

## AN ABSTRACT OF THE DISSERTATION OF

Cory R. Bolkan for the degree of Doctor of Philosophy in Human Development and Family Studies presented on April 28, 2006.

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Karen A. Hooker

Grounded in life span theory, this study explored how personal goals (as measured by possible selves) related to depressive symptoms in older adults. Possible selves represent individuals' ideas of what they would like to become (*hoped-for selves*) and what they are afraid of becoming (*feared selves*). Possible selves are also considered a dynamic aspect of the personality system that have the potential to elicit behavioral change. Because goals can moderate an individual's response to age related loss and promote positive adult development, older adults' ability to manage health and family related possible selves were examined. In addition, teleonomic relevance (i.e., how related one's current projects are to one's future goals) was investigated and associated with depressive symptoms. Eighty-five adults who ranged in age from 60 to 92 ( $M = 74$ ) were recruited from two primary health care clinics and interviewed face-to-face by the researcher. Poisson regression models based on the count of depressive symptoms reported by participants were analyzed. The results provided initial evidence that the content of older adults' possible selves was associated with depressive symptoms. The presence of health related possible selves was moderately related to fewer depressive symptoms when accounting for one's age, gender, and perceived health status. In addition, the absence of health related possible selves was associated with feeling more worthless and the absence of family related possible selves was associated with feeling helpless and feeling like life was empty. The self-regulatory processes associated with possible selves (e.g., self-efficacy, outcome expectancy) were also related to depressive symptoms. For example, older adults who felt more efficacious in achieving their health

and family related hoped-for selves and spent more time thinking about their hoped-for selves reported fewer depressive symptoms. The self-regulation of feared selves was not as significantly associated with depressive symptoms as the self-regulation of hoped-for selves. Finally, teleonomic relevance was not significantly related to depressive symptoms in this study, but was associated with other goal constructs, such as the manageability and meaningfulness of personal projects, and the number of possible selves. Implications of the study and future research directions are discussed.

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Goal Pursuits and Mental Health in Later Life

by

Cory R. Bolkan

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APPROVED:

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Dean of the Graduate School

I understand that my dissertation will become part of the permanent collection of the Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

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Cory R. Bolkan, Author

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## DEDICATION

To my parents.

Dr. Steven Bolkan.

Your scientific accomplishments have influenced me  
to pursue my own scholarly goals.

Marlene Bolkan.

Your years of support and personal sacrifice enabled all of us  
to pursue and achieve our educational goals.

Thank you.

# Goal Pursuits and Mental Health in Later Life

## Chapter 1 INTRODUCTION

The ability to imagine oneself in the future is a quality that is unique to humans. This distinct experience can provide personal direction and fuel motivation to help us actively create our own futures. To ponder such questions as “who am I?” or “who do I want to become?” can provide the foundation for goal-setting and also significantly impact psychological change and growth. In fact, motivational aspects of the self may play a key role in understanding how individuals adapt over the lifespan well into later life. Gerontological researchers have been interested in the potential for growth and the promotion of optimal aging across the lifespan, and a growing line of research is demonstrating that personal goals may be among the phenomena that contribute to positive adult development (Bauer & McAdams, 2004; Riediger, Freund, & Baltes, 2005; Sheldon & Kasser, 2001).

Engagement in goals is vital to maintaining motivation and successful adaptation across the lifespan, particularly in later adulthood (Baltes & Baltes, 1990; Heckhausen & Schulz, 1995; Hooker, 1992; Riediger, Freund, & Baltes, 2005; Schulz & Heckhausen, 1996). With increasing age, older adults may experience resource gains (e.g., social status, practical knowledge, or material belongings), however, other important resources (e.g., physical functioning or time to live) begin to decrease (Riediger, 2005). As a result, it should be an adaptive strategy for older adults to select and pursue goals that maximize their resource gains and minimize their resource losses (Baltes & Baltes, 1990).

The pursuit of personal goals has been linked to psychological well-being and life satisfaction in adults (McGregor & Little, 1998; Sheldon & Kasser, 1998), however, empirical research on the relationship between volitional processes and clinical mental health outcomes is scarce, especially in later adulthood. Psychologists have called for an incorporation of volitional and motivational factors into social-cognitive frameworks of depression (Dykman, 1998; Karoly, 1999). A major shortcoming in cognitive theories of depression is the lack of attention to volitional processes; the explanatory and predictive power of cognitive theories could be enhanced if psychologists better understood what a person was *trying* to do (Dykman, 1998). Given the detrimental impact (e.g., declining

physical health, family burden, increased health costs) of even minor depression on older adults (Johnson, Weissman, & Klerman, 1992), an increased understanding of their goal structures and processes could elucidate a potential connection to depression and also provide new information for improving mental health outcomes in later life. For example, do older adults who fail to invest in goals to maximize their resources or minimize their resource losses experience more depressive symptoms? Do older adults who poorly manage or self-regulate their goals experience more depressive symptoms?

In light of the increasing interest in late life goal processes, we currently know little about the potential relationship to dysphoria (e.g., experiencing unpleasant mood, depressive symptoms) in older adults. This research gap gave rise to the empirical questions and investigation in the present dissertation study. The aim of this dissertation research is to explore how possible selves (one's future goals represented as hopes or fears) relate to depressive symptoms in older adults. Currently, there is no empirical study to date which has used a social-cognitive and motivational approach in understanding late life dysphoria, nor one in which these potential linkages have been explored.

In the following introductory sections, I will first introduce the theoretical foundation of the study, provide an overview of the basic tenets underlying the theoretical perspective, and explain how theory will guide the study. Secondly, because volitional processes must be tied to something central within the individual, an understanding of the *self* is essential (Hooker, 1999). The self is an aspect of personality and I will discuss these concepts (as well as the constructs to be used in this study) in the section following theory. Finally, after a brief discussion of depression as a serious medical illness, I will conclude this introductory chapter with an integrated summary of these concepts (theory, personality, and depression), which will segue into the following chapter and literature review.

### *Theoretical Foundation: Life Span Theory*

A central premise of life span theory is that ontogenetic development is life-long and not solely propelled by biological or genetic factors. Rather, individuals are also embedded and influenced by broader sociohistorical and cultural contexts. Additionally, human development cannot be adequately understood without acknowledging that

individuals are capable of shaping their own development (Bandura, 2001; Brandtstädter & Lerner, 1999; Ford, 1987). Future-oriented motivation, or goals, can provide individuals with guidance to direct their own lives. This means that goals and goal-directed action can impact developmental change. The ability to shape one's own development requires skills (e.g., self-concept, intentionality, goal-directed behaviors) that emerge in childhood (Brandtstädter 1999) but may continue to evolve into later life. This provides evidence that humans continue to develop throughout the entire lifespan. As a result, an objective of life span researchers is to understand the processes of developmental continuity and change across all age periods. Cognitive processes represent one aspect of human development in which researchers have attempted to explore as a developmental life-long process from childhood through later life. (cf, Life-span theory of control, Heckhausen & Schulz, 1999). The ability to understand psychological processes throughout the life course, will ultimately contribute to models of successful or optimal development.

Although life span researchers acknowledge that individuals are capable of navigating their own development, this does not imply that humans are invincible creators of their own destinies. Humans are constrained by biological and societal forces. Contextual forces such as *normative age graded* (i.e., life course influences strongly correlated with age such as marriage or retirement), *normative history graded* (life course influences strongly correlated with history and experienced by the majority of a culture such as wars or epidemics), and *non-normative events* (significant individual life events not correlated with age or history such as winning the lottery) all impact human development (Baltes, 1987). These influences likely play a role in the construction of future selves, therefore, the goals individuals pursue may reflect the sociocultural influences they have experienced (Lerner, 1983).

Another important feature of life span theory is that human development is conceptualized as both growth and decline, not simply the accumulation of positive growth, but as a multi-directional process. Individuals of all ages will experience both growth and declines in development. A key to adaptive development should then include growth, maintenance of functional levels, and regulation of loss (Baltes, Lindenberger, & Staudinger, 1998). For late life development, as the ratio of growth to decline shifts, the



maximization of gains (or maintenance of functional levels) and the minimization of losses may be key to successful adaptation (Baltes & Baltes, 1990). Volitional aspects of the self, such as one's future goals, may be an area where older adults can regulate the maximization of gains and minimization of losses to facilitate well-being.

The SOC model (Baltes & Baltes, 1990; Baltes & Carstensen, 1996; Freund & Baltes, 2000) proposes three processes that are understood as universal principles of developmental regulation: selection, optimization, and compensation. This model asserts that universal adaptive processes include selecting goals or outcomes, optimizing the means to achieve these outcomes, and compensating for loss in order to obtain successful outcomes (Baltes & Baltes, 1990). This model provides a general framework for understanding adaptive processes across the lifespan and across many domains. For example, the SOC model has applied to goal processes in social relationships in later life. Older adults may select goals related to maintaining family relationships, optimize these goals by investing more time in family relationships, and compensate for the losses of friendships or other relationships by maximizing their most important family ties (Baltes & Carstensen, 1991). The SOC model is relevant to the current study in that the goals individuals strive for may serve as optimization or compensation functions for successful development in later life.

Life span theory has been previously applied to research and theory development in the field of personality, self, and goal processes (Brandtstädter, 1984; Cantor, 1990; Carstensen, Isaacowitz, & Charles, 1999; Labouvie-Vief & Diehl, 1999; Heckhausen & Schulz, 1995). Although there is much empirical support and media attention on the development of multiple losses in later life (e.g., physical health declines, cognitive declines, social network size), as highlighted in life span theoretical studies, there is also promising evidence regarding potential growth and gains in later life as well. A few areas with empirically supported evidence of potential gains in the second half of adulthood include emotion regulation, crystallized intelligence, as well as personality. Evidence of potential growth in personality makes this a particularly exciting field for gerontologists. Social-cognitive aspects of personality (e.g., goals) may serve as motivational sources that link to change and help individuals adapt to aging. For example, many scientists have pointed to the importance of exercise and diet as components of healthy aging. An

important driving force behind the implementation of these goals, however, is the person (Hooker & McAdams, 2003). The type of person one is and the environmental context of the person will ultimately affect most health-related behaviors making it essential for psychologists to understand all aspects of personality (Hooker & McAdams, 2003). Despite the burgeoning interest in successful aging, there is surprisingly little empirical research to date about the person as the driving force behind the ability to age optimally.

### *Overview of Personality*

Historically, there has been a divide among personality psychologists regarding the relative stability or change in personality. Part of this divide was a result of the difficulty in defining personality and coming to consensus regarding what personality actually represents. Many defined personality as the unchanging essence or unique characteristics that make up an individual and differentiate that person from others (Costa & McCrae, 1980; McCrae & Costa, 2003, Digman, 1990; Goldberg, 1993). It would be impossible for humans to respond to their constantly changing environments and life events, however, if personality were rigid and stable. Thus, personality, broadly defined, should represent not only personal characteristics, but also how individuals behave, relate, feel, and experience their environment (Ryff, Kwan & Singer, 2001). Cantor (1990) described this as the difference between the “having” and “doing” aspects of personality. More specifically, individuals may “have” certain personality characteristics, but what individuals try to “do” and how they do it are also defining characteristics of personality. The current goals of personality psychologists in the 21<sup>st</sup> century are to identify fundamental and enduring human qualities, as well as to understand how these qualities develop, change or are maintained across the life span.

*Personality stability.* In the gerontological literature, Costa and McCrae’s (1980) Five-Factor Model (FFM) of personality has been well received because of its clarity and extensive support for the universality and stability of global traits across the adult lifespan. The “Big Five” traits include openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. Trait theorists generally believe that the FFM’s biologically based traits are fixed and remain virtually unchanged, despite ever-changing life contexts, well into later life. In fact, numerous studies (cf, McCrae & Costa,

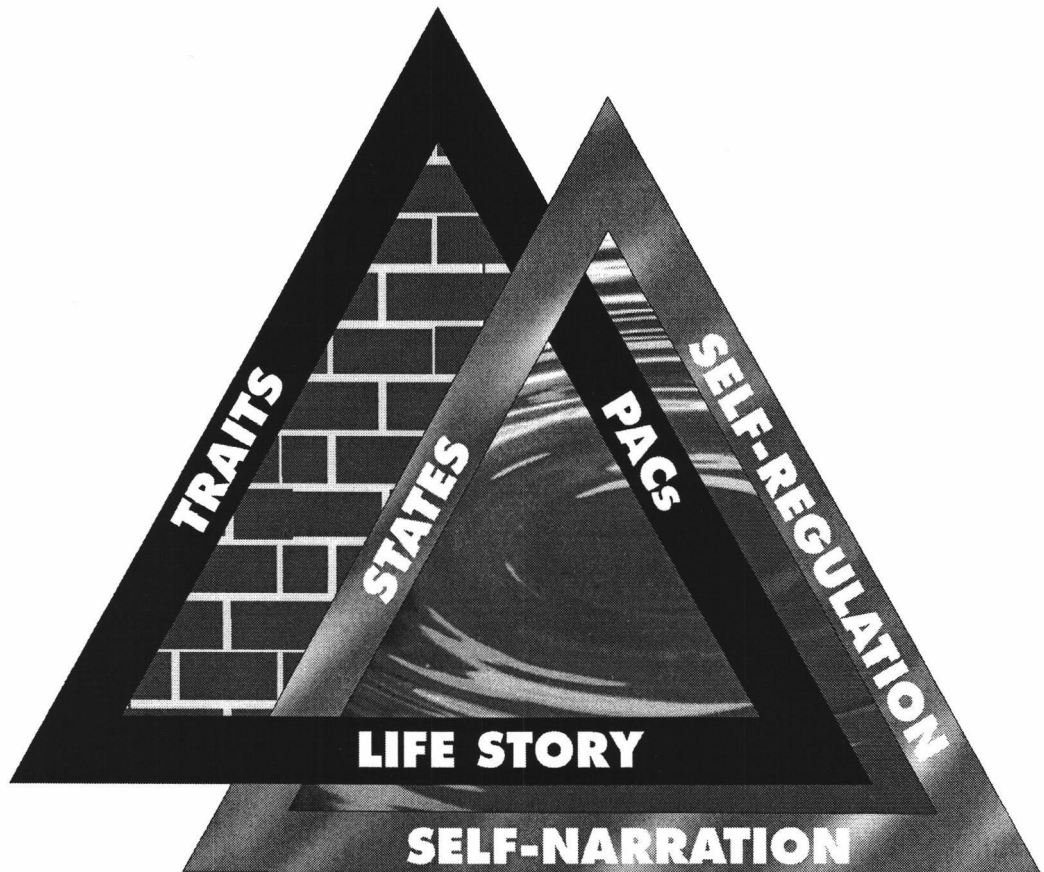
2003) have demonstrated moderate to high stability on the FFM traits for periods of up to 30 years.

More recently, however, research indicates that even personality traits may continue to change during mid-life and beyond. Researchers have identified a shift in certain personality traits in adulthood as a response to specific goal pursuits (Roberts, Caspi, & Moffitt, 2003; Roberts, Helson, & Klohnen, 2002 ). For example, individuals engaged in work and stable marital relationships tended to increase in levels of conscientiousness over time (Roberts, Caspi, & Moffitt, 2003). Trait theorists attribute these trait changes in adulthood to changing social contexts that demand different behaviors at different points in the life span. One critique of trait theories, however, is that they emphasize the individual and may underestimate the role of context in personality development, particularly social connectedness across the lifespan (Labouvie-Vief & Diehl, 1999).

*Personality growth and change.* Although traits are clearly important for understanding a person, and may even reflect some level of positive change or growth into adulthood, it should not be assumed that traits alone define one's personality. One cannot truly know a person based only upon knowledge of certain individual traits (McAdams, 1995). Traits are considered acontextual and cannot reliably predict or lead to specific behavioral outcomes (Mischel, 2004). For example, simply because an individual is extraverted at a family dinner, does not necessarily mean this person will be extraverted in other life situations. Thus, though traits can be useful for understanding some human behaviors, they do not fully capture the richness of an individual's life.

*The six foci of personality.* The long-standing theoretical differences among personality psychologists regarding stability and change have highlighted the need for greater triangulation in personality research. Hooker and McAdams' (2003) *six foci of personality* framework (see Figure 1), addresses the dichotomy between stability and change in one model. This framework integrates personality structures (i.e., traits, personal action constructs, and life stories) with personality processes (i.e., states, self-regulation, and self-narration) in order to provide a richer understanding of who individuals are and what they are trying to accomplish. Each of the six focal areas of

Figure 1. Six foci model of personality. PACs = personal action constructs<sup>1</sup>.



<sup>1</sup>From “Personality reconsidered: A new agenda for aging research” by K. Hooker and D.P. McAdams, 2003, *Journal of Gerontology: Psychological Sciences*, 58, p. 297.

personality can be examined and linked, which will ultimately result in a more integrative, comprehensive understanding of personality and its importance over the lifespan. This theoretical model poses many exciting new challenges and empirical questions for future research in the field of personality and aging. For example, how do states affect personal action constructs or goals? Do older adults with family-related goals display more positive affect? How might these connections affect global outcomes of well-being?

The first level of the six foci model includes both traits and states. Traits consist of the broad and universal descriptions of a person that are generally stable across time (e.g., neuroticism, agreeableness). States are described as the moment-to-moment changes a person experiences. States can include emotions and moods such as joy and anxiety, as well as physiological states such as fatigue or hunger.

The second level of the six foci model includes units of analyses known as personal action constructs (PACs) (Little, 1983). PACs are much less broad than traits, representing the motivational aspects of human behavior, and accentuate the context of each individual's time, place, and social role. Due to the emphasis on person-environment interactions, PACs demonstrate considerable flexibility across one's lifespan and can be understood to represent the "doing" side of personality (Cantor, 1990). There are many goal constructs (e.g., personal projects, developmental tasks, personal strivings, possible selves) that fall under the umbrella of PACs. Two of these PAC level goal constructs are utilized in this dissertation study: personal projects (one's current, day-to-day projects) and possible selves (hoped-for and feared images of oneself in the future). Both of these measures of personality will be further discussed and explained in the literature review (see Chapter 2).

Self-regulatory processes, such as self-efficacy and outcome expectancy, are also included on the second level of the six foci model. These processes relate to the ability to feel in control and tend to be domain specific (Bandura, 1997). Psychological control has been an important area of research in both personality and gerontology (Bandura, 1997, Langer & Rodin, 1976; Rook & Ituarte, 1999). For example, a person with high self-efficacy may feel more successful in meeting goals, and thus take on increasingly challenging roles. Consequently, self-regulatory processes can facilitate or inhibit

motivation and goal setting which elucidates the importance of these processes in conjunction with PACs. Aspects of self-regulatory processes, as they relate to possible selves, will also be incorporated into this dissertation study and discussed in the following literature review (see Chapter 2).

The third level of the six foci model of personality includes both the life story, (which is an individual's narrative understanding of oneself) along with the processes of self-narration. Humans create internalized, evolving stories of their past in order to provide their lives with a sense of meaning, unity, and purpose that continues to develop over the life course as relationships and situations change (McAdams, 1995). The life story also provides us with the richest and deepest sense of who a person truly is (McAdams, 1995). Self-narration processes include social cognitive activities such as remembering, reminiscing, and storytelling; these activities influence how and what is revealed in one's life story. According to McAdams (1995), "when an interviewer asks a person to tell the story of his or her own life, the narrative account that is obtained is not synonymous with the internal life story..." (p.385). Thus, the self-concepting processes, as well as social context, can influence which aspects of the internal life story are shared with others.

A benefit of the Hooker and McAdams' (2003) six foci model of personality is the comprehensiveness of the conceptual framework. Clearly, a more inclusive and multi-level approach to studying personality will lead to increased knowledge about a person and one's ability to adapt across the lifespan. In relation to this model, the purpose of this dissertation study is to examine linkages among Level 2 aspects of personality (PACs), as well as explore how PACs are associated with depressive symptoms in later life.

### *Overview of Depression*

Depression is a serious medical illness. It is one of the most common forms of psychopathology and the number one cause of disability in the world (Murray & Lopez, 1996; Shultz, 1999). In the United States, disability and days in bed due to depression are second only to heart disease (Murray & Lopez, 1996; Shultz, 1999). Approximately 15% of all community residents over age 65 in the United States experience some significant depressive symptoms (Smyer & Qualls, 1999). Fortunately, treatments for depression are

highly effective, many times, however, it remains unrecognized and untreated, which is associated with extremely high personal and societal costs.

Clinical depression can take many forms and it can vary between individuals in terms of symptoms, severity, and co-morbid problems. The categories of depression are identified and described in the Diagnostic and Statistical Manual - 4<sup>th</sup> Edition (DSM – IV) (American Psychiatric Association, 1994). In general, depressive episodes are characterized in terms of discrete periods of time in which a person's behavior is dominated by a depressed mood or anhedonia (American Psychiatric Association, 1994; Karel, et al, 2002). A depression diagnosis typically occurs in middle adulthood, although the illness can emerge at any point across the life span. The results of long-term follow up studies on the course of depression indicate that it is frequently a chronic and recurrent condition, in which episodes of severe symptoms may alternate with periods of full or partial recovery, or relapse and remission (Keller, 1994). Data regarding the course and onset of mood disorders must be viewed with some caution, however, because virtually all studies have focused exclusively on younger adults or individuals who have sought treatment for their depression.

The diagnostic criteria of the two most common types of unipolar depression are displayed in Table 1 and Table 2. Although I will be primarily exploring the relationship between social-cognitive aspects of personality (i.e., goals) and depressive symptoms in older adults, a general understanding of the significance, clinical expression, and symptoms of depression is important.

### *Summary of Introduction*

In conclusion, depression is a very common illness that can easily be overlooked, despite the potential deleterious effects on one's quality of life when it remains untreated. As will be discussed in the literature review, this becomes particularly important in later life. Life span researchers have proposed that personality is one domain in which older adults have a capacity for growth and more specifically, goal processes, may help older adults successfully adapt to late life transitions. Theoretically, one way in which older adults may exert control over their lives and maintain healthy functioning is through their personal goals. These volitional processes are arguably the driving force behind most health-related outcomes (Hooker & McAdams, 2003), and therefore, may play a key role

*Table 1. Symptoms listed in DSM – IV for major depression<sup>1</sup>.*

(Five or more of the following symptoms have been present during the same 2 week period and represented a change from previous functioning; at least one of the symptoms is either (a) depressed mood or (b) loss of interest or pleasure).

<b>DSM – IV diagnostic criteria</b>	<b>Symptom</b>
1. Depressed mood most of day, nearly every day, as indicated either by subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful).	Depressed mood
2. Markedly diminished interest or pleasure in almost all activities most of the day, nearly every day (as indicated either by subjective account or observation by others).	Anhedonia
3. Insomnia or hypersomnia nearly every day.	Sleep disturbance
4. Substantial change in appetite nearly every day or unintentional weight loss or gain ( $\geq 5\%$ of body weight in a month).	Appetite disturbance or weight change
5. Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down).	Increased or decreased psychomotor activity
6. Fatigue or loss of energy nearly every day.	Decreased energy
7. Feelings of worthlessness or inappropriate or excessive guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).	Guilt or feelings of worthlessness
8. Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or observed by others).	Decreased concentration
9. Recurrent thoughts of death (not just fear of dying) recurrent suicidal ideation without a specific plan, or suicide attempt or a specific plan for committing suicide.	Suicidal ideation

<sup>1</sup>Adapted from the Diagnostic & Statistical Manual – 4<sup>th</sup> Edition (1994). Copyright of the American Psychological Association.



Table 2. Symptoms listed in DSM – IV for dysthymic disorder<sup>1</sup>

- A. Depressed mood for most of the day, for more days than not, as indicated either by subjective account, or observation by others, for at least 2 years.
- B. Presence, while depressed, of two (or more) of the following
  - a. Poor appetite or overeating
  - b. Insomnia or hypersomnia
  - c. Low energy or fatigue
  - d. Low self-esteem
  - e. Poor concentration or difficulty making decisions
  - f. Feelings of hopelessness
- C. During the 2-year period of the disturbance, the person has never been without the symptoms in Criteria A and B for more than 2 months at a time.
- D. No major depressive episode has been present during the first 2 years of the disturbance
  - a. **Note.** There may have been a previous major depressive episode provided there was full remission (no significant signs or symptoms for 2 months) before development of the dysthymic disorder. In addition, after the initial 2 years of dysthymic disorder, there may be superimposed episodes of major depressive disorder, in which case both diagnoses may be given when the criteria are met for a major depressive episode.
- E. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

<sup>1</sup>Adapted from the Diagnostic & Statistical Manual – 4<sup>th</sup> Edition (1994). Copyright of the American Psychological Association.

in maintaining mental health in later life. For example, older adults who pursue and successfully manage goals that maximize resource gains and minimize resource losses may potentially experience fewer symptoms of depression.

## Chapter 2 LITERATURE REVIEW

In this literature review, I first describe motivational constructs in personality (e.g., personal goals) and address how they have been linked to well-being across the lifespan. A critical look at how individual and contextual factors interact with goal processes is also addressed throughout this chapter. After introducing the hierarchy of motivational constructs, I describe the primary goal construct of interest in this dissertation study (possible selves), as well as briefly review previous research studies that have utilized this construct. Next, I discuss depression in later life as well as review several etiological theories of depression. I end this chapter by highlighting gaps in our understanding of how goals may affect mental health in late life and present the primary research questions for this study. Finally, I present expectations for this study that were derived from the literature and conceptual framework.

