Functional Disability and Depressive Symptoms in Older Adulthood: The Role of General Goal Adjustment Capacities and Specific Goal Adjustment Strategies

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ABSTRACT
Functional Disability and Depressive Symptoms in Older Adulthood: The Role of General Goal Adjustment Capacities and Specific Goal Adjustment Strategies

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Functional disability is a common age-related problem that has deleterious effects on the well-being of the elderly population. Such disabilities can contribute to a loss of perceived control and autonomy by impeding older adults' ability to accomplish both daily goals (i.e., activities of daily living [ADLs]), and other longer-term life pursuits. However, theory and research also suggest that older individuals may avoid the negative consequences of functional disability if they engage in the adaptive self-regulation of unattainable goals. The present studies investigate the role of goal adjustment capacities in the management of functional disability, and identify pathways through which goal adjustment capacities can influence well-being.

Study 1 consists of a longitudinal investigation into the associations between older adults' goal disengagement and goal reengagement capacities, functional disability, and depressive symptoms among 135 community-dwelling older adults. Using four waves of data, results showed that six-year increases in depressive symptoms were predicted by poor goal disengagement capacities and high levels of functional disability. Moreover, the impact of goal disengagement on depressive symptomatology was particularly strong among participants with functional disability. These findings indicate that goal disengagement can buffer the association between functional disability and increases in depressive symptomatology over time.

Study 2 investigates the specific goal adjustment processes involved in the adjustment to ADL-related goals that are constrained by functional disability. This study

first developed and validated the *Activities of Daily Living – Goal Adjustment Scale* among 135 community-dwelling older adults, with and without functional disability. Factor analyses identified two separate factors as *psychological disengagement* and *compensatory reengagement*, and the scale exhibited good internal consistency and validity among older adults with functional disability. The second part of the study found that these specific ADL-related goal adjustment strategies mediated the cross-sectional relationships between general goal adjustment capacities (i.e., goal disengagement and goal reengagement) and depressive symptoms in this population. These findings suggest that general tendencies to adjust to unattainable goals can exert both direct and indirect effects on depressive symptoms through the specific regulation of ADL-related problems.

Overall, these findings contribute to the literature on pathways to successful aging. Findings on the adaptive role of goal adjustment in the management of functional disability are discussed in the context of developmental theories and adaptive self-regulation.

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CHAPTER 1:

GENERAL INTRODUCTION

Developed nations are beginning to witness one of the most dramatic demographic shifts in history, as the first wave of the baby boom population (those born between 1946 and 1960) begins to transition into old age. Along with this growing segment of the population comes the increased potential for the experience of age-related problems in later years (Baltes, 1987). Although many older adults have the potential to live healthy lives, this life phase is also associated with social, psychological, physical, and biological stressors and losses, such as transitions to retirement, bereavement, loss of autonomy, and chronic disease, which can adversely affect older adults' psychological and physical health. However, some research also suggests that older adults are able to maintain levels of subjective well-being that are commensurate with their younger peers, despite the occurrence of age-related problems in later years (e.g., Carstensen, Isaacowitz, & Charles, 1999). Thus, the identification of factors that can protect older adults from the negative consequences of these problems can inform both theory and research on successful aging, and contribute to a better quality of life among this growing population.

Theory and research focusing on successful aging have identified that the adaptive self-regulation of goals across the lifespan is an important determinate of well-being in old age (e.g., Brandtstädter & Renner, 1990; Heckhausen & Schulz, 1995; Heckhausen, Wrosch, & Schulz, 2010; Wrosch, Scheier, Miller, Schulz, & Carver, 2003b). According to these theories, the pursuit of goals is a central building block for development across the entire human lifespan. Thus, how individuals manage these aspirations can have

broad implications for their subjective well-being. Two of the more relevant theories include Heckhausen and colleagues' motivational theory of lifespan development (Heckhausen & Schulz, 1995; Heckhausen et al., 2010; Schulz & Heckhausen, 1996), and Brandtstädter and colleague's two-process model of self-regulation (Brandtstädter & Renner, 1990, 1992; Brandtstädter & Rothermund, 2002). These theories outline two broad categories of processes involved in the adaptive management of goals, which seek to reduce the discrepancy between an individual's actual circumstances and a desired state. These processes are related to goal engagement, which includes active investments towards changing the external environment to match with one's own personal goals and desires (*primary control* or *assimilative processes*), and goal adjustment, which involves internally-focused processes aimed at bringing one's expectations and perceptions into alignment with the realities of the external world (*compensatory secondary control* or *accommodative processes*) (see Rothbaum, Weisz, & Snyder, 1982). While active investments in goal engagement are viewed as adaptive for situations in which opportunities to achieve a goal are favorable, goal adjustment processes should be beneficial for individuals who face insurmountable challenges to goal attainment. In this way, secondary control strategies and accommodative processes involving goal adjustment may be particularly important for older adults who face age-related problems that can impede progress towards important life goals (Brandtstädter & Rothermund, 2002; Heckhausen et al., 2010).

To expand on the proposed models of successful aging, this dissertation focuses on the adaptive management of a common problem in old age: the experience of functional disability. These disabilities include impairments in older adults' ability to

carry out both basic and instrumental activities of daily living (ADLs), and affect over one-third of older adults (*National Advisory Council on Aging [NACA]*, 2006). Based on the assumption that functional disability can produce problems with goal attainment and consequently contribute to high levels of depressive symptomatology, the application of models of adaptive goal adjustment to this population may provide key insights into how older adults can effectively cope with these difficulties. However, despite considerable advances in research examining the emotional benefits of goal adjustment capacities in different populations across the lifespan, there is comparatively limited research that applies models of goal adjustment to the management of functional disability in older adulthood.

To date, the extant research in this area has documented that individuals with functional disability may experience lower levels of depressive symptoms if they are able to flexibly adjust to unattainable goals (Boerner, 2004; Brandtstädter, Wentura, & Greve, 1993; Schmitz, Saile, & Nilges, 1996). However, given that this research has been cross-sectional in nature, and that emotional well-being can also influence goal adjustment processes (Thompson, Woodward, & Stanton, 2011; Wrosch & Miller, 2009), the long-term associations between these variables remain unknown. Further, theory and other research involving goal adjustment capacities has identified two key components in the ability to adjust to unattainable goals (i.e., goal disengagement and goal reengagement), and results from this line of work suggest that these processes should be examined separately as they can contribute to different physical and psychological outcomes (e.g., I. Bauer, 2004; Wrosch et al., 2003b; Wrosch & Sabiston, in press). Cross-sectional and longitudinal research using this model has found promising results in populations facing

other stressors (e.g., infertile men; Kraaij, Garnefski, & Schroevers, 2009; parents of children with cancer; Wrosch et al., 2003b), and has indicated that goal disengagement capacities predominantly show an effect of reducing negative indicators of well-being (e.g., depressive symptoms), while goal reengagement capacities tend to increase positive aspects of well-being (e.g., purpose in life). In addition, this research has shown that goal disengagement can lead to the adoption of specific adaptive coping responses, while goal reengagement can foster both adaptive and maladaptive coping responses depending on the types of goals individuals reengage in, and whether these goals stretch individuals' resources too thin (Wrosch, Amir, & Miller, 2011; Wrosch & Sabiston, in press).

While research examining goal disengagement and goal reengagement capacities has yet to investigate their individual roles in the context of functional disability in older adulthood, the extant literature indicates that these capacities have potentially protective functions for older adults' well-being. In addition, this research also indicates that general goal adjustment capacities may be able to foster specific processes aimed at the adjustment to particular goals that are impeded by problems such as functional disability. Thus, in light of the limitations in the current research literature and the documented evidence of the adaptive effects of goal adjustment capacities, additional research is needed to examine the role of goal adjustment capacities in the management of functional disability. Such research can better inform theory and practice on how to best confront these age-related problems in older adulthood.

Research Objectives

This dissertation contributes to a more sophisticated understanding of the adaptive self-regulation of stressors in old age, as well as to the elaboration of a theoretical model

specifying pathways to successful aging. More specifically, this research will aid in the development of a more comprehensive picture of the role of both general and specific goal adjustment capacities in the management of functional disability in the aging population. The purpose of the present studies is to investigate the associations between functional disability, general goal adjustment capacities, specific goal adjustment strategies, and depressive symptomatology. This dissertation has three primary objectives, which are illustrated in Figure 1:

> ***Objective 1:*** *To investigate the role of general goal disengagement and goal reengagement capacities over time in the context of functional disability onset in older adults (Figure 1, path a).*
>
> ***Objective 2:*** *To examine the specific processes involved in the adjustment to unattainable goals by developing a scale that identifies and measures strategies used for managing ADL-related goals that are impaired by functional disability.*
>
> ***Objective 3:*** *To determine whether these specific ADL-related goal adjustment strategies represent one pathway through which general goal adjustment capacities can impact older adults' psychological well-being (Figure 1, paths c, d).*

Study 1 addresses the first research objective of this dissertation, while the second and third objectives are addressed in Study 2 (Parts 1 and 2, respectively). As both studies are based on the same multi-wave data from the *Montreal Aging and Health* study, they therefore involve similar theoretical rationales and analytic procedures. However, these studies (as described below) build off of each other to offer unique

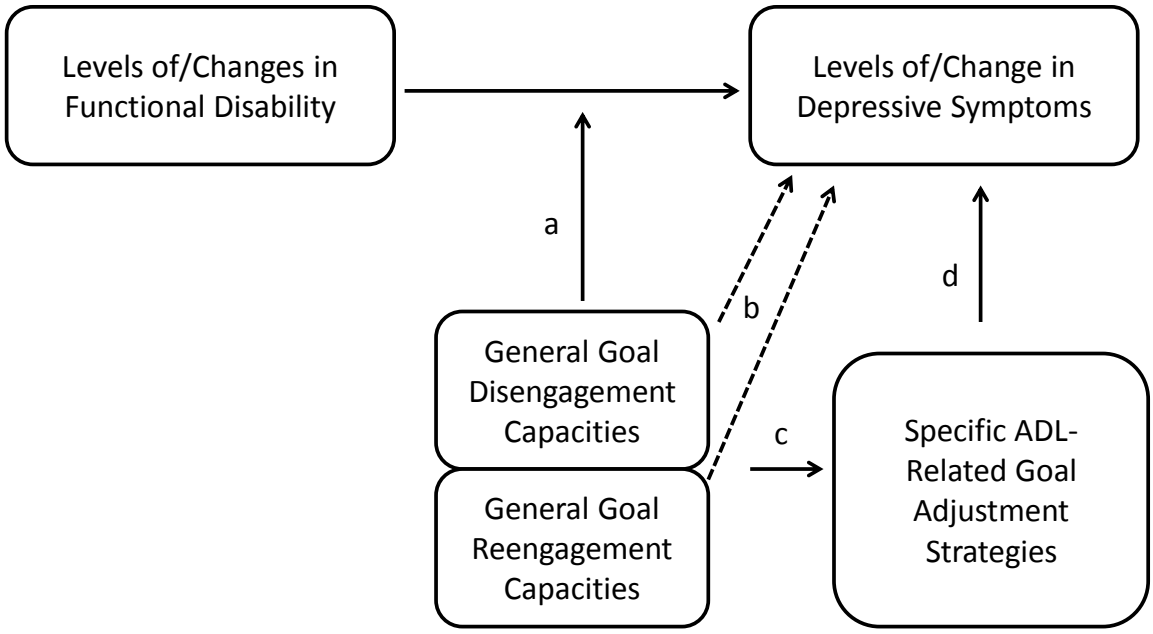

Figure 1 Proposed model of adaptive goal adjustment in the context of functional disability.

