with the LR meaning fulfillment factor scores. Chi square analyses demonstrated the strength of the association between the levels of hardiness and each of the functional health dimensions with the level of LR meaning fulfillment. Univariate ANOVA analyses with the meaning question (#14 personal projects analysis) as the dependent variable with level of hardiness and each of the functional health dimensions as independent variables was conducted and may be found in Appendix H.

Question 3: What are the personal project factors associated with meaning in life (i.e., framework and fulfillment)? Previous factor analysis with the personal projects

methodology (McGregor & Little, 1998) followed a procedure of averaging each participant's scores per dimension (30 questions asked in all) across all of the projects presented, resulting in 30 dimensional mean scores per participant. These mean scores were then entered into principal components analysis and further statistical analyses were conducted. This procedure minimized the range and intent of the participants' responses by compressing them to the mean for each question dimension. As example, if a participant ranked 5 of her projects as a "10" on the meaning question (#14) and 5 other projects as "0" on the same dimension, the mean score result would be a "5". This mean score, however, neither expresses nor represents the participant's intentions. In contrast, this study utilized a new procedure in order to maximize the ratings of all of the projects through the factor analysis process by retaining all of the dimension values provided by the study participants. The principal components analysis with varimax rotation, retaining those eigenvalues over one, was conducted by applying all of the personal projects dimension values provided by the study participants with the assumption that two of the resultant factor scores would represent meaning framework and meaning fulfillment. Each of the item scores were multiplied by the factor scores for personal projects meaning framework ("PP meaning framework") and meaning fulfillment ("PP meaning fulfillment"), summed by participant, and then divided by the number of projects per person. The standard procedure for computing factor scores by summing the multiplied standardized z scores by the coefficient scores was not applied in this study because in the previous question (#2), coefficient scores were not available to compute factor scores.

Therefore, in order to have consistency for analyses, the same procedure as used in question 2 was applied to this question.

Mean score values of the personal project factor scores that appeared to represent personal projects (PP) meaning framework and fulfillment were then correlated with the mean scores of each factor of LR meaning framework and fulfillment established in question 2 to obtain a zero-order correlation matrix. The results indicated the strength of the relationships between the expression of meaning framework and fulfillment through personal projects with the cognitive appraisal of meaning framework and fulfillment through the LRI-R (Debats, 1990). Chi square analyses were also conducted to demonstrate the strength of the association between level of PP meaning framework and fulfillment to the LRI-R (Debats, 1990) levels of meaning framework and fulfillment.

Question 3A: What is the relationship of hardiness and health in older women to the personal projects factor loading associated with meaning framework? Correlational analyses were conducted with PP meaning framework factor scores and the scores on the DRS scale for hardiness (Bartone et al., 1989) to establish the strength of this relationship. Chi square analysis between level of PP meaning framework and level of hardiness tested the strength of that association.

Similarly, correlations between PP meaning framework and each of the functional health dimensions were computed, as were chi square analyses between level of PP meaning framework and level of each of the functional health dimensions.

Univariate analyses with PP meaning framework factor scores as the dependent variable and level of hardiness and level of each of the functional health dimensions were also conducted and are presented in Appendix H.

Question 3B: What is the relationship of hardiness and health in older women to the personal projects factor loading associated with meaning fulfillment? The same procedures as question 3A were conducted for this question with the exception that PP meaning fulfillment factor scores were used for correlational and univariate analyses and level of PP meaning fulfillment were applied to chi square analyses. Univariate analyses are presented in Appendix H.

Question 4: What is the relationship of the meaning factors (i.e., framework and fulfillment) to the three components of hardiness, specifically

Question 4A: What is the relationship of the LRI-R (Debats, 1990) meaning factor associated with framework to the three components of hardiness? The three components for the construct of hardiness (i.e., commitment, control, and challenge) (Kobasa, 1979) were subjected to correlational analyses with the LR meaning framework factor scores. Chi square analyses were conducted with each of the levels of commitment, control, and challenge with level of LR meaning framework.

Univariate ANOVA analyses examined level of the LRI-R (Debats, 1990) meaning framework as the dependent variable and level of each of the hardiness components and level of each of the functional health components as independent variables. These results are printed in Appendix H.

Question 4B: What is the relationship of the meaning factor associated with fulfillment to the three components of hardiness? The same procedures identified in question 4A were applied to this question with the exception that LR meaning fulfillment factor scores replaced the LR meaning framework factor scores where appropriate. Similarly, level of LR meaning fulfillment replaced level of LR meaning framework where appropriate, and univariate ANOVA analyses were conducted and may be found in Appendix H.

Question 5: What is the relationship of the personal projects factors associated with meaning to the three components of hardiness, specifically

Question 5A: What is the relationship of the personal projects factor(s) associated with meaning framework to the three components of hardiness? The three components for the construct of hardiness (i.e., commitment, control, and challenge) (Kobasa, 1979) were subjected to correlational analyses with the PP meaning framework factor scores. Chi square analyses were computed with each of the levels of commitment, control, and challenge in association with level of PP meaning framework.

Univariate ANOVA analyses were examined with level of the PP meaning framework as the dependent variable and level of each of the hardiness components and level of each of the functional health components as independent variables. These results may be found in Appendix H.

Question 5B: What is the relationship of the personal projects factor(s) associated with meaning fulfillment to the three components of hardiness? Again, the same procedures identified in question 5A were applied to this question with the

exception of PP meaning fulfillment factor scores replacing the PP meaning framework factor scores where appropriate. Similarly, level of PP meaning fulfillment replaced level of PP meaning framework where appropriate, and univariate ANOVA analyses may be found in Appendix H.

Table 2 presents an overview of the research questions and their respective statistical analyses.

Table 2.

Summary of Research Questions and Respective Statistical Analyses

	Research questions	Statistical analyses
1.	What types of projects are personally meaningful to older women?	Absolute, relative, and cumulative frequencies according to project types; mean score levels of meaningful projects
1A.	In what types of meaningful projects do hardy vs. nonhardy older women engage?	Absolute, relative, and cumulative frequencies according to project types and hardiness level; chi square analyses for significance by project with hardiness level against above and below mean score on meaning
1B.	What is the relationship of functional health to meaningful projects in which hardy vs. nonhardy older women participate?	Univariate analyses of hardiness and health upon personal project meaningfulness
2.	What are factors for meaning in life?	Principal components analysis of meaning scale by Debats (1990)

	Research questions	Statistical analyses
2A.	What is the relationship of hardiness and health in older women to the LRI-R (Debats, 1990) factor loading of meaning framework?	Correlation analyses of hardiness and health to meaning framework; chi square analyses for strength of association
2B.	What is the relationship of hardiness and health in older women to the LRI-R (Debats, 1990) factor loading of meaning fulfillment?	Correlational analyses of hardiness and health to meaning fulfillment; chi square analyses for strength of association
3.	What are the personal project factors associated with meaning in life (i.e., framework and fulfillment)?	Principal components analysis of personal projects to identify meaning framework and fulfillment factors
3A.	What is the relationship of hardiness and health in older women to the personal projects factor loading associated with meaning framework?	Correlational analyses of hardiness and health to PP meaning framework factor; chi squares analyses for strength of association
3B.	What is the relationship of hardiness and health to the personal projects factor loading with meaning fulfillment?	Correlational analyses of hardiness and health to PP meaning fulfillment factor; chi square

	Research questions	Statistical analyses
4A.	What is the relationship of the meaning factor associated with LRI-R (Debats, 1998) framework to the three components of hardiness?	Correlational analyses of LR meaning framework to commitment, control, and challenge, as well as each of the health dimensions; chi squares analyses with each for strength of association
4B.	What is the relationship of the meaning factor associated with LRI-R (Debats, 1998) fulfillment to the three components of hardiness?	Correlational analyses of LR meaning fulfillment to commitment, control, and challenge, as well as each of the health dimensions; chi square analyses with each for strength of association
5A.	What is the relationship of the personal projects factor(s) associated with meaning framework to the three components of hardiness?	Correlational analyses of factor(s) associated with PP meaning framework with commitment, control, and challenge; chi square analyses with each

Research questions	Statistical analyses
<hr/>	
5B. What is the relationship of the personal projects factor(s) associated with meaning fulfillment to the three components of hardiness?	Correlational analyses of factor(s) associated with PP meaning fulfillment factor to commitment, control, and challenge; chi square analyses with each

Chapter Four: Results

This chapter reviews the results of statistical analyses regarding this study's five research questions. Question 1 examines the types of projects that are personally meaningful to older women; how those meaningful projects differ according to level of hardiness; and how functional health levels are associated with differing levels of meaningful projects for older women. Next, Questions 2 and 3 explore the factors associated with meaning framework and meaning fulfillment according to principal components analysis for the meaning perception measure (LRI-R, Debats, 1990) and with the personal projects methodology (Little, 1983), respectively. Questions 4 and 5 analyze the relationship of hardiness components (i.e., commitment, control, and challenge) to meaning framework and fulfillment, according to cognitive appraisal (LRI-R, Debats, 1990) and the expression of meaning framework and fulfillment through personal projects, respectively, as well as the strength of those relationships.

Question 1: What types of projects are personally meaningful to older women?

A total of 1319 projects were described by the 151 participants in the study resulting in a mean of 8.74 projects being reported (range: 1 to 10 projects per person). Individual projects were categorized according to 21 possibilities described in chapter 3 and first used by Little (1987). All of the project categories are displayed in Table 3 and are presented according to absolute, relative, and cumulative frequencies.

Table 3.

Categorization of 1319 Projects of 151 Older Women According to Absolute, Relative, and Cumulative Frequencies

Absolute Frequency	Project category	Relative frequency (%)	Cumulative frequency (%)
218	Hobbies	16.53	16.53
177	Community	13.42	29.95
148	Home/estate	11.22	41.17
113	Health/body	8.58	49.75
90	Family	6.82	56.57
75	Academic/classes	5.69	62.26
64	Recreation	4.85	72.72
62	Reading	4.70	77.42
56	Spiritual	4.25	81.67
47	Vacations/trips	3.56	85.23
41	Occupational/vocational	3.11	88.34
29	Shopping	2.20	90.54
28	Metaprojects	2.12	92.66
26	Sports	1.97	94.63
23	Finance/legal	1.74	96.37
14	Activities of daily living	1.06	97.43
14	Caregiving	1.06	98.49
12	Recreational	0.99	99.48
8	Mate/husband	0.61	100.09*

* Rounding off percentages resulted in slightly more than 100%

In order to examine how meaningful each project was per participant, the mean score of all responses to the personal projects question #14 (“How meaningful is this project to you?”) was calculated by summing all scores on this question and dividing by the number of projects reported overall (1319). The mean score for question #14 was 8.01 on a possible response range of 0 to 10. Overall, the results indicate that some types

of personal projects by older women are considered more meaningful than others. Those project categories scoring above the mean score on question #14 were considered more meaningful and Table 4 presents this information for all participants in descending order.

Table 4.

Meaningful Project Categories for All Older Women Participants (N = 151) According to Number of Projects within Category, Percentage of Projects, and Mean Score

Project category	Number within category	Percentage of projects	Mean score
Mate/husband	8	0.99	9.50
Caregiving	14	1.73	9.21
Spiritual	55	6.82	9.13
Occupational/vocational	37	4.59	9.00
Family	90	11.17	8.97
Sports	24	2.98	8.83
Recreation	23	2.85	8.70
Interpersonal	73	9.06	8.66
Vacations/trips	44	5.46	8.64
Cultural/aesthetic	23	2.85	8.61
Metaprojects	27	3.35	8.52
Hobbies	217	26.92	8.23
Health/body	112	13.90	8.17
Reading	59	7.32	8.12
Community	174	13.19	7.76*
Recreation	63	4.78	7.63*
Activities of Daily Living	13	.99	7.62*
Academic/classes	74	5.61	7.57*
Shopping	28	2.12	7.07*
Estate/home	153	11.60	6.35*
Total	(1319)		

* below mean (M = 8.01)

Question 1A: In what types of meaningful projects do hardy vs. nonhardy older women engage?

The categories of all projects in which hardy and nonhardy older women engage were first calculated according to absolute, relative, and cumulative frequencies. The 32 hardy older women listed 305 projects overall, and these results are presented in Table 5.

Table 5.

Categorization of 305 Projects of 32 Hardy Older Women According to Absolute, Relative, and Cumulative Frequencies

Absolute Frequency	Project category	Relative frequency (%)	Cumulative frequency (%)
52	Hobbies	17.05	17.05
47	Community	15.41	32.46
39	Home/estate	12.79	45.25
22	Health/body	7.21	52.46
18	Academic classes	5.90	58.36
18	Vacations/trips	5.90	64.26
16	Family	5.25	69.51
15	Recreational	4.92	74.43
13	Reading	4.26	79.69
12	Interpersonal	3.93	82.62
12	Occupational/vocational	3.93	86.55
10	Metaprojects	3.28	89.83
9	Spiritual	2.95	92.78
6	Finance/legal	1.97	94.75
4	Shopping	1.31	97.37
3	Sports	.98	98.35
3	Caregiving	.98	99.33
1	Activities of daily living	.33	99.66
1	Mate/husband	.33	99.99*

* Rounding off resulted in slightly less than 100%

In all, 119 nonhardy older women indicated participation in 1014 projects or activities. These results are presented in Table 6.

Table 6.

Categorization of 1014 Projects of 119 Nonhardy Older Women According to Absolute, Relative, and Cumulative Frequencies

Absolute Frequency (%)	Project category	Relative frequency (%)	Cumulative frequency (%)
166	Hobbies	16.37	16.37
130	Community	12.32	29.19
109	Home/estate	10.75	39.94
91	Health/body	8.97	48.91
74	Family	7.30	56.21
62	Interpersonal	6.11	62.32
57	Academic/classes	5.62	67.94
49	Reading	4.83	72.77
49	Recreational	4.83	77.60
47	Spiritual	4.64	82.24
29	Vacations/trips	2.86	85.10
29	Occupational/vocational	2.86	87.96
25	Shopping	2.47	90.43
22	Cultural/aesthetic	2.17	92.60
18	Metaprojects	1.78	94.38
17	Finance/legal	1.68	96.06
13	Activities of daily living	1.28	97.34
11	Caregiving	1.09	98.43
9	Sports	.89	99.32
7	Mate/husband	.69	100.01*

* Rounding off percentages resulted in slightly more than 100%

Chi square analysis conducted with level of hardiness and level of participation in each category of activity reported overall demonstrated only one significant association. Hardy older women are significantly more likely to participate in vacations or trips than nonhardy women, $\chi^2(1, N = 151) = 8.499, p < .01$. Further, this significant relationship

was maintained when level of hardiness was examined for association with level of activity per person, $\chi^2(1) = 6.808, p < .01$.

In order to determine the meaningful projects in which hardy and nonhardy women engage, a mean score on the personal projects question number #14 (“How meaningful is this project to you?”) was calculated by adding all the scores reported on question #14 and dividing the total by the total number of projects reported for those high in hardiness, as well as those low in hardiness. Overall, those project categories whose mean score was above the mean score for question #14 ($M = 8.1019$) were considered meaningful. The mean score for hardy older women on the meaning question was 8.162 based on a total of 304 projects total with 178 reported projects above the mean. Table 7 provides the number and mean scores of meaningful project categories for hardy older women.

Table 7.

Categorization of 178 Meaningful Projects for Hardy Older Women (N = 32) According to Project Number and Mean Score

Project category	Number of projects	Mean Score
Caregiving	3	10.00
Mate/husband	1	10.00
Activities of daily living	1	10.00
Finance/legal	6	9.67
Spiritual	9	9.67
Metaprojects	10	9.40
Cultural/aesthetics	4	9.25
Family	16	9.19
Vacations/trips	17	9.12
Occupational/vocational	12	8.83
Interpersonal	12	8.75
Hobbies	52	8.52
Reading	13	8.39
Health/body	22	8.18
Community	47	8.15*
Sports	3	8.00*
Academic/lessons	18	7.94*
Shopping	4	7.75*
Recreation	15	7.73*
Home/estate	39	5.51*

* below mean (M = 8.162)

The mean score on the personal projects question #14 was 7.964 for the nonhardy older women representing 1014 projects overall of which 448 projects exceeded the mean. The number and mean scores of meaningful projects for nonhardy older women are presented in Table 8.

Table 8.

Categorization of 448 Meaningful Projects for Nonhardy Older Women (N = 119)

According to Project Number and Mean Score (M = 7.964)

Project category	Number of projects	Mean Score
Mate/husband	7	9.43
Occupational/vocational	25	9.08
Spiritual	45	9.02
Caregiving	11	9.00
Family	74	8.92
Interpersonal	61	8.64
Cultural/aesthetic	19	8.44
Finance/legal	17	8.35
Vacations/trips	27	8.33
Sports	9	8.33
Health/body	90	8.17
Reading	46	8.04
Metaprojects	17	8.00
Community	127	7.62*
Academic/lessons	56	7.45*
Activities of daily living	12	7.42*
Shopping	24	7.96*
Home/estate	104	7.31*

* below mean (M = 7.964)

Overall, 58.4% of hardy older women considered their specific activities meaningful compared to 44.2% of the projects of nonhardy older women. To determine any significant differences in meaningfulness of projects overall in which hardy and nonhardy older women participate, chi square analysis was conducted with level of hardiness and scores above or below the overall mean on question #14 ($M = 8.1019$) as variables but findings did not achieve significance. Three different chi square analyses

were then conducted according to the level of each of the three components of hardiness (commitment, control, and challenge), replication hardiness level to match number of projects reported, and scores above or below the mean on question #14. The results demonstrated that only higher commitment among the older women was significantly associated with higher levels of meaning evaluation of their specific personal projects, χ^2 (1, N = 1286) = 4.478, $p < .05$. Control and challenge analyses were not significant.

Question 1B: What is the relationship of functional health to meaningful projects in which hardy vs. nonhardy women participate?

Analysis strategy. Before examining the relationship of functional health to meaningful projects in which hardy and nonhardy women participate, two forms of analysis were completed. First, the relationship of functional health to overall meaningfulness of projects was examined. Second, the relationship of hardiness and its three components (commitment, control, and challenge) with the eight functional health dimensions were examined.

In order to examine the relationship of functional health to overall meaningfulness of projects, chi square analyses were conducted using the following variables: scores above and below the mean for each of the functional health dimensions and responses above and below the mean ($M = 8.0109$) on personal projects question #14. Mean scores were established for each of the functional health dimensions, consisting of general health, physical health, physical limitation, emotional limitation, energy, well being, social functioning, pain, and general health. Higher functional health scores represent higher levels of functioning, therefore the categories of physical limitation, emotional

limitation, and pain can be misleading. Indeed, higher scores in these categories represent a lack of physical limitation, emotional limitation, or pain, respectively and will be applied as such throughout this study.