### *Personal Goals*

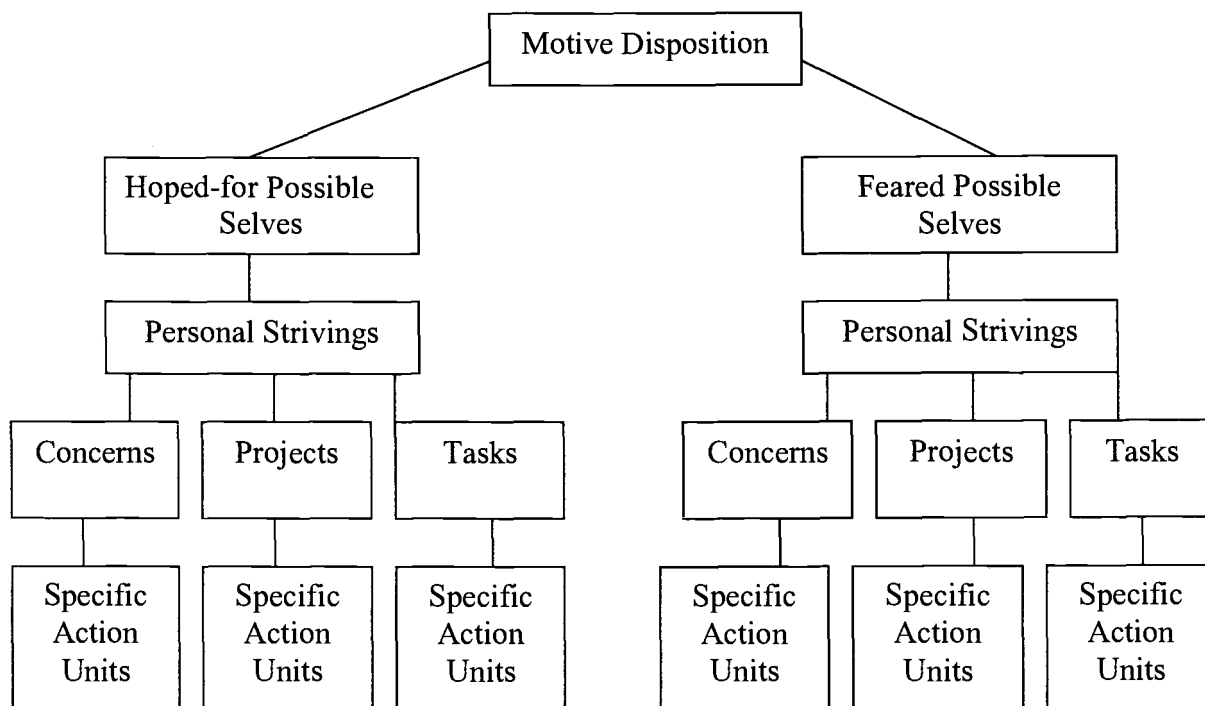
As highlighted in the theoretical roots of this study, goals are one of the important factors contributing to positive development throughout the life span. The concept of life goals is not a new phenomenon (Bühler 1967; Bühler & Marschak, 1968). A renewed interest in goals as a measurement of motivation emerged in the 1970s and has since spawned an extensive volume of literature on the subject. Life goals are broadly defined as the “desired states that people seek to obtain, maintain, or avoid” (Emmons, 1996, p. 314). Individuals achieve these outcomes through the use of cognitive and behavioral strategies, which are mediated by contextual factors (e.g., biological or sociohistorical constraints). Consequently, many researchers have conceptualized motivation in terms of personal goals, but have relied upon various goal constructs (also described as personal action constructs or PACs) to operationalize them. For example, Little’s (1983) *personal projects*, Emmons’ (1986) *personal strivings*, Markus’s (1986) *possible selves* and Cantor’s (1990) *life tasks* are just a few of the constructs that have been used to represent personal goals. Although each of these goal constructs measures motivation from a slightly different perspective (i.e., level of abstraction or temporal frame), there are commonalities among all of them (Nurmi & Salmela-Aro, 2002). Each one is based on individual motives and emphasizes direction of behavior (Allport, G., 1961; Emmons,

1986). In addition, each construct is malleable and exists in an organized, hierarchical system of motivational structures (Emmons, 1986). Finally, the goal constructs are reflective of cultural and contextual influences, and are shaped by life phases (Cantor, 1990; Nurmi, 1991). A hierarchical representation of motivational constructs is portrayed in Figure 2.

One way in which people navigate their own development and select their own environments is through the construction of personal goals (Bandura, 2001; Brandtstädter & Lerner, 1997; Lerner, 1983). Consequently, there has been a lot of interest in personal goals and how they guide development across the life span (Cross & Markus, 1991; Heckhausen, 1999). For example, the success or failure in one's ability to adapt to situations may influence how one reconstructs or strives for goals in future situations, which directly impacts developmental trajectories (Brandtstädter & Renner, 1990; Heckhausen & Schulz 1995). In this manner, individuals exhibit agency in constructing their own lives (Brandtstädter, 1984), by selecting their developmental environments (Baltes & Baltes, 1990b). As highlighted in life span theory, these actions are representative of the multi-directionality of human development and illustrate how individuals can maximize or maintain resource gains, and regulate resource losses.

Goal construction also optimizes a person's ability to cope with many life transitions such as parenting, aging, or caregiving (Nurmi & Salmela-Aro, 2002; Riediger, Freund, & Baltes, 2005). According to Markus and Wurf (1987), the construction of goals that optimize a person's chances to deal successfully with life span transitions requires a comparison of one's individual motives with the developmental tasks and contextual opportunities or constraints that are typical of an individual's age period. For example, older adults who care for a spouse with Alzheimer's disease and who have constructed goals related to caregiving may actually adapt to this increasingly common developmental task better than individuals who do not construct caregiving goals (Bolkan & Hooker, 2005). Personal growth may be linked to transitional periods across the life span and represent ideal periods in which to understand changes in personality (Frazier & Hooker, 2006). Nurmi and Salmela-Aro's (2002) representation of developmental pathways between personal goals, life-span transitions, and well-being is portrayed in Figure 3.

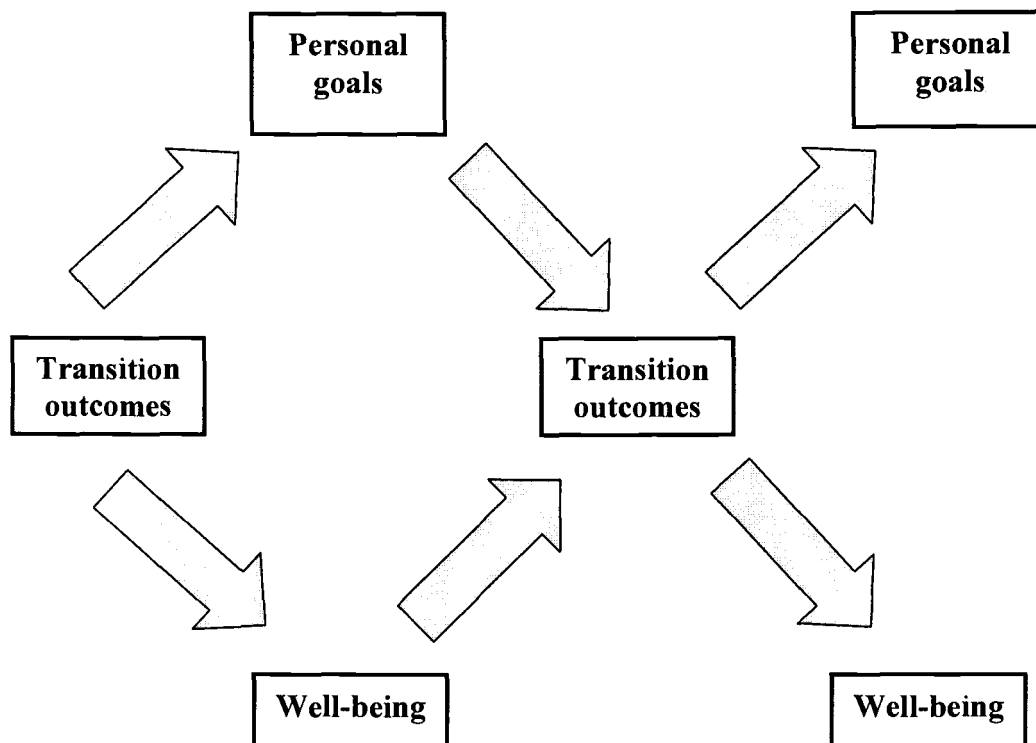
Figure 2. A hierarchical representation of motivational constructs<sup>1</sup>.



<sup>1</sup>Adapted from Emmons by Hooker (2003). *Possible Selves: Selection Mechanism of the Distributed Self in Action*. With Frazier, L., & Bolkan, C. Paper presented at the 111<sup>th</sup> Annual Convention of the American Psychological Association, Toronto, Ontario, Canada.

Figure 3

A representation of the developmental pathways between personal goals, life span transitions, and well – being<sup>1</sup>.



<sup>1</sup>From, Nurmi and Salmela-Aro (2002). Goal construction, reconstruction and depressive symptoms in a life-span context: The transition from school to work. *Journal of Personality*, 70 (3), 385 – 420 (pp. 388).

In congruence with life span theory, goals represent the developmental tasks, socio-historical constraints, and opportunities of each age period (Markus & Wurf, 1987; Nurmi, 1991). For example, the domains of goals in which individuals are invested across the lifespan often vary by age. This likely represents developmentally appropriate tasks for each age period. For example, younger adults tend to construct goals related to friends and careers, middle-aged adults tend to construct family and health related goals, and older adults tend to construct goals related to health or leisure (Cross & Markus, 1991; Hooker, 1992; 1999; Staudinger, 1996a). This raises important empirical questions regarding which goal domains people focus on for optimizing successful outcomes. For example, if older adults invest in goals that are not reflective of their developmental age period (i.e., starting a career), will that affect health outcomes and impair their ability to optimally age? Currently, there is empirical evidence that points to the importance of health-related goals in later life (Hooker, 1992), but further investigation of goal processes in older adults is needed. Specific goals and their relevance to successful aging and well-being will be addressed in the following section.

### *Goals and Well-being*

Personal goals have long been tied to health and psychological well-being. According to Adler (1969, p. 2), “without the sense of a goal, individual activity would cease to have any meaning”. Goals and strategies to achieve them are an important aspect of managing life transitions to promote optimal outcomes. The results of recent studies are indicating that older adults may manage their goals better than younger adults. For example, older adults are more likely than younger adults to express goals as aspirations to grow personally (Bauer & McAdams, 2004). In addition, older adults may be more engaged in their goal pursuits and experience more facilitation among their goals (Riediger, Freund, & Baltes, 2005). Most individuals strive for more than one goal at the same time, but each goal may not necessarily be independent of the others, therefore, intergoal facilitation represents how the pursuit of one goal will simultaneously increase the success of attaining other related goals (Riediger, et al, 2005). Because older adults may exhibit more intergoal facilitation compared to younger adults, this is indicative that their goals may be more aligned, resulting in higher goal pursuit intensity (Riediger, et al., 2005).

Personal goals are often evaluated in two manners: by goal content or goal appraisals. In addition, they can be evaluated nomothetically or idiographically. Regarding evaluation of goal content, empirical evidence supports that goal repertoires shift across the lifespan. As previously discussed, this change may be reflective of the developmental period of an individual's life. Research on goal content also demonstrated that achievement (Salmela-Aro & Nurmi, 1997a), intimacy (Emmons, 1991) and family related goals (Salmela-Aro & Nurmi, 1997) are associated with well-being and low psychological stress. Additionally, older adults tend to select goals with a sense of choice and self-expression (Sheldon & Kasser, 2001). They also engaged in goals aimed towards intrinsic values versus extrinsic values, and were more concerned with generativity and ego integrity than identity formation (Sheldon & Kasser, 2001). Because goals may moderate an individual's response to age related loss, the ability to manage health-related and family related goals should be the challenge for successful development in later life (Wrosch, Heckhausen, & Schulz, 2002).

Theoretically, if goals reflect the successful coping of key developmental challenges then they will foster well-being and, conversely, focusing on goals unrelated to developmental challenges (e.g., self-focused goals) may be maladaptive (Cross & Markus, 1991). Focusing on the self in early life stages, such as adolescence (Erikson, 1959), may be helpful for self-discovery, but it is generally not productive to adaptation in adulthood. It can be argued that self-indicative goals may be reflective of poor coping or ruminative patterns that may lead to depression. Additional empirical evidence is needed, however, before any conclusions can be drawn. Empirical questions also remain regarding the types of goals in which individuals engage; is it the types of goals individuals select that ultimately impact well-being, or is it the goals that individuals fail to select that may affect well-being?

Most of the research linking goals to well-being has examined the self-appraisals of goals (Little, 1983; 1989; McGregor & Little, 1998). Stressful, unstructured, or overly challenging personal projects negatively affect overall life satisfaction (Little, 1989). Additionally, individuals who are engaged in meaningless, chaotic, isolated, or futile goals may display depressive affect (Little, 1989). Little (1989) summarized his work on personal projects by reporting that "well-being will be enhanced to the extent that



individuals are engaged in personal projects that are meaningful, well-structured, supported by others, not unduly stressful, and which engender a sense of efficacy". The ability to feel competent and in control of one's goals is an important pathway to well-being (McGregor & Little, 1998).

### *Possible Selves*

So far, the concept of personal goals has been described in a general overview. This study, however, will employ the use of one specific goal construct: *possible selves*. This construct represents an individual's ideas of what they would like to become (*hoped-for selves*) and what they are afraid of becoming (*feared selves*) (cf. Markus & Nurius, 1986). For example, a student who fears failing at school may have a strong, internal feared self of being unemployed or homeless in the future. Conversely, a struggling writer who hopes for success may have a possible self as a recognized and respected author. As evidenced by these examples, the potential selves of the future (i.e., becoming homeless or becoming recognized) motivate each individual from two distinct self-mechanisms. One individual will likely strive to avoid the feared self, whereas the other will strive to attain the hoped-for self. Carver and Scheier's (1998; 2002) control theory illustrates this function and supports the possible selves theoretical perspective. They argued that people engage in comparison processes in which they compare their current selves to their ideal selves, and when discrepancies exist, they are motivated to change the self in an effort to minimize the inconsistency (Carver & Scheier, 1998; 2002). Possible selves are resources used to help motivate and defend an individual's sense of self. They also incorporate individuals' competence beliefs and values, as well as motivate behavior that propels individuals toward their goals. More research is needed on testing the possible selves theory developmentally, to better understand the continuity and change in this motivational process over the life span.

*Possible selves and self-regulatory processes.* Possible selves, in conjunction with self-regulatory processes (i.e., how capable one feels of achieving or avoiding a future self), influence daily behavior to help one become or avoid specific images of self in the future. These highly personalized images of oneself provide incentives for current behavior because the information represented in these images guides individual decisions about which goals to construct, pursue, avoid, or abandon. Therefore, possible selves

represent the underlying motivation behind improving oneself, maintaining abilities, or employing efforts to minimize losses, particularly in later adulthood (Smith & Freund, 2002). To date, there is little known about age-related changes in motivational processes making possible selves an important area for research (Riediger, Freund, & Baltes, 2005).

Because hoped-for and feared possible selves are derivative of different regulatory mechanisms they have been associated with different behaviors and mental health outcomes (Frazier, Hooker, Johnson & Kaus, 2000). For example, hoped-for selves serve as a motivating mechanism because individuals are striving to achieve these selves, whereas feared selves serve as an avoidance mechanism because individuals are trying to avoid these selves. Theoretically, both mechanisms are motivating, but more research is needed to understand the processes through which these function, as well as which motivational process (i.e., striving or avoiding) may lead to outcomes that are more successful. Motivation to achieve a particular self may be more affected by the availability of the self (i.e., the degree of detail one has about the self), the accessibility of the self (i.e., how quickly it can be generated) and how much control one feels they have to attain or avoid the self (Norman & Aron, 2003; Ruvolo & Markus, 1992). Another factor that may also affect motivation is the extent to which the possible self is represented in the present self (Norman & Aron, 2003).

*Balance of possible selves.* The balance between hoped-for and feared selves in specific domains (i.e., hoped-for health related self with counterbalanced feared health related self) has also been of interest to some researchers (Frazier, et al., 2000; Markus & Ruvolo, 1989; Oyserman & Markus, 1990; Smith & Freund, 2002). It has been argued that an individual develops a balance of possible selves in a specific domain if that domain is personally salient (Markus & Ruvolo, 1989). Hoped-for selves have been linked to goal attainment strategies and the balanced feared self may stabilize the hoped-for self by providing the individual with future images of what may happen if goals are not achieved (Oyserman & Markus, 1990). Markus and Ruvolo (1989) argue that individuals with matched hoped-for and feared selves may indicate a high level of motivational control with multiple strategies and means for achieving the future self. For example, a hoped-for self is represented as a means to maximize gains, whereas a feared self is represented as a means to minimize losses (Smith & Freund, 2002). Other

researchers suggest that the maintenance of matched hoped-for and feared selves may actually impair well-being because it reflects chronic worry and rumination rather than motivation (Smith & Freund, 2002). Furthermore, if individuals have a high degree of inter-related selves and experience negative events which affect the self, then they may not have other areas of the self to buffer the effects of the negative event, resulting in decreased well-being (see self-complexity theory, Linville, 1985; 1987). A well-developed and systematically interrelated possible selves repertoire, though, may be a protective factor in confronting and managing old age (Baltes, Lindenberger, & Staudinger, 1998).

*Possible selves domains.* The relevant question is which domains of possible selves serve as a protective factor for older adults? Although more research is needed to fully address this question, many researchers cite the emergence and importance of health related possible selves in later life (Cross & Markus, 1991; Hooker, 1992, Hooker & Kaus, 1992; 1994). Although individuals of all ages tend to identify health related possible selves, it is not until the second half of life that these possible selves become most important to individuals (Hooker, 1992). Additionally, older adults who believed they had some control over achieving this possible self, reported feeling subjectively healthier. Because there is a positive correlation between age and chronic health conditions, health is often more salient to older adults and is an important self-domain in which to invest. Interestingly, possible selves related to health are more likely represented as fears rather than hopes, until later in life (Hooker, 1992). This poses interesting empirical questions regarding the motivational differences between hoped-for and feared selves throughout the life span.

People of all ages who reported low life satisfaction generated more hopes about personal characteristics (i.e., indicating a desire to change present self characteristics (Cross & Markus, 1991). Those with high life satisfaction generated more hopes in other domains such as family and health (Cross & Markus, 1991). On the other hand, Smith and Freund (2002) found that possible selves related to personal characteristics were common among their participants and noted hopes were less related to well-being than were feared self images. Individuals may become more self-focused immediately after they fail than after they have succeeded (Greenberg & Pyszczynski, 1986). Sometimes,

self-focused attention may actually provide compensation in the aftermath of failure (Wood & Dodgson, 1996). For example, if a person receives a poor evaluation at work, taking time to focus on one's success in another domain, such as gourmet cooking, may help to alleviate negative emotions regarding failure in the occupational domain (cf, self-completion theory, Wicklund & Gollwitzer, 1982). This example highlights the importance of having access to a broad repertoire of goals.

As previously noted, social related goals, such as family and friends, may also be important domains of the self across the lifespan and especially in later life, particularly because people are embedded in contexts of social relationships (Bronfenbrenner, 1977; 1979). Although possible selves represent one's innermost goals and desires, there is a strong social component to them because they are influenced by one's interaction with others. Individuals are embedded and influenced by the social context of their everyday lives. Consequently, social networks are a vital aspect of the human experience and foster engagement with life. This illustrates the co-constructed nature of the self; it is through the feedback individuals receive from others which encourages them to proceed with or disengage from certain goals that promote the self. In essence, the people who surround us continually re-confirm who we are by their reactions to us.

Across the life span, other people continually influence the self-system, although the influence of others may vary as a function of socially recognized, normative developmental tasks. For example, family and peers are particularly influential in shaping the development of adolescents and young adults who are likely facing the normative tasks of seeking a partner, marriage, and creating their own families. In contrast, older adults are more likely to have fewer possible selves, but invest in more activities to achieve those important future selves, such as health (Hooker, 1999). The importance and influence of social relationships may change in later life as social networks are affected by life circumstances associated with aging.

### *Depression in Later Life*

The purpose of this study is to examine the possible selves of older adults and explore linkages to depressive symptoms in later life, therefore, an understanding of the impact of depression on older adults is important to this dissertation research. Many Americans (more than half of older adults) mistakenly assume that depression is a sign of

normal aging (National Mental Health Association, 1996). On the contrary, older adults are at the lowest risk for clinical depression, compared to other age groups. Depression, remains an important concern, however, because an estimated two million Americans aged 65 and older have a depressive illness and another five million may have “subsyndromal depression,” or significant depressive symptoms that fall short of meeting full diagnostic criteria for a disorder (Blazer, 2003). The DSM-IV (American Psychiatric Association, 1994) criteria for depression have not been specifically tested in older adult populations (Singer, 1998). For example, the subsyndromal depression that most frequently occurs in older adults does not have diagnostic criteria described in the DSM-IV (American Psychiatric Association, 1994). In addition, researchers expect the prevalence of late life depression to continue to increase with each decade because current trends indicate that depression rates in more recent-born cohorts are rising (Joiner, 2000). This may be reflective of such socio-historical variables as increasing knowledge, awareness, and acceptance of the illness.

Factors such as ageism, stigma associated with mental illness, a lack of geriatric mental health resources, and high rates of subsyndromal depression, contribute to the large number of older adults who remain undiagnosed and untreated for their symptoms. It is estimated that 10 – 15% of older adults living in community settings suffer from clinically significant depressive symptoms (Blazer, 1994; 2003; Smyer & Qualls, 1999). This is a major concern because even minor depression results in individual suffering, declining physical health, family burden, and increased health care costs (Johnson, Weissman, & Klerman, 1992). More specifically, depression in older adults results in excess disability, meaning that depression will likely make chronic conditions worse for older adults. This leads to more visits to physicians and inpatient hospital days, more reliance on medications and health care services, as well as an unnecessary downward spiral in health, which can indirectly relate to increased mortality. Even controlling for illness, older adults who are depressed are more likely to rate their health as poor and more likely to die sooner than others who are not depressed when followed over time (Schulz, 2000). Moreover, depression (second to dementia) accounts for the second largest annual cost for informal caregiving (Langa, et al., 2004). This highlights the significant impact that depression has on families.

Depression is one of the most common conditions associated with suicide in older adults and this may be fatal if undetected and untreated. Older Americans are disproportionately likely to die by suicide. Although older adults comprised only 13 percent of the American population, individuals aged 65 and older accounted for 18 percent of all suicide deaths in 2000 (Census Bureau, 2004). Among the highest rates (when categorized by gender and race) were Caucasian men aged 85 and older, who were five times more likely than national averages to suicide (Census Bureau, 2004). Furthermore, several studies have found that as many as 75% of older adults who die by suicide have visited a primary care physician within a month of their death. In addition, 55% to 75% of older adults initially visit their primary care physician to seek help for their depressive symptoms (Boswell & Stoudemire, 1996; Olson & Pincus, 1996). These findings point to the urgency of improving detection and treatment of depression as a means of reducing suicide risk among older adults.

*Risk factors for depression in older adults.* There are many unique risk factors in older adults that may make them more vulnerable to depression. These include experiencing co-morbid medical illnesses, abusing or mis-using substances, medication interactions, and coping with stressful life events such as the death of a spouse (Bosell & Stoudemire, 1996; Ganzini, Smith, Fenn & Lee, 1997; Callahan, Dittus & Tierney, 1996). Health status is often correlated with depression and the presence of one or more chronic illnesses in older adults often increases the risk for depression. Up to 40% to 70% of older individuals living with a chronic illness also experience depression (Broe, et al., 1998; Covinsky, et al., 1997; Egberts, Leufkens, Hofman & Hoes, 1997; Gonzalez, et al., 1996; Marjeroni & Hess, 1998). Although depression can lead to health decline, these effects are reciprocal. Individuals who are depressed may have reduced motivation to exercise and engage in important health-related behaviors (Bruce, 2000).

Additional risk factors for older adults include gender and social support. Women, across the lifespan, are at a two to three times higher risk for depression compared to men (National Institute of Mental Health, 1999; National Mental Health Association, 2000). As previously noted, however, older men are more vulnerable to suicide completion. This finding has been replicated numerous times and appears to hold despite cultural norms that may make it easier for women to be diagnosed (i.e., depression indicating weakness

in men). This could be indicative of a symptoms bias towards women. Numerous studies have been conducted on social support and have concluded that it may be an important predictor of depression in later life (Blazer, 2005; Horowitz, Reinhardt, Boerner, & Travis, 2003). Marital status, poor health, low quality of relationships with family, and low stability of friendships explained approximately half of the variance in depression as independent risk factors for depression in later life (Horowitz, et al., 2003). Other studies provide evidence that social isolation and loneliness were large factors in late life depression (Alpass & Neville, 2003). A comprehensive understanding of the role of social support as a risk or protective factor for depression in late life is difficult to ascertain, because social support is multi-dimensional. For example, received support does not necessarily buffer the effect of disability and depression, but perceived support can alleviate some of these negative outcomes (Krause, 1997). Individuals who perceive a high level of support from both family and friends often report higher levels of well-being than those with low support from one or both sources (DuPertuis, Aldwin, & Bossé, 2001; Oxman & Hull, 2001). In conclusion, the most empirically supported components of social support include: type of social support and the frequency of network contacts. Both these components are more strongly related to perceived adequacy of support, indicating that measures of perception of support may be more vital to mental health outcomes than actual measures of social support.

### *Etiological Theories of Depression*

Because the onset, symptoms, and causes of depression can vary from person to person, it is not surprising that there are also multiple theories explaining the etiology of depression. The roots of depression are complex, leaving many scientists and practitioners to agree that the probable cause of depression may be an equal combination of both biological and environmental factors (Katz & McGuffin, 1993). The fact that the most efficacious treatment for depression (a combination of both pharmacotherapy and psychotherapy) supports the assertion that depression may be caused by bio-psycho-social forces. The genetic contribution may be smaller, however, for individuals experiencing minor depression or dysthymia (Katz & McGuffin, 1993). It can also be argued that biological and environmental effects are independent of each other. For example, genetic factors may affect an individuals' sensitivity to environmental events

such as stressful life experiences (Kendler, et al, 1995). It is also possible that we have not distinguished and parsed depression subtypes accurately yet.