Note. *Path a* represents the potential buffering effect of general goal adjustment capacities on the relationship between functional disability and depressive symptomatology. *Path b* represents the general effect of goal adjustment capacities on depressive symptoms. *Paths c* and *d* represent the proposed mediation of *Path b* through the development and use of specific ADL-related goal adjustment strategies.

contributions to the research literature.

Study 1: Goal Disengagement, Functional Disability, and Depressive Symptoms in Old Age

This study examines the long-term associations between goal adjustment capacities, functional disability, and depressive symptomatology in a sample of community-dwelling older adults. In particular this study extends cross-sectional research on the self-regulation of health difficulties in older adulthood by determining the role of goal disengagement capacities and goal reengagement capacities in the management of functional disability across six years. This research seeks to determine whether individuals with functional disability, but who are able to adjust to unattainable goals, experience fewer depressive symptoms than those older adults who have poor goal adjustment capacities. Study 1 addresses the following research questions:

> ***Question 1:*** *What are the six-year associations between goal adjustment capacities, functional disability, and depressive symptoms in older adults?*
>
> ***Question 2:*** *Can goal disengagement and goal reengagement capacities buffer the adverse effect of functional disability on increases in depressive symptoms over time?*
>
> ***Question 3:*** *Are goal disengagement and goal reengagement capacities differentially involved in the adaptive management of functional disability over time?*

Study 2: Specific Goal Adjustment Strategies in Older Adults with Functional Disability: Mediating Role in the Association between General Goal Adjustment Capacities and

Depressive Symptoms

This study includes two distinct sections that aim to create a valid and reliable new scale to measure the specific goal adjustment processes involved in the management of ADL-related goals that are constrained by functional disability. This study extends previous research on general goal adjustment capacities by determining how general capacities can foster cognitive and behavioral strategies aimed at the management of specific unattainable goals. Part 1 aims to describe and validate a new scale by establishing both the concurrent and convergent validity in a subsample of older adults with functional disability, and a subsample of older adults without functional disability. Specifically, Part 1 addresses the following research questions:

> ***Question 1:*** *What are the important aspects of the specific goal disengagement and goal reengagement strategies that should be represented on the Activities of Daily Living – Goal Adjustment Scale (ADL-GAS)?*
>
> ***Question 2:*** *Is the ADL-GAS a reliable and valid research instrument for the measurement of specific goal adjustment strategies?*

The second part of Study 2 investigates whether the specific goal adjustment strategies measured by the ADL-GAS can explain the effect of general goal adjustment capacities on depressive symptoms in cross-sectional analyses. Specifically, Study 2 undertakes mediation analyses in order to determine whether specific goal adjustment strategies represent one pathway through which general goal adjustment capacities may ameliorate the experience of depressive symptomatology in older adults with functional disability. This study addresses the following research questions:

Question 1: *Do adaptive levels of general goal adjustment capacities contribute to lower levels of depressive symptomatology in a sample of older adults with functional disability?*

Question 2: *Can specific goal adjustment strategies mediate the association between goal adjustment capacities and depressive symptomatology?*

CHAPTER 2:

LITERATURE REVIEW

As individuals age across the lifespan, they strive towards the pursuit of personal goals and desires. The pursuit of goals can motivate behavior, and help individuals determine the direction of their actions (Austin & Vancouver, 1996; Brandtstädter, 1998; Emmons, 1986; Freund & Baltes, 2002; Heckhausen, 1999; Ryff, 1989). Inevitable difficulties occur across the course of the lifespan that can threaten progress towards goals. How individuals choose to manage these problems can have broad implications for their subsequent well-being (Carver & Scheier, 1990, 1998; Heckhausen et al., 2010; Wrosch et al., 2003b). The predominant mindset imbedded within the North American culture maintains that pushing forward towards goals, regardless of the obstacles that one faces, is a crucial component of a successful life. However, there may be times when persisting towards a goal can actually have negative consequences on one's well-being (e.g., Brandtstädter & Rothermund, 2002). For example, as individuals age, they may encounter normative age-related changes and losses that can make the continued pursuit of certain goals futile. In cases where reaching a goal is unfeasible, it may be that giving up is actually more beneficial, and can help protect individuals' mental health (e.g., Brandtstädter et al., 2003; Kraaij et al., 2008; Miller & Wrosch, 2007; Wrosch, Scheier, Carver, & Schulz, 2003a; Wrosch et al., 2003b). However, given the prominence of persistence in popular culture, is it really possible that giving up can be adaptive?

> *If at first you don't succeed, try, try again. – English Proverb*
>
> *If at first you don't succeed, try, try again. Then quit. There's no point in being a damn fool about it. – W.C. Fields*

The Rising Life Expectancy and Problems in Old Age

During the past century, significant changes in Canadian demographics have been observed, and reflect the aging of Canada's population. While older adults (individuals aged 60 and older) accounted for approximately 5% of the Canadian population in the early part of the twentieth century, this number has risen to over 13% of the population as of 2005 (Statistics Canada, 2011). Due in part to lower fertility rates, longer life expectancies, and the advent of the baby boom generation, the proportion of older adults is expected to grow to 25% of the population within the next 25 years, with similar trends predicted among most other developed nations (Statistics Canada, 2011). However, although individuals are living to an older age, this does not mean that older adults necessarily experience a high quality of life in later years. In particular, old age can oftentimes be filled with difficult transitions and constraints, and is associated with the onset of social, cognitive, and physical health losses (Baltes, 1987). These difficulties can subsequently place older adults at a high risk for depression and further health declines (Bruce, 2001). Given the rising life expectancy into later years (Martel & Bélanger, 2000), research examining how to maintain the psychological and physical well-being of older adults is fundamental for both the aging population and society as a whole.

One of the predominant challenges for sustaining quality of life into old age is the prevalence of chronic illness and health problems in later adulthood (e.g., arthritis, cancer, heart disease, stroke), and the resultant symptom consequences of these illnesses (*NACA*, 2006). In particular, the increased frailty, reduced mobility, and cognitive declines associated with illness and chronic disease can result in impairments in individuals' abilities to carry out basic activities of daily living (ADLs) (e.g., eating,

bathing, dressing) and instrumental activities of daily living (IADLs) (e.g., preparing meals, shopping, using the telephone). These functional disabilities represent a common challenge in the elderly that affect approximately 31% of individuals between the ages of 65-74, and 53% of those over the age of 75 (*NACA*, 2006). Further, functional disability can have substantive costs to older adults' quality of life by decreasing individuals' sense of control and capacity to function as an autonomous member of the community.

The association between functional disability and depressive symptomatology has been widely substantiated in the research literature (for a review, see Lenze et al., 2001). Community-based and clinical observational studies have found significant cross-sectional associations between functional disability and depressive symptomatology, above and beyond the effects of covariates such as age, education, social support, and other medical conditions (Black, Markides, & Miller, 1998; Bruce Seeman, Merrill, & Blazer, 1994; Forsell, Jorm, & Winblad, 1994; Prince, Harwood, Blizard, Thomas, & Mann, 1997; Steffens, Hays, & Krishnan, 1999). Other longitudinal research has found similar results, with functional disability predicting increased depressive symptomatology over time in samples of community-dwelling older adults and primary care patients (e.g., Barbisoni et al., 1996; Callahan et al., 1998; Kennedy, Howard, Kelman, & Thomas, 1990; Roberts, Kaplan, Shema, & Strawbridge, 1997; Yang & George, 2005; Zeiss et al., 1996). In addition, functional disability has been identified as a major contributor to future functional decline and mortality (Farragher, Lunt, Bunn, Silman, & Symmons, 2007; Nikolova, Demers, Béland, & Giroux, 2011), which can result in a downward spiral characterized by functional disability, depressive symptomatology, and subsequent health declines and mortality (Schulz, Martire, Beach, & Scheier, 2000; Wrosch, Dunne,

Scheier, & Schulz, 2006; Wrosch, Schulz, & Heckhausen, 2004). It is therefore important to identify how functional disability contributes to depressive symptomatology in the aging population, and determine ways in which older adults can adaptively cope with these difficulties.

Functional Disability, Depressive Symptoms, and Goal Pursuit

Research investigating the link between functional disability and depressive symptoms has suggested that functional disability can place older adults at a higher risk for psychological distress through the loss of perceived control, activity restriction, and reduced autonomy that is associated with an inability to accomplish specific short-term daily activities (e.g., going grocery shopping), and more general long-term life pursuits (e.g., travelling) (Lenze et al., 2001). The continued pursuit of personal goals is an important component of human development, and motivates human behavior throughout the lifespan by adding meaning and structure to individuals' lives (Brandtstädter, 1998; Emmons, 1986; Freund & Baltes, 2002; Heckhausen, 1999; Ryff, 1989). Goals help individuals maintain a sense of control over their environment, and making progress towards goals can contribute to higher levels of subjective well-being (Carver & Scheier, 1990, 1998; Wiese & Freund, 2005), happiness (Michalos, 1985), and life satisfactions (Brunstein, 1993; Emmons, 1986).