Chi square analysis were then conducted applying the replication procedure presented in chapter 3 with high and low rankings for the meaning question (#14) per project with high and low rankings for each of the eight functional health dimensions. The results of these chi square analyses, as shown in Table 9, were significant for level of meaning expressed through personal projects and the following functional health dimension levels: lack of emotional limitation, $\chi^2 (1, N = 1262) = 19.40, p < .01$; energy, $\chi^2 (1, N = 1276) = 21.13, p < .01$; and general health, $\chi^2 (1, N = 1286) = 3.84, p < .05$. In other words, higher levels of emotional health, energy, and general health are associated with higher levels of meaning expression through specific personal projects.

Table 9.

*Chi Square Analyses for Level of Functional Health and Level of Project Meaningfulness
for All Participants*

Functional health category	Chi square value (df)	Significance (two-tailed)
Physical health	$\chi^2 (1, N = 1281) = 2.98$	$p = .08$
Lack of physical limitation	$\chi^2 (1, N = 1273) = 0.29$	$p = .59$
Lack of emotional limitation	$\chi^2 (1, N = 1262) = 19.39$	$p = .00^{**}$
Energy	$\chi^2 (1, N = 1276) = 21.13$	$p = .00^{**}$
Well being	$\chi^2 (1, N = 1286) = 0.28$	$p = .60$
Lack of social limitation	$\chi^2 (1, N = 1286) = 0.59$	$p = .44$
Lack of pain	$\chi^2 (1, N = 1280) = 0.15$	$p = .70^*$
General health	$\chi^2 (1, N = 1286) = 3.84$	$p = .05$

* $p < .05$ ** $p < .01$

In order to examine the relationship of functional health to specific meaningful project categories according to level of hardiness, a two (level of hardiness) by two (level of each of the possible health dimensions) by project category (21 possible) three-way univariate ANOVA analyses was conducted. Level of hardiness, level of each of the functional health dimensions, and project type served as independent variables and the personal projects meaning score on question #14 was the dependent variable. As with the earlier chi square analysis regarding level of meaning response to question #14 with level of functional health dimensions, this analysis was conducted with replication of participants' functional health dimensions according to the number of projects reported per person. While hardiness and functional health dimensions demonstrated a number of main effects and interactions, the thrust of this analytical procedure was to identify if

level of hardiness and level of functional health dimensions significantly interacted on any one of the 21 possible project categories. Examination of the upper and lower boundaries of the interactions at the 95% confidence interval between high hardiness x high functional health dimensions to low hardiness x low functional health dimensions according to the level of meaning expressed through each project category demonstrated no significant interactions. In other words, levels of hardiness and functional health dimensions do not significantly interact with the level of meaning expressed in each of the different projects. Further univariate ANOVA analyses with each of the components of hardiness (commitment, control, and challenge) and the functional health dimensions also failed to produce any significant association with the project meaning level of specific project categories.

Question 2. What are the factors for meaning in life?

Analysis strategy. This analysis applies the two factors for meaning framework and meaning fulfillment identified through the principal components analysis, retaining eigenvalues greater than one, of the LRI-R by Debats (1990) in which factor scores of .40 or higher were obtained for 24 of the 28 items. Ten of the items reflected the factors of meaning framework and fourteen items represented LR meaning fulfillment; consequently, these items were used for subsequent analysis in the present study. A Cronbach's alpha estimate of internal consistency of .86 was found for the LR meaning framework factor in the original analysis (Debats, 1990) and achieved .86 with the deletion of question #11 ("I have some aims for my life") in the current study. (Cronbach's alpha with all of the meaning framework items was .85.) The Cronbach's

alpha for LR meaning fulfillment factor was .80 with the original analysis but increased to .88 in the current study. The 24 items representing meaning framework and fulfillment according to Debats analysis with the LRI-R (1990) are presented in Table 10.

According to the analysis for LR framework and LR fulfillment conducted by Debats (1990), LR meaning framework reflects having a cognitive system or philosophy that is important to the individual and provides clear guidance for purposeful life goals. Having such a framework for meaning in life provides motivation and determination to achieve desired goals. LR meaning fulfillment represents the cognitive appraisal that one is doing important and valuable things that make one feel satisfied with life, so that one experiences life as deeply fulfilling.

Table 10.

Principal Components Analysis (Factor scores >.40) for Life Regard Index Revised

Item	Description	Fulfillment	Framework
17	Stopped from doing what I want	.68	
12	Can't accomplish things	.67	
5	Feel good about life	.67	
27	Am living fully	.60	
2	Life deeply fulfilling	.58	
10	Others have better ideas	.54	
15	Others feel better	.52	
20	Real passion in life	.52	
18	Have unused potential	.49	
26	Nothing happens to me	.45	
22	Don't value what I'm doing	.45	
6	Do unimportant things	.42	
19	Satisfied with life	.40	
1	Significant meaning in life		.73
14	Have a philosophy of life		.68
28	Have a system or framework		.62
23	Clear idea of what to do		.60
7	Know what is important to me		.60
9	Don't know what to do with life	.43	.56
11	Have some aims or goals		.49
24	Excited by what I'm doing		.47
3	Not much purpose		.45
21	Going to attain what I want		.41

Question 2A: What is the relationship of hardiness and health in older women to the

LRI-R (Debats, 1990) factor loading of meaning framework?

Analysis strategy. A factor score for LR meaning framework per person was computed by summing the item scores of the meaning framework factor identified in the

principal components analysis that had been multiplied by their respective component loadings, following the recommendation of Hair, Anderson, and Tatham (1992).

Correlation with the LR meaning framework factor scores with the hardiness score per person demonstrated a significant correlation of $r = .36$ ($p < .01$). Strength of LR meaning framework factor scores were then ranked according to scores above or below the mean ($M = 13.19$, range: 6.02 to 13.19, $SD = 2.47$) and subjected to chi square analysis against level of hardiness. Results revealed that level of hardiness is significantly associated with the strength of response for LR meaning framework in older women, $\chi^2 (1, N = 151) = 8.91, p < .01$, suggesting that having a framework for meaning in life is significantly higher for hardy older women.

Correlational analyses conducted between the LR meaning framework factor scores and functional health dimensional scores were significant for all functional health dimensions at the $p < .01$, except physical health which was significant at $p < .05$, as displayed in Table 11.

Table 11.

Correlations between LRI-R Meaning Framework Factor Scores and Functional Health Dimensions

Health Dimension	Correlation	Significance (two-tailed)
Physical health	.169	$p = .038^*$
Lack of physical limitation	.284	$p = .000^{**}$
Lack of emotional limitation	.365	$p = .000^{**}$
Energy	.386	$p = .000^{**}$
Well being	.428	$p = .000^{**}$
Lack of social limitation	.317	$p = .000^{**}$
Pain	.276	$p = .001^{**}$
General health	.366	$p = .000^{**}$

* $p < .05$ ** $p < .01$

In order to identify significant associations between level of LR meaning framework factor scores (above and below the mean score) and level of functional health for each dimension (above and below the mean for each dimension), chi square analyses were conducted. Table 12 presents the chi square analyses which revealed significant results (two-tailed) between level of LR meaning framework factor score and the following functional health dimensions level: lack of physical limitations, $\chi^2(1) = 6.67, p < .01$; lack of emotional limitations, $\chi^2(1) = 17.86, p < .01$; energy, $\chi^2(1) = 13.19, p < .01$; well-being, $\chi^2(1) = 12.53, p < .01$; lack of social limitations, $\chi^2(1) = 12.63, p < .01$; and general health, $\chi^2(1) = 12.00, p < .01$. Results suggest that the LR framework, i.e., having a cognitive philosophy in life to guide older women in purposeful goals, is

associated with numerous health benefits, including physical, emotional, and social health, enhanced energy, well-being, and general health.

Table 12.

Chi Square Analyses for Level of Functional Health and Level LRI-R Meaning

Framework Factor Scores

Functional health category	Chi square value (df)	Significance (two-tailed)
Physical health	$\chi^2 (1, N = 150) = 0.38$	$p = .54$
Lack of physical limitation	$\chi^2 (1, N = 149) = 6.67$	$p = .01^{**}$
Lack of emotional limitation	$\chi^2 (1, N = 147) = 17.86$	$p = .00^{**}$
Energy	$\chi^2 (1, N = 150) = 13.19$	$p = .00^{**}$
Well being	$\chi^2 (1, N = 151) = 12.53$	$p = .00^{**}$
Lack of social limitation	$\chi^2 (1, N = 151) = 12.63$	$p = .00^{**}$
Lack of pain	$\chi^2 (1, N = 150) = 3.17$	$p = .08$
General health	$\chi^2 (1, N = 151) = 12.00$	$p = .00^{**}$

* $p < .05$ ** $p < .01$

Question 2B: What is the relationship of hardiness and health in older women to the LRI-R (Debats, 1990) factor loading of meaning fulfillment?

Analysis strategy. As in the previous analysis, a factor score for meaning fulfillment was computed by multiplying the item scores of the meaning fulfillment factor identified in the principal components analysis by their respective component loadings and summing them, thus creating a meaning fulfillment factor score per person.

Correlational analysis conducted between the LR meaning fulfillment factor scores and hardiness scores was significant (two-tailed), $r = .40$ ($p < .01$). Chi square analysis with level LR meaning fulfillment factors scores above and below the mean (M

= 18.75, range: 7.98 to 22.26, SD = 3.58) and level of hardiness was also significant, χ^2 (1, N = 151) = 7.47, $p < .01$ (two-tailed) suggesting that fulfilling meaning in life is significantly associated with hardiness in older women.

Correlational analyses between the LR meaning fulfillment factor scores and functional health dimensional scores were significant for all functional health dimensions at the $p < .01$, except physical health which was significant at $p < .05$, as displayed in Table 13.

Table 13.

Correlations between LRI-R Meaning Fulfillment Factor Scores and Functional Health Dimensions

Health Dimension	Correlation	Significance (two-tailed)
Physical health	.21	$p = .01^*$
Lack of physical limitation	.28	$p = .00^{**}$
Lack of emotional limitation	.40	$p = .00^{**}$
Energy	.35	$p = .00^{**}$
Well being	.42	$p = .00^{**}$
Lack of social limitation	.36	$p = .00^{**}$
Pain	.25	$p = .00^{**}$
General health	.31	$p = .00^{**}$

* $p < .05$ ** $p < .01$

Table 14 presents the chi square analyses of the LRI-R (Debats, 1990) meaning fulfillment factor scores ranked above and below the means and functional health dimension levels which demonstrated significant associations for all functional health dimensions, as follows: physical health, χ^2 (1, N = 150) = 4.77, $p < .05$; lack of physical

limitation, $\chi^2 (1, N = 149) = 10.80, p < .01$; lack of emotional limitation, $\chi^2 (1, N = 147) = 13.88, p < .01$; energy, $\chi^2 (1, N = 150) = 14.76, p < .01$; well being, $\chi^2 (1, N = 151) = 12.43, p < .01$; lack of social limitation, $\chi^2 (1, N = 151) = 22.75, p < .01$; lack of pain, $\chi^2 (1, N = 150) = 9.053, p < .05$; and general health, $\chi^2 (1, N = 151) = 14.76, p < .01$. The findings suggest that cognitive appraisal of achieving satisfaction in life is associated with higher levels of functional health in older women, with lack of physical, emotional, and social limitation, as well as increased levels of energy and well-being, presenting the strongest associations.

Table 14.

Chi Square Analyses for Level of Functional Health and Level LRI-R Meaning

Fulfillment Factor Scores

Functional health category	Chi square value (df)	Significance (two-tailed)
Physical health	$\chi^2 (1, N = 150) = 4.77$	$p = .03^*$
Lack of physical limitation	$\chi^2 (1, N = 149) = 10.80$	$p = .00^{**}$
Lack of emotional limitation	$\chi^2 (1, N = 147) = 13.88$	$p = .00^{**}$
Energy	$\chi^2 (1, N = 150) = 14.76$	$p = .00^{**}$
Well being	$\chi^2 (1, N = 151) = 12.43$	$p = .00^{**}$
Lack of social limitation	$\chi^2 (1, N = 151) = 22.75$	$p = .00^{**}$
Lack of pain	$\chi^2 (1, N = 150) = 9.05$	$p = .00^*$
General health	$\chi^2 (1, N = 151) = 14.76$	$p = .00^{**}$

* $p < .05$ ** $p < .01$

Question 3: What are the personal projects factors associated with meaning in life (i.e., framework and fulfillment)?

Analysis strategy. Principal components analysis with all of the scores for all of the projects reported by study participants resulted in seven factors (two of which appear to represent meaning framework and meaning fulfillment) with eigenvalues greater than one, and those factors exceeding .40 loadings were retained. Examination of the factors suggest that they represent meaning fulfillment, others, fun, challenge, meaning framework (presented as “F’work”), physical health, and emotional health and are presented in Table 15. The meaning framework and meaning fulfillment factors were selected further analysis to determine their relationship to the LR meaning framework and fulfillment factors, as well as with hardiness and functional health. Cronbach’s alpha for personal projects meaning framework was .7598, while the alpha for meaning fulfillment was .8155. The five loadings representing meaning framework (hereafter referred to as “PP meaning framework”) and the seven loadings for meaning fulfillment (“PP meaning fulfillment”) were then used for further analyses.

Table 15.

*Principal Components Analysis (Factor scores > .40) of All Personal Projects**Dimensions*

Personal project dimensions	Personal projects factor scores					
	Fulfill	Others	Fun	Challenge	F'work	Phlth Ehlth
It's important to me	.746					
It's the right thing to do	.724					
I am committed to doing it	.716					
Success is important	.701					
I expect to be successful	.601					
It's meaningful to me	.557					.430
I've been successful so far	.406			-.405		
It involves interaction with others		.823				
It provides a sense of communion		.794				
It involves others' support		.691				
It's for other's benefit		.618			.408	
It contributes to the community		.595			.512	
I'm open to change if need be		.428				
It's fun			.781			
I enjoy doing it			.749			
It really expresses me			.603		.414	
It's for own benefit or well-being			.572			
It's difficult				.743		
It's challenging				.741		
It requires adaptability				.705		
It's stressful				.598		
It reflects my spiritual beliefs					.758	
It's consistent with my values					.697	
It enhances my self-worth			.419		.538	
My physical health affects it						.856
My overall health affects it						.795
Pain affects it						.719
It's mentally difficult						-.614
I'm in control of it						.592
It's emotionally difficult						-.525

In order to establish whether significant relationships exist between the PP meaning framework and fulfillment and those of the LR meaning framework and fulfillment, correlations and chi square analyses were conducted. The correlation between PP factor scores for meaning framework and the factor scores for LR meaning framework was significant, $r = .32, p < .01$, as was the correlation between the PP meaning fulfillment factor scores and the LR meaning fulfillment factor scores, $r = .19, p < .05$. Although these analyses demonstrate the similarity between each of the meaning measures for meaning framework and fulfillment according to level of significance, the meaning fulfillment correlation is only significant at the .05 level. Chi square analysis between level of PP meaning framework factor scores and the level of LR meaning framework factor scores, however, revealed a significant association (two-tailed) of $\chi^2 (1, N = 151) = 9.35, p < .01$, while a similar analysis with level of meaning fulfillment with each measure displayed a significant association (two-tailed) of $\chi^2 (1, N = 151) = 12.65, p < .01$. In other words, higher levels of PP meaning framework factor scores were significantly associated with higher levels of LR meaning framework factor scores. Additionally, higher levels of PP meaning fulfillment factor scores were significantly associated with higher levels of meaning fulfillment factor scores.

Question 3A: What is the relationship of hardiness and health in older women to the personal projects factor loading associated with meaning framework?

Analysis Strategy. As before, personal projects dimensions scores for meaning framework were computed by multiplying the mean scores per person associated with PP meaning framework by their component loadings and then summed. When the factor

scores for PP meaning framework were correlated with the scores for hardiness, a significant, but somewhat weak, relationship, of $r = .18$, $p < .05$ was found. Chi square analysis with level of hardiness and level of PP meaning framework factor score (divided above and below the mean) was insignificant, indicating that higher levels of hardiness are not significantly associated with higher levels of meaning framework factor scores.

Correlations between PP meaning framework score and the eight functional health dimensions revealed a significant relationship with energy only, $r = .23$, $p < .01$.

Likewise, chi square analyses between level of PP meaning framework and level of functional health displayed only one significant association with energy, $\chi^2 (1, N = 150) = 7.24$, $p < .01$.

Question 3B: What is the relationship of hardiness and functional health in older women to the personal projects factor loading associated with meaning fulfillment?

Analysis Strategy. This strategy applied the procedure used for question 3A with the exception of using personal projects dimensions scores for meaning fulfillment in place of PP meaning framework dimensions scores to create factor scores for personal projects meaning fulfillment (PP meaning fulfillment factor scores).

The correlation between PP meaning fulfillment factor scores and hardiness was not significant, nor did the chi square analysis for level of hardiness and level of PP meaning fulfillment scores produce significant associations.

Correlations conducted between the PP meaning fulfillment factor scores and the functional health dimensions scores evoked a significant relationship (two-tailed) with lack of emotional limitation, $r = .18$, $p < .05$. Chi square analysis between level of PP

meaning fulfillment factor score (divided above and below the mean) and level of functional health dimensions provided a significant (two-tailed) finding with energy, $\chi^2(1, N = 150) = 4.99, p < .05$, suggesting that higher levels of energy are associated with achieving PP meaning fulfillment.

Question 4: What is the relationship of the meaning factors (i.e., framework and fulfillment) to the three components of hardiness, specifically

Question 4A: What is the relationship of the meaning factor associated with LRI-R (Debats, 1998) framework to the three components of hardiness?

Correlations were conducted according to level of LR meaning framework factor scores with each of the three components of hardiness (i.e., commitment, control, and challenge). Each of the components of hardiness related significantly to the LR meaning framework factor score as follows: commitment, $r = .37, p < .01$; control, $r = .37, p < .01$; and challenge, $r = .18, p < .05$.

Chi square analyses conducted with the level of LR factor scores for meaning framework and level of commitment, control, and challenge indicated significant associations with commitment, $\chi^2(1, N = 151) = 25.85, p < .01$; control, $\chi^2(1, N = 151) = 29.36, p < .01$; and challenge, $\chi^2(1, N = 151) = 4.07, p < .05$. The results suggest that higher levels of commitment and control are especially associated with higher levels of LR cognitive meaning framework.