*Biological contributions.* The biological causes of depression remain controversial and poorly understood. Although depression can run in families, it does not occur frequently enough to suggest a sole biological source to depression. Changes with the chemistry of the brain (or fluctuations in certain neurotransmitters) have been identified as a probable cause to some forms of depression, however, this research has largely been correlational. Two neurotransmitters that have been implicated in depression are serotonin and norepinephrine and many anti-depressant treatments are targeted towards these neurotransmitters. The neuroendocrine system may also play an important role to the onset of depression because it is responsible for regulating responses to stress (Miller, 1998). An imbalance in certain body chemicals, particularly cortisol, a hormone that the body produces in response to stress, anger, or fear can contribute to depression. Researchers cannot conclude with certainty that imbalances cause depression, or if depression itself triggers these responses, or if there is another unknown variable that contributes to these differences. Some individuals can exhibit changes and even improvements in chemical imbalances in response to psychotherapy (without medication) and many depressed adults do not respond to any anti-depressant medication. These findings highlight the potential interplay between genetic as well as environmental causes as the root of depression. More empirical research is needed to clarify the importance of environmental influences and to explore alternative, non-pharmacologic based interventions for treating depression.

*Cognitive contributions.* Cognitive theories have been frequently been applied to depression by explaining it as an emotional reaction to an event that is mediated by cognitive schemas. The meaning that individuals attribute to their experiences may significantly influence the onset, severity and course of depression. Cognitive therapy has been a strategy used in treating depression, underscoring the important cognitive component of the illness.

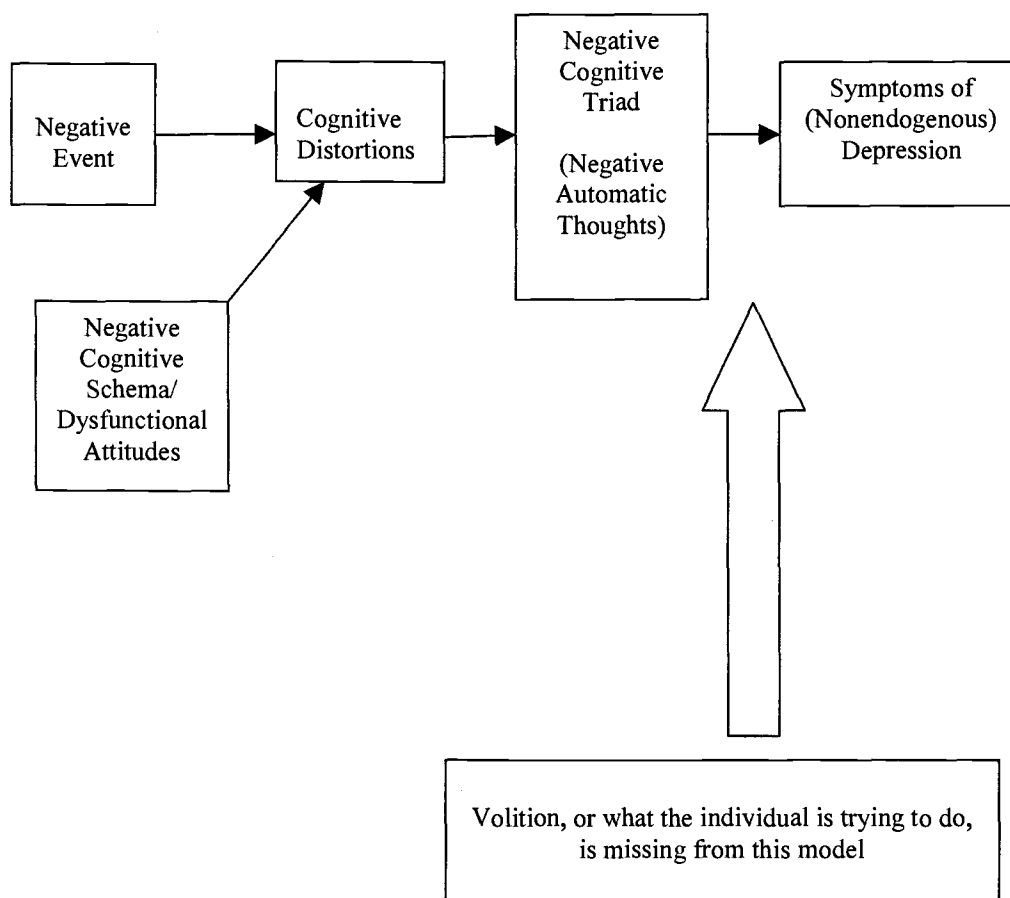
Aaron Beck's (1967) negative cognitive triad is one of the most well-recognized cognitive theories of depression. He argued that an individual's dysfunctional attitude and outlook on life leads to a predisposition towards depression, particularly when an



individual simultaneously experiences negative life events (Beck, 1967). The negative cognitive triad he theoretically outlined consists of pessimistic perceptions of the self, of the future, and of the world. He argues that these perceptions characterize the thinking of individuals with depression; he stated “the depressed person is overly sensitive to goal-directed activity, interprets trivial impediments as substantial, reads disparagement into innocuous statements by others, and at the same time devalues himself or herself” (Kovacs & Beck, 1978, p. 242). The ongoing depressive cognitive schema (i.e., “I should be able to handle this pressure by myself”, “I should be capable all of the time”) may not be the direct cause of depression, but may increase the probability that a person will overreact to future stressful stimuli leading to depression (Abramson, Metalsky, & Alloy, 2002). A portrayal of the causal chain of depression, from Beck’s theoretical perspective, is displayed as Figure 4. One key aspect missing from Beck’s causal chain is volition, or what an individual is trying to do (Dykman, 1998). It could be argued that the negative cognitive schema impedes motivational aspects of the self, leaving an individual engaged in stressful or overly difficult goals, which may ultimately predispose one to depression.

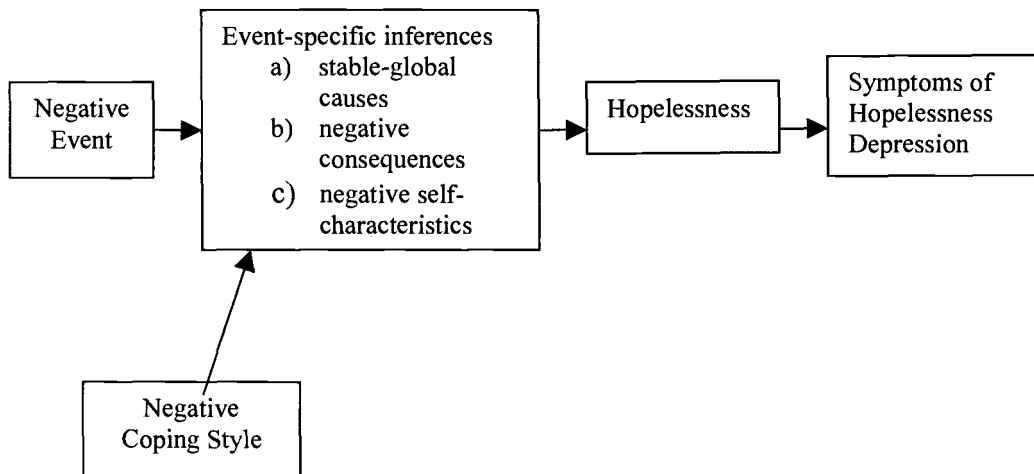
Hopelessness theory (Seligman, 1975; Abramson, Metalsky, & Alloy, 2002) is another popular cognitive theory of depression. Seligman (1975) first suggested hopelessness as a source of depression based on the passive behavior demonstrated by animals that had been exposed to inescapable shocks in his laboratory experiments. The underlying premise of the theory is that depressed individuals do not recognize a contingency between their behavior and outcomes in their environment (Abramson, et al., 2002; Seligman, 1975). Depression may emerge as the expectation that desirable events will not occur or that aversive events probably will occur, regardless of the actions of the individual. As a result, individuals feel helpless because they cannot control events in their own lives. Furthermore, individuals who experience multiple, negative life events and who also have a tendency to attribute negative events to stable and global causes, may be vulnerable to depression (Abramson, et al., 2002). The causal chain of depression in hopelessness theory is portrayed in Figure 5. Although hopelessness theory has garnered much empirical support for negative coping styles related to depression, volitional aspects of the self are also missing in this theory.

Figure 4. Causal chain in Beck's theory of depression<sup>1</sup> is missing volitional component.



<sup>1</sup>Adapted from Abramson, Alloy, Hankin, Haeffel, MacCoon, & Gibb (2002). Cognitive vulnerability-stress models of depression in a self-regulatory and psychobiological context. In I. Gotlib & C. Hammen (Eds.), Handbook of depression (p. 271). New York: Guilford Press.

Figure 5. Causal chain in hopelessness theory<sup>1</sup>



*Note.*

This model fails to account for individuals who do not experience adverse life events, but still become depressed (although it is possible that negative events may be perceived and not overt to observers). In addition, the volitional aspect of the self is also absent in this model.

<sup>1</sup>Adapted from Abramson, Alloy, Hankin, Haefel, MacCoon, & Gibb (2002). Cognitive vulnerability-stress models of depression in a self-regulatory and psychobiological context. In I. Gotlib & C. Hammen (Eds.), *Handbook of depression* (p. 260). New York: Guilford Press.

Self-processes may regulate cognitive distortions, highlighting the importance of understanding motivational aspects of the self in relation to depression (Klinger, 1977). For example, it may not be that learning that one is helpless (as proposed by hopelessness theory) that leads to depression, but that losing incentives (or goals) precipitates depression (Klinger, 1977). This assertion is supported by many studies that failed to detect a learned-helplessness effect (Thornton & Jabos, 1971; Roth & Bootzin, 1974). The attribution of individuals, however, may lead to learned-helplessness (Roth & Kubal, 1975). If individuals believed that their performance was reflective of their ability, based on the meaning of feedback received by others, then they displayed learned-helplessness after failing to complete a task (Roth & Kubal, 1975). On the other hand, when individuals did not believe their performance was reflective of their ability, the learned-helplessness effect did not emerge. According to Klinger (1977), “there is nothing in the theory of learned helplessness to suggest why the importance of failure should make a difference” (p. 160). An incentive-loss perspective, however, can explain the importance of failure because a participant’s self-esteem is at stake if doing well reflects one’s basic ability, but nothing is at stake when it has no bearing on the self. Additional empirical research is needed to clarify the theoretical distinction between Klinger’s suggestions and generalized learned helplessness. Both of these theoretical proposals include elements of cognitive and self-processes.

*Interpersonal contributions.* Interpersonal and behavioral theorists suggest that depressed individuals have an actual negative effect on the people around them, which results in further alienation from friends and family members (Coyne, 1976). For example, when an individual looks to others for excessive reassurance, but does not receive adequate support, a “depressive spiral” or “vicious cycle” may begin, in which the individual is pushed further away from others and further into depression (Coyne, 1976). Depression may also be the product of a reduction in response-contingent positive reinforcement (Lewinsohn, 1974). More specifically, depressed individuals presumably become less active because their behavior is not followed by positive reinforcement (Lewinsohn, 1974). Interpersonal relationships are an important aspect of this theory because others may initially reinforce depressed behaviors (i.e., crying, self-deprecation) in their attempts to provide comfort and support. As individuals make these social

contacts contingent on a depressed mood, they may unintentionally increase the frequency and stability of their loved one's depression. Finally, the result of this cyclical behavior is that continued manifestation of depressed behaviors will ultimately have an aversive impact on other people, which results in diminished social support.

The limitation of interpersonal and behavioral theories of depression is that they suggest human behavior is maintained specifically by reinforcement and that a certain schedule of rewards, stimuli, and responses (Klinger, 1977). This mechanistic world-view does not adequately account for the contextual nature and multi-directionality of ontogenetic development posed by life span theory. Interpersonal or behavioral theories also fail to explain why spontaneous recovery of interest in most activities often occurs after being depressed. It might be better to conceptualize depression as an interactional illness or one in which the disease affects individuals who, in turn, affect their environments.

*Personality contributions.* Personality and depression have been linked for thousands of years. Philosophers, such as Hippocrates and Galen, argued that “humors” were responsible for personality type and various forms of psychopathology (Klein, Durbin, Shankman, & Santiago, 2002). There is an extensive amount of research exploring the relationship between personality and depression (cf, attributional style, coping styles such as rumination, response style, self esteem), but space will preclude discussing each one. Instead, I will focus on how two main aspects of personality (traits and self-processes) may be related to depression.

Numerous studies have been conducted on how personality traits are correlated with depression. For example, individuals who report higher scores of neuroticism and lower scores of extraversion are also associated with higher levels of depression (Klein, et al., 2002). These findings have also been relatively stable. In fact, neuroticism has been proposed as a risk factor for depressive symptoms (Enns & Cox, 1997). In addition, individuals high on dependent personality traits may be more prone to react negatively to rejection or loss, making them vulnerable to depression (Blaney, 2000).

Social cognition researchers have examined how “doing” aspects of personality, such as self-concept, goals and motives play a role in psychological well-being. For example, Higgins (1987) theorized that the discrepancy between one's actual and ideal

self is psychologically uncomfortable and drives individuals to match the actual self to the hoped-for self. A discrepancy between actual and ideal self-states may produce emotions associated with depression, such as disappointment, sadness, and dissatisfaction (Higgins, 1987). Moreover, the discrepancy between one's actual and ideal self was significantly and uniquely related to major depression in at least one empirical study (Allen, Woolfolk, Gara & Apter, 1996). Other research has demonstrated a distinct pattern of self-concept discrepancies in both depression and anxiety (Strauman, 1992; Scott and O'Hara).

Self-complexity (Linville, 1985; 1987) has also been suggested as a buffering effect for depression and poor well-being. Individuals high in self-complexity may organize knowledge about the self into numerous and distinct categories, whereas individuals low in self-complexity have very undifferentiated selves and tend to have a uni-dimensional perspective of themselves (Linville, 1985; 1987). Theoretically, individuals high in self-complexity are protected against depression because when a negative event impacts one particular aspect of the self, there are other aspects of the self that have not been affected. However, McConnell and colleagues (2005) noted that although some research has found that those greater in self-complexity fare better physically (e.g., fewer illnesses) and psychologically (e.g., less depression) when experiencing stress, other studies have reported a different pattern of data (e.g., greater self-complexity predicts greater depression). A meta-analysis of self-complexity research concluded that individuals with high complexity may actually be "mildly more distressed, may react somewhat less negatively to stressful life events, and will respond considerably less positively to positive life events" (Rafaeli-Mor & Steinberg, 2002, p. 54), indicating that high self-complexity may only be important during periods of extreme stress. Additionally, individuals with greater self-complexity, but who perceived relatively little control over their self-aspects, exhibited poorer physical and psychological outcomes (McConnell, et al., 2005).

### *Research Gaps*

Life span researchers have noted that personality and motivational aspects of the self (i.e., goals) may be key to understanding human adaptation across the lifespan and more specifically, an area of potential growth in later life. In addition, as personality

researchers move to incorporate both stability and change into definitions of personality, there is a need for research examining linkages between various aspects or levels of personality in order to establish a richer understanding of individuals (Hooker & McAdams, 2003). Because these lines of research are still relatively new, a lot of exploratory research remains to be done. This makes the study of possible selves in later life an important avenue for research on the promotion of well-being in later adulthood.

Although prior research has begun to link the benefits of health related possible selves to optimal aging, fewer studies have been aimed at understanding how possible selves may serve as a protective factor for mental health, and specifically depression in older adults. Additionally, while important benefits of social connectedness have been highlighted in numerous studies, the self-regulatory processes of social support are not yet well understood. Theoretically, the active pursuit of health and/or family related goals should be adaptive responses for older adults who may be faced with unique developmental transitions associated with later life (e.g., loss of friends, retirement, health maintenance, grandparenthood). Guided by life span theory, and based on successful aging models, goal selection and goal striving in specific domains may be important for preventing depressive symptoms in those with manageable problems, because older adults can actively maximize and manage their gains and regulate potential losses (Baltes, 1990; Rowe & Kahn, 1997).

Finally, depression in later life remains an important area of research because of its prevalence and impact on quality of life. One factor that has been historically lacking in social-cognitive theories of depression is the role of goals and motivation. Although negative cognitive schemas and interpersonal stress may be important influences on depression, it is still essential to understand what individuals are trying to do or become, which makes the use of possible selves a unique method for exploring depression. There is only one known published study in which possible selves have been analyzed in populations of clinically depressed individuals (Allen, Woolfolk, Gara, & Apter, 1996). This study, however, was based on a relatively small sample size, included only middle-aged adults, and relied upon a different measure of possible selves (see Higgins, 1987) than will be implemented in this dissertation study (Allen, Woolfolk, Gara, & Apter, 1996).

Finally, a majority of the research studies conducted on personality and goals has relied upon convenience samples, such as college students, and then generalized to the entire population across the lifespan. In addition, there are very little data available on untreated depression because most depressed participants in clinical samples were already in treatment prior to the research study. Therefore, the use of a community sample of older adults in this study will contribute to our understanding of goal processes and depressive symptoms in later life.

### *Research Questions*

The general aim of this exploratory study is to examine the relationship between personal goals (as measured by possible selves) and depressive symptoms in late life. In addition, the goal of this study was to enhance understanding of dysphoria from a theoretical perspective that emphasizes motivation and social-cognitive processes. In addition to using possible selves to explain depression in later life, the interrelationship between current projects (personal projects) and future goals (possible selves) will also be explored and associated with depressive symptoms in older adults.

More specifically,

1. Do older adults with significant depressive symptoms have different goal repertoires than older adults without depressive symptoms? (For example, do they have fewer goals related to health and family?)
2. Do older adults who successfully manage and self-regulate their goals have fewer depressive symptoms?
3. Do older adults who perceive more relatedness between their goals (indicating high teleonomic relevance) exhibit fewer depressive symptoms?

### *Expectations*

*Hypothesis 1.* Several studies have examined goal repertoires across the lifespan (Cross & Markus, 1991; Frazier, Johnson, Gonzalez, & Kafka, 2002; Hooker, 1992; 1999; Smith & Freund, 2002) however few have specifically explored how possible selves are represented in depressed individuals. Analyzing the content and frequency of the possible selves generated in this study, will corroborate the results of previous studies regarding the emergence of particular possible selves in later life, as well as potentially uncover novel findings regarding the possible selves of older adults with depressive



symptoms. I expect to find potential differences in the goal construction, or content of possible selves, between individuals with and without depressive symptoms. For example, based on current cognitive theories of depression which pose the importance of negative schema, I expect that older adults with depressive symptoms may generate more feared selves or have fewer possible selves overall. I also expect to find that health and social relationships will be among the most frequently reported possible selves for all older adults because these domains are most representative of age-related developmental tasks in later life. Finally, I expect that older adults who are not invested in these developmental tasks (i.e., fail to generate health or family related possible selves) may experience more depressive symptoms.

Prior research has established the salience of health related and family related possible selves in later life (Frazier, et al, 2000; Hooker, 1992; Hooker & Kaus, 1994, Smith & Freund, 2002), therefore, it is predicted that these particular domains may serve as an important protective factor for mental health and that older adults with depressive symptoms may fail to select goals in these domains. Based on the SOC (selective, optimization and compensation) model (Baltes & Baltes, 1990), self-regulation of health and social relationships should be an important goal in later life in order to maximize gains, minimize losses, and increase well-being. For example, older adults with health related selves may be experiencing physical or mental health issues. Thus, individuals who invest in health maintenance goals may have better mental health outcomes, because selecting age-related goals and concentrating on fewer domains will optimize the functions of these domains and help older adults compensate for loss. Similarly, social relationships have been implicated as a key factor in influencing possible selves as well as late life depression, also making it an important domain for older adults to invest.

*Hypothesis 2.* I expect that an important difference between older adults with and without depressive symptoms will emerge in the self-regulatory processes. Because negative cognitive schema is not unique to individuals with depression (Coyne, 1976), the ability to manage and regulate cognitive processes may be key to psychological well-being. I hypothesize that older adults with depressive symptoms may feel less capable or feel in less control of achieving or avoiding their future selves.

Although the presence of health and family related possible selves may play an important role in successful aging in later life (as described in the first hypothesis), a key to one's ability to age successfully in these domains, however, may lie in one's ability to self-regulate these particular possible selves. It is expected that individuals who poorly regulate these specific domains of possible selves (as indicated by low levels of self-efficacy and outcome expectancy) will be more likely to exhibit depressive symptoms.

*Hypothesis 3.* Researchers have suggested that goals are hierarchically linked, with projects building up to larger goals and motivation (refer back to Figure 2). According to Little, Lecci and Watkinson (1992), "personal projects may serve as the vehicles through which our possible selves become realities" (p. 165). If personal projects function as current subgoals that build towards future goals, or if possible selves serve to motivate current behavior, then I expect that there will be a relationship between the two constructs in this study (indicating teleonomic relevance). This means that individuals with current goals related to their future selves, may be engaged in more activities to maximize and maintain their resource gains or regulate their losses. Furthermore, because previous research has indicated that individuals who are engaged in meaningful and manageable personal projects experience higher levels of life satisfaction (Little, 1983), I expect that teleonomic relevance will be associated with lower levels of depressive symptoms in older adults.

### Chapter 3 MATERIALS AND METHODS

The data used in this study were collected as part of a larger research project on the relationship between caregiving, personal goals, and depressive symptoms in older adults. The larger research project included several additional measures such as caregiver experiences, social support networks, personality traits (optimism and pessimism), and levels of stress. Power limitations restrict the feasibility of incorporating all of these measures into one study. I selected the most relevant materials to address my proposed research questions and will describe these measures in later in this chapter. The Institutional Review Board (IRB) approved this study from June 2005 to June 2006 (IRB no. 2916).

#### *Research Design*

This study was designed to target community-dwelling older adults. In order to avoid selection effects that would emerge if clinical samples were utilized, participants were recruited from primary health care clinics. Because prior studies have indicated that at least 15% of community-dwelling older adults may have untreated depression (Blazer, 2003; Smyer & Qualls, 1999) and because most older adults seek help for psychological/emotional concerns from their primary care professionals, I expected that this recruitment strategy would yield an adequate number of older adults with some depressive symptoms.

#### *Participants*

The results of this study are based on 85 community-dwelling older adults (57 women, 28 men) who were recruited from two primary health care clinics in two small cities in Oregon. All patients who were provided health care services at the clinics and who were over the age of 60 were invited to participate in the study ( $n = 268$ ). Many of the participants who declined participation reported they were not feeling well, or lacked time or interest. Although recruited at the health care clinics, participants were interviewed face-to-face using a structured interview format at a later date either in their home, private office at the health care clinic, or another mutually agreed upon location in the community. Each interview lasted approximately 90 - 120 minutes. I conducted over 90% of the interviews and a trained faculty member at Oregon State University –

Cascades, conducted the remaining 10%. In appreciation of participants' time and efforts, they were each provided with a gift card to a large chain, retail supermarket (e.g., Fred Meyer's) in the amount of \$20. Demographic characteristics of the participants are displayed in Table 3.

*Gender, age, and marital status.* There were approximately twice as many women participants as men (67% women and 33% men). This may be indicative of the societal trends that women are more likely to visit doctors and use medical services (US Census Bureau, 2006). Participants ranged in age from 60 to 92 ( $M = 74$ ,  $SD = 7.5$ ). The majority of participants were married (66%) and the next most common marital status was widow or widower (18%). The remaining participants were either divorced or separated or single (12%).

*Race/ethnicity.* The sample is lacking in ethnic diversity. All participants but one were Caucasian. This somewhat reflects the homogeneity of the population in Oregon and the two small cities in which the study took place. The 2000 Census Bureau reported that 86.6% of all Oregonians were Caucasian, however the older adult population is even less ethnically diverse. Up to 96.6% of all older Oregonians are Caucasian (Oregon Geriatric Education Center, 2003) and between 86% and 94% of adults aged 65 and older were Caucasian in the two small cities in which I recruited (US Census, 2000).

*Education and occupational status.* The majority of participants in this study had at least a high school education (38%) or partial college education (35%). Approximately 19% of the sample held college or graduate degrees. Most of the participants were retired at the time of the study (86%).

### *Procedure*

*Recruitment.* Prior to beginning participant recruitment, I held meetings with the practitioners and health care clinic staff at both clinics to discuss the study. The two private health care clinics used in this study were similar in size and patient demographics. Approximately 10 patient appointments were scheduled daily and at least 50% of all patients seen at the clinics were over age 60. In addition, there were typically two health care professionals seeing patients each day (one physician and one nurse practitioner or physician's assistant). All 85 participants were recruited and interviewed in a period of approximately seven months.

Table 3

*Demographic characteristics of participants (N=85)*

	Number of participants
<b>Gender</b>	
Men	28 (32.9)
Women	57 (67.1)
<b>Ethnicity</b>	
Caucasian	84 (98.8)
Hispanic	1 (1.2)
<b>Marital Status</b>	
Married	56(65.9)
Divorced/Separated	10(11.8)
Single	3 (3.5)
Widowed	15 (17.6)
Living with partner	1 (1.2)
<b>Employment Status</b>	
Retired	73 (85.9)
Homemaker	6 (7.1)
Full-time	2 (2.4)
Part-time	4 (4.7)
<b>Education<sup>a</sup></b>	
Grade 8	28 (32.9)
High School	57 (67.1)
Partial College	30 (35.3)
College Graduate	8 (9.4)

*Note.* Numbers inside parenthesis are percentage of total participants.

<sup>a</sup>Two participants completed through the 11<sup>th</sup> grade.