However, with the onset of functional disability and the associated restrictions, the opportunity to realize some personal goals may become unrealistic (Baltes, 1987; Heckhausen, 1999; Heckhausen & Schulz, 1995; Wrosch et al., 2003b, 2004; Wrosch & Freund, 2001). For example, an older adult with functional disability may no longer be able to visit friends, go grocery shopping, or continue to garden. In such instances,

continued attempts towards unattainable goals can have substantive consequences for an individual's emotional well-being, and can subsequently contribute to the high levels of depressive symptomatology found in older adults with functional disability (Carver & Scheier, 1990, 1998; Higgins, 1987; Watson, Clark, & Tellegen, 1988).

Thus, how older adults manage the losses associated with functional disability may be an important determinant of their emotional well-being. In fact, some research has found that regardless of the prevalence of age-related problems and losses in later adulthood, older adults experience relatively stable levels of perceived control and subjective well-being throughout old age, and that these levels are comparable to those of younger adults (e.g., Baltes & Baltes, 1990; Brandtstädter & Rothermund, 1994; Carstensen, 1992; Carstensen et al., 1999; Charles & Carstensen, 2010; Charles, Reynolds, & Gatz, 2001; Costa et al., 1987; Kunzmann, Little, & Smith, 2000; Mroczek & Kolarz, 1998). However, it has also been noted that there is a large amount of variability within these mean levels of emotional stability, and that individual differences in the ways in which older adults adapt to the experience of functional disability can contribute to different outcomes in well-being (Charles & Carstensen, 2010; Jang, Haley, Small, & Mortimer, 2002). Thus, these findings suggest that not all older adults who experience functional disability will necessarily develop subsequent depressive symptomatology, despite the restrictions that these disabilities place on their social, physical, and functional activities (Jang et al., 2002).

In this regard, the ability of some older adults to maintain high levels of psychological well-being in the context of age-related problems has been attributed to their ability to navigate changes and losses, and engage in adaptive self-regulatory

processes aimed at goal pursuits (e.g., Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 1994; Brandtstädter et al., 1993; Heckhausen et al., 2010; Heckhausen & Schulz, 1995; Staudinger, Marsiske, & Baltes, 1993; Wrosch et al., 2003b). For example, it has been suggested that individuals are more likely to place greater importance on maintaining emotional well-being in later life (Carstensen, 1992; Carstensen et al., 1999) and thus prioritize affect-related goals that promote short-term positive levels of well-being as they age (Charles & Carstensen, 2009; Mackay, Charles, Kemp, & Heckhausen, 2011). In this way, individuals may become better at regulating their emotions as they gain experience throughout their lifespan (e.g., Carstensen et al., 1999; Charles & Carstensen, 2004; Gross et al., 1997). This acquired expertise can allow older adults to have more effective emotion regulation and a higher threshold of emotional reaction when faced with a stressor, thus blunting the experience of negative emotions when age-related problems and losses occur in later adulthood.

Models of successful aging have also been proposed in order to account for individuals' resilience in later years. Baltes and Baltes (1990) suggested that older adults possess a superior ability to select and prioritize realistic and attainable goals, to optimize their available resources in order to achieve these goals, and to compensate with additional resources if goals become difficult to attain. Through these processes of selective optimization with compensation, individuals in later adulthood may continue to be engaged in meaningful tasks and pursuits in spite of biological or cognitive declines (Baltes & Baltes, 1990; Freund & Baltes, 1998; 2002; Staudinger et al., 1993). Thus, older adults with functional disability may be able to maintain higher levels of psychological well-being if they are able to adaptively manage the restrictions that these

disabilities place on their ability to accomplish personal goals, and adjust their aspirations accordingly.

The Adaptive Self-Regulation of Goals across the Lifespan

Theories of lifespan development have also been proposed to describe how individuals can adapt to changes and problems across the lifespan, and continue making progress towards, or adjust to, important goals (e.g., Brandtstädter & Rothermund, 1994, 2002; Heckhausen & Schulz, 1993, 1995; Schulz & Heckhausen, 1996; Wrosch et al., 2003a, 2003b). Embedded in these theories are two general processes aimed at continued engagement by confronting and overcoming difficulties to achieve goals, or goal adjustment when opportunities and resources are reduced and goal attainment is unlikely (Carver & Scheier, 1990, 1998; Heckhausen et al., 2010; Heckhausen & Schulz, 1995; Wrosch, 2011). According to the motivational theory of lifespan development, individuals' actions regarding whether to pursue or disengage from a goal depend on their (perceived) ability to overcome goal-related problems in the future (Carver & Scheier, 1990, 1998). Further, in order to be adaptive, these actions must be matched to the situational and age-graded opportunities for goal attainment in the future (Heckhausen et al., 2010; Wrosch & Heckhausen, 1999).

In this regard, if individuals perceive favorable opportunities to reduce the negative discrepancy between a current state and a desired goal, they should renew commitment and persist in the pursuit of the goal. These processes include attempts by the individual to change the external world to fit with internal goals or standards. Such strategies include investing internal resources (e.g., time, effort, ability) towards the attainment of a goal (selective primary control), eliciting aid from external sources (e.g.,

seeking help from others) to achieve a goal (compensatory primary control), and using internally-focused cognitive strategies to increase motivational commitment to the goal (selective secondary control) (Heckhausen et al, 2010; Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996). These goal engagement processes have been shown to contribute to lower levels of depressive symptoms for older individuals with acute physical health problems (Wrosch et al., 2004; Wrosch, Schulz, & Heckhausen, 2002; Wrosch, Schulz, Miller, Lupien, & Dunne, 2007b), and to greater nine-year survival rates for older adults suffering from acute medical events (e.g., heart attack, stroke; Hall, Chipperfield, Heckhausen, & Perry, 2010).

While active control processes aimed at the pursuit of personal goals can contribute to high levels of subjective well-being if there are favorable opportunities to attain a goal, the pursuit of goals that have become unattainable can result in psychological distress (e.g., Wrosch, Heckhausen, & Lachman, 2000). Instead, as the pursuit of goals becomes less feasible, individuals must shift their focus from processes that facilitate goal attainment (e.g., investing time and effort into achieving a goal) to processes that facilitate adjusting one's goals (e.g., goal disengagement, or "letting go" of a goal) (Brandtstädter & Rothermund, 2002; Carver & Scheier, 1990; Heckhausen et al., 2010; Heckhausen & Schulz, 1993, 1995; Scheier & Carver, 2001; Wrosch et al., 2003a, 2003b; Wrosch, Miller, Scheier, & Brun de Pontet 2007a). Thus, when individuals perceive their opportunity to attain a goal to be poor, they should disengage from the goal and reengage in alternative activities (for associations between appraisals and coping, see also Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). Accordingly, the motivational theory of lifespan development also includes a fourth category of control

strategies (compensatory secondary control) that is aimed at minimizing losses through self-protection processes and goal adjustment (Heckhausen et al., 2010). Such strategies have been shown to predict better five-year health status among older adults with chronic and debilitating health problems that impede task pursuits (Hall et al., 2010).

In a similar vein, Brandtstädter and colleagues proposed a dual-process model of self-regulation wherein two control processes are used in order to manage the discrepancy between actual and desired states, and maintain a sense of well-being (Brandtstädter, 2006; Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 2002; Rothermund & Brandtstädter, 2003). These processes involve both assimilative and accommodative actions aimed at managing goals across the lifespan. Assimilation includes active attempts by the individual to facilitate goal attainment through the investment of time and energy, while accommodation includes processes aimed towards flexible goal adjustment that fit with the available resources of the individual. In this regard, an adaptive flexibility is necessary to shift from assimilative to accommodative processes when insurmountable problems arise that impede goal attainment. A shift from assimilative to accommodative processes may involve the disengagement and withdrawal from barren commitments and unattainable goals, acceptance, and the reorientation towards the development and pursuit of other important goals (Brandtstädter & Rothermund, 1994; Rothermund & Brandtstädter, 2003; Wrosch et al., 2003a, 2003b). These processes of flexible goal adjustment help keep individuals engaged in the pursuit of purposeful and realistic goals, and help them avoid the negative consequences associated with a lack of progress towards goals, or goal failure (Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 1994, 2002; Wrosch, 2011).

Theories of stress and coping (Lazarus & Folkman, 1984) have also been elaborated to include coping processes aimed at stressful situations that are unlikely to be resolved (Folkman, 1997; Folkman & Greer, 2000). In such cases when problem-focused or emotion-focused coping has led to an unsatisfactory outcome, the cognitive theory of stress and coping proposes that individuals engage in meaning-based coping in order to generate positive emotions. Such coping processes include the use of positive reappraisals, the relinquishment of unattainable goals, the formulation of new goals, and the activation of spiritual beliefs (Folkman, 1997; Folkman & Greer, 2000). By stimulating positive emotions, meaning-based coping gives individuals in chronically stressful situations a psychological reprieve from negative emotions and distress, and can subsequently promote further coping processes (Folkman & Greer, 2000).

Functional Disability & Adaptive Self-Regulation

Together, theories of lifespan development and adaptive self-regulation indicate that when the attainment of personal goals is compromised by the emergence of functional disability, the ability to adjust expectations and downgrade goals may be an important determinant of psychological well-being (e.g., Brandtstädter & Renner, 1990; Brandtstädter et al., 1993; Carver & Scheier, 1990; Heckhausen et al., 2010; Heckhausen, Wrosch, & Fleeson, 2001; Heckhausen & Schulz, 1995; Wrosch et al., 2003a). Further, theory and research indicates that the continued pursuit of unattainable goals is likely to result in repeated failure experiences and distress, and could subsequently contribute to depressive symptomatology (Brandtstädter & Renner, 1990; Heckhausen et al, 2010). In this regard, compensatory secondary control processes and accommodative tendencies should become more adaptive as individuals encounter functional constraints that limit

opportunities to reach important goals (Hall et al., 2010; see Heckhausen et al., 2010).