Question 4B: What is the relationship of the meaning factor associated with LRI-R (Debats, 1998) fulfillment to the three components of hardiness?

The LR meaning fulfillment factor scores were correlated with each of the three

components of hardiness (i.e., commitment, control, and challenge). Each of the components of hardiness related significantly to the LR meaning fulfillment factor scores as follows: commitment, $r = .46, p < .01$; control, $r = .36, p < .01$; and challenge, $r = .23, p < .01$.

Chi square analyses conducted with the level of LR factor scores for meaning fulfillment and respective level of commitment, control, and challenge indicated significant associations with commitment, $\chi^2 (1, N = 151) = 29.03, p < .01$; control, $\chi^2 (1, N = 151) = 19.27, p < .01$; and challenge, $\chi^2 (1, N = 151) = 3.83, p < .05$. The results suggest that higher levels of commitment and control are especially associated with higher levels of meaning fulfillment with perception beliefs.

Question 5: What is the relationship of the personal projects factors associated with meaning to the three components of hardiness, specifically

Question 5A: What is the relationship of the personal projects factor(s) associated with meaning framework to the three components of hardiness?

Correlations between PP meaning framework factor scores and the three components of hardiness revealed significant relationships (two-tailed) with commitment, $r = .23, p < .01$, and with control, $r = .20, p < .05$. Chi square analyses with each of the hardiness components produced significant results between higher levels of PP meaning framework and higher levels of control, $\chi^2 (1, N = 151) = 4.82, p < .05$.

Question 5B: What is the relationship of personal projects factor(s) associated with meaning fulfillment to the three components of hardiness?

Correlations conducted between the PP meaning fulfillment factor scores and the scores for the hardiness components of commitment, control, and challenge demonstrate significant relationships only with commitment, $r = .22, p < .01$, and with control, $r = .226, p < .01$. Chi square analyses between level of PP meaning fulfillment and level of commitment, control, and challenge revealed only one significant association, that of control, $\chi^2 (1, N = 151) = 6.40, p < .05$.

Chapter 5: Discussion

This chapter discusses the theoretical implications of the results of the present study. Specifically being considered are the extents to which these results provide additional support to, or diverge from, the theoretical bases applied in this study, specifically the cognitive, affective, and motivational pathways to meaning (Wong, 1989), which were analyzed through the application of personal projects methodology (Little, 1983). Also under consideration are the associations of hardiness, its three components, and functional health dimensions upon the evaluation and expression of meaning in the lives of older women. Further, multiple implications of these results are examined, including the extension of our understanding of meaning in the lives of older women; the methodological procedures for the study; limitations of the current study; and the implications for future research.

In brief, the current study identifies the types of projects that are meaningful to older women and finds support for Wong's (1989) cognitive and affective meaning components through global and personal projects assessments. Further, personal projects analysis provides significant findings of what constitutes meaningful projects for older women and how they are achieved, enhancing and extending the expression of personal integrity first identified in the work of McGregor & Little (1998). Additionally, hardiness, a motivational component for meaning, is identified as contributing to meaning-making but its stability with age is questioned. Finally, the motivational components of hardiness, control, and functional health were found to not only affect the

attainment of affectively meaningful goals, but also to associate with the cognitive structure of meaning, itself, a finding not anticipated by Wong (1989).

Implications of Current Study to Theory and the Research Questions

This section discusses how the current findings support or digress from the theoretical bases for this study about meaning in the lives of older women by first examining the findings for the research questions, i.e., types of meaningful projects, including association with hardiness and health; factors for meaning in life, including association with hardiness and functional health; and factors for meaning in personal projects, including association with hardiness and functional health. This section closes with an examination of the implications of these findings on meaning according to Wong's (1989) three components of meaning, i.e., cognitive, affective, and motivational components, which provided a major focus through which this study considered meaning in the lives of older women.

Types of Meaningful Projects, Including Association with Hardiness and Functional Health

Types of meaningful projects (question 1). Some of the ideas concerning meaning by previous researchers have suggested that meaning is individually constructed (Debats, 1998; Wong, 1989) and based upon personal values (Wong, 1989) which can result in self-significance and satisfaction (Flanagan, 1996; Wong, 1989). The wide array of individual meaningful projects reported in the current study supports the contention that meaning is individually constructed (Debats, 1998; Wong, 1989), for the projects range from the most basic deeds of daily life, such as “washing clothes”, to grand pursuits like

“write a children’s book” or “write the stories for my autobiography” and – it would seem – all points in between. Indeed, one of the most important contributions of personal projects analysis is that it allows the researcher access to such detailed delineation of personal activities for the first time (Little, 1983, 1987) which may be examined at the single project level or by project categories. Overall, the five most meaningful categories of activities in order were mate/husband, caregiving, spiritual, occupational/vocational, and family. Interestingly, the two most meaningful activities for older women, mate/husband and caregiving, were also among the least reported, suggesting that quality of personal projects (i.e., they reflect important core personal values) may play a significant role in life meaning (Wong, 1989). At the same time, however, the most meaningful projects may be considered from another angle, i.e., that the most meaningful projects are those that are the most reported. Using this frame of reference, the most meaningful project type of the top five reported by older women, overall, involved family activities, a project category which accounted for 11.17% of the projects reported. This finding supports previous research (Little, 1987), further emphasizing the importance of interpersonal relationships to meaning with aging (Burbank, 1992; De Vogler & Ebersole, 1981; Orbach, Ortiz, & Rosenheim, 1987).

In addition, the types of meaningful projects listed by the study participants support experiencing self-significance and satisfaction by providing meaningful social roles, as others have noted (Flanagan, 1996; Wong, 1989). For instance, participants spoke of being on the “National Board: Alzheimer’s Association” or the need to “take care of granddaughter while mom is called away” which suggest being needed and

contributing socially. Other projects, such as being able to “spend time with children and grandchildren”, “attend line dancing classes”, “plan and prepare Thanksgiving dinner” appear to reflect both self-significance and satisfaction (Flanagan, 1996; Wong, 1989).

Comparing the findings of the current study with those of previous studies on meaning adds support to many earlier findings but also extends our knowledge about what types of projects are personally meaningful to older women in a number of ways. Most previous studies have associated pursuits with relatively general categories, such as interpersonal relationships, spirituality, etc., which compare easily to the 21 basic categories of personal projects used in the current study. Certainly, the importance of interpersonal relationships to meaning is consistent with Little’s (1987) personal projects’ study with college students, which demonstrated that relationships with others ranked according to the following order: interpersonal relationships, family, then girl/boyfriend, and these activities constituted 21% of the most meaningful of the personal projects. The current study generally supports Little’s (1987) findings on the importance of interpersonal relationships, although mate/husband is the most important specific relationship activity here. The difference in ranking order between these two studies may be attributed to the differences in age and experience, as very few college students are married. Additionally, interpersonal relationships, consisting of mate/husband, caregiving, family, and interpersonal categories in the current study, accounted for 22.95% of the most meaningful activities reported, and this group has the highest mean ranking overall for meaningfulness. The importance of relationships to meaning in the current study supports earlier research which identified relationships as the most

important expression of life meaning (Debats, 1998; Little, 1987), especially among the elderly (Burbank, 1992; De Vogler & Ebersole, 1981; Orbach, Ortiz, & Rosenheim, 1987).

Interpersonal relationships is a very general form of categorization, however, while personal project categories are much more specific. In the current study, three of the first five meaningful projects relate to relationships with others (i.e., mate/husband, caregiving, and family) and account for 54.90% of the top five activities overall. Clearly, relationships are very significant in the lives of older women, supporting previous findings (Burbank, 1992; Debats, 1998; De Vogler & Ebersole, 1981; Little, 1987; Orbach, Ortiz, & Rosenheim, 1987).

Interestingly, the current data indicate that the category of mate/husband is the most meaningful activity of some older women, according to its mean score, even though it is least reported (only 8 times out of 806 meaningful projects overall). One reason for such low reporting may be because 49.67% of the participants were widowed which would/should affect the number of times a project with a mate/husband was reported, but the findings appear to suggest more than mere widowhood. After all, the reporting level is surprisingly low given that 50% of the participants do have a spouse. The few reports of husband/mate activities in the current study suggest that older women are living meaningful, self-created, and self-directed lives that are not determined by their mates. Such dominance of self-determination with regard to meaning expression provides further emphasis for idea that people individually construct meaning (Adams, 1998; Debats, 1998; Wong, 1989) according to their personal values (Wong, 1989).

Even though the next most meaningful personal project category reported by the older women in the current study is caregiving, its reporting level is also small (14 times overall). The importance of caregiving as a meaningful activity for older women supports previous research findings which suggest that doing good for others among older women (Bonder & Martin, 2000; Prasinis & Tittler, 1984) and providing service to others (Ebersole & DePaola, 1989) are associated with meaning. Previous quantitative studies have not, however, detailed what “doing good” activities consist of or what types of “service to others” are meaningful. While no other categories in the current study represent service, as such, specific projects within other categories may do so.

Many of these meaningful service activities are reported in the current study’s categories of occupational/vocational and metaprojects categories, even though it must be noted that these activities are not always directly concerned with doing good and/or providing service to others. For instance, occupational/vocational activities include “perform”, “create a new Youth Program”, and “conduct a forum for adults, soldiers, and peacemakers”, but these contrast with a “part time job – two days a week”. Metaprojects range from “reduce cost of prescription drugs” and “return to volunteer (live with) Navajos (create women’s shelter)” to create “database of teachers in county since 1946” and the “ongoing writing of my ‘memoirs’”. In other words, doing good or service for others is not always apparent in the activity reported. Indeed, examination of the meaningful activities quoted above suggests that categories of meaningful projects may represent more than one pathway to meaning. That is, occupational/vocational and metaprojects activities may suggest service to others (Bonder & Martin, 2000; Ebersole

& DePaola, 1989; Prasinis & Tittler, 1984) but may also appear to provide a sense of self-significance and satisfaction, as proposed by Flanagan (1996) and Wong, (1989).

The third most important meaningful activity in the current study is that of spiritual pursuits, followed by occupational/vocational and family activities. Previous studies have established the importance of spirituality as an expression of meaning (Bonder & Martin, 2000; Orbach, Iluz, & Rosenheim, 1987; Chamberlain & Zika, 1988), which is replicated in the current study. That occupational/vocational activities rank so high as expressions of meaning among older women overall represents a new but not necessarily representative finding. The participants in the current study have higher levels of education (47.69% with a college degree or higher) than the general population of their age (16% of older men and women in 2001) (Greenberg, 2002), suggesting that they may be more likely to have – or have had – careers and career skills that they continue to enjoy. This is further supported by the fact that women in the current study are more likely to be retired (81.46%). Only 5.9% of them continue to work compared to 9.4% of women over age 65 in the general population (Greenberg, 2002). Still, the importance of occupational/vocational activities to meaning in the current study provides added support for the association of meaning with self-significance and satisfaction (Flanagan, 1996; Wong, 1989).

Other meaningful project categories in the current study include recreation, sports, trips, hobbies, and reading. Such projects include “complete my Japanese garden”, “playing pool”, and “golf”, being a “bridge club member”, “making lace”, doing “crossword puzzles”, taking a “3 day trip to Williamsburg [with] 5 day trip to Deep

Creek Lake, W.Va. to see leaves”, and reading “books on Ireland”. The wide variety of meaningful projects reported as physical and mental activities provide additional support to the theoretical contentions that meaning is linked to physical and mental activity (Fallon, 1998) and pleasure (Ebersole & DePaola, 1989) among the elderly. Such activities also demonstrate support for the contentions that meaning is individually constructed (Debats, 1998; Wong, 1989), is dependent upon having multiple sources to achieve it (Debats, 1998), and reflects personal values (Wong, 1989). Clearly, meaningful physical and mental activities also appear to provide a sense of satisfaction, as well (Flanagan, 1996; Wong, 1989).

Association of hardiness and functional health with meaningful projects (question 1A and 1B). When considering hardiness and meaningful projects, the hardy older women in the current study engaged in high levels of meaningful activities in numerous ways. These hardy older women were significantly more likely to engage in vacations and trips, to work part time, and to have a graduate degree than the nonhardy women. They were also younger, married, and living in the community. By comparison, the women low in hardiness were significantly more likely to be older, be widowed, and live in a retirement community. The significance of the difference between hardy and nonhardy women for age and marital status is an important finding for it calls to question the idea that individual hardiness is stable over time as proposed by Foster (1997), suggesting instead, that age and multiple decrements associated with it (especially health), may reduce the strength of hardiness in older women.

Previous studies have also identified health pursuits as meaningful for the elderly (Ebersole & DePaola, 1989). Support for this finding is found in the current study with the health/body category, yet this category was one of the least strong of meaningful activities overall. But, curiously, the health/body category was the fourth most meaningful activity to the hardy older women, while it ranked the least meaningful activity among the nonhardy older women (means not significantly different). The centrality of health to hardy older women may reflect their significantly younger age than nonhardy older women, allowing them to participate in more health/body activities. By contrast, the low position of health/body within the ranking of meaningful projects for nonhardy women in the current study suggests that their increased age and health concerns (i.e., lower physical, emotional, and social health, as well as well-being) may make the pursuit of health/body activities less likely. Indeed, previous studies have suggested that high levels of hardiness are associated with higher levels of physical and mental health (Allred & Smith, 1989; Bartone et al., 1989; Cohen & Edward, 1989; Funk, 1990; Funk & Houston, 1998; Gale, 1994; Holahan & Moos, 1985; Hull et al., 1987; Kobasa, 1979; Kobasa et al., 1982; Kobasa & Puccetti, 1983; Maddi & Kobasa, 1984; Okun et al., 1988; Pagana, 1990; Wiebe & McCallum, 1986).

Clearly, the measurement of any one project as meaningful may reflect an individually determined value-based cognitive system (Wong, 1989). As example, “quilting”, actually ranks a “10” on one response and a “7” on another for the personal projects question which asks, “How meaningful is this project to you?” Older women simply do not necessarily rank the same activity with the same level of meaning for

activities overall. But, curiously, the health/body category was the fourth most meaningful activity to the hardy older women, while it ranked the least meaningful activity among the nonhardy older women (means not significantly different). The centrality of health to hardy older women may reflect their significantly younger age than nonhardy older women, allowing them to participate in more health/body activities. By contrast, the low position of health/body within the ranking of meaningful projects for nonhardy women in the current study suggests that their increased age and health concerns (i.e., lower physical, emotional, and social health, as well as well-being) may make the pursuit of health/body activities less likely. Indeed, previous studies have suggested that high levels of hardiness are associated with higher levels of physical and mental health (Allred & Smith, 1989; Bartone et al., 1989; Cohen & Edward, 1989; Funk, 1990; Funk & Houston, 1998; Gale, 1994; Holahan & Moos, 1985; Hull et al., 1987; Kobasa, 1979; Kobasa et al., 1982; Kobasa & Puccetti, 1983; Maddi & Kobasa, 1984; Okun et al., 1988; Pagana, 1990; Wiebe & McCallum, 1986).

Clearly, the measurement of any one project as meaningful may reflect an individually determined value-based cognitive system (Wong, 1989). As example, “quilting”, actually ranks a “10” on one response and a “7” on another for the personal projects question which asks, “How meaningful is this project to you?” Older women simply do not necessarily rank the same activity with the same level of meaning, supporting the ideas that meaning is individually constructed (Debats, 1998; Wong, 1989) and represents personal values (Wong, 1989). Yet hardiness appears to be associated with the level of meaning in question #14 in interesting ways. No significant

differences were found in the level of meaning for any specific project according to hardiness, suggesting that hardy and nonhardy older women experience their projects as equally meaningful. Yet, differences were found according to how many of their projects hardy and nonhardy women considered meaningful. That is, 58.4% of the hardy older women considered their specific activities meaningful while only 44.2% of the nonhardy participants did so, supporting the role of individual determination in the assignment of meaning to personal activities (Debats, 1998; Wong, 1989). In other words, while the quality of a specific project is important to meaning level to older women overall, hardy older women participate in higher numbers of meaningful projects. This finding parallels earlier research with the control aspect of hardiness; namely, that found hardy and nonhardy students reported considered life events equally beyond their control, but hardy participants considered more of their experiences as positive and controllable (Rhodewalt & Zone, 1989). The finding further supports the idea that hardy individuals interpret events as facilitators of meaningful action (Gentry & Kobasa, 1984) and that hardiness is related to higher levels of meaning among the oldest-old in qualitative research (Adams, 1998). This important result suggests that hardy older women may, indeed, be called “meaning-makers” as suggested in chapter one, because they exercise more pathways to meaning through their activities.

Interestingly, when considering the personal projects question, “How meaningful is this project to you?”, only higher levels of the hardiness component of commitment were associated with higher levels of meaningfulness. Previous research has indicated that commitment is associated with engaging in meaningful work (Britt et al., 2001), and

the current finding extends the role of commitment to other meaningful activities among older women. Commitment involves having strong belief systems that guide actions toward meaningful goals. This finding also suggests that the evaluation of the meaningfulness of a single project is strongly linked to other personal projects findings, i.e., that commitment is linked to both the PP meaning framework and fulfillment factor scores. For, while PP meaning framework entails a commitment to personal beliefs and values, PP meaning fulfillment involves a commitment to meaningful projects and to achieving successful project outcomes.

Finally, the eight dimensions of functional health were found to be associated with the level of meaning in the specific projects in which both hardy and nonhardy older women participate. In particular, higher levels of emotional health and energy were significantly associated with higher scores on the "How meaningful is this project to you?" question, suggesting that it may be difficult for older women to engage in meaningful projects if emotional decrements, such as anxiety or depression, pain, and a lack of energy are present. While this represents a new finding, previous studies have found a significant association between higher levels of psychosocial health in older women and a lack of depression (Heidrich, 1998; Michael, et al., 1999; Strawbridge et al., 1996). Such higher levels of psychosocial health and freedom from depression could contribute to the higher levels of energy needed to engage in such activities.

Yet, when level of hardiness and level of each of the functional health dimensions by project category analysis was conducted with level of meaning (as measured by question #14) as the dependent variable, no significant interactions between the means

for hardiness and functional health dimensions by project category were found. These findings suggest that hardiness levels are similar to functional health levels on meaning by individual project, implying that neither one significantly interacts with the other in any particular category of project. Theoretically, this finding suggests that level of hardiness and functional health is independently associated with the level of meaning in specific personal projects among older women.