After the initial meetings at each clinic, I gained access to the clinic waiting rooms. Flyers publicizing the study (see Appendix A) were posted throughout the clinics and a small table with flyers and informed consent documents (see Appendix B) was set up in this area. I spent approximately 20 to 30 hours a week at the clinics answering questions and inviting all participants over age 60 to participate. The initial proposed procedure for this study was to conduct the mood and memory screenings at the clinics. It was soon discovered, however, that this was a significant barrier to recruitment. Many potential participants were interested in the study, but did not have immediate time to complete these questionnaires. As a result, the protocol was revised to also allow participants to initially agree to participate and to schedule an interview for another time. The mental health screenings were then incorporated into the face-to-face interview conducted later.

*Mood and memory evaluations.* Some participants chose to share the results of their mental health screening examinations with their health care providers. These participants completed an additional release of information consent form provided by their health clinic. Completing this form allowed their health information to be shared between the author and the health care providers and/or medical staff at the participant's health care clinic. Participants who did not want these results shared with their health care providers were still able to participate in the study, but the results of their cognitive and depression screenings were not shared with their provider. Any participant with high levels of depressive symptoms or cognitive impairment was encouraged to follow up with their health care provider. They were also reminded that a high score on one measure may not be indicative of significant mood or memory impairment, but warrants further evaluation by their care provider(s). All participants were offered information regarding local resources, which included information about education, support groups, and mental health resources in the community.

Initially, I planned to use the memory evaluation as a screening tool for inclusion into the study. The IRB did not approve this protocol because of potential ethical issues regarding how to inform participants they were excluded from the study due to their mental status and so this was dropped. Ultimately, it was not necessary to screen out individuals with severe dementia, as no participant even scored in the moderate

impairment level. In addition, although potential problems were foreseen regarding the sensitivity of the mood evaluations, no unusual incidents or issues emerged.

### *Study Measures*

Descriptive information on each variable used in the study derived from the following measures is portrayed in Table 4. To account for test order effects, the measures were systematically administered so that all participants did not receive the measures in the same order.

*Short portable mental status questionnaire (SPMSQ), Pfeiffer (1975).* This is a 10-item examination with demonstrated reliability and validity in distinguishing demented individuals from cognitively intact individuals when given face-to-face (Pfeiffer, 1975). In addition, this measure accounts for education (i.e., respondents are allowed an additional error with a grade school education or less, yet allowed one less error with beyond a high school education) and ethnicity (i.e., African-American respondents are allowed one additional error, using the same educational criteria). Individuals who score 0-2 demonstrate normal mental functioning, 3-4 errors indicate mild cognitive impairment, 5-7 errors represent moderate cognitive impairment and 8 or more errors is a sign of severe cognitive impairment (see Appendix C). Over 95% of the participants in this study demonstrated normal mental functioning. Two individuals demonstrated mild cognitive impairment (with a score of 3), however, in one case this was likely a reflection of significant depressive symptoms. Both individuals were kept in the study.

*Demographic questionnaire.* Demographic information on gender, age, marital status, race/ethnicity, education level, and living situation was collected from all participants (see Appendix E).

*Geriatric depression scale (GDS) – shortened version, (Sheikh & Yesavage, 1986).* The original 30-item GDS excludes somatically focused items to minimize counting symptoms that commonly overlap with medical illness. It also has a yes-no format to minimize cognitive demand and can be administered in paper and pencil or interview format (see Appendix D). This tool is reliable and valid among community-dwelling older adults (Stiles & McGarrahan, 1998). The shortened 15-item version of the GDS is also commonly used with demonstrated reliability and validity (Sheikh &

Yesavage, 1986). In addition, reliability analyses conducted on the GDS in this study yielded a Cronbach's alpha of .81. The items with the highest correlations to depression from the original 30-item version were used to create the shorter scale. One critique of the GDS is that it may not be as sensitive to depression in older African-Americans or Hispanic older adults compared to Caucasian older adults. Due to the high population of Caucasian older adults in this study, however, the cultural sensitivity of this instrument was not likely an issue.

*Abbreviated personal projects questionnaire.* Participants were asked to generate a list of the current personal projects in which they were presently engaged (see Little, 1989). Generally, this list contained up to 10 or more personally salient projects, which ranged from routine chores to profound goals. In traditional personal projects analyses, as outlined by Little (1989), respondents should rate all of their personal projects on 14 dimensions (e.g., meaning, stress, challenge, visibility). In respect of the amount of time each interview took, I instructed participants to rate only their top seven personal projects on two self-appraisal dimensions: (a) how meaningful the project was to them and (b) how manageable the project was to them (see Appendix G).

*Possible selves interview.* Possible selves interviews were conducted based on an open-ended questionnaire modeled by Hooker (1999) and Hooker & Kaus (1994). Participants were asked to generate up to three of their most important hoped-for and three of their most important feared selves (see Appendix J). A subsequent follow up question probed participants to clarify why the particular self was important or of concern to them. In addition, they were asked 6 seven-point likert scaled questions addressing self-regulation processes of these future selves: (1) To what extent does this possible self describe you now?, (2) To what extent do you want this possible self to describe you in the future?, (3) How important is it to you to achieve this possible self?, (4) How capable do you feel of achieving this possible self?, (5) How likely do you think it is that this possible self will be achieved?, and (6) How much time do you spend thinking about this possible self? A similar format was used to generate information on feared selves.

Each possible self was coded by the author into one of 15 categories: personal, physical, abilities and education, lifestyle, family/relationships, occupation, material, success, social responsibility, leisure, health, independence/dependency, death,



bereavement, and threats (see Appendix I). A trained graduate student unfamiliar with the study coded 20% of the possible selves data in order to examine coding reliability. Inter-rater reliability was high for both hoped-for and feared selves (Cohen's kappa = .91 and .89, respectively).

*Teleonomic relevance questionnaire* (Hooker & Bolkan, 2004) This measure was created to examine teleonomic relevance, or how related one's current projects are to future goals (see Appendix H). This measure is represented by a matrix, similar to what has been used in Personal Project Analysis (Little, 1983). Individuals rate their top seven most important personal projects on how related they perceive each project is to their two most important hoped-for and two most important feared selves on a 3-point likert scale (0 = not related, 1 = somewhat related, 2 = strongly related). Scores can range from 0 – 56, with a higher score indicating more teleonomic relevance (see Appendix H).

*Health perception questionnaire* (Davies & Ware, 1981). This 9-item measure was used as the Current Health subscale of the Health Perceptions Questionnaire in the Rand Health Insurance Experiment (Davies & Ware, 1981). The scale has been used in multiple studies with demonstrated reliability and validity (Stewart, et al., 1988; Ware, et al., 1992). I also conducted reliability analyses of this scale on the current sample of participants which yielded a Cronbach's alpha of .88. Scores ranged from 9 to 45 with a higher score indicating better health (see Appendix F). As a follow-up indicator of health, participants were also asked a four-point likert scaled question: "In general, how would you say your health is?". Self-perception of health has been implicated as a stronger indicator of mortality and morbidity than physician's ratings (Idler & Kasl, 1991). Finally, a brief chronic condition checklist was also included in the measurements. This check-list provided useful demographic information regarding physical health. The chronic conditions checklist is derived from the Multi-Level Assessment Index, which was designed for use with older adults (Lawton, Moss, Fulcomer, & Kleban, 1982). The measure consists of 20 health conditions in which participants were asked to circle either yes (1) or no (0) as to whether they experienced each condition within the past year. Scores ranged from 0 – 20 with a higher score indicating a higher number of chronic conditions.

Table 4  
Summary of Variables.

Variable	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Age	85	60	92	74	7.5
Health <sup>a</sup> (range 0 – 4)	81	1	4	2.9	.77
Chronic cond <sup>b</sup> (range 0 – 20)	85	0	10	2.6	1.9
HPQ <sup>c</sup> (range 9 – 45)	85	9	45	32.1	7.9
Depression <sup>d</sup> (range 0 – 15)	85	0	11	2.3	2.8
SPMSQ <sup>e</sup> (range 0 – 10)	82	0	3	.43	.75
Meaning <sup>f</sup> (range 0 – 5)	85	1.7	4	3.1	.57
Manageability <sup>g</sup> (range 0 – 5)	85	0	4	2.8	.70
TR <sup>h</sup> (range 0 – 56)	85	1	51	18.5	11.2

*Note.* <sup>a</sup>Self-perception of health, where higher score indicates better health. <sup>b</sup>Number of chronic conditions reported by participant, with higher number indicating more chronic conditions. <sup>c</sup>Health Perception Questionnaire (HPQ). <sup>d</sup>Geriatric Depression Scale (GDS). <sup>e</sup>Short Portable Mental Status Questionnaire (SPMSQ). <sup>f</sup>Meaningfulness of personal project, where higher score indicates more meaning. <sup>g</sup>Manageability of personal project, where higher score indicates more manageability. <sup>h</sup>Teleonomic relevance, where higher score indicates more relatedness between current project and future possible self.

### *Data Management*

After all data were collected and coded, they were entered into SPSS Version 13. This program was used for organizing and cleaning the data as well as to review initial descriptive statistics, histograms, and crosstabulations. The data were then transferred (relying on StatTransfer©) into STATA Version 9 for all statistical analyses. Unless noted otherwise, all tests were based on two-tailed significance and the significance level for all analyses was set at the  $p < .05$  level. In some instances, one-tailed tests were conducted, which may increase the possibility of Type I errors. Specific directions of influence based on previous research, however, were predicted a priori. Descriptive statistics and frequency counts were analyzed to assess each variable for the assumptions of normality and variance needed for statistical analyses. There were no missing data on any of the demographic or outcome variables. In addition, missing data on the predictor variables (i.e., possible selves questionnaire data) was attenuated but not missing. For example, although participants potentially could have reported up to six possible selves, many participants simply had fewer than six images of themselves in the future.

### *Statistical Analyses*

*Count models.* Because the main outcome variable in this study is depressive symptoms, which is based on a count of how symptoms each participant reported and is not reflective of a normal distribution (see Figure 6 and Table 5), the most appropriate statistical model to employ is a count model. This analysis best suits my data and research questions regarding how possible selves relate to depressive symptoms in later life. Although linear regression models are often applied to count outcomes, “this can result in inefficient, inconsistent, and biased estimates... it is much safer to use models specifically designed for count outcomes” (Long & Freese, 2006, p. 349). Count outcomes are characterized by the fact that most participants have a score of zero and the proportion of participants with a specific positive value decreases as the value of the count increases (Frone, 1997). Therefore, the advantage of relying on a count model, versus a linear model, is that it will account for the skewness of the outcome variable because a normal distribution of this variable is not assumed.

The foundation of all count models is derived from Poisson regression models and negative binomial regression models (see Long & Freese, 2006 for a review). Both of

Figure 6

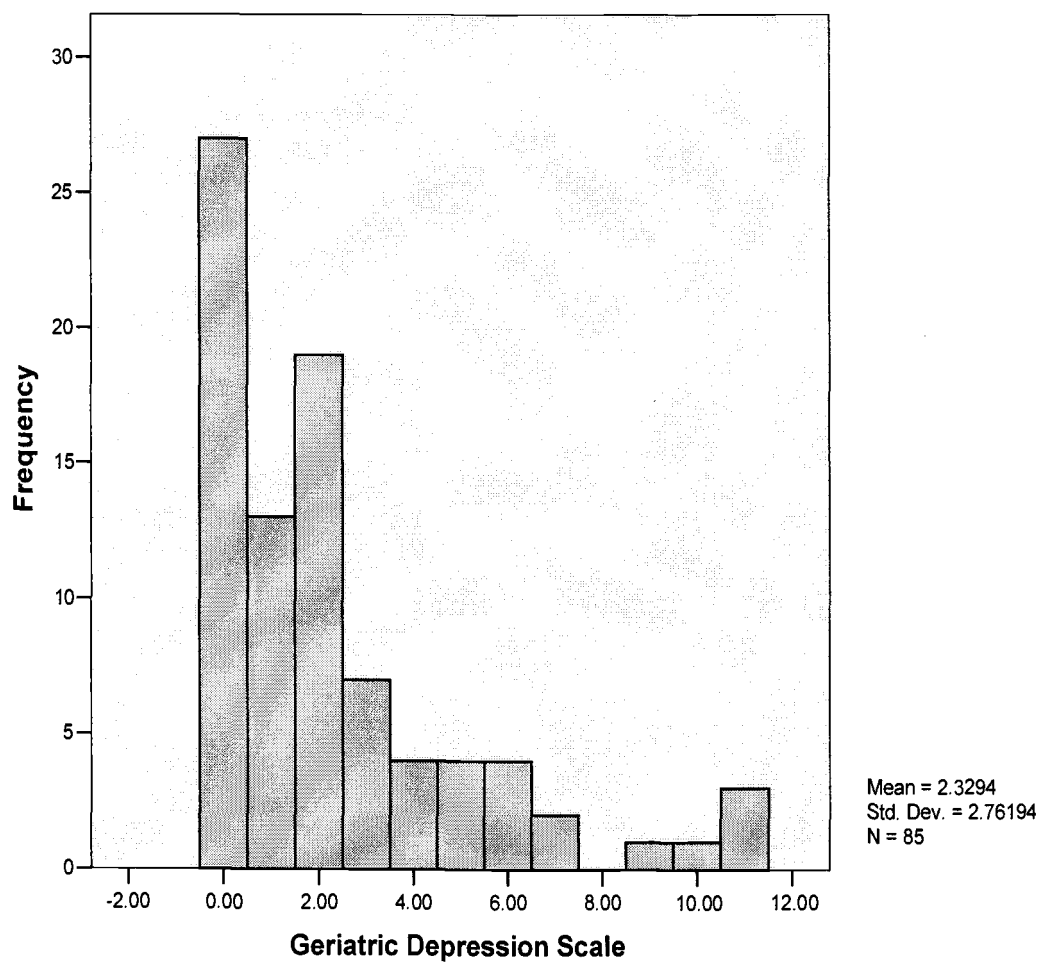
Distribution of depressive symptoms ( $N = 85$ ).

Table 5

Frequency of depressive symptoms ( $N = 85$ ).

Number of symptoms	Frequency	Percent
0	27	31.8
1	13	15.3
2	19	22.4
3	7	8.2
4	4	4.7
5	4	4.7
6	4	4.7
7	2	2.4
8	0	0
9	1	1.2
10	1	1.2
11	3	3.5
Total	85	100%

these models are rooted in the univariate Poisson distribution, which specifies the relationship between the expected count ( $\mu$ ) and the probability of observing any observed count ( $y$ ). The important parameter defining this distribution is  $\mu > 0$ . This distribution is represented structurally by this equation:

$$\Pr(y | \mu) = \frac{e^{-\mu} \mu^y}{y!} \text{ for } y = 0, 1, 2, \dots$$

where  $\mu$  represents the expected number of times an event will occur in a given period of time and  $y$  represents a random variable which indicates the number of times an event did occur. On some occasions the event will occur more often than the average rate and other times the event will occur less often (or even not at all), than the average rate (Long & Freese, 2006).

Four main characteristics of a Poisson distribution are helpful in understanding regression models for counts and are listed below (see Long & Freese, 2006, p. 350).

1. As  $\mu$  (mean of the distribution) increases, the mass of the distribution shifts to the right.
2.  $\mu$  also represents the variance.
3. As  $\mu$  increases, the probability of a zero count decreases
4. As  $\mu$  increases, the Poisson distribution approximates a normal distribution.

The Poisson regression model builds on the Poisson distribution by allowing each observation to have a different value of  $\mu$  and is algebraically expressed by the following equation:

$$\mu_i = E(y_i | x_i) = \exp(x_i \beta)$$

By taking the exponential of  $(x_i \beta)$ , this forces the  $\mu$  to be positive, which is necessary because counts can only be 0 or positive (Long & Freese, 2006).

For this study, I relied solely on Poisson regression models, which is the most basic model. In an attempt to establish the best fit, however, I did conduct two zero-inflated models (i.e., zero-inflated Poisson regression and zero-inflated negative binomial regression model). The zero-inflated count models are more complex and require a much higher case to variable ratio than was available in this dataset and without increased

power, these models had difficulty converging to produce significant effects. As a result, I relied on the basic Poisson regression model.

The results of a Poisson regression model are interpreted by using the factor changes in the expected count. Because the regression model is based on a logarithm of the outcome, the expression  $100[\exp(\text{coefficient}) - 1]$  provides the incidence rate ratio (IRR), which represents the percent change in the dependent variable (a count measure) for one category of a categorical independent variable relative to the reference category, holding other variables constant (Frone, 1997; Long & Freese, 2006). For a continuous independent variable, the incidence rate ratio shows the expected factor change in the dependent variable for each point increase in the independent variable. (Frone, 1997; Long & Freese, 2006)

#### *Variables.*

*Depression variable.* The primary outcome variable in this study was depressive symptoms (as measured by the Geriatric Depression Scale). This variable was scored by a count of the number of symptoms each participant reported.

*Independent variables.* Possible selves variables are the predictor variables in my first two proposed research questions. First, participants identified their possible selves, which were categorized into one the 15 possible domains of future selves (see Appendix I). All possible selves related to family and relationships were collapsed into one category which included both family and friend relationships. Of particular interest to this study were the health and family related possible selves, therefore, new variables were created to identify participants who specifically generated these categories of possible selves. Four dichotomous (presence = 1, absence = 0) variables were calculated and included: (a) health related hoped-for selves, (b) health related feared selves, (c) family related hoped-for selves, and (d) family related feared selves. These four new variables were also collapsed into two additional dichotomous (presence = 1, absence = 0) variables, which included: (a) both health related hoped-for and feared selves, and (b) both family related hoped-for or feared selves. Both of these created variables were included in Poisson regression models to predict depressive symptoms. In addition, a composite score of each of the six self-regulatory processes (e.g., “how important is this possible self?”, “how capable do you feel of achieving/avoiding this possible self?”) were created for all hoped-

for selves and feared selves. These variables provided information about how well individuals managed all of their hoped-for selves as well as their feared selves. Both of these variables were also used in Poisson regression models to predict depressive symptoms. Finally, teleonomic relevance scores were used as a predictor variable in my third research question.

*Control and background variables.* Because age, gender, and physical health are known to be related to depression, they were used as covariates when enough power was available to run the statistical analyses.



## Chapter 4 RESULTS

This chapter is organized by research question to examine how (a) the presence and content of specific goals and (b) the management of goals is related to depressive symptoms in older adults. The results are discussed separately for the two goal domains of particular interest to this study: health related possible selves and family related possible selves. Finally, results are discussed regarding the interrelationship between current projects and future goals.

### *Preliminary Analyses*

Descriptive data were used to establish a profile of the sample (see Table 3). In addition, Pearson correlation coefficients were calculated to examine bivariate relationships between all predictor, outcome, and demographic variables for each research question (see Table 6), and are integrated throughout this chapter. Due to issues of sample size, the number of variables in each regression model was closely monitored. The intercorrelations were useful in providing theoretical and empirical relationships to the dependent variable and helped to guide inclusion of variables into various models.

A general review of the frequency of possible selves across all participants demonstrated that health, family, and leisure hoped-for selves were among the most commonly reported (see Figure 7). Health and independence/dependence feared selves were among the most commonly reported (see Figure 8). Overall, more hoped-for selves ( $n = 203$ ) were generated than feared selves ( $n = 133$ ). Examples of health and family related possible selves that were generated in the study are displayed in Table 7.

### *Goal Contents and Relationship to Depressive Symptoms*

Do older adults with depressive symptoms have different goal repertoires than older adults without depressive symptoms? Approximately half of all of the participants identified at least one health related possible self (See Table 8) or family related possible self (see Table 9). Correlational analyses yielded no significant relationships between the presence or absence of health related possible selves and depression scores. One correlation approached significance ( $r = -.17, p = .06$ , one-tailed), however, indicating a trend for higher levels of depressive symptoms in the absence of any family related

Table 6

Intercorrelations Between Demographic and Health Variables ( $n = 85$ ).

Variables	1	2	3	4	5	6	7	10
1. Age	--	-.07	-.07	-.12	.09	.37**	-.19	.20
2. Gender <sup>a</sup>		--	.25*	-.01	-.20	-.20	.09	.05
3. Education <sup>b</sup>			--	.19	-.23	-.16	.16	-.07
4. Health <sup>c</sup>				--	-.41**	-.43**	.70**	-.12
5. Chronic cond. <sup>d</sup>					--	.32**	-.52**	.04
6. GDS <sup>e</sup>						--	-.67**	.20
7. HPQ <sup>f</sup>							--	-.05
8. SPMSQ <sup>g</sup>								--

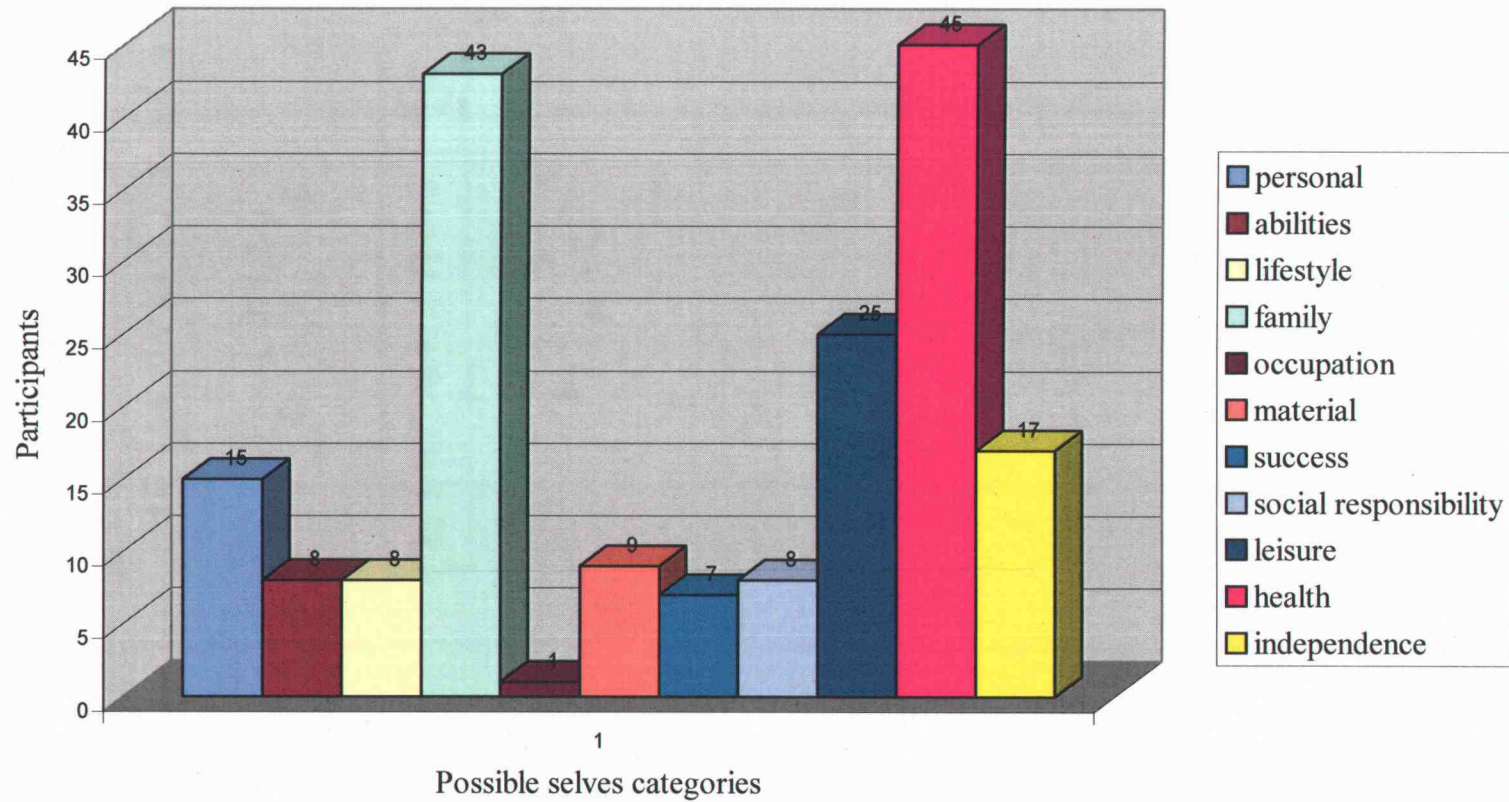
*Note.* <sup>a</sup>Women = 0, Men = 1. <sup>b</sup>Higher number indicates more education. <sup>c</sup>Self-perception of health, where higher score indicates better health. <sup>d</sup>Number of chronic conditions reported by participant, with higher number indicating more chronic conditions. <sup>e</sup>Geriatric Depression Scale (GDS), where higher score indicates more depressive symptoms. <sup>f</sup>Health Perception Questionnaire (HPQ), where higher score indicates better health <sup>g</sup>Short Portable Mental Status Questionnaire (SPMSQ), where higher score indicates more cognitive impairment.