Research supports this notion, and has indicated that individuals shift from active goal attainment processes to processes aimed at goal adjustment in older adulthood when opportunities are reduced (Brandtstädter & Renner, 1990; Heckhausen, 1997; Rothermund & Brandtstädter, 2003). In addition, research has shown that older adults possess a greater capacity for goal adjustment than younger adults (Wrosch et al., 2003b). Other research has also documented that primary control strategies aimed at the active engagement in goal attainment can contribute to better physical health and greater perceived health for young-old adults (<80 years old), but can be detrimental among the old-old (>80 years old). Instead, secondary control strategies were associated with greater perceptions of health among the oldest participants in this study (Chipperfield, Perry, & Menec, 1999).

Other research has focused specifically on the role of goal adjustment in the management of functional disability. Cross-sectional studies have found that the ability to flexibly adjust to unattainable goals in the context of functional disability can help protect older adults from the experience of depressive symptomatology (Boerner, 2004; Brandtstädter et al., 1993; Schmitz et al., 1996). In particular, using data from samples of individuals with functional disability, researchers found that flexible goal adjustment buffered the negative effect of disability on depressive symptoms. More specifically, the results indicated that participants who had a higher capacity to disengage, accept, and re-orientate when confronting unattainable goals were less likely to concurrently experience depressive symptoms than participants who were unable to flexibly adjust. Although this research was cross-sectional and did not differentiate between the different aspects of

goal adjustment, the results suggest that older adults who experience functional disability may be able to avoid the experience of depressive symptoms if they are able to adaptively adjust to unattainable goals.

A Model of Goal Adjustment Capacities: Goal Disengagement & Goal Reengagement

A model of goal adjustment that distinguishes between the different processes involved in the adaptive management of unattainable goals has been proposed, and suggests that individual differences in these processes can be an important determinant of subjective well-being and physical health outcomes when individuals encounter different stressors throughout the lifespan (Wrosch et al., 2003a, 2003b, 2007a). Derived from personality psychology and theories of adaptive self-regulation, this model assumes that individuals differ more generally in how they deal with unattainable goals across different life domains and time, and postulates two separate processes that determine how individuals adjust to the experience of unattainable goals.

First, goal disengagement capacities include the tendency of an individual to "let go" of goals that are no longer attainable through the withdrawal of both effort and commitment from the goal (Wrosch et al., 2003a, 2003b). By disengaging from unattainable goals, individuals may circumvent the negative emotions associated with repeated failure experiences, such as helplessness and depression. In addition, disengaging from barren pursuits can free up individuals' available resources, which can then be turned towards other meaningful life pursuits. This investment of resources towards alternate tasks can compensate for the negative consequences of goal failure, and can help individuals maintain meaning and feelings of self-efficacy. In this regard,

individuals who are generally better able to disengage from unattainable goals may experience lower levels of psychological distress when encountering an unattainable goal compared to individuals who cannot disengage. For example, clinical evidence suggests that a poor capacity to disengage from barren commitments is a major contributor to depression, as well as to the strength and length of depressive episodes (see Brandtstädter & Rothermund, 2002).

The second process involved in the adjustment to unattainable goals is goal reengagement (Wrosch et al., 2003a, 2003b). Goal reengagement capacities include an individual's tendency to identify, pursue, and undertake new, attainable goals. Having self-relevant goals contributes to life satisfaction, self-esteem, and positive affect (Diener & Lucas, 2000; Ryff, 1989), and, in this way, goal reengagement allows individuals to maintain a sense of purpose in life (Scheier et al., 2006; Wrosch et al., 2003b). In addition, turning one's attention to other important goals may help individuals disengage from barren commitments, as the availability of alternative pursuits can facilitate the disengagement process (e.g., Aspinwall & Richter, 1999). Importantly, reengaging in alternative goals may help individuals maintain a sense of well-being by more easily avoiding thoughts pertaining to failed goal attempts. For example, Klinger (1975) suggests that reengagement can help alleviate symptoms of depression that have arisen due to the experience of challenged goal attainment.

Goal Adjustment and Psychological Well-being

Models of goal adjustment suggest that that the capacity to adjust one's goals may represent one pathway through which older adults can maintain a high quality of life despite the experience of age-related problems. While research has yet to investigate the

role of these individual processes in the adaptive management of functional disability, cross-sectional and longitudinal research on other populations support the idea that goal adjustment capacities can forecast adaptive outcomes through both a general effect on well-being, and through the management of goals when individuals encounter specific stressors.

In this regard, research that has distinguished between goal disengagement and goal reengagement capacities has frequently linked higher levels of goal disengagement to less negative affect, fewer depressive symptoms, more adaptive biological functioning (e.g., lower cortisol output, less C-reactive protein), and better physical health (Miller & Wrosch, 2007; Wrosch & Miller, 2009; Wrosch et al., 2003b, 2007a). Goal reengagement capacities, by contrast, have been shown to predominantly predict positive affect and purpose in life, but have been largely unrelated to negative aspects of subjective well-being and health-related outcomes (I. Bauer, 2004; Miller & Wrosch, 2007; Wrosch & Miller, 2009; Wrosch et al., 2003b, 2007a).

Results from studies examining populations that face specific stressors have indicated a similar pattern of findings. These results have documented associations between goal disengagement capacities and lower levels of depressive symptoms (e.g., in women who have passed the developmental deadline for childbearing, Heckhausen et al., 2001; in parents whose children had cancer, Wrosch et al., 2003b), negative affect (e.g., in infertile men, Kraaij et al., 2009; in breast cancer survivors, Wrosch & Sabiston, in press), and anxiety symptoms (e.g., in HIV positive males, Kraaij et al., 2008), while the ability to reengage in other meaningful pursuits was related to higher levels of positive affect (e.g., in infertile men, Kraaij et al., 2009; in individuals with cancer, Schroevers,

Kraaij, & Garnefski, 2008; in breast cancer survivors, Wrosch & Sabiston, in press).

Overall, the literature on goal adjustment capacities suggests that goal disengagement and goal reengagement can have differential effects on positive and negative indicators of subjective well-being. These effects have been explained by the different main functions of goal disengagement and goal reengagement capacities (see Wrosch et al., 2007a). To this end, goal disengagement should primarily prevent the experience of negative emotions by protecting individuals from experiencing the failure and distress associated with being unable to accomplish important goals. Conversely, goal reengagement is expected to provide purpose for living and thereby promote the experience of positive aspects of subjective well-being (Wrosch et al., 2007a).

However, there are some exceptions to this pattern of findings in the literature, and goal disengagement has been associated with positive aspects of subjective well-being (e.g., self-mastery, Wrosch et al., 2003b), while goal reengagement has been associated with lower levels of perceived stress, intrusive thoughts, and depressive symptomatology in previous research (e.g., Kraaij et al., 2008; Wrosch et al. 2003b). In this regard, goal disengagement may contribute to positive indicators of well-being if it frees up individuals' personal resources to pursue other meaningful and attainable goals. Similarly, goal reengagement capacities can contribute to lower levels of distress if it reduces thoughts regarding the failure to pursue an unattainable goal (Wrosch et al., 2003b, 2007a). Importantly, it has also been suggested that goal reengagement capacities may actually lead to higher levels of distress if it promotes the adoption of maladaptive goals that stretch an individual too thin by depleting their personal resources (Wrosch et al., 2011). Consequently, whether or not individuals' general goal adjustment capacities

can lead to adaptive outcomes may depend on the types of goals that are adopted, and the specific coping behaviors that they promote.

General Goal Adjustment Capacities and Specific Coping Responses

In order to further help explain the differential effects of goal disengagement and goal reengagement on individuals' emotional well-being, and to investigate specific pathways through which general capacities can influence well-being, recent research has also examined how general goal adjustment capacities can contribute to the use of cognitive and behavioral coping strategies (Wrosch et al., 2011). More specifically, in a sample of caregivers of family members with mental illness, researchers found that goal disengagement capacities contributed to the use of adaptive coping strategies (e.g., less self-blame, lower substance abuse), while goal reengagement capacities were found to promote both adaptive (e.g., positive reframing) and maladaptive coping responses (e.g. venting, self-distraction).

These findings are important for several reasons. First, they suggest that goal disengagement and goal reengagement capacities can lead to different types of specific coping processes, which can subsequently affect individuals' emotional well-being. Second, these findings indicate that the adaptive value of goal reengagement capacities may be largely dependent upon the specific coping responses that they foster, and the types of goals that individuals reengage in. In this regard, other research found that general goal reengagement capacities could contribute to high levels of positive affect and low levels of physical symptoms by promoting physical activity among breast cancer survivors (Wrosch & Sabiston, in press). Thus, while cognitive coping strategies may be more adaptive when a stressor cannot be overcome, goal reengagement capacities may

lead to better emotional well-being if they foster active coping processes when stressors can be addressed through a person's external behaviors. Third, these results suggest that there may be a complex interplay between general goal adjustment capacities and the use of specific coping processes. This idea has also been proposed through other research looking at pain-related coping, which found that pain-specific forms of coping contributed to lower levels of perceived disability in chronic pain sufferers, but only for those who also showed high levels of flexible goal adjustment (Schmitz et al., 1996). Thus, in order to fully understand and elucidate the role that goal adjustment can play in the relationship between functional disability and depressive symptoms, research must investigate both general goal-regulation capacities, as well as the specific types of coping behaviors that they may foster.

Summary

Together, the pattern of results in the reviewed literature implies that goal adjustment capacities may be one important component in the management of functional disability in old age. Importantly, previous cross-sectional research has shown that flexible goal adjustment can contribute to lower levels of depressive symptoms in older adults with functional disability (Boerner, 2004; Brandtstädter et al., 1993; Schmitz et al., 1996). Further, research looking at both goal disengagement and goal reengagement as separate processes also supports this notion by indicating that individual differences in general capacities to disengage from unattainable goals and reengage in other meaningful pursuits can contribute to subjective well-being outcomes in other populations (e.g., Kraaij et al., 2008; 2009; Wrosch et al., 2003b). While research has yet to investigate the role of goal disengagement in the management of functional disability over time, goal

disengagement processes should be particularly important for older adults with functional disability, as the resultant impairments can render many goals unattainable. In addition, goal disengagement may also help older adults maintain their emotional well-being by fostering specific processes aimed at the management of particular ADL-related goals (Wrosch et al., 2011). Although the effects of goal reengagement capacities are mixed, the reviewed literature also suggests that it may lead to adaptive outcomes when individuals encounter unattainable goals. However, in the context of functional disability, the impact of goal reengagement capacities on emotional well-being may be dependent on the specific types of goals which older adults adopt, and whether these goals promote adaptive or maladaptive outcomes (Wrosch et al., 2011; Wrosch & Sabiston, in press).