Factors for Meaning in Life, Including Association with Hardiness and Functional Health

Meaning factors in LRI-R (question 2). Applying the factor scores for LR meaning framework and LR meaning fulfillment identified in previous principal components analysis of the LRI-R (Debats 1998) supports having a cognitive framework for meaning, consisting of having a philosophy, system, or framework for meaning that helps create important and purposeful life goals. Indeed, applied to the population in the current study, the salience of this framework for meaning factor loading achieved a higher reliability score for LR framework than in the previous study. A factor loading for meaning fulfillment based on the previous statistical analysis was also identified. As with LR meaning framework, the LR meaning fulfillment factor loading demonstrated a higher level of reliability score in the current study than with the original analysis by Debats (1998), attesting to the cohesiveness of the factor. The LR meaning fulfillment loading reflects affective assessment of life and includes valuing one's actions, seeing them as important, being determined to complete actions, having real passion in life,

living life fully, finding life deeply fulfilling, and feeling good about life, among similar others.

Association of hardiness and functional health with LRI-R (question 2A-B, 4A-B).

The current study indicates that hardiness is significantly associated with higher levels of the LR meaning framework. In other words, hardy older women have a significantly stronger framework for meaning than nonhardy older women by having strong levels of belief systems, values, and important goals. Previous research has suggested that hardy individuals are committed to their belief systems, feel purposeful, and direct their lives towards meaningful goals (Gentry & Kobasa, 1984; Kobasa, 1979), and the current study provides support for these previous findings. Further, hardiness in the present study is also significantly associated with higher levels of LR meaning fulfillment, suggesting that hardy older women experience their lives as more meaningful than nonhardy older women, because they value what they are doing, feel they are accomplishing things, find life more deeply fulfilling, and feel good about life, among similar others. While this represents a new finding, the components for such an assessment are suggested in earlier research with hardiness and meaning in which hardy individuals appear to interpret life events as more meaningful (Gentry & Kobasa, 1984) contributing to higher life satisfaction.

Because higher levels of hardiness were significantly associated with higher levels of LR meaning framework and fulfillment in the current study, it is not surprising that higher levels of each of the hardiness components were also significantly associated with higher levels for LR meaning framework and fulfillment. These findings are

consistent with previous research that identified higher levels of meaning with the higher levels of the hardiness components of commitment (Britt et al., 2001), control (Newcomb & Harlow, 1986; Reker et al., 1987; Taylor, 1993) and challenge (Cress et al., 2001; Jensen et al., 2000). The level of the hardiness component of challenge in the current study, however, appears that it is not as strongly related to meaning ($p < .05$) as the other components of commitment and control ($p < .01$ for each), but further testing beyond the scope of this study would be needed to really judge challenge's level of contribution. According to research (Kobasa, 1979; Gentry & Kobasa, 1984), challenge represents viewing change as exciting and requires a cognitive willingness to adapt as needed to achieve successful outcomes. The lower level of significant association between challenge and LR meaning framework and fulfillment may be attributed to the functions of anticipation and adaptability associated with challenge that are necessary for future and current exploits while the LRI-R (Debats, 1998) involves a more reflective assessment concerned with having or having accomplished meaningful goals. Challenge's lower association to meaning in the current study may also reflect the reduced capacity and lower levels of functioning associated with older age which demand that older individuals selectively optimize their activities to compensate for aging decrements (Baltes and Baltes, 1990). Research has shown that knowledge-based goals decline from middle age onward while emotionally based goals increase from middle to late years (Carstensen, Isaacowitz, and Charles, 1999). Challenge may be seen as more closely linked with knowledge based goals, for emotionally, older people spend more time with familiar individuals with whom they share rewarding relationships (Carstensen,

1991). In other words, research has suggested that older individuals do not seek emotional adventure that would be associated with challenge, nor do they typically seek challenging knowledge based goals. Indeed, the ability to accept change, not create it, has been identified with meaning among older adults (Carstensen, 1998).

In addition to hardiness, the current study conducted analyses with the LR meaning framework and fulfillment factor scores and functional health. Higher levels of LR meaning framework were associated with higher levels of general health, energy, well being, and a lack of physical, emotional, and social limitation. Higher levels of LR meaning fulfillment were additionally associated with physical health and a lack of pain. Earlier studies have suggested a positive relationship between general and mental health with meaning in life (Battista & Almond, 1973; Debats, 1990, 1996; Debats, et al., 1995; Debats et al., 1993; Prasinios & Tittler, 1984; Zika & Chamberlain, 1987, 1992) and the importance of social relationships to higher health functioning (Strawbridge et al., 1996; Heidrich, 1999; Michael et al., 1999). The current study supports those propositions with both LR meaning framework and fulfillment as intended.

The current study, however, also extends those findings to suggest that the LR meaning framework is further linked to energy, well being, and a lack of physical impairment, providing new insight into the role of cognitive appraisal of meaning in the lives of older women. Similarly, additional positive relationships indicated between LR meaning fulfillment and energy, well being, and a lack of physical limitation and pain suggest that positive affective assessment of meaning in life is dependent upon high levels of functional health. Certainly, previous research has demonstrated that depression

and anxiety in older women are associated with a decreased interest in life (Newman et al., 1991a, 1991b) which could affect levels of energy and well being both cognitively and affectively. Higher levels of disability (or physical limitation) are also associated with higher levels of depression and anxiety (Pennix et al., 1998) providing another possible negative association with energy and well being. That experiencing pain in the current study is specifically linked negatively to affective meaning fulfillment, or living life fully, is suggested by a previous finding that severe disabilities (assumed to be painful) in older women are associated with depression, anxiety, unhappiness, and loss of autonomy (Pennix et al., 1998). Clearly, potential loss of autonomy could severely affect one's ability to live life fully. The findings in the current study suggest that cognitively and affectively viewing one's life as meaningful is intricately tied to multiple health dimensions in older women and that negative changes in health functioning may be associated with the assessment of one's life as meaningful both cognitively and affectively.

Factors for Meaning in Personal Projects, Including Association with Hardiness and Functional Health

Meaning factors in personal projects (question 3). The LRI-R (Debats, 1998) assessment of meaning framework and fulfillment is a global approach, while thinking about the ways in which meaning framework fulfillment are expressed through personal projects (Little, 1983) involves assessing specific action goals. The LR meaning framework global assessment differs from the PP meaning framework assessment in that the former is concerned with having meaningful goals while personal projects ask what

makes action goals meaningful. Correlation analyses conducted with the LR meaning framework factor scores and personal projects meaning framework factor scores suggested a significant relationship ($p < .01$) attesting to the probability that each are probably similarly constructed and both provide strong support for a cognitive framework component for meaning.

Principal components analysis of the personal projects of older women clearly indicates a PP meaning framework factor loading which represents those activities which reflect self identity, as well as one's spiritual beliefs and values. Further, these activities are for the benefit of others, contribute to a sense of community, and enhance self-worth.

Acting according to purpose, values, and spiritual beliefs in personal projects parallel those indicated in the LRI-R (Debats, 1998) and may be described as reflecting personal integrity or being consistent with core values. Indeed, one of the items in this PP meaning framework loading, that the current project is "distinctly" them, suggests how much older women's beliefs and values have become integrated into who they are and provides further support for the idea that meaning framework is associated with personal integrity. Further, Wong (1989) theorized the importance of values and beliefs to meaning, and previous studies have supported the salience of spiritual beliefs to meaning among older women (Bonder & Martin, 2000; Chamberlain & Zika, 1988; Orbach, Iluz, & Rosenheim, 1987).

Other items in the current analysis, however, extend our understanding of what are meaningful core values for older women. The factor loading for PP meaning framework also indicates that meaningful personal projects contribute to a sense of

community, are for others' benefit, and contribute to a sense of self-worth and well-being for older women. So, personal integrity appears to extend beyond expressing purpose, values, beliefs, and being oneself as important factors for meaning framework in the personal projects of older women. Personal integrity, as expressed in the PP meaning framework factor loading, also includes multiple perspectives that may be specific to older women, such as the concept of generativity, or contributing to the community. According to Erikson (1959) generativity creates self-worth in middle and later age, and has been found in previous studies (Ebersole & DePaola, 1989; McGregor & Little, 1998). Other research has noted that doing good for others is also associated with meaning among older women (Bonder & Martin, 2000; Prasinis & Tittler, 1984), and that having purpose in life is associated with well being (Reker, Peacock, and Wong, 1987).

Further, the extension of integrity to include communal sensitivity and generativity in the PP meaning framework factor suggests that early socialization of females to benefit others (Fagot, Leinbach, and O'Boyle, 1992) becomes internalized as a core value with age among these older women and central to their sense of integrity. Yet, the inclusion of self-worth as a factor item with the PP meaning framework may be seen by some as creating a conflict, for self-worth is generally thought of as an affective component, namely that of experiencing a sense of self-worth or well-being. Examining the cognitive framework concept identified here as a PP meaning framework factor, however, suggests that perhaps, older women engage in meaningful projects because they know cognitively, based on a life time of previous experience, that such projects enhance

their self-worth. Consequently, projects that have been associated previously (possibly somewhat loosely) with enhanced self-worth may be engaged in now because these projects are successful meaning-makers, setting up an expectation that self-worth will, again, be achieved. With such a cognitive framework, self-worth is no longer necessarily an outcome of action but part of a framework for determining future behavior that is consistent with core values. Previous research supports this possibility by suggesting that moral values become internalized with development in children so that socially desirable activities are engaged in not because they avoid external punishment but because they have become a personally chosen cognitive strategy (Haan, Langer, and Kohlberg, 1976). Further, previous research with children and adolescents suggests that competence beliefs combine with subjective valuing of the activity to predict outcomes (Eccles, 1984, 2000; Eccles and Wigfield, 2002; Wigfield and Eccles, 2000; Wigfield et al., 1997). The current research supports the idea that meaningful and valued activities are repeated but suggests that outcomes, such as self-worth and well-being, in younger years may become internalized cognitive beliefs (like moral development) to predict performance because of their ability to achieve outcomes consistent with core values repeatedly over time.

McGregor and Little (1998) first identified the importance of value-congruency, and self-identity, which they referred to as integrity, as significant to the expression of meaning in their personal projects study. Clearly, the association of personal integrity and core values with meaning is supported in the current study; however, the present findings extend their understanding substantially with regard to the PP meaning framework

loading to include acting for the benefit of others and contributing to a sense of community.

Like the differences between the LR meaning framework factor and the PP meaning factor, some differences were found between the global assessment of LR meaning fulfillment and the specific project assessment of meaning fulfillment in personal projects, as reflected in their somewhat weak correlational relationship ($p < .05$). While the LR meaning fulfillment factor is more globally reflective and includes achieved life satisfaction, the PP meaning fulfillment factor lacks such reflection. Instead, the PP meaning fulfillment factor emphasizes the conative action (Little, 1999a) of the moment, emphasizing that meaningful current projects are important in themselves, that success is important requiring commitment and determination, and that success has been achieved so far. Indeed, one of the PP meaning fulfillment factor items states that the project “is the right thing to do”, and together, the PP meaning fulfillment factor loading suggests what may be needed to experience meaningful satisfaction upon project completion. According to Debats (1998), being involved in life is consistent with experiencing meaning fulfillment, while life satisfaction is associated with people who successfully achieve meaningful goals (Battista & Almond, 1973; Debats, 1990; Zika & Chamberlain, 1988). Similarly, experiencing a sense of self-fulfillment is also consistent with meaning among the oldest-old (Adams, 1998), and the PP meaning fulfillment factor provides support for each of these previous findings.

In their personal projects research on meaning, McGregor and Little (1998) also found that project importance and commitment, along with value congruency and self

identity (all of which they labeled integrity), are associated with meaning through factor analysis. The current study extends their findings by suggesting that project importance and commitment express parts of personal integrity through PP meaning fulfillment, while other parts of personal integrity are expressed through value congruency and self identity in the PP meaning framework part of this study. Indeed, examination of the current study's findings suggests that the personal integrity described by McGregor and Little (1998) involves not only cognitive (framework) but also affective processes, an important finding. In addition, the current study augments the earlier elements of integrity through principal components analysis to suggest that cognitive integrity also includes benefiting others, enhancing self-worth, and contributing to a sense of community while affective integrity also involves the importance of, and expectation for, success among older women. That the current study provides support for, and extends, the relationship of personal integrity to meaning strengthens the findings of McGregor and Little (1998) and supports Little's (1983, 1999a) contention that the intentional, individual, goal-directed actions of conation involve both inner aspirations (cognitive and affective) and observable behavior (the projects, themselves).

Association of hardiness and functional health with meaningful personal projects (questions 3A-B, 5A-B). Certainly, one of the central assumptions of this study was that higher levels of hardiness in older women would be associated with higher levels of meaning in their personal projects, since previous studies on meaning have been linked to hardiness components (Britt et al., 2001; Caress et al., 2001; Jensen et al., 2000; Newcomb & Harlow, 1986; Reker et al., 1987, Taylor, 1993). Hardiness and meaning has

not been linked through previous quantitative research, although one qualitative study suggests such a relationship with the oldest-old reflecting upon meaning in their lives (Adams, 1998). Indeed, the current study indicates that hardiness is associated with higher levels of meaning framework and fulfillment measured globally with the LRI-R (Debats, 1998), and that this reflective assessment is similar to that of Adams (1998). Yet, comparison of hardy and nonhardy responses on the PP meaning framework and fulfillment factor scores, did not show a significant difference between the hardy and nonhardy groups. In other words, cognitive framework and affective fulfillment factors for meaningful activities are similarly strong in the current activities of hardy and nonhardy older women, suggesting that activities may require more specific personal strengths in order to be achieved. Indeed, examining the role of hardiness components to PP meaning framework and fulfillment factor scores produced a single significant association between higher levels of PP meaning framework and fulfillment and higher levels of control. This finding suggests that cognitive and affective appraisals of meaningful projects by older women are linked to their ability to control their activities and life plan through choice, ability, and motivation (Kobasa, 1979; Gentry & Kobasa, 1984). Previous research has identified the critical role of control over activities by older nursing home residents in order to gain a sense of meaning and purpose (Rodin and Langer, 1977); however, this finding extends our understanding of the role of control to include the importance of control to belief systems of what constitutes meaningful activities, as well as the accomplishment of meaning through projects.

Additionally, higher levels of PP meaning framework and fulfillment were linked significantly to higher levels of only one functional health dimension, that of energy. Research has shown that older women have higher levels of functional disability than men and lower physical activity (Arber & Ginn, 1993; Barer, 1994; Gale & Templeton, 1995). Another study suggests that aging decrements in older women associated with poorer health, fear of injury, and decreased levels of energy, among others, are seen as barriers to participating in activities (Heesch, Brown, and Blanton, 2000). Further, concern about health decrements have resulted in an increased emphasis on physical activity and exercise in old age (DiPietro, 2001), and personal projects involve physical activity which requires energy. Indeed, the finding suggests that lower levels of energy associated with old age and health decrements may jeopardize older women's ability to participate in meaningful activities, and that having enough energy may override other health decrements in order to commit to, and participate in, meaningful projects. The significance of energy to meaning is also supported in another current finding that suggests a lack of energy may act alone, or combine with other health decrements, to affect negatively older women's global assessment of meaning in life.

Implications of Wong's (1989) Components of Meaning and Personal Projects

One of the most significant findings in the current study is that of support for the utility of Wong's (1989) cognitive, affective, and motivational components for the study of meaning as an appropriate vehicle for defining meaning in measurable terms. In particular, the findings indicate that older women do, indeed, have a framework for meaning, such as a philosophy or set of goals, that allows them to label their lives and

projects as meaningful (the cognitive component). Also, the results indicate that older women experience meaningful fulfillment by valuing what they are doing or have done in their lives (the affective component). And, the findings suggest that personality factors, such as hardiness, its components, and functional health dimensions, do enhance or restrict their achievement of meaningful goals through personal projects (the motivational component).

Wong's (1989) cognitive and affective components parallel the meaning framework and fulfillment subscales of the LRI-R (Debats, 1998) global meaning measure, respectively. The meaning framework subscale provides a cognitive appraisal of meaning in life, including measuring the degree to which individuals have belief systems or meaningful goals for their life. The meaning fulfillment subscale considers the degree to which individuals are fulfilling or have fulfilled valuable life goals (Battista & Almond, 1972; Debats, 1998). Consequently, applying Wong's cognitive and affective components to the meaning framework and fulfillment subscales of the LRI-R (Debats, 1998) and referring to the subscales as cognitive framework and affective fulfillment is possible.

Further, significant, but not large, correlations and associations of the LRI-R (Debats, 1998) cognitive framework and affective fulfillment factor scores were identified with the conative personal projects factor scores for meaning framework and fulfillment. Such significant relationships suggest that PP meaning framework and fulfillment factor scores also parallel Wong's (1989) cognitive and affective components for meaning.

Certainly, the significant relationships and associations for cognitive and affective components for meaning between the LRI-R (Debats, 1998) factor scores and personal projects factor scores suggest the similarity between global assessment and conation. Differences, however, are also apparent. Reflecting on meaning and expressing meaning is simply not the same thing. For instance, the LR cognitive component for meaning consists of belief systems and meaningful goals. The cognitive component in personal projects also involves beliefs and values but further indicates elements that are much more specific as to what constitutes meaningful goals. Indeed, the PP meaning framework factor suggests that for older women, those meaningful goals include acting for the benefit of others, contributing to a sense of community, enhancing self worth, and expressing self-identity. As such, the PP cognitive component framework in the current study suggests possible gender and cohort specificity for meaningful actions while extending our understanding of the cognitive component of meaning expressed through personal projects.

In addition, the LR affective component represents the achievement of meaningful goals. Similarly, PP affective meaning component suggests that what is needed to achieve those meaningful goals includes being the “right thing to do”, demands commitment to -- and feeling the importance of -- success, along with having an expectation for successful completion. Clearly, these findings suggest that older women are fulfilling meaningful goals through their personal projects, but they also suggest much more. The affective component in personal projects provides a “recipe” for the

accomplishment of meaningful goals by identifying the need for commitment to a project, the importance of the project, and the essentiality of success.

Wong (1989) also proposes a motivational component to meaning that includes those factors that contribute to, or inhibit, the achievement of meaningful goals. Clearly, hardiness, its components, and functional health in the current study provide support for this component of meaning. Higher levels of hardiness and each of its components (commitment, control, and challenge) are associated with higher levels of the affective component of meaning with the LRI-R (Debats, 1998), suggesting that fulfilling meaning, as measured globally, requires having a commitment to achieving meaningful outcomes, feeling a sense of control over their achievement, and possessing a willingness to adapt to achieve desired goals in life. Yet, only higher levels of control are associated with affective component in personal projects with older women. The significance of each of these findings is discussed elsewhere, yet their presentation here provides support to the multiple ways in which motivational factors, i.e., hardiness and its components, may contribute to the cognitive and affective components for meaning (Wong, 1989).