\*  $p < .05$  level (2-tailed)

\*\*  $p < .01$  level (2-tailed)

Figure 7

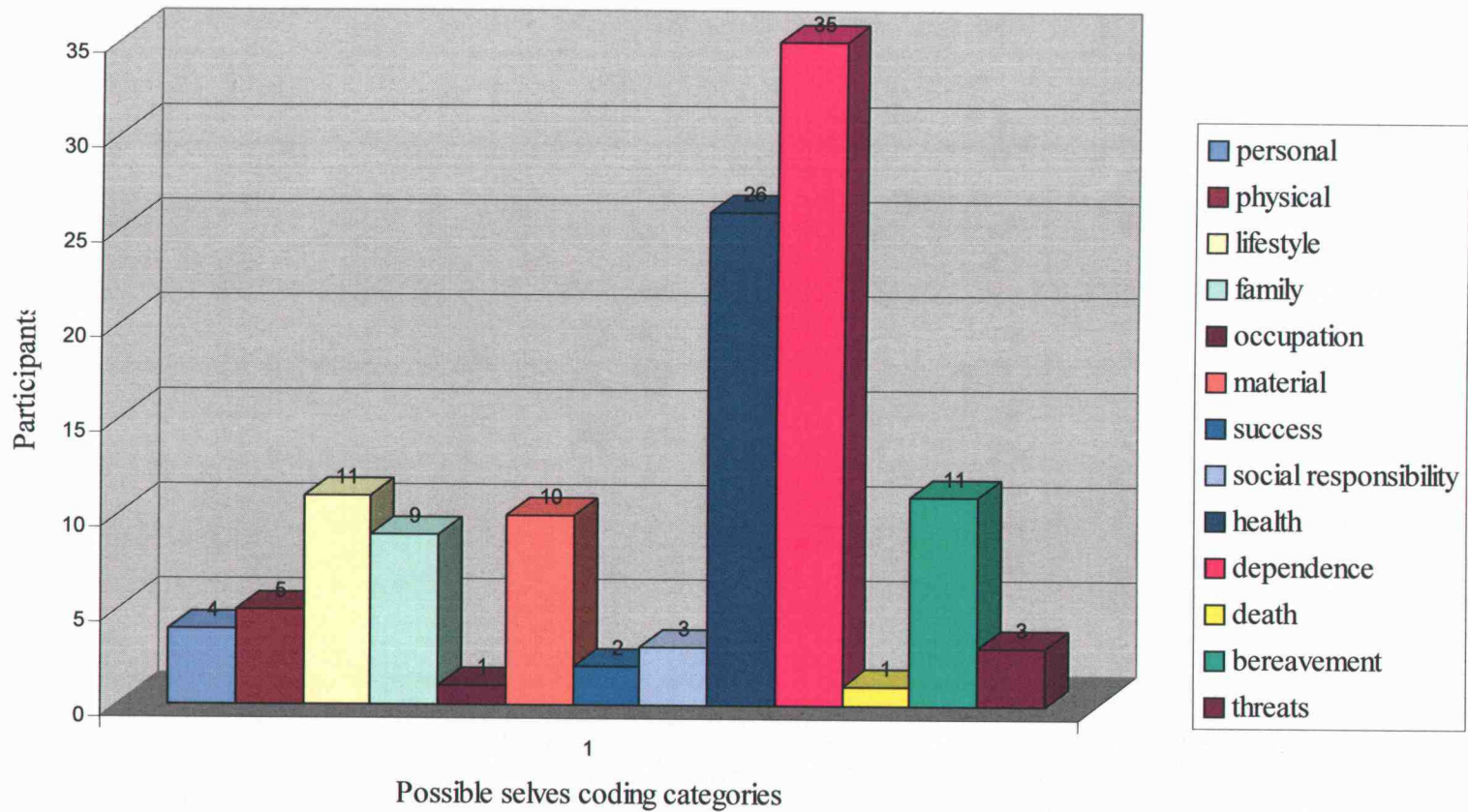
Distribution of Hoped-for Selves ( $n = 85$ ).



Note. No hoped-for selves were reported in the domains of (a) physical, (b) death, (c) bereavement, or (d) threats.

Figure 8

Distribution of Feared Selves ( $n = 85$ ).



Note. No feared selves were reported in the domains of (a) abilities and education, or (b) leisure.

Table 7

Examples of Health and Family Related Possible Selves.

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Health Related Hoped-For Self:	“To keep my health”
Health Related Feared Self:	“That my health will fail”
Family Related Hoped-for Self:	“To live long enough to spend more time with my grandchildren and watch them graduate”
Family Related Feared Self:	“To lose touch with my daughter when her family moves”

---

Table 8

*Number of Health Possible Selves (N = 85)*


---

	Number of participants
Presence of Any Health Self	55 (64.7)
Absence of Any Health Self	30 (35.3)
Number of Health Hoped-for Selves	
None	40 (47)
One	42 (49)
Two	3 (3.5)
Three	0 (0)
Number of Health Feared Selves	
None	59 (69)
One	22 (24)
Two	4 (4.7)
Three	0 (0)

---

*Note.* Numbers inside parenthesis are percentage of total participants.

Table 9.

*Number of Family Possible Selves (n = 85)*


---

	Number of participants
Presence of Any Family Self	44 (52)
Absence of Any Family Self	41 (48)
Number of Family Hoped-for Selves	
None	44 (52)
One	32 (38)
Two	9 (11)
Three	0 (0)
Number of Family Feared Selves	
None	76 (89.4)
One	9 (10.6)
Two	0 (0)
Three	0 (0)

---

*Note.* Numbers inside parenthesis are percentage of total participants.

possible selves. In addition, I performed exploratory crosstabulations on depressive symptoms by the presence or absence of health and family related possible selves. The chi-square analysis conducted on the crosstabulations revealed that there was not a significant difference between the presence or absence of health related possible selves and individuals with or without depressive symptoms ( $\chi^2(1, 85) = .17, p = .67$ ). A second chi-square analysis was also insignificant ( $\chi^2(1, 85) = .47, p = .49$ ), indicating that there was no significant difference between the presence or absence of family related possible selves and individuals with or without depressive symptoms.

Although the presence or absence of health related or family related possible selves were not significantly correlated with depressive symptoms, they were significantly related to several specific items on the Geriatric Depression Scale. An absence of health related possible selves was associated with feeling more worthless ( $r = -.23, p = .04$ ). In addition, an absence of family related possible selves was associated with feeling more helpless ( $r = -.23, p = .03$ ), feeling that life is empty ( $r = -.29, p = .008$ ), and dropping activities and interests ( $r = -.25, p = .02$ ).

A Poisson regression model analysis was conducted to examine how the presence or absence of health related possible selves and the presence or absence of family related possible selves related to depressive symptoms. Age, gender, and health were controlled for in this model. The results are displayed in Table 10. Each control variable significantly predicted depressive symptoms. For every standard deviation increase in age (7.5 years), depressive symptoms increased by a factor of 1.5, holding all other variables in the model constant ( $p = .00$ ). This finding is somewhat contrary to epidemiological studies regarding the prevalence of clinical depression in older adults, however this may be indicative of an increase of sub-syndromal depression with age. Furthermore, being male and healthier significantly decreased the number of depressive symptoms by a factor of .70 ( $p = .04$ ) and .58 ( $p = .00$ ), respectively. The presence of family related possible selves was not significantly related to depression when controlling for all other variables. On a trend level, however, the presence of health related possible selves was related to a decrease in depressive symptoms by a factor of .76 ( $p = .078$ ). Although the



Table 10

Poisson regression model of health and family related possible selves to predict depressive symptoms ( $N = 85$ )

Variables	Incidence Rate Ratio	<i>SE</i>	<i>Z</i>	Significance
Age	1.1	.01	4.86	.00**
Gender <sup>a</sup>	.70	.12	-2.0	.04*
Health <sup>b</sup>	.58	.12	-6.2	.00**
Family selves <sup>c</sup>	.86	.13	-1.0	.30
Health selves <sup>d</sup>	.76	.12	-1.8	.078

*Notes.* <sup>a</sup>Women = 0, men = 1, <sup>b</sup>Health perception scores, with higher score indicating better health. <sup>c</sup>The presence (1) or absence (0) of family related possible selves. <sup>d</sup>The presence (1) or absence (0) of health related possible selves.

\* $p < .05$  level

\*\*  $p < .01$  level

results were not significant at the  $p < .05$  level, the effect sizes were moderate. The same Poisson regression model was conducted with bootstrap repetitions in an effort to account for the smaller sample size, however it did not increase the significance of the model.

The preceding findings provide initial evidence that the content of one's goals (as measured by possible selves) are associated with depressive symptoms in older adults. On a trend level, the presence of health related possible selves was related to a decrease in depressive symptoms when accounting for one's age, gender, and perceived health status. Additionally, both health and family related possible selves were correlated with specific items on the Geriatric Depression Scale.

#### *Goal Management and Relationship to Depressive Symptoms*

Do older adults who successfully manage and self-regulate their goals have fewer depressive symptoms? A review of the initial bivariate correlations between the average score on all self-regulatory processes and depressive symptoms indicated that only the self-regulatory processes of hoped-for selves was correlated with depressive symptoms (see Table 11). More specifically, individuals with higher levels of depressive symptoms rated themselves as currently less like any of their hoped-for possible selves ( $r = -.49, p = .00$ ), less capable of achieving any hoped-for selves ( $r = -.41, p = .00$ ), and spent less time thinking about their hoped-for possible selves ( $r = -.29, p = .00$ ). In addition, individuals with higher levels of depressive symptoms rated themselves as less likely to achieve their hoped-for selves ( $r = -.39, p = .00$ ), rated their hoped-for selves as less important ( $r = -.29, p = .00$ ), and were less likely to want their hoped-for selves to describe them in the future ( $r = -.23, p = .00$ ). The relationships between self-regulatory processes among feared selves and depressive symptoms was not as significant, although there was a trend for individuals with higher levels of depressive symptoms to rate themselves as feeling less capable of avoiding their feared selves ( $r = .20, p = .05$ , one-tailed).

Two Poisson regression models were conducted to explain how the (a) the six self-regulatory processes of hoped-for possible selves and (b) the six self-regulatory processes of feared possible selves related to depressive symptoms. There were not enough cases to include control variables into these models. In the first model, two self-regulatory items significantly related to depressive symptoms while holding the other

Table 11

Intercorrelations Between Hoped-for Possible Selves Self-Regulatory Processes and Geriatric Depression Scale ( $N = 85$ )

Variables	1	2	3	4	5	6	7
1. GDS <sup>a</sup>	–	-.49**	-.23**	-.29**	-.41**	-.39**	-.29**
2. Describe <sup>b</sup>		–	.82**	.86**	.85**	.84**	.74**
3. Desire <sup>c</sup>			–	.92**	.83**	.83**	.79**
4. Important <sup>d</sup>				–	.86**	.88**	.80**
5. Capable <sup>e</sup>					–	.95**	.82**
6. Likelihood <sup>f</sup>						–	.84**
7. Think <sup>g</sup>							–

*Note.* <sup>a</sup>Geriatric Depression Scale. <sup>b</sup>How much does this hoped-for possible self currently describe you? <sup>c</sup>How much do you want this hoped-for possible self to describe you in the future? <sup>d</sup>How important is it for you to achieve this hoped-for possible self in the future? <sup>e</sup>How capable to do you feel of achieving this hoped-for possible self? <sup>f</sup>How likely do you think it is that this hoped-for possible self will be achieved? <sup>g</sup>How much time do you spend thinking about this hoped-for possible self?

\* $p < .05$  level (2-tailed)

\*\*  $p < .01$  level (2-tailed)

variables constant. The more individuals wanted their hoped-for selves to describe them in the future was related to an increase of depressive symptoms by a factor of .90 ( $p = .007$ ). In addition, the less individuals' hoped-for selves currently described them, was related to an increase in depressive symptoms by a factor of .68 ( $p = .00$ ). In the feared self model, one self-regulatory process (how capable one felt of avoiding feared selves) was significantly related to depressive symptoms. Higher levels of capability were related to an increase in depressive symptoms by a factor of 1.1 ( $p = .00$ ). The results of the models are displayed in Table 12 and Table 13.

*Data subsets.* Based on the goal management findings in the overall sample of participants, I further investigated the self-regulatory processes of specific goals (i.e., health related and family related possible selves). In order to do so, I needed to create sub-sample data sets that consisted only of individuals who had specifically identified health or family related possible selves. I used a series of filters to determine the frequencies of health or family related possible selves in the entire dataset to pare the sample down to four sub-samples: (a) participants who identified health related hoped-for selves, (b) participants who identified health related feared selves, (c) participants who identified family related hoped-for selves, and (d) participants who identified family related feared selves. Because the four sub-samples were small, I merged the health related hoped-for and feared selves into one sub-sample and merged the family related hoped-for and feared selves into another sub-sample. Demographic characteristics of the sub-samples were similar to the overall data set.

#### *Health Related Possible Selves*

Thirty-eight individuals identified health related hoped-for selves and 37 individuals identified health related feared selves. Of these participants, 14 individuals were represented in both groups because they identified both hoped-for and feared health related possible selves. Based on these frequencies, it was calculated that 61 of the original 85 participants (72%) identified at least one health related possible self.

Bivariate correlations were conducted between both hoped-for and feared self-regulatory processes and depressive symptoms (see Table 14). Overall, the self-regulation of health related hoped-for selves appeared more strongly related to depressive symptoms than the self-regulation of health related feared selves. None of the self-regulatory

Table 12

Poisson Regression Model of Hoped-for Possible Selves Self-Regulatory Processes to Predict Depressive Symptoms ( $N = 85$ )

<i>Variables</i>	<i>Incidence Rate Ratio</i>	<i>SE</i>	<i>Z</i>	<i>Significance</i>
Describe <sup>a</sup>	.68	.05	-4.87	.00**
Desire <sup>b</sup>	1.39	.17	2.70	.01**
Important <sup>c</sup>	1.00	.13	.05	.96
Capable <sup>d</sup>	.89	.13	-.76	.45
Likelihood <sup>e</sup>	.89	.14	-.70	.48
Think <sup>f</sup>	1.04	.08	.51	.61

*Note.* <sup>a</sup>How much does this hoped-for possible self currently describe you? <sup>b</sup>How much do you want this hoped-for possible self to describe you in the future? <sup>c</sup>How important is it for you to achieve this hoped-for possible self in the future? <sup>d</sup>How capable to do you feel of achieving this health hoped-for possible self? <sup>e</sup>How likely do you think it is that this health hoped-for possible self will be achieved? <sup>f</sup>How much time do you spend thinking about this health hoped-for possible self?

\* $p < .05$  level; \*\*  $p < .01$  level

Table 13

Poisson Regression Model of Feared Possible Selves Self-Regulatory Processes to Predict Depressive Symptoms ( $N = 85$ )

<i>Variables</i>	<i>Incidence Rate Ratio</i>	<i>SE</i>	<i>Z</i>	<i>Significance</i>
Describe <sup>a</sup>	1.06	.05	1.28	.19
Desire <sup>b</sup>	1.19	.14	1.59	.11
Important <sup>c</sup>	.75	.09	-2.15	.03
Capable <sup>d</sup>	1.13	.04	3.29	.00**
Likelihood <sup>e</sup>	.97	.07	-.29	.77
Think <sup>f</sup>	.90	.06	-1.49	.14

*Note.* <sup>a</sup>How much does this hoped-for possible self currently describe you? <sup>b</sup>How much do you want this hoped-for possible self to describe you in the future? <sup>c</sup>How important is it for you to achieve this hoped-for possible self in the future? <sup>d</sup>How capable to do you feel of achieving this health hoped-for possible self? <sup>e</sup>How likely do you think it is that this health hoped-for possible self will be achieved? <sup>f</sup>How much time do you spend thinking about this health hoped-for possible self?

\* $p < .05$  level; \*\*  $p < .01$  level

Table 14

## Intercorrelations Between Health Possible Selves Self-Regulatory Processes and Depressive Symptoms

Variables	GDS <sup>a</sup>
Health Hoped-for Selves ( $n = 38$ )	
1. Describe <sup>b</sup>	-.66**
2. Desire <sup>c</sup>	-.08
3. Important <sup>d</sup>	-.27*
4. Capable <sup>e</sup>	-.64**
5. Likelihood <sup>f</sup>	-.77**
6. Think <sup>g</sup>	-.40**
Health Feared Selves ( $n = 37$ )	
7. Describe <sup>b</sup>	.15
8. Desire <sup>c</sup>	-.22
9. Important <sup>d</sup>	-.21
10. Capable <sup>e</sup>	-.13
11. Likelihood <sup>f</sup>	-.15
12. Think <sup>g</sup>	.09

*Note.* <sup>a</sup>Geriatric Depression Scale, where higher score indicates more depressive symptoms. <sup>b</sup>How much does this possible self currently describe you? <sup>c</sup>How much do you want (or do not want) this possible self to describe you in the future? <sup>d</sup>How important is it for you to achieve (or avoid) this possible self in the future? <sup>e</sup>How capable to do you feel of achieving (or avoiding) this possible self? <sup>f</sup>How likely do you think it is that this possible self will be achieved (or avoided)? <sup>g</sup>How much time do you spend thinking about this possible self?

\* $p < .05$  level (2-tailed); \*\*  $p < .01$  level (2-tailed)

processes of feared selves were correlated with depressive symptoms. Four self-regulatory processes of hoped-for selves were significantly correlated with depression. Higher levels of depressive symptoms was associated with feeling that health related hoped-for selves were less likely to be achieved ( $r = -.77, p = .00$ ), feeling less capable of achieving health related hoped-for selves ( $r = -.64, p = .00$ ), feeling currently less like health related hoped-for selves ( $r = -.66, p = .00$ ), and spending less time thinking about health related hoped-for selves ( $r = -.40, p = .006$ ).

Although the sub-sample was far below the recommended size for Poisson regression analyses, an exploratory model was conducted. The four most significant self-regulatory processes were related to depressive symptoms. Two of these items were significantly associated with depressive symptoms. The less likely individuals felt their health hoped-for selves would be achieved was associated with an increase in depressive symptoms by a factor of .59 ( $p = .003$ ) and the less time individuals thought about their health related hoped-for selves was associated with an increase in depressive symptoms by a factor of .84 ( $p = .047$ ).

#### *Family Related Possible Selves*

Thirty-nine individuals identified family related hoped-for selves and only seven individuals identified family related feared selves. Five individuals were represented in both groups because they identified both hoped-for and feared family related possible selves. It was calculated that 41 of the original 85 participants (48%) identified at least one family related possible self.

Bivariate correlations were conducted between both hoped-for and feared self-regulatory processes and depressive symptoms (see Table 15). Although the sample of family related feared selves was extremely small, one self-regulatory process was strongly correlated with depression. The more time individuals spent thinking about their family related feared selves was related to higher levels of depressive symptoms ( $r = -.91, p = .005$ ). Two hoped-for self-regulatory processes were correlated with depressive symptoms. Individuals who felt their family related hoped-for selves were less important to achieve was associated with higher levels of depressive symptoms ( $r = -.46, p = .004$ ) and individuals who felt currently less like their family related hoped-for selves was associated with more depressive symptoms ( $r = -.53, p = .001$ ).



Table 15

## Intercorrelations Between Family Possible Selves Self-Regulatory Processes and Depressive Symptoms

Variables	GDS <sup>a</sup>
Family Hoped-for Selves ( <i>n</i> = 39)	
1. Describe <sup>b</sup>	-.53**
2. Desire <sup>c</sup>	-.31 <sup>+</sup>
3. Important <sup>d</sup>	-.46**
4. Capable <sup>e</sup>	.01
5. Likelihood <sup>f</sup>	-.02
6. Think <sup>g</sup>	-.16
Family Feared Selves ( <i>n</i> = 7)	
7. Describe <sup>b</sup>	--
8. Desire <sup>c</sup>	.14
9. Important <sup>d</sup>	-.12
10. Capable <sup>e</sup>	-.28
11. Likelihood <sup>f</sup>	-.35
12. Think <sup>g</sup>	-.91**

*Note.* <sup>a</sup>Geriatric Depression Scale, where higher score indicates more depressive symptoms. <sup>b</sup>How much does this possible self currently describe you? <sup>c</sup>How much do you want (or do not want) this possible self to describe you in the future? <sup>d</sup>How important is it for you to achieve (or avoid) this possible self in the future? <sup>e</sup>How capable to do you feel of achieving (or avoiding) this possible self? <sup>f</sup>How likely do you think it is that this possible self will be achieved (or avoided)? <sup>g</sup>How much time do you spend thinking about this possible self?

<sup>+</sup>*p* < .06 level (2-tailed); \**p* < .05 level (2-tailed); \*\**p* < .01 level (2-tailed)

Because so few feared selves related to family were generated, further analyses were conducted only on the family related hoped-for selves sub-sample. Although the sub-sample is still far below the recommended size for Poisson regression analyses, an exploratory model was conducted. The two most significant family related hoped-for self-regulatory processes were associated with depressive symptoms, and one of these processes was significantly related to depressive symptoms. The less likely individuals currently felt like their family related hoped-for self, was associated with an increase in depressive symptoms by a factor of .35 ( $p = .008$ ).

All of the findings regarding the management, or self-regulation, of possible selves support the hypotheses I proposed in my second research question. The self-regulatory processes were significantly related to management of all possible selves in general, but also to specific domains of self, such as health and family. Interestingly, the self-regulation of hoped-for possible selves appeared more significant in relationship to depressive symptoms than the self-regulation of feared selves. Additionally, in some cases, specific self-regulatory processes (e.g., self-efficacy) emerged as more strongly related to depressive symptoms than other self-regulatory processes. I will discuss these results in more detail in the subsequent chapter.

#### *Teleonomic Relevance and Depressive Symptoms*

Do older adults who perceive more relatedness between their current projects and possible selves (teleonomic relevance) have fewer depressive symptoms? I expected to find a relationship between these variables, because theoretically older adults engaged in daily projects to support their possible selves have more resources to regulate their developmental resource gains and losses. The bivariate correlations between teleonomic relevance and depressive symptoms, however, yielded no significant relationship between these variables (see Table 16). Additionally, a Poisson regression model in which teleonomic relevance scores were used to predict depression (controlling for age, gender, and education) corroborated the absence of a relationship between teleonomic relevance and depressive symptoms.

There were other significant findings regarding teleonomic relevance that were of interest and warranted further exploration. For example, teleonomic relevance was significantly related to participants' self-appraisal of their current projects. Higher

Table 16

Intercorrelations Between Demographic, Teleonomic Relevance and Depressive Symptoms ( $N = 85$ ).

Variables	1	2	3	4	5	6	7	8	9	10
1. GDS <sup>a</sup>	--	.15	-.16	-.20	.32**	-.67**	-.09	-.52**	-.08	-.14
2. TR <sup>b</sup>		--	-.27	.06	.04	-.13	.26*	-.19	-.10	-.27*
3. Education <sup>c</sup>			--	.25*	-.23*	.16	-.22*	.29**	.26	.04
4. Gender <sup>d</sup>				--	-.21	.09	-.24*	.20	.00	-.08
5. Chronic <sup>e</sup>					--	-.52**	.02	-.22	-.01	-.07
6. HPQ <sup>f</sup>						--	-.01	.45**	.032	.11
7. Meaning <sup>g</sup>							--	.06	-.00	.27*
8. Manage <sup>h</sup>								--	.04	.13
9. Projects <sup>i</sup>									--	.38**
10. Selves <sup>j</sup>										--

Note. <sup>a</sup>Geriatric Depression Scale, higher score indicates more depressive symptoms. <sup>b</sup>Teleonomic relevance, where higher score indicates more perceived inter-relatedness between current projects and future selves. <sup>c</sup>Higher number indicates more education. <sup>d</sup>Women = 0, Men = 1. <sup>e</sup>Number of chronic conditions reported by participant. <sup>f</sup>Health Perception Questionnaire (HPQ), higher score indicates better health. <sup>g</sup>Self-appraisal of project manageability, higher score indicates more manageable. <sup>h</sup>Self-appraisal of project meaningfulness, higher score indicates more meaningful. <sup>i</sup>Number of personal projects, with higher number indicating more reported projects. <sup>j</sup>Number of possible selves in different domains, with higher number indicating more possible selves.

\*  $p < .05$  level (2-tailed); \*\*  $p < .01$  level (2-tailed)

teleonomic relevance was associated with higher ratings of meaningfulness on personal projects ( $r = .26, p = .017$ ). In addition, higher teleonomic relevance was moderately associated with less manageable personal projects ( $r = -.19, p = .08$ ).

The manageability of one's projects was correlated with depressive symptoms ( $r = -.52, p = .00$ ) and health ( $r = .45, p = .00$ ), whereas the meaningfulness of one's project was not related to depressive symptoms or health. This means that individuals with fewer depressive symptoms were associated with higher reported ratings of manageability on their current projects. Additionally, individuals with better health were also associated with reporting higher manageability ratings on their current projects. The meaningfulness of personal projects was associated with a higher number of different possible selves ( $r = .27, p = .012$ ).

An exploratory multiple linear regression was conducted to better understand how these variables were associated with teleonomic relevance. The regression model included self-appraisal personal project scores, the number of personal projects, and the number of different possible selves reported by each participant. Because education was correlated with some of these variables, it was added to the model as a covariate. The overall regression was significant  $F(7, 77) = 3.88, p = .001$ , and explained approximately 26% of the variance in teleonomic relevance ( $R^2 = .26$ ). The results are displayed in Table 17.

Finally, there were also interesting relationships between the number of personal projects, possible selves and all self-regulatory processes of hoped-for and feared possible selves (see Table 18). These results pose interesting empirical questions regarding the number of goals one pursues and the ability to manage all of these goals. I will discuss these findings and present ideas for future research based on these results in Chapter 5. In conclusion, although there was no initial evidence to support my hypothesis that teleonomic relevance was associated with depressive symptoms (as presented in my third research question), I continued to explore the concept of teleonomic relevance and discovered relationships to other personality variables such as project meaning and manageability. These relationships will be further discussed in the subsequent chapter.

Table 17

Summary of Multiple Regression Analysis for Variables Predicting Teleonomic Relevance ( $N = 85$ )

Variable	B	SE B	$\beta$
Education <sup>a</sup>	-.04	.02	-.18
Manageability <sup>b</sup>	-.04	.03	-.11
Meaning <sup>c</sup>	.13	.04	.33**
Projects <sup>d</sup>	.01	.01	.10
Selves <sup>e</sup>	-.07	.02	-.37**

Notes.  $R^2 = .25$ . <sup>a</sup>Higher number indicates more education. <sup>b</sup>Average self-appraisal score for project manageability. <sup>c</sup>Average self-appraisal score for project meaningfulness.

<sup>d</sup>Number of personal projects, with higher number indicating more projects. <sup>e</sup>Number of possible selves with higher number indicating more possible selves in difference domains.