Limitations in the Research Literature

In sum, while the reported research on the adaptive benefits of goal adjustment capacities document important associations between goal disengagement, goal reengagement, and well-being, there are also important limitations in the literature that the current research aims to address:

1) *First, while the studies involving goal adjustment capacities have been associated with adaptive psychological and physical health outcomes, there is limited research on older adults who suffer from functional disability. The extant literature on functional disability has relied solely on cross-sectional data, which precludes making conclusions about the causal direction of these effects. In addition, it is unknown whether the beneficial effects of goal adjustment capacities on depressive symptoms in the context of functional disability will be demonstrated in long-term longitudinal studies.*

2) *Second, previous studies on goal adjustment in the context of functional disability have relied on the general construct of "flexible goal adjustment", and have therefore failed to disentangle the separate effects of goal disengagement and goal reengagement capacities. As other research that separated these constructs has shown a differentiated picture of the potential impact of goal disengagement and goal reengagement capacities on well-being, it is important that research investigate these two constructs as separate processes.*
3) *Third, to date, research has focused primarily on general goal adjustment capacities and not on the specific processes that are involved in the adjustment to particular goals. In this regard, a new scale that measures specific goal adjustment strategies in the context of functional disability is needed.*
4) *Fourth, few studies have investigated the pathways through which general goal adjustment capacities can lead to adaptive outcomes. While recent research has looked at how general goal adjustment capacities may lead to specific coping behaviors (Wrosch et al., 2011; Wrosch & Sabiston, in press), it is important to determine if general goal adjustment capacities can contribute to specific goal adjustment strategies, and whether such specific strategies can explain the associations between general capacities and well-being. Such processes may help to explain the disparate results found between goal disengagement and goal reengagement in the current research literature.*

The Present Research

This dissertation includes both longitudinal and cross-sectional studies that were designed to address the limitations in the existing research. The present research aims to

extend current models of goal adjustment by applying it to older adults with functional disability, and by specifying the specific goal adjustment processes involved in the adjustment to unattainable goals (see Figure 1). Study 1 (Chapter 3) investigated the longitudinal associations between goal disengagement capacities, goal reengagement capacities, functional disability, and depressive symptoms, by examining data from a large sample of community-dwelling older adults over a time period of six years. The specific hypotheses of this study were:

> ***Hypothesis 1.1:*** *Functional disability and depressive symptoms will increase over six years in our sample of older adults.*
>
> ***Hypothesis 1.2:*** *High baseline levels of goal disengagement capacities will ameliorate the adverse effects of functional disability on depressive symptoms. Specifically, the experience of functional disability will predict increases in depressive symptomatology, but only among older adults who had difficulty disengaging from unattainable goals.*
>
> ***Hypothesis 1.3:*** *Goal reengagement capacities will not influence changes in depressive symptomatology over time.*

Study 2 (Chapter 4) represents a two-part cross-sectional study on specific goal adjustment strategies for older adults with functional disability. The first part of the study provides the description and validation of a new goal adjustment scale (the *Activities of Daily Living – Goal Adjustment Scale;* or ADL-GAS) that was created to measure specific goal disengagement and goal reengagement processes related to the adjustment of ADL-related goals that have become unattainable due to functional disability. Results

were compared between older adults with functional disability and older adults without functional disability. The specific hypotheses of the first part of Study 2 were:

Hypothesis 2.1: *The ADL-GAS will exhibit good internal reliability.*

Hypothesis 2.2: *The ADL-GAS will exhibit good concurrent validity by showing significant associations with adaptive levels of subjective well-being outcomes. However, these associations will only be seen in our subsample of older adults with functional disability.*

Hypothesis 2.2: *The ADL-GAS will show good convergent validity by exhibiting positive associations with other self-regulatory scales from which it was derived. However, we expected that these associations would be apparent for participants with functional disability, but not for participants without functional disability.*

The second part of Study 2 was conducted to determine whether general goal adjustment capacities were related to depressive symptoms in a population of older adults with functional disability, and whether these associations could be explained by the specific goal adjustment strategies represented on the ADL-GAS. Results were again compared between older adults with functional disability and older adults without functional disability. The specific hypotheses of the second part of Study 2 were:

Hypothesis 2.4: *Higher levels of general goal disengagement and goal reengagement will exert beneficial cross-sectional effects on depressive symptomatology in a sample of older adults with functional disability.*

Hypothesis 2.5: *Specific goal adjustment strategies aimed at accomplishing ADL-*

related goals will act as mediators and statistically explain the effects of goal disengagement and goal reengagement capacities on participants' depressive symptomatology.

CHAPTER 3:

STUDY 1

Goal disengagement, functional disability, and depressive symptoms in old age

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Abstract

Objectives. This longitudinal study examined the associations between older adults' goal adjustment capacities (i.e., goal disengagement and goal reengagement capacities), functional disability, and depressive symptoms. It was expected that goal disengagement capacities would prevent an adverse effect of heightened functional disability on increases in depressive symptoms. **Methods.** Multivariate regression analyses were conducted, using four waves of data from a 6-yr longitudinal study of 135 community-dwelling older adults (> 60 years old). **Results.** Depressive symptoms and functionality disability increased over time. Moreover, poor goal disengagement capacities and high levels of functional disability forecasted six-year increases in depressive symptoms. Finally, goal disengagement buffered the association of functional disability with increases in depressive symptoms. No associations were found for goal reengagement capacities. **Conclusion.** The findings suggest an adaptive role for goal disengagement capacities in older adulthood. When confronted with increases in functional disability, the capacity to withdraw effort and commitment from unattainable goals can help protect older adults from experiencing long-term increases in depressive symptoms.

KEY WORDS: goal adjustment; functional disability; depressive symptoms; successful aging.

Goal Disengagement, Functional Disability, and Depressive Symptoms in Old Age

It has been well-established that the experience of functional disability can contribute to depressive symptomatology in older adults (Bruce, 2001; Williamson & Schulz, 1995). This effect is partly due to the adverse consequences that functional disability can have on individuals' activity or goal constraints, which can lead to failure experiences and loss of control (Lenze et al., 2001). Theory and research also suggest that individuals may be able cope with functional disability. In particular, there are cross-sectional data to suggest that depressive symptoms can be ameliorated if older adults can disengage from goals that have become unattainable in such circumstances (Boerner, 2004; Brandtstädter, Wentura, & Greve, 1993; Schmitz, Saile, & Nilges, 1996). However, longitudinal studies that test this hypothesis explicitly have yet to be performed. To address this gap in the literature, we analyzed four waves of data from a six-year longitudinal study of older adults. We expected that heightened functional disability would forecast increases in depressive symptoms, but only among older adults who had difficulty disengaging from unattainable goals. We did not expect this connection to become established in participants who were capable of disengaging from unattainable goals, because goal disengagement could protect them from repeated failure experiences that typically give rise to depressive symptomatology in old age.

Goal Adjustment and Depressive Symptoms in the Context of Functional Disability

Functional disability is a common and severe challenge in old age (Hébert, Brayne, & Spiegelhalter, 1997; Manton, Gu, & Lamb, 2006). These disabilities relate to problems with carrying out activities of daily living (e.g., bathing, dressing, preparing

meals, or shopping) and are often perceived as uncontrollable and irreversible consequences of aging (Beckett et al., 1996). Further, functional disability has been associated with older adults' depressive symptoms and its consequences for biological dysregulation, chronic disease, and mortality (e.g., Lenze et al., 2001; Williamson & Schulz, 1995; Zeiss, Lewinsohn, Rohde, & Seeley, 1996). Theoretical models suggest that such effects may be mediated by failure experiences, loss of control, and restrictions of (social) activities and interpersonal goals (Lenze et al., 2001). This implies that functional disability can make it difficult for an older person to pursue valued goals (e.g., visiting a relative, continuing leisure activities, or living independently at home), which in turn might increase subsequent levels of depressive symptoms (cf. Higgins, 1987).

The capacity to adjust to unattainable goals may play an important role in helping individuals avoid such adverse emotional consequences of functional disability. This notion is consistent with different theories of self-regulation that point to the emotional benefits of goal adjustment processes among individuals who can no longer attain important goals (Brandtstädter & Renner, 1990; Carver & Scheier, 1998; Heckhausen, Wrosch, & Schulz, 2010; Wrosch, 2011). Further, goal adjustment capacities have been addressed in personality theory and conceptualized as relatively stable differences in individuals' general tendencies to disengage from unattainable goals across circumstances (i.e., goal disengagement) and to engage in other and attainable goals (i.e., goal reengagement). Goal disengagement capacities reflect a person's tendencies to reduce effort and commitment from unattainable goals, while goal reengagement capacities involve the tendency to identify, commit to, and pursue other new goals when unattainable goals are encountered (Wrosch, Amir, & Miller, 2011; Wrosch & Miller,

2009; Wrosch, Miller, Scheier, & Brun de Pontet, 2007a; Wrosch, Scheier, Miller, Schulz, & Carver, 2003).

Cross-sectional and longitudinal research has shown that general goal disengagement capacities can forecast less negative affect, fewer depressive symptoms, lower cortisol output, less systemic inflammation, and better physical health (Miller & Wrosch, 2007; Wrosch et al., 2003, 2007a, 2011). These beneficial effects are likely to occur because goal disengagement can reduce negative mood and the associated health problems by protecting individuals from the experience of repeated failure. Goal reengagement capacities are thought to provide new meaningful goals and have been associated with purpose in life and positive affect. Research suggests that goal reengagement capacities are seldom directly related to negative mood states and physical health problems (O'Connor & Forgan, 2007; Wrosch et al., 2003, 2007a). However, there are two exceptions to this trend. First, research has also shown that goal reengagement may relate to lower distress, and that this effect is likely to take place if goal reengagement ameliorates thoughts about the inability to continue pursuing a valued goal (Wrosch et al., 2003). Second, research suggests that in some cases goal reengagement may relate to *greater* distress, particularly if it triggers maladaptive coping strategies (e.g., venting or self-distraction) that interfere with people's ability to manage key life stressors (e.g., caregiving for a sick family member, Wrosch et al., 2011).