Another motivational component of meaning examined in the current study concerns functional health dimensions. A wide array of higher functional health levels are associated with higher levels of the LR affective meaning component, including general, emotional, and social health, as well as physical health, energy, well being, and a lack of physical limitation or pain. The specificity of meaning in personal projects, however, indicates that only higher levels of energy are associated with the PP affective meaning component. Again, these findings suggest that motivational components, as

measured through functional health dimensions, are associated with the affective components of meaning in different ways, thereby supporting Wong's (1989) approach and furthering our understanding of motivational factors to meaning in the lives of older women.

Wong (1989), however, suggested that the motivational components for meaning would only be associated with the affective component, which is concerned with the achievement of meaningful goals, assuming that values and beliefs remain quite stable with age. That motivational elements like hardiness, its components, and functional health also are associated with the cognitive component for meaning represents a new and important quantitative finding, although previous case study research has suggested that people reformulate their values in old age to achieve new meaning, promote self-continuity, and integrate their life course (Kaufman, 1993). Both hardiness and the functional health dimensions of general, emotional, and social health, as well as energy, well being, and a lack of physical limitation, are significantly associated with the LR cognitive meaning component, suggesting that having belief systems and meaningful goals may be associated with health elements from many directions. By contrast, the personal projects cognitive meaning component, consisting of core values, self expression, and self worth, is significantly associated with control, a component of hardiness, and energy, only. These findings suggest that what makes an activity meaningful for older women is associated with their level of control over it and the amount of energy available at the time, implying that less meaningful activities (like

watching T.V.?) may be attractive to older women with increased health decrements because they may require less control and less energy.

Although not part of the formal assessment of Wong's (1989) meaning components, the response to the personal projects question, "How meaningful is this project to you?", may reflect both the cognitive and affective components for meaning. Higher levels of the hardiness component of commitment and higher levels of emotional health and energy were associated with higher levels of meaning according to the "How meaningful. . ." question. As previously discussed, higher levels of commitment were associated with higher levels of the LR cognitive and affective components, while higher levels of energy were significantly associated with higher levels of the PP cognitive and affective components. These findings suggest that the meaningfulness of a specific project may represent multiple reasons within the cognitive and affective components, suggesting one possible reason why measuring meaning in meaningful ways has been so challenging to researchers (Wong, 1989).

Indeed, using Wong's (1989) components of meaning to examine and compare global assessments for life meaning with meaningful projects extends our understanding of meaning in the lives of older women. Significant relationships and associations found between Wong's (1989) cognitive and affective components of meaning with the respective meaning framework and fulfillment dimensions of the LRI-R (Debats, 1998) provides support for Wong's (1989) approach. Further, the association with hardiness, its components, and functional health upon cognitive and affective meaning components supports their roles as important motivational components of meaning. Yet, it is the

application of cognitive, affective, and motivational components for meaning (Wong, 1989) to personal projects in the current study that contributes much new information to our understanding of how meaning “is lived out in the reality of people’s lives” (p. 207) (Little, 1998). Still, the complexity of applying Wong’s components for meaning and the use of personal projects analysis (Little, 1983) provides substantial “grist for the mill” for the methodological implications that follow.

Methodological Implications

This section discusses the extent to which the adaptation of Wong’s (1989) components of meaning are an appropriate means for measuring meaning in the lives of older women. In addition, the methodological implications of measuring meaning through the personal projects methodology (Little, 1983) and its contributions to a better understanding of meaning in the lives of older women are also examined.

One focus for this study with older women explored the methodological value of Wong’s (1989) proposed three components of meaning. Even though Wong suggested that these components would allow for substantive measurement of meaning in life for the first time, two difficulties challenged this approach. One difficulty concerned the complexity of designing a study to measure so many dimensions of meaning at once. Another difficulty involved the limitations of available measures for meaning which have been demonstrated as actually measuring other desirable concepts besides meaning (McGregor & Little, 1998).

One of the implications of using Wong’s (1989) three components of meaning as

a study method is that it demands an inclusive, complex study design. Yet, there are multiple paths to meaning (Debats, 1998) (as amply demonstrated in the current study) and this complexity makes such a design challenging. It was proposed that meaning could be measured cognitively and affectively through the application of an appropriate meaning measure and that meaning would most strongly be affected motivationally by hardiness and functional health factors. Results demonstrate that Wong's (1989) proposed method for the examination of meaning is feasible. For example, Wong's (1989) cognitive component for meaning found strong support in the current study as a mental framework for labeling activities and life as meaningful; his affective component established similar support for the fulfilling, or fulfillment, of meaning in life; and his motivational component was exemplified by the different ways in which hardiness and functional are associated with meaning in life. Specifically, hardiness was linked motivationally to both the cognitive and affective components in the LRI-R (Debats, 1998). Similarly, different aspects of functional health were associated with the cognitive and affective components of meaning in the global measurement (i.e., that the cognitive assessment of meaning involved general health, energy, well-being, and a lack of physical, mental, and social limitation while the affective assessment of meaning extends beyond these aspects to include physical health and a lack of pain). Methodologically, Wong had proposed that the motivational components of meaning would only affect the pursuit and attainment of meaningful goals. The current results suggest that the motivational factor for meaning is more complex than he had envisioned and that it is associated with both cognitive and affective components of meaning.

Another methodological challenge with applying Wong's (1989) three components of meaning concerned finding an appropriate meaning measure. McGregor and Little (1998) clearly demonstrated through principal components analysis that most measures for meaning actually do a better job at measuring well-being and happiness. Their study did, however, identify two aspects for meaning, i.e., that of having goals and purpose and that of experiencing meaning and purpose, which parallel well with Wong's cognitive and affective components of meaning, respectively. Fortunately, the LRI-R (Debats, 1998), a measure for meaning not examined by McGregor and Little (1998), applied comparable approaches to the measurement of meaning and was therefore, appropriate for the current study. Still, the LRI-R (Debats) was not an ideal measure for meaning. Principal components analysis conducted with the current participants resulted in multiple factors and cross-loadings which suggests that the measure may not work well with older women. Consequently, the factor loadings previously identified by Debats (1998) were applied to the current study but only after they demonstrated appropriate reliability levels for cognitive (i.e., meaning framework) and affective (i.e., meaning fulfillment) components of meaning.

Another of the methodological challenges faced in the current study involved the application of personal projects methodology (Little, 1983) to a population of older women. Most previous personal projects studies have involved college and university students whose ability to handle the rigors of the procedure is higher than that of older women. The current study suggests that Little's (1983) standard method of completing study forms as a group could be extended to individuals completing the forms in private,

at their own pace, instead of in a one-time-only sitting with a group. Allowing participants to complete their forms individually at their own pace was clearly preferred, instead of in a one-time-only sitting with a group. Allowing participants to complete their forms at their own pace, instead of in a one-time-only sitting with a group. Allowing forms individually at their own pace was clearly preferred by the older women in this study. This method allowed participants to accommodate the demands of the study (i.e., 60 to 120 minutes to complete, extensive length, font size of questionnaires, and cognitive concentration, among others) to the challenges they face as elderly (e.g., visual deterioration, difficulty reading, cognitive slowing, physical discomfort sitting for extended periods of time, arthritis, and eye-hand coordination difficulties).

Completing forms at their own pace also allowed the questionnaires to come to the older women by hand or mail delivery, providing convenience that the former procedure lacked. One less desirable outcome, however, was that some 50% of potential participants did not complete the forms, probably reflecting the extensive time and attention required. In fact, the respondents represented in the current study had higher levels of education and worked less than the general population of their age. Perhaps, they had more time on their hands. On the other hand, their level of educational achievement may have made participating in a dissertation study more attractive while being too intellectual for the regular public. Still, the resulting participants in the study clearly suggest that they participated by choice and/or interest, not as a result of a course of academic study.

That personal projects methodology is demanding is attested to by the fact that participants in the current study did not always list ten projects as instructed, averaging 8.74 projects reported per person. A recent personal projects study, however, was conducted with elderly individuals over age 70 using a personal interview technique (Lawton, Moss, Winter, and Hoffman, 2002). In that study, participants were equally divided between White and African American (educational levels achieved were not reported) and averaged only 2.8 projects reported per person, suggesting that the individually paced procedure in the current study enhances response rates. Still, a caution is necessary, as the current study had high numbers of educated, White participants (94.7%), suggesting that the procedural method applied in the current study is valid and has merit for this population of older women but cannot be generalized to the elderly overall.

Another methodological challenge was the appropriateness of applying the 21 personal projects categories used by Little (1987) which reflected the interests and needs of his younger adolescent population to the older women in the current study. For instance, sex and drinking/drugs were among the more reported categories in his study, described as the “pleasurable, if often illicit, preoccupations of youth” (p. 235). Needless to say, neither of these activity categories were reported among the older women in the current study, resulting in their elimination here, but their inclusion in previous work provides validation to the use of personal projects research as a methodology that can be adapted to the needs of a particular study. Two potential categories appropriate to older women emerged in the data, however, and these two categories, namely shopping and

caregiving, were added. Caregiving was the second most meaningful type of activity reported by the women in the current study, while shopping was also well represented, suggesting that these categories allow us to better categorize the lives of older women.

Perhaps the most unique methodological aspect of this study was the analysis of meaning through personal projects according to cognitive, affective, and motivational dimensions. Little (1983) had suggested that personal projects reflect “cognitive, affective, and behavioral aspects of human conduct” (p. 273), and this approach paralleled Wong’s (1989) approach to the components of meaning. Yet, applying all three components to meaning through personal projects in the current study was only made possible because of the work by McGregor and Little (1998). Their research on six well known assessment measures for meaning and well being clarified items for a meaning factor loading in life through principal components analysis, however, only three items met the criteria for describing meaning. Still, these three meaning items suggested both the cognitive and affective components of meaning suggested by Wong (1989) and were further extended methodologically through the application of the LRI-R (Debats, 1998) in the current study.

McGregor and Little (1998) also identified personal integrity as a factor loading associated with personal projects meaning reflecting personal values, self-expression, project importance and project commitment. Principal components analysis of personal projects in the current study also revealed that meaning is associated with personal integrity in the projects of older women but that personal integrity has both cognitive components (i.e., reflect values and beliefs, contribute to others and the community,

express true self and contribute to self-worth) and affective components (i.e., are important, require commitment, demand success, and are the “right thing to do”) as well. These findings suggest that personal activities are more complex than previously understood and that using personal projects methodology to consider both the cognitive and affective qualities of personal projects allows us to better understand the process of conation or action in our daily lives.

One important change to the analysis of personal projects data in the current study strengthens the statistical base of the methodology. Previous personal projects studies have averaged the many responses per project asked of each participant in order to conduct principal components analysis (Little, 1983, 1987, 1992; Little, et al., 1992; Lawton et al., 2002; McGregor & Little, 1998; Palys & Little, 1983; Wilson, 1990) and make comparisons to other outcome measures (McGregor & Little, 1998; Palys & Little, 1983). In the current study, all of the responses per person were retained through the principal components procedure, thus retaining the intent and range of individual responses to the questions asked per project. This procedure extends the original conduct principal components analysis (Little, 1983, 1987, 1992; Little, et al., 1992; Lawton et al., 2002; McGregor & Little, 1998; Palys & Little, 1983; Wilson, 1990) and make comparisons to other outcome measures (McGregor & Little, 1998; Palys & Little, 1983). In the current study, all of the responses per person were retained through the principal components procedure, thus retaining the intent and range of individual responses to the questions asked per project. This procedure extends the original methodology of Little

(1983) to benefit not only the statistical analysis but also to maintain the integrity of the participants' responses.

Retaining all of the personal projects responses as long as possible for statistical analysis presented some real challenges in question 1A ("In what types of meaningful activities do hardy vs. nonhardy women engage?") and 1B ("What is the relationship of functional health to meaningful projects in which hardy vs. nonhardy older women participate?"). Since participants described up to ten projects per person and possibly responded to 30 questions for each of those projects, a 10 by 30 matrix of personal projects data set were possible per person. Yet the measures for hardiness, its components, and functional health dimensions consisted of a single data set. In order to retain all of the personal projects data per person, the data sets for the other measures were replicated line for line up to the number of projects reported per person, based on the assumption that the responses to these measures would remain the same (or be independent) with each project described. This method allowed for the very desirable retention of all personal projects responses (see the preceding paragraph), however, it represents a new methodological approach which may alter the way personal projects methodology is conducted.

One question concerning the measurement of hardiness must be addressed. The current study follows the guidelines of Funk (1990) who, in his criticism of hardiness research, recommended that hardiness consist of above the median scores on all three hardiness components. Earlier studies used a different format for inquiry by summing all responses and using the top third scores to represent hardiness, a method that does not

clearly indicate high scores on each of the component dimensions. Consequently, the strength of the associations in the current study provides added emphasis to the strength of hardiness where found in the lives of older women. The use of a lesser standard in previous studies may have contributed to the contention that hardiness remains stable with age.

Finally, the addition of hardiness and functional health assessments permitted this study to actually measure all three dimensions in personal projects and meaning concurrently for the first time. Yet, hardiness was not associated with cognitive and affective components of meaning consistently. In fact, hardiness components, not hardiness, itself, was associated with meaning in personal projects, although hardiness was significantly associated with the LRI-R (Debats, 1998) cognitive and affective meaning components. Indeed, commitment was linked to the meaningfulness of an individual project, while control was associated with the cognitive and affective aspects of personal integrity in personal projects. Further, different functional health dimensions were associated with cognitive and affective meaning components in both the global assessment with the LRI-R measure and the personal projects assessment. Methodologically, these findings support the idea that motivational components affect both the global, reflective assessment for meaning and personal projects action/conation measurements for meaning differently, suggesting the importance of their association in a greater understanding of how meaning is achieved through our daily activities.

Limitations of the Current Study

This section focuses on the limitations of the current study. One of the limitations identified in the study concerns the sample of older women under consideration. The participants in this study were overwhelming White and well educated. This study would have benefited from a more ethnically representative sample of older women or even a direct comparison of equally numbered ethnic groups. Ethnic balance would more closely represent the population at large and permit study results to be more easily generalized to older women. Further, seeking participants with a broader range of academic accomplishment would also provide a more representative sample of older women in future research.

Another limitation of the current study centers on the 50 % return rate of the assessment forms by the study participants. As all previous personal projects studies have been conducted in group settings, their response rate has been 100% for the group present (Little, 1987; McGregor & Little, 1998). How many potential participants who failed to show up, however, were not indicated in these studies. Consequently, it is not possible to know if this return rate is high or low for this type of study with this population. The assessment package is demanding of time (60 to 120 minutes) and attention (concentration, eye coordination, and physical requirements) which could present unmanageable challenges to older women which would lower the likelihood of completing the package by an elderly population. Two potential participants returned their incomplete packages saying that the study was too lengthy to complete. Non-respondents may have seen the study as too sophisticated or intellectual, as this sample

group far exceeded national education norms for women of their age (Greenberg, 2002). Probably, many of the potential participants just became too busy with their other concerns, especially since study participants were being sought in the fall with Thanksgiving, Hanukkah, and Christmas holidays rapidly approaching. Certainly, some simply forgot to complete the forms, and others likely only agreed to take the assessment package in order to please, or get rid of, the researcher.

The lack of a broader ethnic representation in the study also impacts its interpretation. Participants were mostly sought at places where Whites dominate, i.e., retirement communities and the Anne Arundel County Senior Center. Although a number of African-American women were sought from the community who had previously participated in a study with the researcher, their level of educational achievement was much less than that of the White participants. One apologized for not completing the forms, saying they were “too hard on my eyes and mind” while another let me know that she, as the family matriarch, had all the cooking to do to prepare for the family coming to her house for the holiday and simply did not have the time to complete the forms.

Further, the use of the LRI-R (Debats, 1998) as an outcome measure for meaning presented limitations because its factor analysis could not be replicated with the older women in this study. Consequently, the analyses with this measure were conducted with the previously identified factors for cognitive framework and affective fulfillment for meaning. While the results of the current study using the previously identified factors were impressive, the inability to replicate the factor loadings of the previous analysis in women in this study. Consequently, the analyses with this measure were conducted with

the previously identified factors for cognitive framework and affective fulfillment for meaning. While the results of the current study using the previously identified factors were impressive, the inability to replicate the factor loadings of the previous analysis in this study calls into question the appropriateness of this measure for this population, even though reliability analyses were acceptable.

Also, while some projects are seen as more meaningful than others, a general conclusion that a specific type of project is not meaningful, e.g., “taking out the trash”, cannot be universally applied. To many, such a project may be meaningless, but to someone with severe physical limitations, it may take on great meaning. Quantifying the level of meaning for any particular project may, indeed, provide analytical bases for comparison but still not fully grasp the subjective interpretation of that project for any one individual.

Another limitation concerns the fact that this study was conducted in the United States where 67% of the population over the age of 65 years are women. A brief examination of the proportion of women over age 65 years in other countries throughout the world demonstrates that the American percentage level of older women is extremely high. For instance, in 2000, only 34.83% of Egyptian women are over age 65 years compared to men of a similar age range, while 59.92 % of South African women are over the same age (United States Census Bureau, 2003). Other countries for this population of older women included 47.00% for Afghanistan, 56.27% for Australia, 59.36% for France, 49.13% for India, and 42.90% for Japan for the same year.

Certainly, one must ask if personal projects can really measure meaning in life any more or better than the current outcome measures purporting to do the same thing. The study certainly supports the complexity of measuring this construct overall, as well as presenting many, multiple pathways to its achievement. Personal projects can only

Certainly, one must ask if personal projects can really measure meaning in life any more or better than the current outcome measures purporting to do the same thing. The study certainly supports the complexity of measuring this construct overall, as well as presenting many, multiple pathways to its achievement. Personal projects can only measure the value of any particular project to a specific individual at a particular time and place. The methodology is a dynamic measuring tool, but its role in the larger, philosophical realm of ideas may be limited by its very temporal nature.

Similarly, the use of hardiness as a personality measure for meaning may be limited in its applicability. Certainly, other personality measures may provide more valuable information, but one must question what qualities are potentially especially important to the achievement of meaning and its expression through personal projects. One such possibility may be the application of an optimism/pessimism measure for motivational association to meaning, however, such a measure may demonstrate more relationship to happiness as identified by McGregor and Little (1998) instead of meaning and personal integrity. In that study, happiness was associated with shorter and more achievable, efficacious projects. Still, other motivational measures for personality and other aspects related to the self may be more appropriate than hardiness.