\* $p < .05$  level; \*\*  $p < .01$  level

Table 18

Intercorrelations between Number of Projects and Number of Possible Selves and Self-regulatory Processes ( $N = 85$ )

	Describe <sup>a</sup>		Desire <sup>b</sup>		Important <sup>c</sup>		Capable <sup>d</sup>		Likelihood <sup>e</sup>		Think <sup>f</sup>	
	Hope	Fear	Hope	Fear	Hope	Fear	Hope	Fear	Hope	Fear	Hope	Fear
Personal Projects <sup>g</sup>	.35**	-.06	.48**	.13	.42**	-.04	.41**	-.01	.38**	-.08	.32**	.31**
Possible Selves <sup>h</sup>	.50**	.09	.62**	-.04	.61**	-.03	.57**	.09	.56**	-.12	.59**	.11

*Notes.* <sup>a</sup>How much does this possible self currently describe you? <sup>b</sup>How much do you want (or do not want) this possible self to describe you in the future? <sup>c</sup>How important is it for you to achieve (or avoid) this possible self in the future? <sup>d</sup>How capable to do you feel of achieving (or avoiding) this possible self? <sup>e</sup>How likely do you think it is that this possible self will be achieved (or avoided)? <sup>f</sup>How much time do you spend thinking about this possible self? <sup>g</sup>Number of personal projects, with higher number indicating more reported projects. <sup>h</sup>Number of possible selves in different domains, with higher number indicating more possible selves.

\* $p < .05$  level (2-tailed); \*\*  $p < .01$  level (2-tailed)

## Chapter 5 DISCUSSION

The focus of this study was on social-cognitive-motivational aspects of personality (as measured by possible selves) and the relationship to depressive symptoms in later life. A focus on possible selves contributes to our understanding of how individuals actively influence their own development and adapt to later life within biological, societal and resource constraints via the personal goals they select and future goals they strive to attain. Lifespan psychology theory, which emphasizes that adult development is characterized by loss as well as potential gains (e.g., Baltes & Baltes, 1990; Labouvie-Vief, 1981), provided the theoretical foundation for this study. As evidenced by current life-span development models and theories (e.g., SOC model, Freund & Baltes, 2000; life-span control theory, Heckhausen & Schulz, 1995), one domain in which older adults may experience developmental gain is in personality. More specifically, the goals that adults select provide guidance and direction to their own development, help them optimize their personal resources, and compensate for potential age-related losses. Within this general lifespan developmental psychology framework, the purpose in this dissertation was to examine the possible selves selected by older adults, examine how older adults managed their possible selves, and explore how possible self content and self-regulation was associated with psychological well-being in older adults. In addition, I explored teleonomic relevance (i.e., inter-relationship among current projects and possible selves) and its association to depressive symptoms in later life.

At the onset of this project, it was unclear what types and how many possible selves would emerge from dysphoric older adults. Would they have fewer? Would they have different goal domains represented in their goal repertoires (e.g., fewer health or family possible selves)? It was also unknown how the self-regulation of possible selves was related to depressive symptoms in older adults. Would older adults with depressive symptoms poorly manage their goals? Finally, would teleonomic relevance also be related to depressive symptoms in later life? The following discussion is organized around the results of these empirical questions.

### *Summary of Findings*

*Goal content and the relationship to depressive symptoms.* As predicted by lifespan psychological theory, many older adults in this study identified health or family related possible selves ( $n = 55$ ,  $n = 44$ , respectively). Later adulthood is a developmental period in which fewer societal norms or structural roles exist for older adults compared to younger adults, which gives older adults more freedom in selecting goals. Although this developmental period may be less structured, unique transitions are associated with later life (e.g., loss of friends, retirement, health maintenance, grandparenthood) which may make health and family related goals more salient. In addition, because a shift between the ratio of personal resource gains to losses occurs as individuals age (i.e., age-related health declines), older adults should select, manage, and pursue goals in a resource-efficient manner (e.g., Baltes, 1987; Riediger, Freund, & Baltes, 2005). As a result, goal striving in specific domains may be important. More specifically, an active pursuit of health and family related goals may be an adaptive response for older adults (Wrosch, Heckhausen, & Schulz, 2002).

The hypothesized relationship between goal content (i.e., health and family related possible selves) and depressive symptoms in late life was partially supported in this study. When controlling for age, gender, and health (which are all strongly related to depressive symptoms), I found a trend for the absence of health related possible selves to be related to an increase in the number of depressive symptoms. This finding is suggestive of the theoretical assertion that goal striving in the health domain may be an adaptive response for older adults in relation to depressive symptoms. Creating health related goals might be a strategy for older adults to maintain health or regulate health losses, as physical health declines become more likely to occur. Additionally, because health is a broad domain, it can also encompass goals to maintain mental as well as physical health. For example, older adults with possible selves such as “to stay mentally active” or “to stay healthy in mind and body” are likely more cognizant of both physical and mental health possible selves.

Significant relationships between goal content and specific Geriatric Depression Scale items also emerged in this study. These correlations provide further evidence of an association between health and family related possible selves and depressive symptoms



in late life. First, the absence of health related possible selves was associated with feeling worthless. What does this mean? One explanation is that investing in health related goals might generate increased self-esteem or motivation to keep older adults active. Or, perhaps older adults who did not generate a health related possible self were already experiencing poor or irreversible declines in health (e.g., macular degeneration) that limited their ability to leave their homes. For these older adults, it may be futile and unrealistic to generate health related future selves. An empirical question remains: are there other goal domain areas in which this group of older adults should invest to compensate for health related losses? Are there other goal domains in which they can maintain resources? One such area may be related to family.

An absence of family related possible selves was associated with feeling helpless and feeling like life was empty. In addition, older adults without family related possible selves were associated with dropping activities and interests. As is evident in these correlations, social connections facilitate an important element of successful aging: engagement with life. Older adults who create and invest in family related possible selves might be actively cultivating these social connections (e.g., participating in grandchildren's activities, caring for an ill spouse), which in turn results in lower levels of depressive symptoms because their lives are active and meaningful.

The preceding findings regarding health and family related possible selves and depression scale items might also be reflective of feedback or feed forward processes. Self-development is generative and a reflection of the dynamic interaction between persons and their contexts (Brandstädter, 1989; Ford & Lerner, 1992). In developmental systems theory (Ford & Lerner, 1992), various feedback and feed forward processes operate to help individuals reduce the discrepancy between current outcomes and desired outcomes. For example, older adults who identified family possible selves may feel less helpless or empty because they are receiving positive reinforcement from their loved ones, which promotes further investment into this possible self.

*Goal management and depressive symptoms in later life.* The content of one's goals may be important to psychological well-being, but how does the ability to manage and successfully self-regulate one's goals relate to depressive symptoms? Possible selves, in conjunction with self-regulatory processes (e.g., self-efficacy, outcome expectancy),

can influence daily behavior to help one become or avoid specific images of self in the future. The self-regulatory processes probed in response to each specific possible self provided insight into how thoughts about the self can be transformed into action (Hooker, 1999). For example, time spent thinking about a possible self may help individuals process specific self-images which could result in concrete planning for achieving future selves (Klinger, 1975). A more elaborated possible self may be more motivationally effective because rehearsing the outcome and the steps needed to achieve that outcome should organize and energize individuals to move toward that goal (Markus and Ruvolo, 1989).

All six self-regulatory processes of hoped-for selves were inversely correlated with depression. This means that older adults had fewer depressive symptoms, the more efficacious older adults felt in achieving their hoped-for selves, the more time they spent thinking about their hoped-for selves, the more they currently matched their hoped-for selves, the more important their hoped-for selves, and the more they had control over the outcome of their hoped-for selves. None of the self-regulatory processes of feared selves were significantly related to depressive symptoms in older adults. This finding poses intriguing empirical questions regarding the motivational differences between hoped-for and feared possible selves in relation to mental health outcomes. Although, it was hypothesized that negative possible selves (i.e., feared selves) may play a more significant role in older adults with dysphoria, it does not appear to be the case.

Two of the six hoped-for selves self-regulatory processes were further associated with depressive symptoms. The less close participants currently felt to their hoped-for self and the less they wanted to become their hoped-for self in the future, was related to an increase in the number of depressive symptoms in older adults. In this study, self-efficacy across all hoped-for selves was not significantly related to the number of depressive symptoms in older adults, although it has been identified as a theoretically important predictor of depression (Abramson, Metalsky, & Alloy, 2002; Bandura, 1997). These findings do, however, support social-cognitive theories of well-being that account for motivation (e.g., self-discrepancy theory, Higgins, 1987). The discrepancy between one's actual and ideal self may be psychologically uncomfortable and drive individuals to match their actual self to their hoped-for self (Higgins, 1987). The discrepancy between

actual and ideal self-states can theoretically produce depressive emotions (Higgins, 1987). As demonstrated in the findings above, individuals with more discrepancy between their current and hoped-for self, reported more depressive symptoms. These results also corroborate the findings of a clinical study in which a discrepancy between one's actual and ideal self was significantly and uniquely related to major depression (Apter, et al., 1996).

*Goal management of health possible selves and depressive symptoms in later life.* Given the unique findings regarding the relationship between self-regulation of possible selves and depressive symptoms, I further explored how the self-regulation of health related possible selves was associated with depressive symptoms. Among this sub-sample of older adults, three self-regulatory processes of health related hoped-for selves were related to depression: self-efficacy (i.e., how capable do you feel of achieving your hoped-for self?), outcome expectancy (i.e., how likely do you think it is that your hoped-for self will be achieved?), and time spent thinking about health related hoped-for self. None of the self-regulatory processes of feared selves were associated with depressive symptoms. Previous research demonstrated that both self-efficacy and outcome expectancy of health related hoped-for selves were positively related to perceived health (Hooker, 1992). As demonstrated in this study, these self-regulatory processes appear to also be related to positive mental health. Hooker (1992) also found that time spent thinking about health related hoped-for selves was important, however, it was negatively related to perceived health. In contrast, I found that the amount of time individuals spent thinking about health related hoped-for selves was associated with fewer depressive symptoms. A possible explanation for this finding is that a classic symptom of depression is hopelessness, thus, perhaps being cognizant and thinking about future hopes is actually a protective factor for depression.

*Goal management of family related possible selves and depressive symptoms in later life.* I continued to explore how the self-regulation of specific possible selves related to depressive symptoms in older adults by examining family related possible selves. Two family related hoped-for selves self-regulatory processes were related to increased depressive symptoms: older adults who felt that it was less important to achieve their family related hoped-for self (an element of self-efficacy) and older adults who felt

currently felt less like their family related hoped-for self. In congruence with the prior findings on self-regulation of hoped-for and feared selves, family related feared selves were not as frequently related to depressive symptoms as family related hoped-for selves. The amount of time individuals spent thinking about their family related feared selves, however, was strongly related to an increase in depressive symptoms. This finding may indicate that people who ruminate on their fears may be more likely to experience depressive symptoms. In addition, individuals who spend a lot of time thinking about family related goals may have little real control over these goals because they are based on others.

*Teleonomic Relevance.* Theoretically, goals are hierarchically linked with projects building up to larger goals and motivation (refer to Figure 2). This means that current personal projects can be understood as sub-goals to future possible selves (Little, Lecci and Watkinson, 1992). Because these constructs are theoretically linked, individuals with current goals related to their future selves are engaged in more activities to maintain or avoid their possible selves. Despite expectations, teleonomic relevance (as measured by individuals' perception of relatedness between their current projects and possible selves) was not related to depressive symptoms in older adults. The lack of evidence to support the relationship to depressive symptoms in this study should be interpreted with caution, however, because it may be more indicative of limitations within this study. Furthermore, it may not be the perceived inter-relatedness among goals that is associated with depressive symptoms, but rather the conflict between goals that is associated with negative mental health outcomes (Riediger, Freund, & Baltes, 2005).

Hooker & McAdams (2003) have challenged personality researchers to integrate approaches to understanding all levels of personality; therefore, the concept of teleonomic relevance continues to be an important construct to explore and relate to behavioral outcomes. The self-appraisals of personal projects were associated with increased teleonomic relevance. More specifically, individuals who rated their goals as more meaningful, but less manageable, reported higher levels of teleonomic relevance. The manageability of goals was linked to depressive symptoms and physical health. Manageability may be related to the ability to feel competent and in control of one's goals, which has also been associated with well-being (McGregor & Little, 1998). This

also reflects Little's (1989) findings that individuals engaged in meaningful goals that are also not overly challenging but promote a sense of self-efficacy (or a balance between manageability) may have higher levels of well-being. Meaningfulness of projects on the other hand, was only related to number of possible selves. Older adults with possible selves in a number of domains were associated with rating their current projects as more meaningful. This may mean that older adults with many distinct possible selves rate their projects as more meaningful because each project simultaneously builds towards multiple future goals (similar to *intergoal facilitation*, Riediger, Freund, Baltes, 2005). Because individuals often strive for more than one goal at the same time, each goal may not be independent of the others; in general, older adults appear to exhibit more facilitation among their goals, or that the pursuit of one goal simultaneously increases the success of attaining other related goals (Riediger, Freund, & Baltes, 2005). The concept of intergoal facilitation is important because it allows for an efficient use of older adults' potentially limited resources in the interest of their goals (Riediger, Freund, & Baltes, 2005).

Finally, another interesting and unexpected finding was that the number of different possible selves and the number of personal projects was related to better self-regulation among hoped-for possible selves. More specifically, individuals with more projects and more possible selves in different domains were positively correlated with all six hoped-for possible selves self-regulatory processes. Does this imply that older adults with more projects are equipped with more strategies to achieve their possible selves? The presence of multiple current projects related to a future self might help older adults feel more capable of achieving their possible selves. In addition, perhaps this finding suggests that a larger set of well-developed possible selves, rather than an inter-related or balanced possible selves repertoire, is more adaptive for managing late life transitions (Baltes, Lindenberger, & Staudinger, 1998). The presence of multiple possible selves in the same domain (i.e., two possible selves related to health) could reflect chronic worry and rumination rather than motivation (Smith & Freund, 2002), which may negatively impact self-regulatory processes. In addition, in congruence with self-complexity theory (Linville, 1987), if an older adult only has multiple possible selves in one domain (i.e., health), but has experienced a negative event (i.e., cerebrovascular accident), all aspects of the self are affected which can have a negative effect on goal self-regulation.

*Strengths and limitations.* This study addressed gaps in the literature by examining social-cognitive aspects of personality and the association with depressive symptoms in later life. Some limitations to this study require careful interpretation of the results. For example, I was not able to discuss the causal factors of depressive symptoms in later life, and all conclusions are based on associations of variables to the number of depressive symptoms that older adults reported. Also, because I used only one point in time to measure depressive symptoms for each individual, I was not able to establish how personality affects the development of depressive symptoms, which would mean that the influence of personality was not fully captured.

The homogeneity of the sample, specifically in regards to gender and ethnicity, will limit generalizability. Furthermore, an unexpected finding during recruitment was that spouses frequently accompanied many of the patients at the health care clinic. This resulted in several dyads ( $n = 12$ ) within the study. Although precautions were taken to interview the couples separately, their results were likely more highly correlated than the general population. This issue could be controlled for in statistical analyses if more power was available (i.e., using cluster analyses with robust variance in Poisson regression models).

Strengths of this study included the purposeful sampling of community-dwelling older adults. Prior studies in this area have relied upon samples of college students. The findings of this study are more generalizable to an older adult population. In addition, conducting face-to-face interviews was also an advantage. Although it was possible that conducting interviews on personal information may have inadvertently evoked a social desirability bias, prior studies have indicated that this method may be more efficient for older adults. I was able to help clarify questions for the participants, which resulted in few missing data.

#### *Implications and future research directions*

The implications of this line of research are far-reaching. A useful feature of the possible selves construct is the links between motivational, cognitive, and emotional self-systems. It has been argued that when an individual's goals for the future are represented as possible selves, one may be more motivated to work toward this goal (Markus & Nurius, 1986). In addition, one's ability to select and pursue goals is closely tied to

emotions, which in turn can guide an individual's daily action (Hooker, 1999). A clearer understanding of human motives can benefit a wide range of scientific disciplines, therefore, it is no surprise that there is a growing interest in the usefulness and applicability of possible selves research.

Researchers have already begun integrating the use of possible selves into such fields as occupational counseling, school achievement, adult learning, and substance abuse counseling with some preliminary success (Martz, 2001; Oyserman, Terry, & Bybee, 2002). All of these researchers have noted, however, the importance of ongoing, future research regarding this construct and its usefulness in improving the quality of life of humans. For example, counselors and therapists might obtain more insight into their clients' distress by eliciting their possible selves and self-regulatory processes (Little, Chambers, & Barbeau, 2000), or they might be able to better motivate clients to adhere to treatment plans. Future studies designed to explore the practicality and usefulness of integrating this construct into counseling and clinical domains are much needed.

From a gerontological perspective, research on possible selves can provide an important contribution to the evolving line of research that is demonstrating the importance of goals in positive adult development (Bauer & McAdams, 2004; Riedieger, Freund, Baltes; Sheldon & Kasser, 2001). Although the current dissertation study explored the potential importance of two specific goal domains (health and family), the ability to document goal-related processes over time is essential to elucidating this developmental process, as well as understanding the role that goals play in confronting and managing old age. Cohort-sequential studies on personal goals can provide new evidence of positive development and growth within the personality domain.

Additional research is also needed on the potential linkages between and across all levels of personality (see Hooker & McAdams, 2003). In this study, I explored teleonomic relevance and the association to depressive symptoms, however, further research is needed to clarify this relationship and potential links to other behavioral outcomes. I also recommend that additional studies implement the teleonomic relevance measure in order to assess validity.

An interesting re-occurring finding in this study included the asymmetry found between hoped-for and feared possible selves. In all analyses examining the relationship

between self-regulatory processes and depressive symptoms, hoped-for selves were clearly more prominently related to depressive symptoms than feared selves. As Hooker (1992) suggested, it is fascinating that positive self-images and negative self-images (even within the same domain) “relate differentially to life outcomes” (p.108). Hoped-for selves (an approach goal) and feared selves (an avoidance goal) may be linked to research on two motivational systems that theoretically regulate behavior: behavioral inhibition systems (BIS) or behavioral activation systems (BAS) (see Carver & Scheier, 1998). There is some evidence that BIS and BAS levels relate to psychiatric disorders (Johnson, Turner, & Iwata, 2003), but additional future studies designed to address the underlying mechanisms of these different motivational strategies are clearly needed.

Finally, studies are also needed to clarify the role between personality and depression in late life. It was beyond the scope of this study to include older adults with major depressive disorders, however, future research should continue to explore the relationship between volitional processes and psychopathology. For example, does the experience of mental illness change the goals that one selects? Does it affect the perceived importance or self-regulation of goals? Do negative cognitive schema impede motivational aspects of the self and predispose one to depression? Do these change over time as depression worsens or improves? These questions need to be answered in longitudinal studies with larger clinical samples that follow the content and management of goals and behaviors over time.

### *Conclusion*

Despite the increasing interest in the active role that adults play in shaping their own development, our knowledge regarding motivational and volitional processes in older adults is limited. Furthermore, studies that have connected these processes to late life depression are scarce. The overall findings of this study contributed to our understanding of both theoretical and empirical issues related to the role of social-cognitive aspects of personality and dysphoria in later life. More specifically, the goal domains of health and family might be important areas in which it would be adaptive for older adults to invest. In addition, the ability to manage one’s future goals is connected to psychological well-being. In conclusion, it appears that it is not solely *what* goals older



adults choose, but *how* they self-regulate their goals that are important elements of mental health in later life.

## REFERENCES

- Abramson, L. Y., Alloy, L. B., Hankin, B. L., Haefffel, G. J., MacCoon, D. G., & Gibb, B.E. (2002). Cognitive vulnerability-stress models of depression in a self-regulatory and psychobiological context. In I. Gotlib & C. Hammen (Eds.), *Handbook of depression* (pp. 268 – 313). New York: Guilford Press.
- Abramson, L. Y., Metalsky, G. I., & Alloy, L.B. (1989). Hopelessness depression: A theory based-subtype of depression. *Psychological Review*, *96*, 358 – 372.
- Adler, A. (1969). *The science of living*. Garden City, NY: Anchor doubleday.
- Allen, L. A., Woolfolk, R. L., Gara, M. A., & Apter, J. T. (1996). Possible selves in major depression. *The Journal of Nervous and Mental Disease*, *184* (12), 739 – 745.
- Allport, F. H. (1937). Teleonomic description in the study of personality. *Character and Personality*, *5*, 202 – 214.
- Allport, G. W. (1961). *Pattern and growth in personality*. New York: Holt, Rinehart, & Winston, Inc.
- Alpass, F. M., & Neville, S. (2003). Loneliness, health and depression in older males. *Aging & Mental Health*, *7* (3), 212 – 216.
- American Psychiatric Association (1994). *Diagnostic and statistical manual – 4<sup>th</sup> edition*. Washington, DC: American Psychiatric Association.
- Baltes, P. B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology*, *23*, 611 – 626.
- Baltes, P. B., & Baltes, M. M. (1990b). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1 – 34). New York: Cambridge University Press.
- Baltes, M.M., & Carstensen, L.L. (1991). Possible selves and their fertility in the process of successful aging: A commentary on Cross and Markus. *Human Development*, *34*, 256 - 260.
- Baltes, P. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist*, *52*, 366-380.

- Baltes, P. B., Lindenberger, U., & Staudinger, U. M. (1998). Life-span theory in developmental psychology. In R. M. Lerner (Ed.), *Handbook of Child Psychology: Vol. 1. Theoretical models of human development* (5<sup>th</sup> Ed., pp. 1029 - 1143). New York: Wiley.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1 - 26.
- Bauer, J. J., & McAdams, D. P. (2004). Growth goals, maturity, and well-being. *Developmental Psychology*, 40, 114 - 127.
- Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. New York: Harper & Row.
- Bolkan, C., & Hooker, K. (August, 2005). Successful adaptation to chronic stress: How personality traits and possible selves relate to positive mental health. Paper presented in symposium presentation, *Images and realizations of positive development in adulthood and old age*. Organizer: U. M. Staudinger, at the 113<sup>th</sup> Annual Convention of the American Psychological Association, Washington, DC.
- Blaney, P. H. (2000). Stress and depression: A personality-situation interaction approach. In S. L. Johnson, A. M. Hayes, T. M. Field, N. Schneiderman, & P. M. McCabe (Eds.), *Stress, coping, and depression* (pp. 89 - 116) Mahwah, NJ: Lawrence Erlbaum.
- Blazer, D. G. (1994). Depression in the elderly. *Hospital Practice*, 29(7), 37 - 41.
- Blazer, D. G. (2003). Depression in late life: Review and commentary. *Journal of Gerontology: Medical Sciences*, 58A, 249 - 265.
- Brandtstädter, J. (1984). Personal and social control over development: Some implications of an action perspective in life-span developmental psychology. In T. B. Baltes, & O. G. Brim, Jr. (Eds.), *Life span development and behavior* (Vol. 6, pp. 1 - 32). New York: Academic Press.
- Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging*, 5, 58 - 67.
- Brandtstädter, J. (1999). The self in action and development: Cultural, biosocial, and ontogenetic bases of intentional self-development. In J. Brandtstädter, & R. M. Lerner (Eds.). (1999). *Action and self-development: Theory and research through the life span* (pp. 37 - 65). Thousand Oaks, CA: Sage.

- Brandtstädter, J., & Lerner, R. M. (Eds.). (1999). *Action and self-development: Theory and research through the life span*. Thousand Oaks, CA: Sage.
- Brunstein, J. C. (1993). Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology*, 65(5), 1061 – 1070.
- Boswell, E. B. & Stoudemire, A. (1996). Major depression in the primary care setting. *American Journal of Medicine*, 101(6A), 3S - 10S.
- Boise, L., Neal, M. B., & Kaye, J. (2004). Dementia assessment in primary care: Results from a study in three managed care systems. *Journal of Gerontology: Medical Sciences*, 59A, 621 - 626.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32, 513 - 530.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.
- Bühler, C. (1967). Human life goals in the humanistic perspective. *Journal of Humanistic Psychology*, 7(1),
- Bühler, C., & Marschak, M. (1968). Basic tendencies of human life. In C. Bühler & F. Massarik (Eds.), *The course of human life: A study of goals in the humanistic perspective* (pp. 92 – 102). New York: Springer.
- Burns, R. S., & Martin, J. (1997). The therapeutic construction of possible selves: Imagination and its constraints. *Journal of Constructivist Psychology*, 10, 153 – 166.
- Callahan, C. M, Dittus, R. S., & Tierney, W. M. (1996). Primary care physicians' medical decision making for late-life depression. *Journal of General Internal Medicine*, 11(4), 218 – 225.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54, 165 - 181.
- Carver, C. S., & Scheier, M. F. (2002). Control processes and self-organization as complementary principles underlying behavior. *Personality and Social Psychology Review*, 6, 304 – 315
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.

- Carver, C. S., & Scheier, M. F. (1991). Self-regulation and the self. In J. Strauss & G. R. Goethals (Eds.), *The self: Interdisciplinary approaches*. New York: Springer – Verlay.
- Cantor, N. (1990). From thought to behavior: “Having” and “doing” in the study of personality and cognition. *American Psychologist*, *45*, 735 – 750.
- Center for population research and census (2000). Experimental race estimates for Oregon and its counties: July 1, 2000. Portland State University: Portland, OR.
- Costa, P. T. Jr., & McCrae, R. R. (1980c). Still stable after all these years: Personality as a key to some issues in adulthood and old age. In P. B. Baltes & O. G. Brim, Jr. (Eds.), *Life-span development and behavior* (Vol 3, pp. 65 – 102). New York: Academic Press.
- Coyne, J. C. (1992). Cognition in depression: A paradigm in crisis. *Psychological Inquiry*, *3*, 232 – 235.
- Coyne, J. C. (1976). Toward an interactional description of depression. *Psychiatry*, *39*, 28 – 40.
- Covinsky, K. E., Fortinsky, R. H., Palmer, R. M., Kresevic, D. M., & Landefeld, C. S. (1997). Relation between symptoms of depression and health status outcomes in acutely ill hospitalized older persons. *Annals of Internal Medicine*, *126*(15), 417 - 425.
- Cross, S., & Markus, H. (1991). Possible selves across the life span. *Human Development*, *34*, 230 – 255.
- Diehl, M. Hastings, C. T., & Stanton, M. (2001). Self-concept differentiation across the adult life span. *Psychology and Aging*, *16*(4), 643 – 654.
- Digman, J. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, *41*, 417 - 440.
- DuPertuis, L. L., Aldwin, C. M., & Bossé, R. (2001). Does the source of support matter for different health outcomes? Findings from the Normative Aging Study. *Journal of Aging & Health*, *13*(4), 494 – 507.
- Dykman, B. M. (1998). Integrating cognitive and motivational factors in depression: Initial tests of a goal-orientation approach. *Journal of Personality and Social Psychology*, *74*(1), 139 – 158.
- Egberts, A. C., Leufkens, H. G., Hofman, A., & Hoes, A. W. (1997). Incidence of antidepressant drug use in older adults and association with chronic diseases: the Rotterdam Study. *International Clinical Psychopharmacology*, *12*(4), 217 – 223.

- Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology*, 51, 1058 - 1068.
- Emmons, R. A. (1991). Personal strivings, daily life events, and psychological and physical well-being. *Journal of Personality*, 59, 455 - 472.
- Emmons, R. A. (1996). Striving and feeling: Personal goals and subjective well-being. In J. Bargh, & P. Gollwitzer (Eds.), *The psychology of action: Linking motivation and cognition to behavior* (pp. 314 - 337). New York: Guilford.
- Enns, M. W., & Cox, B. J. (1997). Personality dimensions and depression: Review and commentary. *Canadian Journal of Psychiatry*, 42, 274 - 84.
- Erikson, E. H. (1959). *Identity and the life cycle*. New York: International Universities Press.
- Fingerman, K. L., & Lang, F. (2004). Coming together: A lifespan perspective on personal relationships. In F. Lang, & K. L. Fingerman (Eds.), *Growing together: Personal relationships across the lifespan* (pp. 1 - 23). New York: Cambridge University Press.
- Fingerman, K. L. (2001). *Aging mothers and their adult daughters: A study in mixed emotions*. New York: Springer Publishers.
- Fingerman, K. L., Hay, E. L., & Birditt, K. S. (2004). The best of ties, the worst of ties: Close, problematic, and ambivalent social relationships. *Journal of Marriage & Family*, 66(3), 792 - 808.
- Ford, D. H., & Lerner, R. M. (1992). *Developmental systems theory: An integrative approach*. Newbury Park, CA: Sage.
- Ford, D. H. (1987). *Humans as self-constructing living systems: A developmental perspective on behavior and personality*. Hillsdale, NJ: Erlbaum.
- Frazier, L. D., & Hooker, K. (2006). Possible selves in adult development: Linking theory and research. In C. Dunkel & J. Kerpelman (Eds.), *Possible selves: Theory, research, and application* (pp. 41 - 59). Huntington, NY: Nova Science.
- Frazier, L. D., Johnson, P. M., Gonzalez, G. K., & Kafka, C. L. (2002). Psychosocial influences on possible selves: A comparison of three cohorts of older adults. *International Journal of Behavioral Development*, 26(4), 308 - 317.

- Frazier, L. D., Hooker, K., Johnson, P. M. & Kaus, C. R. (2000). Continuity and change in possible selves in later life: A 5-year longitudinal study. *Basic and Applied Social Psychology*, 22, 235 –241.
- Freund, A. M., & Baltes, P. B. (2000). The orchestration of selection, optimization, and compensation: An action-theoretical conceptualization of a theory of developmental regulation. In W. J. Perrig, & A. Grob (Eds.), *Control of human behavior, mental processes, and consciousness: Essays in honor of the 60<sup>th</sup> birthday of August Flammer* (pp. 35 – 58). Mahwah, NJ: Lawrence Erlbaum
- Frone, M.R. (1997). Regression models for discrete and limited dependent variables. *Research Methods Forum*, 2, 3 - 6.
- Ganzini, L, Smith, D. M., Fenn, D. S., & Lee, M. A. (1997). Depression and mortality in medically ill older adults. *Journal of the American Geriatrics Society*, 45(3), 307 - 312.
- Gatz, M. (2000). Variations on depression in later life. In S. Qualls, & N. Abeles (Eds.), *Psychology and the aging revolution: How we adapt to longer life* (pp. 239 – 254). Washington, DC: American Psychological Association.
- Goldberg, L. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48, 26-34.
- Gotlieb, I. H., & Hammen, C. L. (Eds.). (2002). *Handbook of depression*. New York: The Guilford Press.
- Greenberg, J., & Pyszczynski, T. (1986). Persistent high self-locus after failure and low self-locus after success: The depressive self-focusing style. *Journal of Personality and Social Psychology*, 50, 1039 – 1044.
- Hammen, C. (2000). Interpersonal factors in an emerging developmental model of depression. In S. L. Johnson, A. M. Hayes, T. M. Field, N. Schneiderman, & P. M. McCabe (Eds.), *Stress, coping, and depression* (pp. 89 - 116). Mahwah, NJ: Lawrence Erlbaum.
- Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review*, 102, 284 – 304.
- Heckhausen, J. (1999). *Developmental regulation in adulthood: Age-normative and sociohistorical constraints as adaptive challenges*. Cambridge, UK: Cambridge University Press.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94, 319 – 340.

- Hooker, K. (2002). New directions for research in personality and aging: A comprehensive model for linking levels, structures, and processes. *Journal of Research in Personality*, 36, 318 – 334.
- Hooker, K. (1999). Possible selves in adulthood: Incorporating teleonomic relevance into studies of the self. In T. M. Hess & F. Blanchard-Fields (Eds.), *Social cognition and aging* (pp. 97 - 122). New York: Academic Press.
- Hooker, K., & Kaus, C. R. (1994). Health-related possible selves in young and middle adulthood. *Psychology and Aging*, 9, 126 - 133.
- Hooker, K. (1992). Possible selves and perceived health in older adults and college students. *Journal of Gerontology: Psychological Sciences*, 47, 85 – 95.
- Hooker, K. & Kaus, C. R. (1992). Possible selves and health behaviors in later life. *Journal of Aging and Health*, 4, 390 - 411.
- Hooker, K. & McAdams, D. P. (2003). Personality reconsidered: A new agenda for aging research. *Journal of Gerontology: Psychological Sciences*, 58, 296 – 304.
- Hooker, K. (2003). *Possible Selves: Selection Mechanism of the Distributed Self in Action*. With Frazier, L., & Bolkan, C. Paper presented at the 111<sup>th</sup> Annual Convention of the American Psychological Association, Toronto, Ontario, Canada.
- Hooker, K., & Bolkan, C. (November, 2004). *Measuring the six-foci model of personality: Progress and ongoing challenges*. Presented at the 57<sup>th</sup> Annual Scientific Meeting of the Gerontological Society of America, Washington, DC.
- Horowitz, A., Reinhardt, J.P., Boerner, K., & Travis, L. A. (2003). The influence of health, social support quality and rehabilitation on depression among disabled elders. *Aging and Mental Health*, 7(5), 342 – 350.
- Idler E., & Kasl S. (1991). Health perceptions and survival: Do global evaluations of health status really predict mortality? *Journal of Gerontology: Social Sciences* 46: S55 - S65.
- Johnson, S. L., Turner, R. J., & Iwata, N. (2003). BIS/BAS levels and psychiatric disorder: An epidemiological study. *Journal of Psychopathology and Behavioral Assessment*, 25(1), 25 – 36.
- Johnson, J., Weissman, M. M., & Klerman, G. L. (1992). Service utilization and social morbidity associated with depressive symptoms in the community. *Journal of the American Medical Association* 267(14), 78 - 83.



- Joiner, T. E., & Metalsky, G. I. (1995). A prospective test of an integrative interpersonal theory of depression: A naturalistic study of college roommates. *Journal of Personality and Social Psychology*, 69, 778 - 788.
- Joiner, Jr, T. E. (2000). Depression: Current developments and controversies. In S. Qualls & N. Abeles (Eds.), *Psychology and the aging revolution: How we adapt to longer life* (pp. 223 – 238). Washington, DC: American Psychological Association.
- Karel, M. J., Ogland-Hand, S., Gatz, M., with Unützer, J. (2002). *Assessing and treating Late-life depression: A casebook and resource guide*. New York: Basic Books.
- Kahn, R. L., Antonucci, T. C. (1980). Convoys over the life course: Attachment, roles, and social support. In P. B. Baltes & O. C. Brim (Eds.), *Life-span, development, and behavior* (pp. 254 – 283). New York: Academic Press.
- Katz, R., & McGuffin, P. (1993). The genetics of affective disorders. In D. Fowles (Ed), *Progress in experimental personality and psychopathology research*. New York: Springer.
- Karoly, P. (1999). A goal systems – self-regulatory perspective on personality, psychopathology, and change. *Review of General Psychology*, 3(4), 264 – 291.
- Kendler, K. S., Kessler, R. C., Walters, E. E., MacLean, C., Neale, M. C., Heath, A. C., & Eaves, L. J. (1995). Stressful life events, genetic liability, and onset of an episode of major depression in women. *American Journal of Psychiatry*, 152, 833 – 842.
- Klein, D. N., Durbin, C. E., Shankman, S. A., & Santiago, N. J. (2002). Depression and personality. In I. Gotlib & C. Hammen (Eds.), *Handbook of Depression* (pp. 115 – 140). New York: Guilford Press.
- Kline, Rex B. (1998). *Principles and practice of structural equation modeling*. NY: Guilford Press.
- Klinger, E. K. (1977). *Meaning and void: Inner experiences and the incentives in people's lives*. Minneapolis, MN: University of Minnesota Press.
- Koestner, R., Lekes, N., Powers, T. A., & Chicoine, E. (2002). Attaining personal goals: Self-concordance plus implementation intentions equals success. *Journal of Personality and Social Psychology*, 83(1), 231 – 244.
- Kovacs, M. & Beck, A. (1978). Maladaptive cognitive structures in depression. *American Journal of Psychiatry*, 135(5), 525 - 533.

- Krause, N., & Rook, K. S. (2003). Negative interaction in late life: Issues in the stability and generalizability of conflict across relationships. *Journal of Gerontology: Psychological Sciences*, 57B, P88 - P99.
- Labouvie – Vief, G., & Diehl, M. (1999). Self and personality development. In J.C. Cavanaugh & S. K. Whitbourne (Eds.), *Gerontology: An interdisciplinary perspective* (pp. 239 – 268). New York: Oxford University Press.
- Langa, K. M., Valenstein, M., Fendrick, A.M., Kabeto, M, Vijan, S. (2004). Informal caregiving for older Americans with symptoms of depression. *American Journal of Psychiatry* 161(5), 857-863.
- Langer, E., & Rodin, J. (1976). The effects of choice and enhanced personal responsibility for the aged: A field experiment in an institutional setting. *Journal of Personality & Social Psychology*, 191 - 198.
- Lerner, R. M. (1983). A “goodness of fit” model of person – context interaction. In D. Magnusson, & V. L. Allen (Eds.), *Human development: An interactional perspective* (pp. 279 – 294). New York: Academic Press.
- Lawton, M. P., Moss, M. S., Winter, L., & Hoffman, C. (2002). Motivation in later life: Personal projects and well-being. *Psychology and Aging*, 17, 539 - 547.
- Lawton M., Moss M., Fulcomer M., Kleban M., 1982. A research and service oriented multilevel assessment instrument. *Journal of Gerontology*, 37, 91 - 99.
- Little, R. J. A., & Rubin, D. B. (1987). *Statistical Analysis with Missing Data*. New York: Wiley.
- Little, B. R. (1983). Personal projects: A rationale and method for investigation. *Environment and Behavior*, 15, 273 – 309.
- Little, B. R. (1998). Personal project pursuit: Dimensions and dynamics of personal meaning. In P. T. P. Wong, & P. S. Fry (Eds.), *The human quest for meaning: Theory, research, and clinical application*. Mahwah, NJ: Erlbaum.
- Little, B. R., Lecci, L., & Watkinson, B. (1992). Personality and personal projects: Linking Big Five and PAC units of analysis. *Journal of Personality*, 60, 502 – 525.
- Little, B. R. (1989). Personal projects analysis: Trivial pursuits, magnificent obsessions, and the search for coherence. In D. M. Buss & N. Cantor (Eds.), *Personality psychology: Recent trends and emerging directions*, (pp. 15 – 31), New York: Springer – Verlag.

- Linville, P. W. (1985). Self-complexity and affective extremity: Don't put all your eggs in one cognitive basket. *Social Cognition*, 3, 94 – 120.
- Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology*, 52, 663 – 676.
- Lewinsohn, P. M. (1974). A behavioral approach to depression. In R. Friedman & M. Katz (Eds.), *The psychology of depression: Contemporary theory and research*, (pp. 157 – 178). New York: Winston – Wiley.
- Long, J. S., & Freese, J. (2006). Models for count outcomes. *Regression models for categorical dependent variables using Stata (2<sup>nd</sup> Ed.)*. Stata Press.
- Markus, H. R., & Nurius P. (1986). Possible selves. *American Psychologist*, 41, 954 – 969.
- Markus, H., & Ruvolo, A. (1989). Possible selves: Personalized representations of goals. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology* (pp. 211 – 241). Hillsdale, NJ: Erlbaum.
- Markus, H., & Wurf, E. (1987). The dynamic self – concept: A social psychological perspective. *Annual Review of Psychology*, 38, 299 – 337.
- Martz, E. (2001). Expressing counselor empathy through the use of possible selves. *Journal of Employment Counseling*, 38, 128 – 133.
- McAdams, D. P. (1995). What do we know when we know a person? *Journal of Personality*, 63(3), 365 – 396.
- McConnell, A. R., Renaud, J. M., Dean, K. K., Green, S. P., Lamoreaux, M. J., Hall, C. E., & Rydell, R. J. (2005). Whose self is it anyway? Self-aspect control moderates the relation between self-complexity and well-being. *Journal of Experimental Social Psychology*, 41, 1 – 18.
- McCrae, R., & Costa, P. T. (2003). *Personality in adulthood: A five-factor theory perspective*. New York: Guilford Press.
- McGregor, I., & Little, B. R. (1998). Personal projects, happiness and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology*, 74, 494 - 512.
- Miller, A. H. (1994). Neuroendocrine and immune system interactions in stress and depression. *Journal of Geriatric Psychiatry & Neurology*, 7(1), 33 – 38.

- Mischel, W. (2004). Toward an integrative science of the person (Prefatory Chapter). *Annual Review of Psychology*, 55, 1 – 22.
- Murray, C. J. L., & Lopez, A. D. (Eds.). (1996). *The Global Burden of Disease*. Cambridge, MA: Harvard School of Public Health.
- National Mental Health Association. (1996). *American attitudes about clinical depression and its treatment*. Retrieved April 11, 2005 from <http://www.nmha.org/infoctr/factsheets/22.cfm>.
- Norman, C. C., & Aron, A. (2003). Aspects of possible self that predict motivation to achieve or avoid it. *Journal of Experimental Social Psychology*, 39, 500 – 507.
- Nurmi, J., & Salmela – Aro (2002). Goal construction, reconstruction and depressive symptoms in a life-span context: The transition from school to work. *Journal of Personality*, 70(3), 385 - 420.
- Nurmi, J. E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review*, 11, 1 – 59.
- Nurmi, J. E. (1992). Age differences in adult life goals, concerns, and their temporal extension: A life-course approach to future-oriented motivation. *International Journal of Behavioral Development*, 15, 487 – 508.
- Olfson, M., & Pincus, H. A. (1996). Outpatient mental health care in non-hospital settings: Distribution of patients across provider groups. *The American Journal of Psychiatry* 153(10), 1353 - 1356.
- Omodei, M. M., & Wearing, A. J. (1990). Need satisfaction and involvement in personal projects: Toward an integrative model of subjective well-being. *Journal of Personality and Social Psychology*, 59(4), 762 – 769.
- Oyserman, D., Terry, K., & Bybee, D. (2002). A possible selves intervention to enhance school involvement. *Journal of Adolescence*, 25, 313 – 326.
- Oregon Geriatric Education Center (2003). Statewide focus. Retrieved April 14<sup>th</sup>, 2006. <http://www.ohsu.cc/ogec/history.html>
- Oyserman, D., Ager, J., & Gant, L. (1995). A socially contextualized model of African American identity: Possible selves and school persistence. *Journal of Personality and Social Psychology*, 69(6), 1216 – 1232.
- Oyserman, D., & Markus, H. (1990). Possible selves and delinquency. *Journal of Personality and Social Psychology*, 59(1), 112 – 125.

- Oxman, T. E., & Hull, J. G. (2001). Social support and treatment response in older depressed primary care patients. *Journal of Gerontology: Psychological Sciences*, 56B, 35 - 45.
- Palys, T. S., & Little, B. R. (1983). Perceived life satisfaction and the organization of personal project systems. *Journal of Personality and Social Psychology*, 44(6), 1221 - 1230.
- Pfeiffer, E. (1975). A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. *Journal of the American Geriatric Society*, 23(10), 433 - 441.
- Rafaeli - Mor, E., & Steinberg, J. (2002). Self-complexity and well-being: A research synthesis. *Personality and Social Psychology Review*, 6, 31 - 58.
- Riediger, M. (2001). On the dynamic relations among multiple goals: Intergoal conflict and intergoal facilitation in younger and older adulthood. *Doctoral dissertation*. Free University, Berlin, Germany.
- Riediger, M., Freund, A.M., & Baltes, P.B. (2005). Managing life through personal goals: Intergoal facilitation and intensity of goal pursuit in younger and older adulthood. *Journal of Gerontology: Psychological Sciences*, 60B, P84 - P91.
- Roberts, B. W., Caspi, A., & Moffitt, T. E. (2003). Work experiences and personality development in young adulthood. *Journal of Personality and Social Psychology*, 84, 582 - 593.
- Roberts, B. W., Helson, R., & Klohnen, E. C. (2002). Personality development and growth in women across 30 years: Three perspectives. *Journal of Personality*, 70, 79 - 102.
- Roberts, B. W., Caspi, A., & Moffitt, T. (2001). The kids are alright: Growth and stability in personality development from adolescence to adulthood. *Journal of Personality and Social Psychology*, 81, 670 - 683.
- Roberts, B. W., & Robins, R. W. (2000). Broad dispositions, broad aspirations: The intersection of personality traits and major life goals. *Personality and Social Psychology Bulletin*, 26(10), 1284 - 1296.
- Rook, K. S., & Ituarte, P. H. G. (1999). Social control, social support, and companionship in older adults' family relationships and friendships. *Personal Relationships*, 6, 199 - 211.
- Roth, S., & Bootzin, R. (1974). The effects of experimentally induced expectancies of external control: An investigation of learned helplessness. *Journal of Personality and Social Psychology*, 29, 253 - 264.

- Roth, S., & Kubal, L. (1975). Effects of noncontingent reinforcement on tasks of differing importance: facilitation and learned helplessness. *Journal of Personality and Social Psychology*, 32, 680 – 691.
- Rowe, J.W., & Kahn, R. L. (1997). Successful aging. *The Gerontologist*, 3 (4), 433 - 440.
- Ruvolo, A. P., & Markus, H. R. (1992). Possible selves and performance: The power of self-relevant Imagery. *Social Cognition*, 10(1), 95 - 124.
- Ryff, C. D., Kwan, C. M. L., & Singer, B. (2001). Personality and aging: Flourishing agendas and future challenges. In J.E. Birren, & K. W. Schaie (Eds.), *Handbook of the psychology of aging*, 5<sup>th</sup> edition (pp.477 - 499). San Diego: Academic Press.
- Salmela – Aro, K., & Nurmi, J. E. (1997a). Goal contents, well-being, and life context during the transition to university studies. *International Journal of Behavioral Development*, 20, 471 – 491.
- Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death*. San Francisco: Freeman.
- Segrin, C., & Abramson, L. Y. (1994). Negative reactions to depressive behaviors: A communication theories analysis. *Journal of Abnormal Psychology*, 103, 655 – 668.
- Shar, J. Y. (2005). The automatic pursuit and management of goals. *Current directions in psychological science*, 14(1), 10 – 13.
- Scheier, M. E., & Carver, C. S. (1985). Optimism, coping and health: Assessment and implications of generalized outcome expectancy on health. *Health Psychology*, 4, 219 - 247.
- Schulz, R., Drayer, R. A., & Rollman, B. L. (2002). Depression as a risk factor for non-suicide mortality in the elderly. *Biological Psychiatry*, 52, 205 – 225.
- Schulz, R., & Heckhausen, J. (1996). A life span model of successful aging. *American Psychologist*, 51, 702 – 714.
- Sheikh, J. I., & Yesavage, H. A. (1986). Geriatric Depression Scale (GDS): Recent evidence and development of a shorter version. *Clinical Gerontologist*, 5, 165 – 173.
- Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin*, 24, 1319 – 1331.

- Smith, J. & Freund, A. M. (2002). The dynamics of possible selves in old age. *Journal of Gerontology: Psychological Sciences*, 57(6), 492 – 500.
- Smyer, M. A., & Qualls, S. H. (1999). *Aging and mental health*. Malden, MA: Blackwell.
- Stiles, P. G., & McGarrahan J. (1998). The Geriatric Depression Scale: A comprehensive review. *Journal of Clinical Geropsychology*, 4, 89 - 110.
- Whitbourne, S. K. (1985). The psychological construction of the lifespan. In J. Birren, & K. Schaie (Eds.), *Handbook of the psychology of aging (2nd Ed.)* (pp. 594 - 618). New York: Van Nostrand Reinhold.
- Wicklund, R. A., & Gollwitzer, P. M. (1982). *Symbolic self-completion*. Hillsdale, NJ: Erlbaum.
- Wood, J. V., & Dodgson, P. G. (1996). When is self-focused attention an adaptive coping response?: Rumination and overgeneralization versus compensation. In I. B. Weiner (Ed.), *Cognitive interference: Theories, methods, and findings*, (pp. 231 – 259). Mahwah, NJ: Lawrence Erlbaum.
- Wrosch, C., Heckhausen, J., & Schulz, R. (2002). Health stresses and depressive symptomology in the elderly: The importance of health engagement control strategies. *Health psychology*, 21(4), 340 – 348.
- Wrosch, C., Scheier, M. F., Carver, C. S., & Schulz, R. (2003). The importance of goal disengagement in adaptive self-regulation: When giving up is beneficial. *Self and Identity*, 2, 1 - 20.
- Yesavage, J. A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., Adey, M., & Leirer, V. O. (1983). Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatry Research*, 17, 37 – 49.

## APPENDICES



## Appendix A

*Informational Flyer*

Department of Human Development & Family Sciences  
 Oregon State University  
 322 Milam Hall, Corvallis, Oregon, 97331-5104  
 T 541-737-4336 | F 541-737-1076 | <http://oregonstate.edu/hdfs/>

## RESEARCH STUDY OPPORTUNITY

### **HELLO: ARE YOU AGE 60 OR OLDER?**

If so, you are invited to participate in an exciting new research study to learn more about goals and daily activities in older adults. This study is supported and conducted by Oregon State University gerontology researchers.

WHO: We are inviting any adult who is at least 60 years old to participate.

WHAT: This is an exploratory study about how our daily activities, concerns, or goals may affect our health, stress, and family relationships in later life. The study involves a 60 – 90 minute individual meeting with an OSU researcher to complete anonymous questionnaires on these topics.

WHEN & WHERE: Participants can schedule an individual meeting during any time that is convenient for them. The research assistant can travel to your home, or meet you at any other agreeable location.

WILL I GET PAID? Each participant will receive a \$20.00 gift card to Fred Meyer's at the conclusion of the meeting.

I AM INTERESTED! WHO SHOULD I CONTACT? If you are interested or would like more information on the study, please contact one of the following Oregon State University researchers:

**Dr. Karen Hooker, Professor**  
 Director of Center for Healthy Aging  
 Human Development & Family Sciences  
 Oregon State University  
 541-737-4336  
[hookerk@oregonstate.edu](mailto:hookerk@oregonstate.edu)

**Cory Bolkan, MS**  
 Research Assistant  
 Human Development &  
 Family Sciences  
 541-737-0954  
[bolkan@onid.orst.edu](mailto:bolkan@onid.orst.edu)

## Appendix B

*Informed Consent Document*

Department of Human Development & Family Sciences  
 Oregon State University  
 322 Milam Hall, Corvallis, Oregon, 97331-5104  
 T 541-737-4336 | F 541-737-1076 | <http://oregonstate.edu/hdfs/>

**INFORMED CONSENT DOCUMENT**

Project Title: *The Relationship Between Caregiving, Personal Goals, and Depressive Symptoms*

Principal Investigator: **Dr. Deborah Padgett Coehlo**

Co – investigator: **Dr. Karen Hooker**

Research Assistant: **Cory Bolkan, M.S.**

**WHAT IS THE PURPOSE OF THIS STUDY?**

You are being invited to take part in an important exploratory research study designed to investigate goals in older adults and understand how striving for goals may affect outcomes such as one's physical health, mental health, perceived stress, and family relationships (such as caregiving experiences). We are studying this topic to better understand how individuals can successfully adapt to life changes and challenges, particularly in later life. We intend to present our findings to other scientists at national conferences as well as in gerontology journals.

**WHAT IS THE PURPOSE OF THIS FORM?**

This consent form gives you the information that you will need to help you decide whether or not to be in the study. Please read the form carefully. You may ask any questions about the research, the possible risks and benefits, your rights as a volunteer, or anything else that is not clear. When all of your questions have been answered, you can decide if you want to be in this study or not.

## **WHY AM I BEING INVITED TO TAKE PART IN THIS STUDY?**

You are being invited to take part in this study because you are an adult over the age of 60 who is living in the community and affiliated with the health care clinic.