No longitudinal research to date has examined how goal disengagement and goal reengagement capacities play out in the context of older adults confronted with functional disability. However, the literature reviewed above suggests that those older adults who confront functional disability and are generally able to disengage from unattainable goals

may avoid the experience of repeated failure (e.g., problems with maintaining independent living), which could prevent a spillover effect of functional disability on depressive symptomatology. By contrast, older adults who cannot disengage from unattainable goals are likely to experience accumulated failure in such circumstances and the resultant increase in depressive symptoms.

With respect to goal reengagement, however, the reported findings indicate that these capacities may be less likely to ameliorate depressive symptoms among older adults who confront functional disability. First, goal reengagement is mainly targeted at improving positive aspects of subjective well-being and has not been shown in previous research to reduce levels of depressive symptoms over time (Wrosch et al., 2007a, Wrosch & Miller, 2009). Second, goal reengagement has not only beneficial effects, but can also be associated with maladaptive coping and stress-specific burden (Wrosch et al., 2011). This may happen if individuals become stretched too thin and implies that only some new goals may improve emotional well-being in the context of functional disability (e. g., focusing on positive relationships or recruiting help to maintain levels of functioning), while other new goals (e.g., new travel plans or restructuring the garden) could deplete a person's resources, thereby increasing the person's burden and associated depressive symptoms. These patterns illustrate how goal reengagement capacities can have both positive and negative consequences for individuals' emotional well-being (Wrosch et al., 2011). As a result of these dual consequences, we did not expect to find a general buffering effect of goal reengagement capacities on distress.

Empirical evidence lends preliminary support to these propositions by demonstrating that replacing activities that were lost due to illness was associated with

higher positive affect, but unrelated to negative mood (Duke, Leventhal, Brownlee, & Leventhal, 2002). In addition, cross-sectional research has shown that older adults who encountered age-related challenges, including functional disability, experienced comparatively low levels of depressive symptoms if they were able to flexibly adjust to unattainable goals (Boerner, 2004; Brandtstädter et al., 1993; Schmitz et al., 1996). However, given that emotional experiences can also influence goal disengagement processes (Thompson, Woodward, & Stanton, 2011; Wrosch & Miller, 2009), results from cross-sectional research remain inconclusive. To overcome this limitation, our study was conducted to examine in longitudinal research whether goal disengagement capacities can buffer the adverse effects of functional disability on increases in older adults' depressive symptoms.

The Present Study

This research examined the associations between older adults' goal adjustment capacities, functional disability, and depressive symptoms. We hypothesized that functional disability would predict increases in depressive symptomatology, but only among older adults who had difficulty disengaging from unattainable goals. By contrast, we expected high goal disengagement capacities to ameliorate the adverse effect of functional disability on depressive symptoms. We did not expect goal reengagement capacities to influence depressive symptomatology. To test these hypotheses, we analyzed four waves of data from a 6-yr longitudinal study of older adults. We first explored whether functional disability and depressive symptoms would change over time. Second, our main analysis investigated whether baseline levels of goal adjustment capacities would interact with functional disability in predicting 6-yr changes in

depressive symptoms. To this end, we tested interactions between goal adjustment capacities and baseline, 2-yr, 4-yr, and 6-yr levels of functional disability to clarify whether goal adjustment capacities would protect participants' mood against baseline levels or increases in functional disability.

Method

Participants

This study included a heterogeneous, community-based sample of older adults who participated in the longitudinal *Montreal Aging and Health Study* (MAHS; Wrosch, Schulz, Miller, Lupien, & Dunne, 2007b). Participants were recruited through advertisements in local Montreal newspapers, and were required to be 60 years or older in order to participate. Two-hundred-fifteen participants were recruited in 2004. These participants were contacted and invited for an initial appointment to the laboratory and instructed to respond to a questionnaire. If participants were unable to come to the laboratory, they were visited in their homes. Participants received $50 for their participation.

The second, third, and fourth waves of the MAHS were collected approximately two years (M = 1.89, SD = .08, *range* = 1.72 to 2.13 years), four years (M = 3.78, SD = .24, *range* = 3.28 to 4.77 years), and six years (M = 6.05, SD = .20, *range* = 5.52 to 6.40 years) after baseline. T2 included 184 participants (85.6%), while T3 included 164 participants (76.3%) and T4 included 137 participants (63.7%). Attrition from T1 to T4 was due to being deceased (n = 23), refusing to participate further (n = 9), being unable to locate participants (n = 19), or having other personal problems that precluded participation (n = 27). Study attrition was not significantly associated with baseline

measures of the main study variables, sex, or socioeconomic status. However, participants who dropped out of the study were significantly older at baseline (M = 73.82, SD = 6.78, *range* = 63 to 94 years) than those who remained in the study, $t(129.14) = 2.49$, $p = .01$. A further three participants were excluded from the analyses because of multiple missing data points. Single missing data were replaced with the sample mean (goal reengagement = 1 participant; functional disability = 5 participants). Thus, the final sample consisted of 135 older adults. At baseline, these participants were 71.65 years old (SD = 5.23, *range* = 64 to 90 years), 53 percent were female, 38 percent had attained an undergraduate degree or higher, and the majority was retired from work (84%).

Materials

The main study variables included measures of participants' depressive symptomatology, goal adjustment capacities, and levels of functional disabilities (i.e., difficulties with activities of daily living; see Table 1 for zero-order correlations). In addition, sociodemographic variables (age, sex, and socioeconomic status) were assessed.

Depressive symptomatology was measured across waves with the 10-item *Center for Epidemiological Studies Depression Scale* (CES-D10), which has been validated for use with older adults in previous research (Andresen, Malmgren, Carter, & Patrick, 1994; see Appendix C). Participants were asked to rate how frequently they had experienced each of ten depressive symptoms during the past week on 4-point Likert-type scales (0 = *less than one day*, to 3 = *5-7 days*). Sample items included: *I felt depressed* or *I felt that everything I did was an effort.* For each wave, a sum score of the ten depressive symptoms was computed (see Table 2). Cronbach's alpha ranged from .71 to .83 across waves.

Table 1

Zero-Order Correlations Between Depressive Symptoms, Goal Disengagement, Goal Reengagement, and Functional Disability.

	1	2	3	4	5	6	7
(1) Baseline CES-D							
(2) Six-year CES-D	.57**						
(3) Baseline goal disengagement	-.11	-.36**					
(4) Baseline goal reengagement	-.29**	-.29**	.13				
(5) Baseline functional disability	.16	.24**	-.06	-.13			
(6) Two-year functional disability	.18*	.25**	-.08	-.10	.54**		
(7) Four-year functional disability	.30**	.44**	-.18*	-.16	.54**	.44**	
(8) Six-year functional disability	.29**	.34**	-.05	-.05	.55**	.53**	.55**

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

Table 2

Means (Standard Deviations) and Range of Older Adults' Levels of Functional Disability and Depressive Symptoms Across Six Years of Study.

	Baseline	Two-Year	Four-Year	Six-Year	*F*
Functional disability					
Mean (SD)	0.41 (1.09)[a]	0.48 (1.05)	0.69 (1.36)[b]	0.70 (1.29)[b]	4.11**
Range	0-7	0-6	0-8	0-6	
Depressive symptoms					
Mean (SD)	5.93 (4.32)[a]	6.05 (5.01)[a]	6.77 (5.49)	7.15 (5.31)[b]	4.67**
Range	0-18	0-23	0-28	0-26	

Note. [a] Means with different superscripts differ significantly from each other across time. * $p < .05$. ** $p < .01$.

Functional disability was also assessed across waves (see Appendix D). Participants were asked to report whether or not they had difficulty or were unable to perform each of six instrumental activities of daily living (ADLs) (heavy housework, light housework, shopping, preparing meals, managing money, and using the phone) and six basic ADLs (eating, dressing, showering, using the toilet, walking around at home, and getting in and out of a bed or chair). A count variable comprising of the total number of difficulties participants experienced with all ADLs was computed for each wave (see Table 2). At baseline, 22% of participants had difficulty with either basic or instrumental ADLs (T2 = 30%; T3 = 32%; T4 = 36%), indicating that our sample was within the normative range for older adults residing at home (*National Advisory Council on Aging*, 2006).

Goal adjustment capacities were measured at baseline by administering a previously validated 10-item self-report questionnaire (Miller & Wrosch, 2007; Wrosch et al., 2003, 2007a; Wrosch & Miller, 2009; see Appendix E). Participants were asked to report how they usually react when they have to stop pursuing an important goal in their life. Four items measured goal disengagement capacities (e.g., *It's easy for me to stop thinking about the goal and let it go*), and six items measured goal reengagement capacities (e.g., *I start working on other new goals to pursue*). Responses were measured on 5-point Likert-type scales, ranging from 1 = *strongly disagree*, to 5 = *strongly agree*. Confirmatory principal component factor analyses (using oblimin rotation) showed that the goal disengagement and goal reengagement items loaded on two separate factors (goal reengagement: *eigenvalue* = 3.75, *loadings* = .59 to .82; goal disengagement: *eigenvalue* = 1.93, *loadings* = .56 to .70). Consequently, mean scores were computed for

goal disengagement (M = 3.05, SD = .72, α = .57) and goal reengagement (M = 3.69. SD = .60, α = .85) separately. The goal disengagement and goal reengagement scales were not significantly correlated with each other at baseline (see Table 1).

Sociodemographic characteristics were measured at baseline and used as covariates in the analyses to reduce the likelihood of spurious associations (see Appendix B). In particular, we measured age, sex, and socioeconomic status (SES) because these factors have been shown to be associated with depressive symptoms in previous research (e.g., Blazer, Burchett, Service, & George, 1991). SES was measured as participants': 1) education level (0 = no education, 1 = high school, 2 = collegial or trade school, 3 = bachelor's degree, 4 = masters or doctorate); 2) annual family income (0 = less than $17,000, 1 = up to $34,000, 2 = up to $51,000, 3 = up to $68,000, 4 = up to $85,000, 5 = more than $85,000); and 3) perceived socioeconomic status (measured using a 10-rung SES ladder on which participants were asked to rate their socioeconomic status relative to others in their society, as described by Adler, Epel, Castellazzo, & Ickovics, 2000). These three indicators of SES were correlated in our study (rs = .40 to .53; ps < .01) and we therefore computed a global measure of SES by averaging the standardized scores of the single indicators.