A final limitation of the current study may be seen in having such an overwhelming amount of data about meaning in the lives of older women generated as a consequence of using personal projects methodology (Little, 1983). This rich abundance of data focusing on the daily activities of older women can make “it difficult to see the forest for the trees” and even more difficult to interpret the data meaningfully. Still, the many findings are provocative and point to the multiple implications for future research that are explored in the next section.

Directions for Future Research

The design of the current study was purposely descriptive and foundational in that it applied the personal projects methodology (Little, 1983) to the characterization of meaning in the lives of older women for the first time. Specifically, this design allowed for a detailed examination of the cognitive, affective, and motivational components of meaning as assessed globally through the LRI-R (Debats, 1998) and expressed locally through personal projects and at the same time, assessed the utility of Little’s (1983) contention that personal projects also consist of the same components. Additionally, this design provided insight into how meaning reflects personal integrity and how personal integrity in older women is characterized. Further, this design also permitted inferences about how motivational components are associated with both the cognitive and affective dimensions of meaning assessment and expression.

Further, future research should seek a more representative sample of the over age 65 population. The current study consisted of overwhelmingly white and highly educated participants, while minorities represent 16% of the older population overall with 8%

being African American (Greenberg, 2002). Also, future research would benefit from a replication of the current study with older men, as well as both men and women in middle age. The rich and extensive findings of the current study contribute greatly to our understanding of the cognitive, affective, and motivational components of meaning in the lives of older women. Examining older men, however, for meaning in their lives would help researchers gain a more complete picture of meaning in old age. This is particularly true because the PP cognitive component for meaning in the current study indicated factor items that appear to be gender based (i.e., that meaningful activities are for the benefit of others) and may also be age-based (i.e., that they contribute to a sense of community). Consequently, applying this methodology to younger population samples would contribute extensively to our understanding of how we transition in our assessment and expression of meaning through adulthood to old age.

Cognitively, future research would benefit from cognitive comparison of younger and older populations. Populations decline at a younger age in what is known as fluid intelligence, those biological skills for processing information compared to crystallized intelligence, the knowledge and abilities acquired through learning (Cattell, 1963; Horn, 1982). Yet, older populations have typically gained in their acquisition of expertise (Clancey and Hoyer, 1994). Younger populations are actively acquiring knowledge and abilities (even basic ones) which may relate to the finding that younger people seek efficacious goals for meaning while older people's goals are based more on internalized core values (McGregor & Little, 1983). Indeed, the lessening of fluid intelligence and the increase of expertise with age may influence this shift toward more internalized values.

The impact of these forms of intelligence with age upon meaning expression through personal projects may present provocative data for the enhancement of successful cognitive strategies. Such a study would provide additional insight into the cognitive limits or advantages associated with older age. The study format, however, would require a longitudinal design which may be prohibitive unless included in current longitudinal aging studies.

Another element to be addressed in publication or even future research would be to examine the data using age differences as the point of comparison instead of hardiness or functional health. The design of the current study intentionally looked at these two variables, however, comparisons between the young-old (65 to 74 years), the old-old (75 years and more), and the oldest-old (over 80 years) (Charness and Bosman, 1992) would provide insight into the relationship of years of age to meaning. A future cross-sectional study design would provide important information on what represents meaning to these different age groups, while allowing for the examination for potential cohort effects which would also be informative. In particular, such a study may demonstrate more clearly the levels of enhanced health our young-old population now enjoys. Further, a longitudinal study design could appropriately track these changes over time and include a concurrent examination of a particular cohort. Such an examination would likely demonstrate the lessening of physically active projects as meaningful towards ones that are less demanding of energy and body, deepening our understanding of how making meaning adapts or is retained over time. Finally, adding a comparison of those living longer to those dying younger may provide information for the long term adaptability of

meaning expression for potential proactive interventions that may enhance life quality and increased age potential.

Before extending this study's methodology to other groups, however, a stronger global assessment measure for meaning should be created. McGregor and Little (1998) clearly established that current meaning measures rarely measure meaning and that a better outcome measure for life meaning is needed. The current study applied the factor analysis of the LRI-R (Debats, 1998) measure because it most closely matched the cognitive framework and affective fulfillment components for meaning identified by McGregor and Little (1998). Yet, the LRI-R (Debats, 1998) failed to achieve definable loadings for meaning framework and fulfillment with principal components analysis with the current sample, resulting in the use of the earlier factor findings. Consequently, a better cognitive and affective meaning measure is desirable with the hope that a superior measure, with clearly worded cognitive and affective components, may be developed in the near future. As the current study suggests, such a measure may need to address differences in what constitutes meaning between men and women. Indeed, it is a possibility that a valid universal measure for meaning for both men and women is not appropriate, and that meaning measures for each gender need to be considered.

One possibility for the construction of such a measure may involve the wording used to describe the meaning framework and meaning fulfillment components. For instance, meaning framework appears to be more concerned with what one "has", e.g., a philosophical, belief, or spiritual system. This component may also be strengthened with wording reflecting self-identity which has not been generally found in other meaning

measures (Chamberlain & Zika, 1988; Debats, 1990; Ryff, 1989c). Meaning fulfillment appears, on the other hand, to be more concerned with “how” that meaning system is expressed in the pursuit of meaningful goals, e.g., through achieving, or achievement of, meaningful goals. Further, some gender specific questions could be included to score the scale according to male and female responses. Such language usage may allow for the development of a meaning measure that may demonstrate fewer cross-loadings in factor analysis, resulting in clearer meaning framework and fulfillment factor loadings and thereby, more appropriately represent the men and women responding to such a measure.

A note of caution, however, concerns whether a meaning measure may ever be developed that can be applied to all populations. McGregor and Little (1998) clearly demonstrated that meaningful projects differ according to younger and older populations according to efficacious goals and expression of core values, respectively. The current study provides added support for their findings and extends what constitutes meaning with an older population of women but not of men or younger populations. Future research needs to more clearly identify what constitutes meaning according to these groups before attempting the development of a universal measure. Indeed, future measures for meaning may be more appropriately created and directed to specific groups according to both gender and age, thereby reflecting developmental change for men and women.

Another concern for future research is concerned with the classification procedures used for personal projects. At times, more than one category would apply to a project reported resulting in somewhat subjective classification. As indicated in the

Methods section, projects that could be assigned to more than one category were arbitrarily assigned to the first activity type mentioned. This method of classification has no way of knowing which project category is appropriate to the participant's intent. Further, it risks classifying activities according to convenience. One possibility for future research would be to classify such activities into more than one category in order to be more inclusive of the participant's report and intent. For instance, "Plan an Elderhostel trip with my husband" could then be categorized into both vacations/trip and mate/husband, instead of just one. Certainly, doing so would pose major analysis challenges.

Classifying activities is also limited to only those projects in which individuals may engage currently. Future research may benefit by seeking to also identify the kinds of projects that participants, particularly older individuals, might wish to participate in if only they could do so. For instance, one of the findings noted in the current study was the limited number of projects associated with mate/husband. How many of the widows would have wished that they could report such an activity? Other examples might include wishing to exercise but being unable to do so, entertain but unable to stand long enough to clean and prepare for guests, or desiring to volunteer in the community but cannot due to immunity difficulties which limit contact with others. Future research may wish to address those important projects in which one wishes to engage but cannot and measure the impact of such lack of activity choice upon meaning. Combined with personal projects methodology examining current projects may add a new level of richness to our understanding of meaning in the lives of older persons.

Another consideration for the application of personal projects methodology with elderly populations in future research concerns using group procedures for the completion of the assessment package. The current study's participants clearly preferred to complete the forms at their own pace, on their own time and not in a group format. Future personal projects research with older or more fragile populations may benefit from using an individually guided procedure.

Future research with personal projects methodology involving factor analysis should also consider subjecting all of the participants' responses to the questions asked per project to the principal components analysis procedure. Previous personal projects research (Little, 1983, 1987, 1992; Little, et al., 1992; Lawton et al., 2002; McGregor & Little, 1998; Palys & Little, 1983; Wilson, 1990) has averaged the responses per person before conducting principal components analysis in order to have a one-to-one correspondence with other measures being examined. This procedure weakened the analysis results statistically and failed to retain the range and intent of the individual responses.

Certainly, as the current study demonstrates, a rich body of findings results from using personal projects methodology to examine meaning in life. These findings have strong implications for enhancing our understanding of how meaning is expressed in daily life. This understanding is all the more apparent when the study includes measures for each of the three components of meaning, i.e., the cognitive, affective, and motivational components (Wong, 1998). Obviously great care must be taken when selecting assessment tools for these components. For instance, applying hardiness as a

personality measure in the current study generated much new and valuable information concerning this construct while raising a number of questions regarding it.

One of the questions in current study concerned whether hardiness is stable into old age, as previously held (Foster, 1997). Yet other possibilities around hardiness could also be investigated. For instance, another question for future research could address whether hardiness is a characteristic that can be developed, even in old age. Still another possibility would be to examine whether hardiness, if once lost (if, indeed, it can be) can be regained. While previous studies (Kobasa, 1979; Kobasa et al., 1982) have emphasized its developmental trajectory, the fluidity of this concept has not been researched. Certainly, previous studies on hardiness have emphasized its positive relationship to physical health (Bartone et al., 1989; Funk, 1990; Gale, 1994; Holahan & Moos, 1985; Hull et al., 1987; Kobasa, 1979; Kobasa et al., 1982; Kobasa & Puccetti, 1983; Okun et al., 1988; Wiebe & McCallum, 1986) and socio-emotional health (Allred & Smith, 1989; Cohen & Edward, 1989; Funk, 1990; Funk & Houston, 1987; Gale, 1994; Kobasa, 1982; Kobasa et al., 1982; Maddi & Kobasa, 1984; Pagana, 1990; Wiebe, 1991). The hardy older women presently sampled reported higher levels of physical, emotional, and social health, as well as higher levels of well being, but they were also significantly younger, healthier, and more active than nonhardy women. Consequently, future research on hardiness and health with older populations may wish to incorporate a longitudinal study design to determine the stability of hardiness over time and what role deteriorating health may play in lessening the strength of hardiness.

The current study also employed the most stringent criteria for measuring hardiness that was recommended by Funk (1990) which required that study participants measure above the median on each of the three hardiness component scales in order to be considered hardy. Future research on hardiness would be well served to employ this criteria in order to assure that the full range of hardiness is being measured.

Another question for future research concerns whether another clearly established personality measure, such as the NEO Personality Inventory (Costa & McCrae, 1985) would be more appropriate than the personality construct of hardiness as a motivational measure. As previously noted, Wong (1989) suggests that the motivational component for meaning includes any personality factors that might enhance or restrict the achievement of meaningful goals. A number of researchers (Blaney, 1985; Blaney & Ganellen, 1990; Carver, 1989; Funk, 1990, Hull et al., 1987) have suggested that hardiness is not a single construct but an “umbrella” for the distinct components of commitment, control, and challenge. Certainly, the current study attests to both the individual components and the overall construct of hardiness. Still, future research may wish to consider the application of a more professionally recognized personality measure to personal projects research, as used previously (Little, 1992), to strengthen the personality assessment.

Clearly, the current study provided new emphasis for the importance of measuring health in older women according to multiple dimensions. The complexity of the associations between the functional health dimensions and meaning’s cognitive and affective components in the LRI-R (Debats, 1998) and personal projects (Little, 1983)

reflected the complexity of how different functional health dimensions help or hinder the achievement of meaningful goals. In the current study, almost all of the functional health dimensions were associated with the global assessment of LR cognitive and affective components for meaning. Yet, in personal projects, higher levels of functional health (i.e., emotional health and energy for the “How meaningful is this project to you?” question and energy for the PP cognitive and affective components) were associated with higher levels of meaningful activities in the lives of older women. These findings suggest that the specificity of personal projects analysis may provide practical possibilities for enhancing meaning in older women’s lives; namely, that enhancing emotional health and energy through activities targeted to this population could lead to more meaning in life, by providing more pathways to the achievement of meaning. Additional research on the relationship of functional health dimensions to life meaning among the elderly may extend our current understanding of functional health effects and decrements in old age and contribute to the establishment of programs and interventions to strengthen health and meaning in this population.

Perhaps the most important contribution that future research could make to the study of meaning is to further examine the association of the motivational component for meaning with the cognitive component. As noted earlier, Wong (1989) only anticipated that motivational factors, like hardiness and health, would only be associated with the ability to achieve meaningful goals. This study clearly demonstrates that hardiness and health can also be associated with the strength of older women’s belief systems. Deepening our understanding that value congruency may become fragile in old age in

future research would contribute to the possible creation of multiple programs or interventions to strengthen meaningful belief systems and the achievement of meaningful goals in the elderly. And, clearly, more research employing the extraordinary methodology of personal projects to study life meaning will continue to extend our knowledge of the multiple pathways through which meaning is expressed in the reality of our lives and the factors that may be associated with its expression. Such information could be of value to adults, older women and men, researchers, caregivers, professionals, and family members to enhance the quality of life at the end of life.

Appendix A

Introductory Letter

October 22, 2002

Dear Potential Participant,

Thank you for your interest in participating in this doctoral study on older women. The study consists of questionnaires including your demographics, your opinions about life, the kinds of projects in which you engage, and how you feel about them. A further survey asks questions regarding your health status.

The goal of this study is to ascertain a thorough understanding of the activities of older women and their perceptions of their activities; the relationship of their activities to how they perceive their lives; and the impact of health upon activity choice. The data collected from the participants will be used to satisfy requirements for the awarding of a doctoral degree in Human Development.

A Consent Form for the study is enclosed. This form assures that your study information will be kept strictly confidential, and you may ask any questions or withdraw from the study at any time. Please read its content thoroughly before signing and returning the sheet. In addition, the complete package of surveys is attached. A stamped return envelope is provided for your convenience.

Please complete the questionnaires in a timely manner. Should you desire information about the study once it is completed, please so indicate by providing your address on your Consent Form. If you have any questions or concerns, please do not hesitate to contact me at 301-889-0898 or by email: savsteve@erols.com.

Again, thank you.

Sincerely,

Susan E. Savage-Stevens
Ph.D. Candidate
Department of Human Development

Appendix B

Informed Consent Form

Personal Projects of Older Women

I state that I am over 18 years of age, in good physical health, and wish to participate in a program of research being conducted by Susan Savage-Stevens in the Department of Human Development at the University of Maryland, College Park.

The procedures for this study have been fully explained to me and involve completing a package of surveys which seek my responses regarding my demographics, my opinions about life, the kinds of projects in which I engage, and how I feel about them. All information collected in this study is confidential, and my name will not be identified at any time. The data I provide will be grouped with data others provide for reporting and presentation. I feel assured that no short or long-term risks are associated with this research project. The experiment is not designed to help me personally, but to help the investigator learn more about the daily pursuits of older women and the effects of health upon those pursuits. I am free to ask questions or withdraw from participation at any time.

The University of Maryland does not provide any medical or hospitalization insurance for participants in this research study nor will the University of Maryland provide any compensation for any injury sustained as a result of participation in this research study, except as required by law.

Susan E. Savage-Stevens, Ph.D. Candidate
3338 Benjamin Building
University of Maryland
College Park, MD 20742-1131
301-405-0254

NAME OF SUBJECT

SIGNATURE OF SUBJECT

DATE _____

Appendix C

Demographics Data Sheet

1. What is your date of birth? ___ Month ___ Date _____ Year
2. What is your current marital status?
 ___ Never Married ___ Married ___ Divorced
 ___ Separated ___ Widowed (Date of widowhood: _____)
3. What is your racial or ethnic background?
 ___ Asian ___ African-American ___ Native American
 ___ Hispanic ___ White ___ Other: _____
4. How much education or schooling have you completed?
 ___ Under 7 years ___ Junior High ___ Some high school
 ___ High School ___ Some College ___ College Graduate
 ___ Some Graduate/Professional Training ___ Graduate Degree
5. What is your current work status?
 ___ Full-time job ___ Part-time job ___ Homemaker
 ___ Retired ___ Unemployed ___ Disabled
 ___ Other
6. Where do you live?
 ___ Community (City, town, suburb, rural) ___ Retirement community
 ___ Other

If "Other", please describe your living arrangement:

Appendix D

Life Regard Index Revised

Instructions: Below you will find 28 statements with which you can agree or disagree. Indicate each time the answer best represents your opinion.

		Do Not Agree	No Opinion	Disagree
1.	I feel like I have found a really significant meaning for leading my life.	1	2	3
2.	Living is deeply fulfilling.	1	2	3
3.	I really don't have much of a purpose for living, even for myself.	1	2	3
4.	There honestly isn't anything that I totally want to do.	1	2	3
5.	I really feel good about my life.	1	2	3
6.	I spend most of my time doing things that aren't very important to me.	1	2	3
7.	I have really come to terms with what is important for me in my life.	1	2	3
8.	I need to find something that I can really be committed to.	1	2	3
9.	I just don't know what I really want to do with my life.	1	2	3
10.	Other people seem to have a better idea of what they want to do with their lives than I do.	1	2	3
11.	I have some aims and goals that would personally give me a great deal of satisfaction if I could accomplish them.	1	2	3
12.	I don't seem to be able to accomplish those things that are really important to me.	1	2	3
13.	I really don't believe in anything about my life very deeply.	1	2	3
14.	I have a philosophy of life that really gives my living significance.	1	2	3
15.	Other people seem to feel better about their lives than I do.	1	2	3
16.	I get confused when I try to understand my life.	1	2	3
17.	Something seems to stop me from doing what I really want to do.	1	2	3
18.	I have a lot of potential that I don't normally use.	1	2	3

	Do Not Agree	No Opinion	Disagree
19. When I look at my life I feel the satisfaction of really having worked to accomplish something.	1	2	3
20. I have a real passion in my life.	1	2	3
21. I feel that I'm going to attain what I want in life.	1	2	3
22. I don't really value what I'm doing.	1	2	3
23. I have a clear idea of what I want to do with my life.	1	2	3
24. I get so excited by what I am doing that I find new stores of energy I didn't know I had.	1	2	3
25. There are things that I devote all my life's energy to.	1	2	3
26. Nothing very outstanding ever seems to happen to me.	1	2	3
27. I feel that I am living fully.	1	2	3
28. I have a system or framework that allows me to truly understand my being alive.	1	2	3

(Debats, 1998)

Appendix E

Personal Project Dimensions for Rating

Please score each of your personal projects according to the following questions on a scale of “0” to “10” in which “0” = “Not at all ” and “10” = “Very much”.