In addition, if you are a caregiver, or someone who is providing care for a family member with a debilitating chronic illness, you will be invited to participate in an additional brief interview describing your caregiver experiences.

## **WHAT WILL HAPPEN DURING THIS STUDY AND HOW LONG WILL IT TAKE?**

If you agree to take part in this study, your involvement will last a total of 60 – 90 minutes during a separate face-to-face meeting with one of the researchers. One of the researchers will come to your home to interview you, or meet you at an alternate agreed-upon location. During the meeting, you will be interviewed about your personal goals in the present, as well as the future. In addition, we will ask you questions about your background, your health, and life stressors. If you are a caregiver, we will ask you questions about your caregiving experience. You will also be asked to participate in a brief, routine mood and memory evaluation.

If you allow, your health care provider will be provided with the results of your mood and memory evaluation. We will provide you with your health care provider's release of information form. It is your choice to decide if you want your health care provider and the researchers to share information regarding your health. You may choose not to sign the release of information and still participate in the study. Any decision you make regarding sharing or not sharing this information with your health care provider will have no effect on the quality of care or services that you receive at your health care clinic. If you wish to know the results of your mood and memory evaluation, we can inform you after the interview, or you may call the researchers at any time.

## **WHAT ARE THE RISKS OF THIS STUDY?**

There are few foreseeable risks associated with this project aside from the loss of time while participating in the interviews. The possible risks and/or discomforts associated with the procedures described in this study include potential concern or uncomfortable feelings that may arise regarding

the results of the mood or memory screenings. In addition, uncomfortable feelings may arise when thinking about the future or thinking about life stressors, such as caregiving. As a result, mild negative emotions, such as anxiety or uncertainty, could arise during this study.

### **WHAT ARE THE BENEFITS OF THIS STUDY?**

One important benefit of participating in this study includes a free mental health screening for mood or memory impairments. Every older adult should have frequent screenings as part of an overall health check-up. In addition, we hope that you will benefit from knowing that your contribution to science could improve the lives of older adults in the future.

### **WHO IS PAYING FOR THIS STUDY?**

Oregon State University is funding this research study. This means that Oregon State University is supporting all of the activities that are required to conduct the study.

### **WILL IT COST ME ANYTHING TO BE IN THIS STUDY?**

There are no foreseeable costs to you, if you choose to participate in this study. You will not be charged for any evaluations that are being performed for the purposes of the study. In addition, the investigators will travel to your home to conduct the interviews. If you choose, instead, to meet the researchers in an alternate, agreed upon setting (i.e., your health care clinic, local library, OSU campus), you might incur experiences associated with travel to that location, such as the cost of gasoline or the cost of parking.

### **WILL I BE PAID FOR PARTICIPATING?**

You will be compensated for participating in this research study. In appreciation of your time and efforts, we will provide you with a gift card to Fred Meyer's in the amount of \$20.

### **WHO WILL SEE THE INFORMATION I GIVE?**

The information you provide during this research study will be kept confidential to the extent permitted by law. The researchers will have access

to the information, as well as your primary care provider if you allow. Federal government regulatory agencies and the Oregon State University Institutional Review Board (a committee that review and approves research studies) may inspect and copy records pertaining to this research. Some of these records could contain information that personally identifies you.

To help protect your confidentiality, we will use identification code numbers only on data forms, as well as keep data stored in locked filing cabinets. Finally, if we write a report or article about this study to be published, or if we share the study data set with others, we will do so in such a way that you cannot be directly identified.

### **DO I HAVE A CHOICE TO BE IN THE STUDY?**

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering. If you decide not to take part in this study, your decision will have no effect on the quality of care or services that you receive at the your health care clinic.

You will not be treated differently if you decide to stop taking part in the study. In addition, you may feel free to skip any questions on the questionnaires or any questions during the interviews that you prefer not to answer. If you choose to withdraw from the project before it ends, the researchers may keep information collected about you and this information may be included in study reports.

### **WHAT IF I HAVE QUESTIONS?**

If you have any questions about this research project, please contact either:

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If you have questions about your rights as a participant, please contact the Oregon State University Institutional Review Board (IRB) Human Protections Administrator, at (541) 737 – 3437 or by email at [IRB@oregonstate.edu](mailto:IRB@oregonstate.edu).

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Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

Participant's Name (printed):

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(Signature of Participant)

---

(Date)

## Appendix C

*Short Portable Mental Status Questionnaire (SPMSQ) (Pfeiffer, 1975)*

**Instructions:** Ask questions 1 to 10 on this list and record all answers. (Ask Question 4a only if the subject does not have a telephone.) Record the total number of errors based on the answers to the 10 questions:      +      –

**Questions**

1. What is the date today?

2. What day of the week is it?

3. What is the name of this place?

4. What is your telephone number?

4a. What is your street address?

5. How old are you?

6. When were you born?

7. Who is the president of the U.S.?

8. Who was president just before?

9. What was your mother's maiden name?

10. Subtract 3 from 20 and keep subtracting 3 from each new number all the way down.

**Instructions**

*Correct only when the month, date, and year are all correct.*

*Correct only when the day is correct.*

*Correct if any of the description of the location is give. "My home," the correct city/town or the correct name of the hospital/institution is acceptable.*

*Correct when the number can be verified or the subject can repeat the same number at a later time in the interview.*

*Ask only if the subject does not have a telephone.*

*Correct when the stated age corresponds to the date of birth.*

*Correct only when the month, date, and year are correct.*

*Requires only the correct last name.*

*Requires only the correct last name.*

*Needs no verification; it only requires a female first name plus a last name other than the subject's.*

*Any error in series – or unwillingness to attempt the series – is scored as incorrect.*

**Total Number of Errors**

•0 – 2 errors = Intact Intellectual Function      •3-4 errors = Mild Intellectual Function

•5 – 7 errors = Moderate Intellectual Function      •8 – 10 errors = Severe Intellectual Function

(Allow one more error for a subject with only a grade school education. Allow one less error for a subject with education beyond high school. Allow one more error for African-American subjects using identical educational criteria.)

Appendix D  
*Geriatric Depression Scale – short form (Sheikh & Yesavage, 1986).*

Choose the best answer for how you have felt over the past week:

1. Are you basically satisfied with your life? **YES / NO**
2. Have you dropped many of your activities and interests? **YES / NO**
3. Do you feel that your life is empty? **YES / NO**
4. Do you often get bored? **YES / NO**
5. Are you in good spirits most of the time? **YES / NO**
6. Are you afraid that something bad is going to happen to you? **YES / NO**
7. Do you feel happy most of the time? **YES / NO**
8. Do you often feel helpless? **YES / NO**
9. Do you prefer to stay at home, rather than going out and doing new things?  
**YES / NO**
10. Do you feel you have more problems with memory than most? **YES / NO**
11. Do you think it is wonderful to be alive now? **YES / NO**
12. Do you feel pretty worthless the way you are now? **YES / NO**
13. Do you feel full of energy? **YES / NO**
14. Do you feel that your situation is hopeless? **YES / NO**
15. Do you think that most people are better off than you are? **YES / NO**

(Answers in **bold** indicate depression. Although differing sensitivities and specificities have been obtained across studies, for clinical purposes a score > 5 points is suggestive of depression and should warrant a follow-up interview. Scores > 10 are almost always depression).



Appendix E  
*Demographic Questionnaire*

1. Age: \_\_\_\_\_

2. Female/ Male (circle one)

3. Which of the following best describes your ethnic identity? (check one)

- \_\_\_\_\_ Caucasian  
 \_\_\_\_\_ African American  
 \_\_\_\_\_ Asian American  
 \_\_\_\_\_ Hispanic American  
 \_\_\_\_\_ American Indian/ Alaskan Native  
 \_\_\_\_\_ Other: (please specify) \_\_\_\_\_

**Marital status:** (check one)

- \_\_\_\_\_ Married  
 \_\_\_\_\_ Divorced or separated  
 \_\_\_\_\_ Single  
 \_\_\_\_\_ Widowed  
 \_\_\_\_\_ Other (Please specify, e.g. living with partner) \_\_\_\_\_

**What was the last year of school you completed?** (check one)

- \_\_\_\_\_ Graduate or professional degree  
 \_\_\_\_\_ College graduate (4 year degree)  
 \_\_\_\_\_ Partial college  
 \_\_\_\_\_ High school graduate  
 \_\_\_\_\_ Completed 8<sup>th</sup> grade  
 \_\_\_\_\_ Other: (fill in last grade you completed) \_\_\_\_\_

**Employment status:** (check one)

- \_\_\_\_\_ Retired  
 \_\_\_\_\_ Homemaker  
 \_\_\_\_\_ Employed full-time  
 \_\_\_\_\_ Employed part-time \_\_\_\_\_ hours/week  
 \_\_\_\_\_ Unemployed

**What is your current occupation?** (be very specific please)-

\_\_\_\_\_

**If Retired, what was your previous occupation?** (Be very specific please)

\_\_\_\_\_

## Appendix F

*Health Perception Questionnaire (Davies & Ware, 1981)*

We are interested in your health. Please read each of the following statements, and then circle one of the numbers on each line to indicate whether the statement is true or false for you. **There are no right or wrong answers.**

If a statement is definitely true for you, circle **5**.  
 If a statement is mostly true for you, circle **4**.  
 If you don't know whether a statement is true or false, circle **3**.  
 If a statement is mostly false, circle **2**.  
 If a statement is definitely false for you, circle **1**.

**Some of the statements may look or seem like others. But each statement is different, and *should be rated by itself*.**

	<b>Definitely true</b>	<b>Mostly true</b>	<b>Don't know</b>	<b>Mostly false</b>	<b>Definitely false</b>
According to the doctors I've seen, my health is now excellent.	5	4	3	2	1
I feel better now than I ever have before.	5	4	3	2	1
I am somewhat ill.	5	4	3	2	1
I'm not as healthy now as I used to be.	5	4	3	2	1
I'm as healthy as anybody I know.	5	4	3	2	1
My health is excellent.	5	4	3	2	1
I have been feeling bad lately.	5	4	3	2	1
The doctors say that I am now in poor health.	5	4	3	2	1
I feel about as good as I ever have.	5	4	3	2	1

*Health Perception Questionnaire (Cont.)*

**1. In general, would you say your health is excellent, good, fair, or poor?**

(circle one)

- Excellent ..... 1  
 Good ..... 2  
 Fair ..... 3  
 Poor ..... 4

**During the past 12 months about how many:**

- a) days have you spent in a hospital? \_\_\_\_\_  
 b) times did you see any type of a doctor? Do not include doctors seen while you were a patient in a hospital. \_\_\_\_\_  
 c) days have you been sick in bed all or most of the day? \_\_\_\_\_

**2. In the past year, did you have (circle one):**

	YES	NO
Diabetes or sugar sickness	1	2
High blood pressure or Hypertension	1	2
Heart trouble	1	2
Circulation problems or hardening of the arteries	1	2
Been paralyzed in any way	1	2
Any other effects of stroke	1	2
Arthritis or Rheumatism	1	2
Stomach ulcer	1	2
Emphysema or Asthma	1	2
Glaucoma or pressure behind the eye	1	2
Cataracts	1	2
A tumor or growth or cancer	1	2
Liver trouble or jaundice	1	2
Gall bladder trouble	1	2
Kidney trouble	1	2
Bladder trouble	1	2
Broken hip	1	2
Other broken bones	1	2
Anemia	1	2
Parkinson's disease	1	2
Other (specify)	1	2

## Appendix G

*Personal Projects Analysis – abbreviated version (based on Little, 1989)*

INSTRUCTIONS: We are interested in studying the kinds of activities and concerns that people have at different stages of their life. We call these *personal projects*. All of us have a number of personal projects at any given time that we think about, plan for, carry out, and sometimes (though not always) complete. Here are some examples of projects:

- Completing the essay for my writing class
- Trying to help Linda get along better with others
- Overcoming fear of meeting new people
- Getting more outdoor exercise
- Trying to finish the book that Alan gave me
- Taking a trip to Vancouver
- Finding a part-time job
- Trying to clarify my religious beliefs
- Losing ten pounds

We are also interested in finding out how people feel about their personal projects—how meaningful they are and how manageable they are. We would appreciate it if you could begin by just writing down in the next ten minutes your most important or consequential personal projects that you are engaged in or thinking about at the present time—remember these are not necessarily formal projects—we would prefer you to give us more of the everyday kinds of activities or concerns that characterize your life at present.

*See next page*.....



## Appendix H

*Teleonomic Relevance Measure (Hooker & Bolkan, 2004)*

**MAPPING PERSONAL PROJECT RATINGS ONTO POSSIBLE SELVES**

**Using the following scale, please indicate the extent to which each of your projects is related to each of your hoped-for or feared possible selves. If a project facilitates a possible self or a possible self makes a project easier to complete, they are related to one another. We want you to rate whether the two are somewhat related (rate it a 1) or strongly related (rate it a 2). If a particular project has nothing to do with a possible self, they are not related (rate it a 0).**

**Doing the map:**

- Please choose your *two* most important hoped-for selves and *two* most dreaded feared selves to write in along the top of the table.
- Then choose up to *seven* of your most important personal projects to list down the side of the table. You can abbreviate to fit it into the square.
- Fill in the table by rating for each project how strongly it is related to each possible self:
  - 2 = strongly related
  - 1 = somewhat related
  - 0 = not at all related

*Teleonomic Relevance Measure (Cont.)*

PERSONAL PROJECTS (list in spaces below)	Hoped-For Self-1 (write in content)	Hoped-for Self-2 (write in content)	Feared Self-1 (write in content)	Feared Self-2 (write in content)
1.				
2.				
3.				
4.				
5.				
6.				
7.				

## Appendix I

*Possible Selves Coding Categories*

1. Personal: Included references to personal attributes or attitudes ("independent," "intelligent," "harried," or "dissatisfied with my life") and to philosophical or spiritual issues.
2. Physical: Included references to fitness ("in good shape"), attractiveness ("thin" or "fat"), or a physical problem (e.g., "disabled").
3. Abilities and education: Included references to creative or artistic expression ("to be a good artist"), to education ("to have an advanced degree," "flunking out of school"), and to general knowledge ("becoming fluent in another language," "being well read").
4. Lifestyle: Included geographical references ("to live on the East Coast"), references to living in a nursing home, and references to quality of life ("living a simpler lifestyle," "having children move far away").
5. Family & Relationships: Included all references to marriage or divorce, spouse, grandparenting, relating to one's own parents, and family illness. Refers to anything family related. Also included references to friendship ("being a sympathetic friend," "being alone and lonely") and personal relationships not clearly indicated as family.
6. Occupation: Included all references to jobs ("having a job I truly enjoy," "having a boring job"), careers ("to be an effective therapist"), and retirement.
7. Material: Included references to financial security ("self-supporting," "poor") and to specific possessions ("having a medium-size comfortable home").
8. Success: Included references to achieving goals ("to finish the story of my family," "to be a failure") and to recognition or fame ("becoming a dominant authority in my field").
9. Social Responsibility: Included all references to volunteer work, community involvement, and activity relating to other social issues ("a leader in eliminating the threat of nuclear war").
10. Leisure: Included references to travel or vacations ("traveling with my husband as semiretirees"), hobbies and recreational sports ("a good tennis player and runner"), and other leisure activities ("someone who appreciates music").



*Possible Selves Coding Categories (Cont.)*

11. Health: Included references to general health ("in poor health," "long-lived"), specific diseases ("having Alzheimer's disease"), or substance abuse ("being an alcoholic").
12. Independent/Dependence: Included references to being dependent on others for activities of daily living ("couldn't take care of myself," maintaining my independence").
13. Death: Included any references to personal death ("having a prolonged death," "terminal illness").
14. Bereavement: Included references to death of a loved one ("losing my spouse," "widowed," "child's death").
15. Threats: Included references to events that were perceived to be threatening to the individual ("being raped," "having my house broken into").

## Appendix J

*Possible Selves Questionnaire (modeled by Hooker, 1999)***HOPED-FOR POSSIBLE SELVES**

- ❖ This questionnaire addresses how you see yourself in the future. We all think about our future to some extent. When doing so, we usually think about the kinds of experiences that are in store for us and the kinds of people we might possibly become. Sometimes we think about what we HOPE we will be like – selves we hope to become in the future – or “HOPED-FOR POSSIBLE SELVES.”
- ❖ Some hoped-for possible selves seem quite likely, like becoming a homeowner or achieving higher status at work. Other future selves seem quite far-fetched but are still possible, for example, winning the lottery. Things that we *do* are not possible selves but are usually *part* of a possible self. For example, to write books is not a possible self; to be a writer is a possible self.
- ❖ Please take a few minutes to think about all of your HOPED-FOR POSSIBLE SELVES. You may have just a few, or you may have many.
- ❖ The following questionnaire asks you to identify 3 HOPED-FOR SELVES which are currently most important to you, and then asks you to respond to a series of 6 questions about each possible self you identify.

<b><u>HOPED-FOR SELF #1</u></b> (describe in this space)	<b><u>HOPED-FOR SELF #2</u></b> (describe in this space)	<b><u>HOPED-FOR SELF #3</u></b> (describe in this space)
Why is this hoped-for self important to you?	Why is this hoped-for self important to you?	Why is this hoped-for self important to you?
<b>1. To what extent does this possible self describe you now?</b>	<b>1. To what extent does this possible self describe you now?</b>	<b>1. To what extent does this possible self describe you now?</b>
1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much</i>
<b>2. To what extent would you like this possible self to describe you in the future?</b>	<b>2. To what extent would you like this possible self to describe you in the future?</b>	<b>2. To what extent would you like this possible self to describe you in the future?</b>
1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much</i>
<b>3. How important is it to you to achieve this possible self?</b>	<b>3. How important is it to you to achieve this possible self?</b>	<b>3. How important is it to you to achieve this possible self?</b>
1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very Important                  Important                  Important</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very Important                  Important                  Important</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very Important                  Important                  Important</i>
<b>4. How capable do you feel of achieving this possible self?</b>	<b>4. How capable do you feel of achieving this possible self?</b>	<b>4. How capable do you feel of achieving this possible self?</b>
1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much Capable                  Capable                  Capable</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much Capable                  Capable                  Capable</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much Capable                  Capable                  Capable</i>
<b>5. How likely do you think it is that this possible self will be achieved?</b>	<b>5. How likely do you think it is that this possible self will be achieved?</b>	<b>5. How likely do you think it is that this possible self will be achieved?</b>
1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much Likely                  Likely                  Likely</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much Likely                  Likely                  Likely</i>	1 2 3 4 5 6 7 <i>Not at all                  Somewhat                  Very much Likely                  Likely                  Likely</i>
<b>6. How much time do you spend thinking about this possible self?</b>	<b>6. How much time do you spend thinking about this possible self?</b>	<b>6. How much time do you spend thinking about this possible self?</b>
1 2 3 4 5 6 7 <i>Rarely                  Sometimes                  Often</i>	1 2 3 4 5 6 7 <i>Rarely                  Sometimes                  Often</i>	1 2 3 4 5 6 7 <i>Rarely                  Sometimes                  Often</i>

### FEARED POSSIBLE SELVES

- ❖ In addition to having hoped-for possible selves, we may have some images of ourselves in the future that we fear, dread, or don't want to have happen. Some of these FEARED POSSIBLE SELVES may seem quite likely, like fear of dependency on another person. Other FEARED POSSIBLE SELVES may seem quite unlikely, for example, becoming a homeless person. Some of us have a large number of FEARED POSSIBLE SELVES in mind, while others may have only a few.
- ❖ Take a few minutes to think about all of your FEARED POSSIBLE SELVES. Again, please identify 3 FEARED POSSIBLE SELVES which you currently most dread, and then respond to the 6 questions about each possible self you identify.

<p align="center"><b><u>FEARED SELF #1</u></b> (describe in this space)</p>	<p align="center"><b><u>FEARED SELF #2</u></b> (describe in this space)</p>	<p align="center"><b><u>FEARED SELF #3</u></b> (describe in this space)</p>
<p>Why is this feared self of concern to you?</p>	<p>Why is this feared self of concern to you?</p>	<p>Why is this feared self of concern to you?</p>
<p><b>1. To what extent does this possible self describe you now?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much</i></p>	<p><b>1. To what extent does this possible self describe you now?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much</i></p>	<p><b>1. To what extent does this possible self describe you now?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much</i></p>
<p><b>2. To what extent would you like to avoid having this possible self describe you in the future?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much</i></p>	<p><b>2. To what extent would you like to avoid having this possible self describe you in the future?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much</i></p>	<p><b>2. To what extent would you like to avoid having this possible self describe you in the future?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much</i></p>
<p><b>3. How important is it to you to prevent the occurrence of this possible self?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very Important      Important      Important</i></p>	<p><b>3. How important is it to you to prevent the occurrence of this possible self?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very Important      Important      Important</i></p>	<p><b>3. How important is it to you to prevent the occurrence of this possible self?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very Important      Important      Important</i></p>
<p><b>4. How capable do you feel of preventing this possible self?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much Capable      Capable      Capable</i></p>	<p><b>4. How capable do you feel of preventing this possible self?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much Capable      Capable      Capable</i></p>	<p><b>4. How capable do you feel of preventing this possible self?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much Capable      Capable      Capable</i></p>
<p><b>5. How likely do you think it is that this possible self will be prevented?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much Likely      Likely      Likely</i></p>	<p><b>5. How likely do you think it is that this possible self will be prevented?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much Likely      Likely      Likely</i></p>	<p><b>5. How likely do you think it is that this possible self will be prevented?</b> 1 2 3 4 5 6 7 <i>Not at all      Somewhat      Very much Likely      Likely      Likely</i></p>
<p><b>6. How much time do you spend thinking about this possible self?</b> 1 2 3 4 5 6 7 <i>Rarely      Sometimes      Often</i></p>	<p><b>6. How much time do you spend thinking about this possible self?</b> 1 2 3 4 5 6 7 <i>Rarely      Sometimes      Often</i></p>	<p><b>6. How much time do you spend thinking about this possible self?</b> 1 2 3 4 5 6 7 <i>Rarely      Sometimes      Often</i></p>

## Appendix K

### *Author's Self-Reflection*

As early as the fifth century, Socrates professed, “the unexamined life is not worth living”. As one of the most influential philosophers in history, he firmly believed in the pursuit of truth and personal growth. In order to achieve personal growth and greater self-understanding we must take time to examine and reflect upon our lives. Self-reflection, or introspection, fosters personal adaptation and is essential to life-long learning and increased understanding of others. The process of conducting this research study was a personally meaningful process for me and I also believe that participation in this study led to meaningful self-reflection in many of the participants as well. For this reason, I would like to share some of my experiences and observations with the reader.

The main focus of this study was on the possible selves, or future goals, of older adults. I had not anticipated the initial reticence that many older adults had about participating in such a study. It was not uncommon for a potential participant to raise an eyebrow skeptically, while jokingly stating “Do you know how *old* I am?” to imply that possible selves for an older adult may be oxymoronic. I was further surprised that several potential participants quickly dismissed my study by shaking their head and reporting, “I’m too old, I don’t have any goals anymore”. It seemed evident to me, that perhaps, this was indicative of a cohort that has been affected by ageist assumptions that older adults have little to offer to society or have little capacity for future growth.

For the older adults that decided to participate, I believe that the experience may have had a positive effect on their lives and fostered their own self-reflection experiences. Although many initially believed that they truly had no future goals, once they began to talk, they were able to openly discuss their hopes and fears about the future. Many realized that future goals were not always about achieving new goals, but maintaining one’s current pursuits into the future. Almost every participant commented on the interview questionnaires and topics. These comments ranged from, “that was really interesting” to “I’ve never really thought about my life in that way before”. Moreover, for some participants this effect may have been more profound than I would have expected. For example, late in the recruitment process, I coincidentally ran into an older woman at the health care clinic whom I’d interviewed at the beginning of the study. She

stopped to talk to me about the life changes she had made following her participation in the study.

“You know, those questions you asked really made me think about my life. I decided to sign up for some painting classes to get back into that and meet people. And I also think I am going to start getting back into counseling and see my therapist”.

During the study interview, she had identified feelings of unhappiness and anhedonia that were tied to her future goals. Her most important possible selves were related to finding a companion and the fear of being alone, yet she spent much of her time isolated in her home. The process of thinking about her future hopes and fears had clearly motivated her to make changes in her day-to-day life in order to achieve her possible selves. I was pleased to hear that she was becoming more involved in activities outside of her home and was also seeking support from her therapist to guide her during this transition of self-change.

This participant was not the only lonely older adult I interviewed. In fact, I was probably not adequately prepared for how common the sense of loneliness emerged from my interviewees, and I was certainly not adequately prepared for how much it was going to affect me personally. For many participants, simply the chance to converse and socially interact with another person for several hours had a positive effect on their day. In fact, for some, this was their only social interaction of the entire day. It was a bittersweet feeling for me, however, because when the interview ended it was obvious how disappointed some participants were. One widower actually teared up as I began to leave. This was the hardest part of the research process because I got a better understanding of the utter isolation some older adults endure. This has made a lasting impression on me.

Through conducting this study, I also learned that the health care clinics' endorsement of the study was essential to recruitment in this population. Even with this collaboration, many older adults were skeptical of participating out of fear that they would be exploited. One woman informed me that when she informed her friends about her scheduled interview, they tried to dissuade her from participating. In fact, they were so worried she would be robbed or taken advantage of that they actually planned on

checking in on her throughout and immediately following the interview. In a society where identity theft and media sensationalization of crime is pervasive, it is no surprise that older adults may feel more vulnerable than younger populations (and in fact, they may actually be more vulnerable). I wonder if other researchers have experienced this issue in recruitment, and if this problem is becoming more challenging for recruiting samples of older adults.

Just as thinking about their goals may have influenced the participants in this study, listening to the goals and life stories of the participants has also influenced my own experience, particularly as I currently navigate life transitions and pursue new goals within my own life. I know that I personally gained a lot of insight out of this research study and my hope is that each participant also gained something valuable from their research participation as well.