Results

The results are described in two sections. The first section tests whether participants' depressive symptomatology and functional disability changed over time. The second section examines the main and interaction effects of goal adjustment capacities and functional disability in predicting changes in depressive symptoms over time.

Mean Level Changes in Functional Disability and Depressive Symptomatology

To examine mean level changes in depressive symptomatology and functional disability across six years of study, we conducted two separate repeated-measures analyses of variance (ANOVAs), incorporating the within-subject factor *Time* and using the scores of depressive symptoms and functional disability across waves as dependent variables, respectively. The results of the analyses were controlled for participants' age, sex, and socioeconomic status. As reported in Table 2, the analyses demonstrated significant linear effects of *Time* for both depressive symptoms and functional disability, Fs(3, 393) > 4.10, ps < .01, indicating that functional disability and depressive symptoms increased over time. Post-hoc *t*-tests confirmed that participants' functional disability, $t(134) = 2.93$, $p < .01$, and depressive symptoms, $t(134) = 3.10$, $p < .01$, increased significantly from baseline to 6-yr follow-up. In addition, depressive symptoms increased from 2-yr to 6-yr follow-up, $t(134) = 2.97$, $p < .01$, and functional disability increased from baseline to 4-yr follow-up, $t(134) = 2.74$, $p < .01$.

Predictors of Changes in Depressive Symptomatology

To test the hypothesis that goal disengagement capacities and functional disability would predict changes in depressive symptoms, we performed a hierarchical regression analysis, using 6-yr levels of depressive symptoms as the outcome variable. In order to operationalize change in depressive symptomatology, the first step controlled the analysis for baseline levels of depressive symptoms. In the second step of the analysis, we included the main effects of participants' baseline levels of goal disengagement capacities, goal reengagement capacities, and baseline, 2-yr, 4-yr, and 6-yr levels of functional disability. In the final step of the analysis, we tested the interactions between

goal disengagement and functional disability (separately for baseline, 2-yr, 4-yr, and 6-yr levels), and between goal reengagement and functional disability (separately for baseline, 2-yr, 4-yr, and 6-yr levels) for significance. The analysis was statistically controlled for age, sex, and socioeconomic status, and predictor variables were centered prior to the analysis.[1]

The results of the main effects and interaction effects are presented in Table 3. Baseline levels of depressive symptoms were significantly and positively associated with 6-yr levels of depressive symptoms, $F(1, 133) = 62.62$, $p < .01$. None of the sociodemographic characteristics were significantly associated with 6-yr changes in depressive symptoms, Fs$(1, 130) < 1.45$, ps $> .23$. In support of our hypothesis, baseline levels of goal disengagement capacities (but not goal reengagement capacities) were significantly associated with 6-yr changes in depressive symptoms, $F(1, 124) = 14.81$, $p < .01$. Participants with poor goal disengagement capacities experienced larger increases in depressive symptoms over time than those who were able to disengage from unattainable goals. In addition, 4-yr levels of functional disability significantly predicted increases in depressive symptoms, $F(1, 124) = 5.09$, $p = .03$. The main effects of baseline, 2-yr, and 6-yr functional disability were not significant in the multivariate approach, Fs$(1, 124) < 2.05$, ps $> .15$. Of importance, the final step of the analysis demonstrated significant interaction effects between baseline levels of goal disengagement capacities and 2-yr, 4-yr, and 6-yr levels of functional disability in predicting changes in depressive symptoms, Fs$(1, 123) > 4.39$, ps $< .04$. There was no significant interaction effect between goal disengagement capacities and baseline functional disability, and goal reengagement capacities did not interact with any of the

Table 3

Hierarchical Regression Analysis Predicting Six-Year Changes in Depressive Symptoms by Baseline Levels of Goal Disengagement and Goal Reengagement Capacities, and Baseline, Two-Year, Four-Year, and Six-Year Levels of Functional Disability.

	Six-year levels of depressive symptoms	
Predictors	R^2	Beta
Baseline levels of depressive symptoms	.32**	.57**
Main effects	.15**	
Baseline goal disengagement (GD)	.06**	-.26**
Baseline goal reengagement (GR)	.01	-.10
Baseline functional disability	.00	-.03
Two-year functional disability	.00	.02
Four-year functional disability	.02*	.20*
Six-year functional disability	.00	.09
Significant interactions		
GD X Two-year functional disability	.02*	-.15*
GD X Four-year functional disability	.02*	-.16*
GD X Six-year functional disability	.02*	-.15*

Note. Main effects and interactions were controlled for age, sex, and socioeconomic status. * $p < .05$; ** $p < .01$.

functional disability indicators in predicting changes in depressive symptoms, *F*s(1, 123) < 2.14, *p*s > .14.

Simple slope analyses (Aiken & West, 1991) of the three significant interaction effects showed a highly similar pattern of findings. In support of our hypotheses, baseline goal disengagement capacities were stronger predictors of fewer 6-yr increases in depressive symptoms among participants who experienced heightened functional disability at 2-yr, 4-yr, or 6-yr follow-up (βs = -.44 to -.49, *p*s < 01), as compared to participants who did not experience increased functional disability at the follow-ups (βs = -.10 to -.11, *p*s > .24). Because of the similarity of these interactions, and because the three interaction effects were partially correlated with each other, we repeated our analysis by using a composite score of functional disability levels across 2-yr, 4-yr, and 6-yr follow-up, which represented the averaged levels of functional disability experienced after baseline. The analysis confirmed that this functional disability composite score was also significantly associated with 6-yr changes in depressive symptoms, $F(1,126) = 8.26$, $\beta = .26$, $R^2 = .03$, $p < .01$, and interacted with goal disengagement capacities in predicting 6-yr changes in depressive symptoms, $F(1, 125) = 6.69$, $\beta = -.17$, $R^2 = .03$, $p = .01$.

Figure 2 illustrates the latter interaction effect. We plotted the association between averaged functional disability across follow-ups (1 SD above and below the sample mean) and 6-yr changes in depressive symptoms separately for participants who had high (+1 SD) and low (-1 SD) baseline levels of goal disengagement capacities. The obtained pattern of results shows that the largest 6-yr increases in depressive symptoms were found among participants who experienced heightened functional disability across

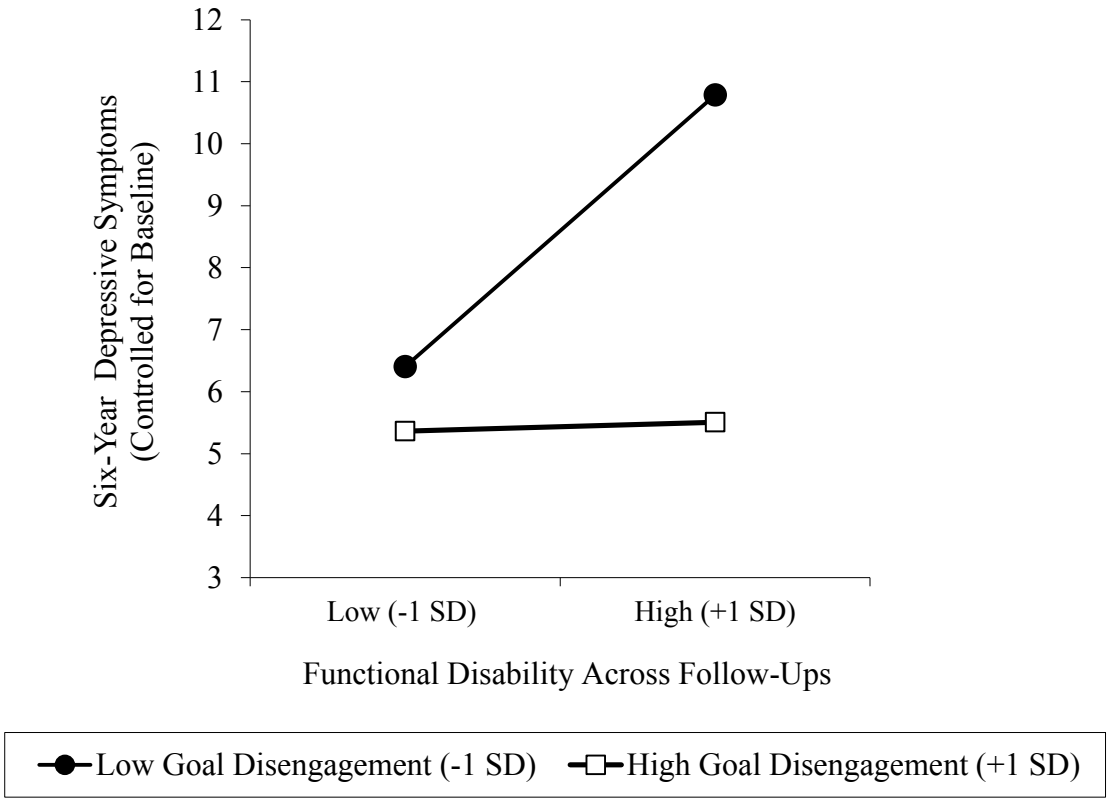

Figure 2 Associations between functional disability (averaged across two-year, four-year, and six-year follow-up) and six-year changes in depressive symptoms, separately for participants who had low (-1 SD) and high (+1 SD) baseline levels of goal disengagement capacities.

follow-ups and had poor goal disengagement capacities. By contrast, depressive symptoms were fairly stable over time among participants with less functional disability across follow-ups, and among participants who experienced heightened functional disability but were able to disengage from unattainable goals.

Analyses of the simple slopes confirmed this interpretation of the data by documenting that heightened functional disability over follow-ups predicted 6-yr increases in depressive symptoms among participants who had poor goal disengagement capacities, $\beta = .41$, $p < .01$, but not among participants who were able to disengage from unattainable goals, $\beta = .01$, $p = .92$. By contrast, difficulty with goal disengagement was associated with 6-yr increases of depressive symptoms among participants who experienced heightened functional disability across follow-ups, $\beta = -.50$, $p < .01$, but not among their counterparts who experienced less functional disability, $\beta = -.10$, $p = .30$. Note that all analyses controlled for baseline levels of functional disability, which implies that heightened functional disability over follow-ups represented increases in functional disability. Thus, the reported pattern of findings suggests that goal disengagement capacities can protect older adults from experiencing elevated levels of depressive symptomatology when they are confronted with increases in functional disability.