1. How much adaptability does this project require of you? (Adaptability)
2. To what extent does this project involve interaction with other people? (Affiliation)
3. How much physical pain is involved in this project? (Bodily pain)
4. To what extent is this project challenging to you? (Challenge)
5. How committed are you to the completion of this project? (Commitment)
6. To what extent does this project contribute toward a sense of togetherness and harmony with other people or your environment? (Communion)
7. How much do you feel you are in control of this project? (Control)
8. How difficult do you find it to carry out this project? (Difficulty)
9. How much do emotional problems limit your ability to do this project? (Emotional health)
10. How much do you enjoy working on this project? (Enjoyment)
11. Some projects are intrinsically fun, whimsical, or delightful. How much fun is this project to you? (Fun)
12. How much is your overall health a factor in this project? (General health)
13. How important is this project to you at the present time? (Importance)
14. How personally meaningful is this project? (Meaning)
15. How much do mental problems limit your ability to do this project? (Mental health)
16. How much are you open to change, if needed, on this project? (Openness to change)
17. To what extent is this project oriented toward the benefit or well-being of others? (Other’s benefit)
18. How successful do you think you will be with this project? (Outcome)
19. How much does your physical health limit your ability to do this project? (Physical health)
20. How successful have you been in this project so far? (Progress)
21. How strongly do you feel that there are good reasons or justification for pursuing this project, that is, how confident are you that this project is the “right” thing for you to be doing? (Purpose)
22. To what extent is this project oriented toward your own benefit or well being? (Self-benefit)
23. Most of us have projects that are “really us” and some others that we don’t really feel “ourselves” when doing. To what extent does this project feel distinctly “you” – like a personal trademark – as opposed to being quite alien to you? (Self-

- identity)
24. To what extent do you feel that being engaged in this project contributes to your sense of self-worth? (Self-worth)
 25. To what extent does this project contribute to the community or society? (Social contribution)
 26. To what extent do you feel this project reflects your spiritual values? (Spirituality)
 27. How stressful is it for you to carry out this project? (Stress)
 28. How important is being successful on this project to you? (Success)
 29. Overall, do you feel that other people relevant to this project are more helpful or detrimental to its completion? (Support)
 30. To what extent do you feel this project is consistent with the values that guide you life? (Value congruency/framework)

(Adapted from McGregor & Little, 1998)

Appendix F

Dispositional Resilience Scale (DRS)

Instructions

Below are statements about life that people often feel differently about. Circle a number to show how you feel about each one. Read the items carefully and indicate how much you think each one is true in general. There are no right or wrong answers; just give your own honest opinions.

Not true at all = 0

A little true = 1

Quite true = 2

Completely true = 3

Ratings

1.	Most of my life gets spent doing things that are worthwhile. (CM+)	0	1	2	3
2.	Planning ahead can help avoid most future problems. (CO+)	0	1	2	3
3.	Trying hard doesn't pay, since things still don't turn out right. (CO)	0	1	2	3
4.	No matter how hard I try, my efforts usually accomplish nothing. (CO)	0	1	2	3
5.	I don't like to make any changes in my daily schedule. (CH)	0	1	2	3
6.	The "tried and true" methods are always best. (CH)	0	1	2	3
7.	Working hard doesn't matter, since only the bosses profit by it. (CM)	0	1	2	3
8.	By working hard, you can always achieve your goals. (CM+)	0	1	2	3
9.	Most working people are simply manipulated by their bosses. (CM)	0	1	2	3
10.	Most of what happens in life is just meant to be. (CO)	0	1	2	3
11.	It's usually impossible for me to change things at work. (CO)	0	1	2	3
12.	New laws should never hurt a person's pay check. (CH)	0	1	2	3
13.	When I make plans, I'm certain I can make them work. (CO+)	0	1	2	3
14.	It's very hard for me to change a friend's mind about something. (CO)	0	1	2	3
15.	It's exciting to learn something about myself. (CH+)	0	1	2	3
16.	People who never change their minds usually have good judgment. (CH)	0	1	2	3

17.	I really look forward to my work. (CM+)	0	1	2	3
18.	Politicians run our lives. (CM)	0	1	2	3
19.	If I'm working on a difficult task, I know when to seek help. (CO+)	0	1	2	3
20.	I won't answer a question until I'm really sure I understand it. (CH)	0	1	2	3
21.	I like a lot of variety in my work. (CH+)	0	1	2	3
22.	Most of the time, people listen carefully to what I say. (CO+)	0	1	2	3
23.	Daydreams are more exciting than reality for me. (CM)	0	1	2	3
24.	Thinking of yourself as a free person just leads to frustration. (CM)	0	1	2	3
25.	Trying your best at work really pays off in the end. (CM+)	0	1	2	3
26.	My mistakes are usually very difficult to correct. (CO)	0	1	2	3
27.	It bothers me when my daily routine gets interrupted. (CH)	0	1	2	3
28.	It's best to handle most problems by just not thinking of them. (CO)	0	1	2	3
29.	Most good athletes and leaders are born not made. (CO)	0	1	2	3
30.	I often wake up eager to take up my life wherever it let off. (CH+)	0	1	2	3
31.	Lots of times, I don't really know my own mind. (CM)	0	1	2	3
32.	I respect rules because they guide me. (CH)	0	1	2	3
33.	I like it when things are uncertain and unpredictable. (CH+)	0	1	2	3
34.	I can't do much to prevent it if someone wants to harm me. (CO)	0	1	2	3
35.	People who do their best should get full support from society. (CH)	0	1	2	3
36.	Changes in routine are interesting to me. (CH+)	0	1	2	3
37.	People who believe in individuality are only kidding themselves. (CM)	0	1	2	3
38.	I have no use for theories that are not closely tied to facts. (CH)	0	1	2	3
39.	Most days, life is really interesting and exciting for me. (CM+)	0	1	2	3
40.	I want to be sure someone will take care of me when I'm old. (CH)	0	1	2	3
41.	It's hard to imagine anyone getting excited about working. (CM)	0	1	2	3
42.	What happens to me tomorrow depends on				

	what I do today. (CO+)	0	1	2	3
43.	If someone gets angry at me, it's usually no fault of mine. (CO)	0	1	2	3
44.	It's hard to believe people who say their work helps society. (CM)	0	1	2	3
45.	Ordinary work is just too boring to be worth doing. (CM)	0	1	2	3

CM = Commitment

CO = Control

CH = Challenge

(Bartone, Ursano, Wright, & Ingraham, 1989)

Appendix G

SF-36 Questionnaire

1. In general, would you say your health is:
 - ☐ Excellent
 - ☐ Very good
 - ☐ Good
 - ☐ Fair
 - ☐ Poor

2. *Compared to one year ago*, how would you rate your health in general *now*?
 - ☐ Much better now than one year ago
 - ☐ Somewhat better now than one year ago
 - ☐ About the same as one year ago
 - ☐ Somewhat worse than one year ago
 - ☐ Much worse than one year ago

3. The following questions are about activities you might do during a typical day. *Does your health now limit you* in these activities? If so, how much?
 - A. *Vigorous activities*, such as running, lifting heavy objects, participating in strenuous sports.
 - ☐ Yes, limited a lot
 - ☐ Yes, limited a little
 - ☐ No, not limited at all

 4. *Moderate activities*, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf
 - ☐ Yes, limited a lot
 - ☐ Yes, limited a little
 - ☐ No, not limited at all

 5. Lifting or carrying groceries
 - ☐ Yes, limited a lot
 - ☐ Yes, limited a little
 - ☐ No, not limited at all

 6. Climbing *several* flights of stairs
 - ☐ Yes, limited a lot
 - ☐ Yes, limited a little
 - ☐ No, not limited at all

 7. Climbing *one* flight of stairs
 - ☐ Yes, limited a lot
 - ☐ Yes, limited a little
 - ☐ No, not limited at all

- F. Bending, kneeling, or stooping
 ___ Yes, limited a lot
 ___ Yes, limited a little
 ___ No, not limited at all
- G. Walking *more than one mile*
 ___ Yes, limited a lot
 ___ Yes, limited a little
 ___ No, not limited at all
- H. Walking *several blocks*
 ___ Yes, limited a lot
 ___ Yes, limited a little
 ___ No, not limited at all
- I. Walking *one block*
 ___ Yes, limited a lot
 ___ Yes, limited a little
 ___ No, not limited at all
- J. Bathing or dressing yourself
 ___ Yes, limited a lot
 ___ Yes, limited a little
 ___ No, not limited at all
4. During *the past four weeks*, have you had any of the following problems with your work or other regular activities *as a result of your physical health*?
- A. Cut down the *amount of time* you spent on work and other activities
 ___ Yes ___ No
- B. *Accomplished less* than you would like
 ___ Yes ___ No
- C. Were limited in the *kind* of work or other activities
 ___ Yes ___ No
- D. Had *difficulty* performing the work or other activities (for example, it took extra effort)
 ___ Yes ___ No
5. During *the past four weeks*, have you had any of the following problems with your work or other regular activities *as a result of any emotional problems* (such as feeling depressed or anxious)?
- A. Cut down on the *amount of time* you spent on work or other activities
 ___ Yes ___ No

- B. Accomplished less than you would like
_____ Yes _____ No
- C. Didn't do work or other activities as carefully as usual
_____ Yes _____ No
6. During the past four weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?
- _____ Not at all
_____ Slightly
_____ Moderately
_____ Quite a bit
_____ Extremely
7. How much bodily pain have you had during the past four weeks?
- _____ None
_____ Very mild
_____ Moderate
_____ Severe
_____ Quite severe
8. During the past four weeks, how much did pain interfere with your normal work (including both inside the home and housework)?
- _____ Not at all
_____ A little bit
_____ Moderately
_____ Quite a bit
_____ Extremely
9. These questions are about how you feel and how things have been with you during the past four weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past four weeks
- A. Did you feel full of pep?
- _____ All the time
_____ Most of the time
_____ A good bit of the time
_____ Some of the time
_____ A little of the time
_____ None of the time

- B. Have you been a nervous person?
- ☐ All the time
 - ☐ Most of the time
 - ☐ A good bit of the time
 - ☐ Some of the time
 - ☐ A little of the time
 - ☐ None of the time
- C. Have you felt so down in the dumps that nothing could cheer you up?
- ☐ All the time
 - ☐ Most of the time
 - ☐ A good bit of the time
 - ☐ Some of the time
 - ☐ A little of the time
 - ☐ None of the time
- D. Have you felt calm and peaceful?
- ☐ All the time
 - ☐ Most of the time
 - ☐ A good bit of the time
 - ☐ Some of the time
 - ☐ A little of the time
 - ☐ None of the time
- E. Did you have a lot of energy?
- ☐ All the time
 - ☐ Most of the time
 - ☐ A good bit of the time
 - ☐ Some of the time
 - ☐ A little of the time
 - ☐ None of the time
- C. Have you felt downhearted and blue?
- ☐ All the time
 - ☐ Most of the time
 - ☐ A good bit of the time
 - ☐ Some of the time
 - ☐ A little of the time
 - ☐ None of the time

- D. Did you feel worn out?
- ☐ All the time
 - ☐ Most of the time
 - ☐ A good bit of the time
 - ☐ Some of the time
 - ☐ A little of the time
 - ☐ None of the time
- H. Have you been a happy person?
- ☐ All the time
 - ☐ Most of the time
 - ☐ A good bit of the time
 - ☐ Some of the time
 - ☐ A little of the time
 - ☐ None of the time
- I. Did you feel tired?
- ☐ All the time
 - ☐ Most of the time
 - ☐ A good bit of the time
 - ☐ Some of the time
 - ☐ A little of the time
 - ☐ None of the time
10. During the *past four weeks*, how much of the time has your *physical health or emotional problems* interfered with your social activities (like visiting friends, relatives, etc.)?
- ☐ All the time
 - ☐ Most of the time
 - ☐ Some of the time
 - ☐ A little bit of the time
 - ☐ None of the time
11. How TRUE or FALSE is *each* of the following statements about you?
- A. I seem to get a little sicker than other people
- ☐ Definitely true
 - ☐ Mostly true
 - ☐ Don't know
 - ☐ Mostly false
 - ☐ Definitely false

B. I am as healthy as anyone I know

- ☐ Definitely true
- ☐ Mostly true
- ☐ Don't know
- ☐ Mostly false
- ☐ Definitely false

C. I expect my health to get worse

- ☐ Definitely true
- ☐ Mostly true
- ☐ Don't know
- ☐ Mostly false
- ☐ Definitely false

C. My health is excellent

- ☐ Definitely true
- ☐ Mostly true
- ☐ Don't know
- ☐ Mostly false
- ☐ Definitely false

(Ware & Sherbourne, 1992)

Appendix H

Univariate Analyses

Question 2a: What is the relationship of hardiness and health in older women to the LRI-R (Debats, 1990) factor loading of meaning framework?

Univariate analyses were conducted with independent variables of level of hardiness and rank of each functional health dimension above and below the mean score for each upon the dependent variable of the LRI-R (Debats, 1990) meaning framework factor score.

Results demonstrated that hardiness exhibits a significant main effect upon the dependent variable with all of the functional health dimensions, except when paired with lack of social limitations. In other words, the mean score of hardy older women significantly exceeded the mean score of nonhardy older women with all of the functional health dimensions, except lack of social limitations, upon the meaning framework factor score for the LRI-R (Debats, 199). Further, the functional health dimensions of lack of emotional limitations, social limitations, and pain, along with energy and general health, also exerted main effects upon meaning framework.. The results, displayed in Table 13, also note that a significant interaction between hardiness and well being was found suggesting that high levels of hardiness and well being have a strong positive association with meaning framework in older women.

Table 13.

*Univariate Analyses of LRI-R Meaning Framework Factor Scores with Level of
Hardiness and Functional Health Dimensions*

Source	<i>F</i>	Significance
Hardiness	$F(1, 146) = 7.46$	$p = .007$
Physical health		No significant main effect
Interaction		No significant interaction
Hardiness	$F(1, 145) = 8.71$	$p = .004$
Lack of physical limitation	$F(1, 145) = 4.02$	$P = .047$
Interaction		No significant interaction
Hardiness	$F(1, 143) = 7.64$	$p = .006$
Lack of emotional limitation		No significant main effect
Interaction		No significant interaction
Hardiness	$F(1, 146) = 8.34$	$p = .004$
Energy	$F(1, 146) = 5.48$	$p = .021$
Interaction		No significant interaction
Hardiness	$F(1, 147) = 10.47$	$p = .001$
Well being		No significant main effect
Interaction	$F(1, 147) = 4.40$	$p = .038$
Hardiness		No significant main effect
Lack of social limitation	$F(1, 147) = 5.39$	$p = .022$
Interaction		No significant interaction
Hardiness	$F(1, 146) = 8.34$	$p = .004$
Lack of pain	$F(1, 146) = 5.23$	$p = .024$
Interaction		No significant interaction
Hardiness	$F(1, 147) = 10.78$	$p = .001$
General health	$F(1, 147) = 7.00$	$p = .009$
Interaction		No significant interaction

Question 2B: What is the relationship of hardiness and health in older women to the LRI-R (Debats, 1990) factor loading of meaning fulfillment?

Univariate analysis was conducted with level of hardiness and functional health scores ranked above and below the mean for each dimension as the independent variables and the LRI-R (Debats, 1990) meaning fulfillment factor scores as the dependent variable. Results indicated that hardiness exerts a main effect upon the dependent variable with each of the functional health dimensions, except lack of social limitation, suggesting the salience of hardiness in the achievement of meaning. The functional health dimensions of energy, lack of pain, and general health also exert main effects upon the meaning fulfillment factor score, as presented in Table 14. No interactions between hardiness and the functional health dimensions were found.

Table 14.

Univariate Analyses of LRI-R Meaning Fulfillment Factor Scores with Level of Hardiness and Functional Health Dimensions

Source	<i>F</i>	Significance
Hardiness	$F(1, 146) = 8.27$	$p = .005$
Physical health		No significant main effect
Interaction		No significant interaction
Hardiness	$F(1, 145) = 9.52$	$p = .002$
Lack of physical limitation	$F(1, 145) = 4.15$	$p = .043$
Interaction		No significant interaction
Hardiness	$F(1, 143) = 9.16$	$p = .003$
Lack of emotional limitation		No significant main effect
Interaction		No significant interaction
Hardiness	$F(1, 146) = 11.03$	$p = .001$
Energy		No significant main effect
Interaction		No significant interaction
Hardiness	$F(1, 147) = 11.11$	$p = .001$
Well being		No significant main effect
Interaction	$F(1, 147) = 5.02$	$p = .027$
Hardiness	$F(1, 147) = 5.80$	$p = .017$
Lack of social limitation		No significant main effect
Interaction		No significant interaction
Hardiness	$F(1, 146) = 10.42$	$p = .002$
Lack of pain	$F(1, 146) = 5.19$	$p = .024$
Interaction		No significant interaction
Hardiness	$F(1, 147) = 13.10$	$p = .000$
General health	$F(1, 147) = 4.77$	$p = .031$
Interaction		No significant interaction

Question 3A: What is the relationship of hardiness and health in older women to the personal projects factor loading associated with meaning framework?

Univariate analyses with level of hardiness and functional health dimensions upon PP meaning framework demonstrated that only energy, $F(1, 146) = 9.858$ ($p = .002$) had a main effect upon meaning framework in personal projects. The findings suggest that hardiness lacks a significant role with meaning framework associated with personal projects which may be attributed to the “doing” nature of personal activities. This possibility is further enhanced by the significant role that energy plays with regard to meaning framework in personal projects.

Question 3B: What is the relationship of hardiness and functional health in older women to the personal projects factor loading associated with meaning fulfillment?

Univariate analyses with PP meaning fulfillment factor score as the dependent variable and levels of hardiness and functional health dimensions as the independent variables produced no significant main effects or interactions.

Question 4: What is the relationship of the meaning factors (i.e., framework and fulfillment) to the three components of hardiness, specifically

Question 4A: What is the relationship of the LRI R (Debats, 1990) meaning factor associated with framework to the three components of hardiness?

Univariate analyses of the factor scores for the LRI-R (Debats, 1990) meaning framework factor scores with the level of each of the components of hardiness and functional health dimensions were calculated.

The mean score for level of commitment was significantly higher than those less committed for all functional health dimensions, as seen in Table 15. Further, main

effects were also significant for lack of physical, emotional, and pain limitation, well-being, and general health. A significant interaction occurred with commitment and well-being, indicating that higher levels of commitment and well-being contribute significantly to the strength of meaning framework beliefs.

Table 15.

*Univariate Analyses of LRI-R Meaning Framework Factor Scores with Level of
Commitment and Functional Health Dimensions*

Source	<i>F</i>	Significance
Commitment	$F(1, 146) = 37.115$	$p = .000$
Physical health		No significant main effect
Interaction		No significant interaction
Commitment	$F(1, 145) = 35.770$	$p = .000$
Lack of physical limitation	$F(1, 145) = 5.377$	$p = .022$
Interaction		No significant interaction
Commitment	$F(1, 143) = 29.509$	$p = .000$
Lack of emotional limitation	$F(1, 143) = 9.844$	$p = .002$
Interaction		No significant interaction
Commitment	$F(1, 146) = 33.082$	$p = .000$
Energy	$F(1, 146) = 7.185$	$p = .008$
Interaction		No significant interaction
Commitment	$F(1, 147) = 31.855$	$p = .000$
Well being	$F(1, 147) = 7.774$	$p = .006$
Interaction	$F(1, 147) = 4.559$	$p = .034$
Commitment	$F(1, 147) = 24.635$	$p = .000$
Lack of social limitation		No significant main effect
Interaction		No significant interaction
Commitment	$F(1, 146) = 40.403$	$p = .000$
Lack of pain	$F(1, 146) = 6.103$	$p = .015$
Interaction		No significant interaction
Commitment	$F(1, 147) = 35.022$	$p = .000$
General health	$F(1, 147) = 10.382$	$p = .002$
Interaction		No significant interaction

Univariate analyses conducted with levels of control and each of the functional health dimensions upon the LRI-R (Debats, 1990) meaning framework factor scores revealed significant main effects of control when examined with each of the functional health dimensions, as displayed in Table 16. Further, significant main effects were found with lack of physical, emotional, and social limitation, energy, well-being, freedom from pain, and general health. No significant interactions were found.

Table 16.

Univariate Analyses of LRI-R Meaning Framework Factor Scores with Level of Control and Functional Health Dimensions

Source	<i>F</i>	Significance
Control	$F(1, 146) = 39.283$	$p = .000$
Physical health		No significant main effect
Interaction		No significant interaction
Control	$F(1, 145) = 39.307$	$p = .000$
Lack of physical limitation	$F(1, 145) = 7.695$	$p = .006$
Interaction		No significant interaction
Control	$F(1, 143) = 31.063$	$p = .000$
Lack of emotional limitation	$F(1, 143) = 12.426$	$p = .001$
Interaction		No significant interaction
Control	$F(1, 146) = 37.299$	$p = .000$
Energy	$F(1, 146) = 10.264$	$p = .002$
Interaction		No significant interaction
Control	$F(1, 147) = 32.967$	$p = .000$
Well being	$F(1, 147) = 9.778$	$p = .002$
Interaction		No significant interaction
Control	$F(1, 147) = 32.445$	$p = .000$
Lack of social limitation	$F(1, 147) = 12.618$	$p = .001$
Interaction		No significant interaction
Control	$F(1, 146) = 32.853$	$p = .000$
Lack of pain	$F(1, 146) = 5.795$	$p = .017$
Interaction		No significant interaction
Control	$F(1, 147) = 38.479$	$p = .000$
General health	$F(1, 147) = 12.110$	$p = .000$
Interaction		No significant interaction

Univariate analyses with level of challenge with level of functional health dimensions upon the LRI-R (Debats, 1990) continued to produce robust findings, as significant main effects for challenge were found with physical health, lack of physical limitation, energy, well-being, lack of pain, and general health, as shown in Table 17. Functional health dimensions exerting main effects upon LRI-R (Debats, 1990) are lack of physical, emotional, and social limitation, energy, well-being, lack of pain, and general health. Significant interactions occurred with level of challenge and well-being.

Table 17.

*Univariate Analyses of LRI-R Meaning Framework Factor Scores with Level of
Challenge and Functional Health Dimensions*

Source	<i>F</i>	Significance
Challenge	$F(1, 146) = 6.300$	$p = .013$
Physical health		No significant main effect
Interaction		No significant interaction
Challenge	$F(1, 145) = 4.437$	$p = .037$
Lack of physical limitation	$F(1, 145) = 5.757$	$p = .018$
Interaction		No significant interaction
Challenge		No significant main effect
Lack of emotional limitation	$F(1, 143) = 18.747$	$p = .000$
Interaction		No significant interaction
Challenge	$F(1, 146) = 6.963$	$p = .009$
Energy	$F(1, 146) = 12.163$	$p = .001$
Interaction		No significant interaction
Challenge	$F(1, 147) = 5.949$	$p = .016$
Well being	$F(1, 147) = 11.658$	$p = .001$
Interaction	$F(1, 147) = 7.225$	$p = .008$
Challenge		No significant main effect
Lack of social limitation	$F(1, 147) = 15.668$	$p = .000$
Interaction		No significant interaction
Challenge	$F(1, 146) = 7.587$	$p = .007$
Lack of pain	$F(1, 146) = 9.494$	$p = .002$
Interaction		No significant interaction
Challenge	$F(1, 147) = 5.114$	$p = .025$
General health	$F(1, 147) = 13.177$	$p = .000$
Interaction		No significant interaction

In particular, higher levels of commitment and challenge interact with higher levels of well-being, or being satisfied with one's life, to significantly strengthen our beliefs about meaning framework.

Question 4B: What is the relationship of the meaning factor associated with fulfillment (LRI-R) to the three components of hardiness?

Univariate analyses of the factor scores for the LRI-R (Debats, 1990) meaning fulfillment factor scores with the level of each of the components of hardiness and functional health dimensions were calculated.

Table 18 demonstrates that the mean score for level of commitment was significantly higher for all functional health dimensions. Further, main effects were also significant for all of the functional health dimensions, except physical health. Significant interactions were found with commitment and well being, as well as lack of pain, indicating that higher levels of commitment and well-being and commitment and lack of pain contribute significantly to the strength of meaning fulfillment cognition.

Table 18.

*Univariate Analyses of LRI-R Meaning Fulfillment Factor Scores with Level of
Commitment and Functional Health Dimensions*

Source	<i>F</i>	Significance
Commitment	$F(1, 146) = 46.124$	$p = .000$
Physical health		No significant main effect
Interaction		No significant interaction
Commitment	$F(1, 145) = 46.116$	$p = .000$
Lack of physical limitation	$F(1, 145) = 5.066$	$p = .026$
Interaction		No significant interaction
Commitment	$F(1, 143) = 34.936$	$p = .000$
Lack of emotional limitation	$F(1, 143) = 7.134$	$p = .008$
Interaction		No significant interaction
Commitment	$F(1, 146) = 47.882$	$p = .000$
Energy	$F(1, 146) = 6.458$	$p = .012$
Interaction		No significant interaction
Commitment	$F(1, 147) = 40.836$	$p = .000$
Well being	$F(1, 147) = 12.634$	$p = .001$
Interaction	$F(1, 147) = 8.294$	$p = .005$
Commitment	$F(1, 147) = 31.921$	$p = .000$
Lack of social limitation	$F(1, 147) = 4.670$	$p = .032$
Interaction		No significant interaction
Commitment	$F(1, 146) = 52.688$	$p = .000$
Lack of pain	$F(1, 146) = 8.857$	$p = .003$
Interaction	$F(1, 146) = 4.380$	$p = .038$
Commitment	$F(1, 147) = 47.579$	$p = .000$
General health	$F(1, 147) = 8.496$	$p = .004$
Interaction		No significant interaction

Univariate analyses conducted with levels of control and each of the functional health dimensions upon the LRI-R (Debats, 1990) meaning framework factor scores revealed significant main effects for control when examined with each of the functional health dimensions, as displayed in Table 19. Further, only physical health failed to display a significant main effect among the functional health dimensions. No significant interactions were found.

Table 19.

Univariate Analyses of LRI-R Meaning Fulfillment Factor Scores with Level of Control and Functional Health Dimensions

Source	<i>F</i>	Significance
Control	$F(1, 146) = 27.833$	$p = .000$
Physical health		No significant main effect
Interaction		No significant interaction
Control	$F(1, 145) = 28.452$	$p = .000$
Lack of physical limitation	$F(1, 145) = 7.565$	$p = .007$
Interaction		No significant interaction
Control	$F(1, 143) = 19.942$	$p = .000$
Lack of emotional limitation	$F(1, 143) = 10.483$	$p = .001$
Interaction		No significant interaction
Control	$F(1, 146) = 27.838$	$p = .000$
Energy	$F(1, 146) = 10.350$	$p = .002$
Interaction		No significant interaction
Control	$F(1, 147) = 20.942$	$p = .000$
Well being	$F(1, 147) = 16.364$	$p = .000$
Interaction		No significant interaction
Control	$F(1, 147) = 19.775$	$p = .000$
Lack of social limitation	$F(1, 147) = 19.821$	$p = .000$
Interaction		No significant interaction
Control	$F(1, 146) = 21.463$	$p = .000$
Lack of pain	$F(1, 146) = 8.991$	$p = .003$
Interaction		No significant interaction
Control	$F(1, 147) = 25.598$	$p = .000$
General health	$F(1, 147) = 11.747$	$p = .001$
Interaction		No significant interaction

Univariate analyses with level of challenge and level of functional health indicated significant main effects for challenge with all functional health dimensions, except lack of social limitation, as shown in Table 20. All functional health dimensions exerted main effects upon LRI-R (Debats, 1990) meaning fulfillment factor scores, except physical health. Significant interactions occurred with level of challenge and well-being.

Table 20.

Univariate Analyses of LRI-R Meaning Fulfillment Factor Scores with Level of Challenge and Functional Health Dimensions

Source	<i>F</i>	Significance
Challenge	$F(1, 146) = 6.959$	$p = .009$
Physical health		No significant main effect
Interaction		No significant interaction
Challenge	$F(1, 145) = 4.654$	$p = .033$
Lack of physical limitation	$F(1, 145) = 6.483$	$p = .012$
Interaction		No significant interaction
Challenge		No significant main effect
Lack of emotional limitation	$F(1, 143) = 12.954$	$p = .000$
Interaction		No significant interaction
Challenge	$F(1, 146) = 8.380$	$p = .009$
Energy	$F(1, 146) = 12.660$	$p = .001$
Interaction		No significant interaction
Challenge	$F(1, 147) = 6.794$	$p = .010$
Well being	$F(1, 147) = 17.434$	$p = .000$
Interaction	$F(1, 147) = 6.467$	$p = .012$
Challenge		No significant main effect
Lack of social limitation	$F(1, 147) = 20.780$	$p = .000$
Interaction		No significant interaction
Challenge	$F(1, 146) = 8.635$	$p = .004$
Lack of pain	$F(1, 146) = 12.926$	$p = .000$
Interaction		No significant interaction
Challenge	$F(1, 147) = 5.869$	$p = .017$
General health	$F(1, 147) = 12.255$	$p = .001$
Interaction		No significant interaction

Both higher levels of commitment and challenge with higher levels of well-being (life satisfaction) and higher levels of commitment with lack of pain, interact to significantly increase our beliefs that meaning in life is being fulfilled.

Question 5: What is the relationship of the personal projects factors associated with meaning to the three components of hardiness, specifically

Question 5A: What is the relationship of the personal projects factor(s) associated with meaning framework to the three components of hardiness?

Univariate analyses with commitment and each of the functional health dimensions as dependent variables upon the independent variable, PP meaning framework factor scores, demonstrated that commitment exerts a main effect upon the independent variable only with lack of physical and social limitation, as well as physical health. In turn, only the functional health dimension of energy displayed a significant main effect. No significant interactions were noted.

Table 21.

Univariate Analyses of the PP Meaning Framework Factor Scores with Level of Commitment and Functional Health Dimensions

Source	<i>F</i>	Significance
Commitment	$F(1, 146) = 4.320$	$p = .039$
Physical health		No significant main effect
Interaction		No significant interaction
Commitment	$F(1, 145) = 4.688$	$p = .032$
Lack of physical limitation		No significant main effect
Interaction		No significant interaction
Commitment		No significant main effect
Lack of emotional limitation		No significant main effect
Interaction		No significant interaction
Commitment	$F(1, 146) = 7.564$	No significant main effect
Energy		$p = .007$
Interaction		No significant interaction
Commitment		No significant main effect
Well being		No significant main effect
Interaction		No significant interaction
Commitment	$F(1, 147) = 6.750$	$p = .010$
Lack of social limitation		No significant main effect
Interaction		No significant interaction
Commitment		No significant main effect
Lack of pain		No significant main effect
Interaction		No significant interaction
Commitment		No significant main effect
General health		No significant main effect
Interaction		No significant interaction

Univariate analyses conducted with levels of control and each of the functional health dimensions upon the PP meaning framework factor scores revealed significant main effects of control when examined with each of the functional health dimensions, as displayed in Table 22. Further, only the functional health dimension of energy exerted a main effect upon the PP meaning framework factor scores. No significant interactions were found.

Table 22.

Univariate Analyses of the PP Meaning Framework Factor Scores with Level of Control and Functional Health Dimensions

Source	<i>F</i>	Significance
Control	$F(1, 146) = 8.374$	$p = .004$
Physical health		No significant main effect
Interaction		No significant interaction
Control	$F(1, 145) = 7.635$	$p = .006$
Lack of physical limitation		No significant main effect
Interaction		No significant interaction
Control	$F(1, 143) = 7.445$	$p = .007$
Lack of emotional limitation		No significant main effect
Interaction		No significant interaction
Control	$F(1, 146) = 6.067$	$p = .015$
Energy	$F(1, 146) = 7.790$	$p = .006$
Interaction		No significant interaction
Control	$F(1, 147) = 5.779$	$p = .017$
Well being		No significant main effect
Interaction		No significant interaction
Control	$F(1, 147) = 8.837$	$p = .003$
Lack of social limitation		No significant main effect
Interaction		No significant interaction
Control	$F(1, 146) = 6.769$	$p = .010$
Lack of pain		No significant main effect
Interaction		No significant interaction
Control	$F(1, 147) = 6.714$	$p = .011$
General health		No significant main effect
Interaction		No significant interaction

Univariate analyses with level of challenge with level of functional health dimensions upon the PP meaning framework factor scores demonstrated that challenge is not a significant contributor to PP meaning framework., as seen in Table 23. Only energy exerted a main effect upon the independent variable, and no significant interactions were indicated.

Table 23.

Univariate Analyses of the PP Meaning Framework Factor Scores with Level of Challenge and Functional Health Dimensions

Source	<i>F</i>	Significance
Challenge		No significant main effect
Physical health		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Lack of physical limitation		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Lack of emotional limitation		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Energy	$F(1, 146) = 9.016$	$p = .003$
Interaction		No significant interaction
Challenge		No significant main effect
Well being		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Lack of social limitation		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Lack of pain		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
General health		No significant main effect
Interaction		No significant interaction

Question 5B: What is the relationship of personal projects factor(s) associated with meaning fulfillment to the three components of hardiness?

Univariate analyses with commitment and each of the functional health dimensions fails to demonstrate any main effect for commitment upon PP meaning fulfillment factor scores, as shown in Table 24. Only the functional health dimension of energy achieves a significant main effect. Of particular importance, however, is the significant interaction between two non-significant main effects, commitment and well-being, suggesting that expressing meaning fulfillment through personal projects is significantly effected by commitment and well-being.

Table 24.

*Univariate Analyses of the PP Meaning Fulfillment Factor Scores with Level of
Commitment and Functional Health Dimensions*

Source	<i>F</i>	Significance
Commitment		No significant main effect
Physical health		No significant main effect
Interaction		No significant interaction
Commitment		No significant main effect
Lack of physical limitation		No significant main effect
Interaction		No significant interaction
Commitment		No significant main effect
Lack of emotional limitation		No significant main effect
Interaction		No significant interaction
Commitment		No significant main effect
Energy	$F(1, 146) = 4.514$	$p = .035$
Interaction		No significant interaction
Commitment		No significant main effect
Well being		No significant main effect
Interaction	$F(1, 147) = 7.459$	$p = .007$
Commitment		No significant main effect
Lack of social limitation		No significant main effect
Interaction		No significant interaction
Commitment		No significant main effect
Lack of pain		No significant main effect
Interaction		No significant interaction
Commitment		No significant main effect
General health		No significant main effect
Interaction		No significant interaction

Table 25 presents the univariate findings of control and each of the functional health dimensions upon the PP meaning fulfillment factor scores. Significant main effects were found for control when examined with each of the functional health dimensions. None of the functional health dimensions exerted a main effect upon the PP meaning fulfillment factor scores. No significant interactions were found.

Table 25.

Univariate Analyses of the PP Meaning Fulfillment Factor Scores with Level of Control and Functional Health Dimensions

Source	<i>F</i>	Significance
Control	$F(1, 146) = 5.979$	$p = .016$
Physical health		No significant main effect
Interaction		No significant interaction
Control	$F(1, 145) = 6.049$	$p = .015$
Lack of physical limitation		No significant main effect
Interaction		No significant interaction
Control	$F(1, 143) = 7.161$	$p = .008$
Lack of emotional limitation		No significant main effect
Interaction		No significant interaction
Control	$F(1, 146) = 6.013$	$p = .015$
Energy		No significant main effect
Interaction		No significant interaction
Control	$F(1, 147) = 5.655$	$p = .019$
Well being		No significant main effect
Interaction		No significant interaction
Control	$F(1, 147) = 5.401$	$p = .022$
Lack of social limitation		No significant main effect
Interaction		No significant interaction
Control	$F(1, 146) = 6.231$	$p = .014$
Lack of pain		No significant main effect
Interaction		No significant interaction
Control	$F(1, 147) = 6.049$	$p = .015$
General health		No significant main effect
Interaction		No significant interaction

Univariate analyses with level of challenge with level of functional health dimensions upon the PP meaning fulfillment factor scores demonstrated that challenge is not a significant contributor to PP meaning fulfillment, as seen in Table 26. Only the functional health dimensions of lack of emotional limitation and energy exerted main effects upon the independent variable. A significant interaction was found with challenge and lack of emotional limitation.

Table 26.

Univariate Analyses of the PP Meaning Fulfillment Factor Scores with Level of Challenge and Functional Health Dimensions

Source	<i>F</i>	Significance
Challenge		No significant main effect
Physical health		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Lack of physical limitation		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Lack of emotional limitation	$F(1, 146) = 9.096$	$p = .003$
Interaction	$F(1, 146) = 5.003$	$p = .027$
Challenge		No significant main effect
Energy	$F(1, 146) = 5.423$	$p = .021$
Interaction		No significant interaction
Challenge		No significant main effect
Well being		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Lack of social limitation		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
Lack of pain		No significant main effect
Interaction		No significant interaction
Challenge		No significant main effect
General health		No significant main effect
Interaction		No significant interaction

Univariate analyses presents two particularly interesting interactions each involving non-significant main effects. One demonstrates that high levels of commitment and well-being impact the expression of meaning fulfillment. Similarly, high levels of adaptability and excitement about life combine with strong emotional health to significantly enhance meaning fulfillment as expressed through personal projects.

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