Discussion

The present study examined whether goal disengagement capacities can ameliorate depressive symptomatology if older adults experience functional disability. The reported results strongly support this hypothesis. Over six years, older adults showed parallel increases in functional disability and depressive symptoms. However, an association between these constructs was observed only among older adults who had

difficulty disengaging from unattainable goals, and not among their counterparts who were able to abandon unattainable goals. In particular, 6-yr increases in depressive symptoms appeared among participants who had poor goal disengagement capacities and experienced heightened levels of functional disability at 2-yr, 4-yr, or 6-yr follow-up, independent of baseline levels. This pattern of results implies that increases in functional disability contributed to subsequently elevated levels of depressive symptoms if individuals were not able to disengage from unattainable goals.

These findings are consistent with theory and research suggesting that the emergence of functional disability can constrain older adults' valued activities and goals, which is likely to result in a loss of control and depressive symptoms (Lenze et al., 2001). In addition, the results from this study support research documenting that goal disengagement can reduce the experience of negative mood among individuals who encounter unattainable goals (Brandtstädter & Renner, 1990; Heckhausen et al., 2010; Wrosch et al., 2007a, 2011; Wrosch & Miller, 2009). Thus, when confronted with functional disability, the general ability to withdraw effort and commitment from goals that have become unattainable can help protect older adults from experiencing the adverse consequences on their emotional well-being. However, if older adults continue pursuing such goals, they may experience accumulated failure and subsequent increases in depressive symptoms. We note that although the effect sizes of goal disengagement were not particularly large (6% for the main effect and 3% for the interaction), the obtained results could be clinically meaningful in certain subgroups. Specifically, the average six-year levels of depressive symptoms observed among participants with heightened functional disability and poor goal disengagement capacities reached the

recommended cut-off point for mild depression that has been established by previous research (i.e., CES-D10 ≥ 10; Andresen et al., 1994, see also Figure 2).

This study's findings further showed that goal reengagement capacities were generally associated with lower levels of depressive symptoms (see Table 1). However, goal reengagement capacities did not protect older adults with functional disability against increases in depressive symptomatology. These findings imply that while goal reengagement capacities can be generally associated with low depressive symptoms, they are not conducive to ameliorating the adverse emotional consequences of specific health threats. This may happen because goal reengagement facilitates the pursuit of a variety of alternative goals, and does not necessarily help an individual to cope directly with the negative emotions that derive from specific lost activities. For example, adopting certain new goals could also deplete a person's resources and lead to failure and negative mood in the context of functional disability (e.g., starting a laborious new garden project or pursuing travel plans), while other new goals could positively influence a person's quality of life and reduce levels of depressive symptoms (e.g., getting help from other people or improving personal relationships). This implies that there may be a trade-off that comes with the pursuit of new goals (cf. Wrosch et al., 2011), and that individuals who confront stressors and easily engage in new goals could become stretched too thin. These possibilities may explain why general goal reengagement capacities did not predict increases in depressive symptoms and is consistent with previous research that has rarely associated goal reengagement with negative mood (Wrosch et al., 2007a, Wrosch & Miller, 2009).

Overall, the study's findings have important implications for theory and research

in the area of aging and health. First, they substantiate the existing cross-sectional literature, which documents that goal disengagement can be associated with fewer depressive symptoms if older adults confront functional disability (Boerner, 2004; Brandtstädter et al., 1993; Schmitz et al., 1996). However, given that negative mood can also influence how individuals cope with stressors (Thompson et al., 2011; Wrosch & Miller, 2009), previous cross-sectional research cannot provide any conclusions about the direction of effects or the processes at work. Our research overcomes this limitation by demonstrating in longitudinal analyses that goal disengagement capacities ameliorated the impact of heightened functional disability on long-term increases in depressive symptoms.

Second, we think it is important that our study observed reliable increases in levels of depressive symptomatology over six years of study. There is much evidence from the life-span developmental literature indicating that older adults do not experience increases in negative mood (Carstensen, Isaacowitz, & Charles, 1999; Charles, Reynolds, & Gatz, 2001; Kunzmann, Little, & Smith, 2000). However, other longitudinal studies have shown that depressive mood can be elevated in older adulthood (Roberts, Lee, & Roberts, 1991; Rothermund & Brandtstädter, 2003; Wallace & O'Hara, 1992). Our findings support the latter set of studies by demonstrating that depressive symptoms increase in old age, and that this effect is associated with heightened levels of functional disability. In addition, our findings show that high levels of depressive symptoms can be avoided if older adults are able to disengage from unattainable goals. While this pattern of findings supports theory and research documenting that effective self-regulation and emotion regulation can prevent age-related declines in subjective well-being

(Brandtstädter & Renner, 1990; Carstensen et al., 1999; Heckhausen et al., 2010), it also suggests that there is a particularly vulnerable group of older adults who experience age-related challenges and are unable to cope effectively with these problems. Given that goal disengagement and functional disability were largely uncorrelated in our study (see Table 1), this group of vulnerable individuals may actually be quite substantial and could consist of up to 50% of older adults suffering from functional disability. These older adults are at a high risk of experiencing depressive symptomatology and should receive more attention in future research.

Third, the identification of goal disengagement as a mechanism that can prevent the adverse effect of functional disability on older adults' depressive symptoms could have important implications for a variety of health-related outcomes. In particular, depressive symptoms have been shown to dysregulate biological processes in the hormonal and immune systems (e.g., cortisol and systemic inflammation), and to contribute to health declines and mortality (Deuschle et al., 1997; Lenze et al., 2001; Schulz et al., 2000). Given that research has linked goal disengagement capacities to lower cortisol output, less C-reactive protein, and fewer physical health problems (Miller & Wrosch, 2007; Wrosch et al., 2007a), we argue that goal disengagement capacities could also help prevent the consequences of functional disability and depressive symptoms on older adults' physical health.

Finally, we note that there is only little empirical evidence that can be used to assist older adults in managing functional disability (Gitlin, Hauck, Winter, Dennis, & Schulz, 2006). However, the findings from our study may inform research that is designed to help older adults cope with functional disability. In particular, we suggest

that clinical interventions could target the withdrawal of goal commitment during challenging life circumstances, which could subsequently facilitate an improvement of older adults' quality of life.

Limitations and Future Research

Although the findings of this study support our hypotheses, there are limitations that need to be addressed in future research. First, our analyses were based on self-report measures, and the associations between them could be inflated to some degree by common method variance. In addition, there may be other personality variables, such as neuroticism or optimism, which could be associated with goal disengagement capacities and explain the obtained effects. In this regard, we note that our study included measures of neuroticism and dispositional optimism, and all reported effects remained significant if these constructs were included as covariates into the analyses. In addition, our longitudinal analyses controlled for previous levels of the outcome variable, which is likely to partial out some of the potential biases of self-reports. Nonetheless, future research should substantiate the study's findings by examining a wider range of personality variables, and using clinician-derived measures of depressive symptomatology and physician-based measures of functional disability.

Second, we measured participants' general capacities to adjust to unattainable goals and did not assess their specific goals. We focused our analysis on general goal adjustment capacities because functional disability is likely to constrain the pursuit of self-relevant goals across several different life domains. However, as discussed previously, the effects of goal reengagement capacities may depend on the specific type of new goals that they foster, which could either ameliorate or increase emotional distress

in stressful life circumstances (cf. Wrosch et al., 2011). Thus, future research should extend our approach by examining both individuals' general self-regulation capacities and how they adopt and abandon specific goals. Such research may also examine whether goal reengagement capacities can influence the effects of goal disengagement. While subsequent analyses of our data did not confirm a significant interaction between goal disengagement and goal reengagement in predicting changes in depressive symptoms, we would expect that the emotional benefits of goal disengagement could be enhanced if goal reengagement fosters the adoption of adaptive new goals. However, these benefits may be compromised if individuals cannot reengage in new goals, or if goal reengagement leads to the pursuit of new goals that increase an older adult's burden.

Finally, our analysis did not examine the role of chronic disease in the reported associations, or other factors that can be influenced by depressive mood. In this regard, it would be possible that underlying chronic illness could have made it more difficult for participants to disengage from unattainable goals and produced increases in functional disability and depressive symptoms. Subsequently conducted analyses suggest that this alternative possibility is unlikely to explain the observed pattern of findings, as the reported effects remained significant if we additionally controlled our analyses for prevalent chronic disease at baseline (e.g., heart problems, cancer, or arthritis). In addition, it is possible that levels of depressive symptoms could trigger a cascade of biological processes that subsequently influence risk for morbidity and mortality (Kiecolt-Glaser & Glaser, 2002; Schulz et al., 2000). We therefore suggest that future research should conduct long-term follow-ups to examine how older adults can regulate age-related challenges and protect their psychological and physical health.

Footnotes

1. Age, sex, and SES were controlled for in the analysis by entering these covariates into the second step of the regression analysis (all Rs < .01, βs < .09).

CHAPTER 4:

STUDY 2

Specific goal adjustment strategies in older adults with functional disability: Mediating role in the association between general goal adjustment capacities and depressive symptoms

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Running head: Goal adjustment and functional disability
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Abstract

Objectives. This study developed and validated a new research tool that measures the specific ADL-related goal adjustment strategies of older adults with functional disability. It was hypothesized that the association between general goal adjustment capacities and depressive symptoms would be mediated by ADL-specific goal adjustment strategies. **Methods.** The ADL-GAS was administered to 75 community-dwelling older adults with functional disability, and to 60 older adults without functional disability. Self-reports of general goal adjustment capacities, control strategies, and subjective well-being were also collected at the time of the questionnaire. **Results.** The ADL-GAS produced two factors associated with *psychological disengagement* and *compensatory reengagement.* The scale exhibited good internal consistency, as well as concurrent and convergent validity among older adults with functional disability. Further, the use of different specific ADL-related goal adjustment strategies partially mediated the associations between general goal adjustment capacities and depressive symptoms. **Conclusion.** General goal adjustment capacities can exert both direct and indirect effects on depressive symptoms by fostering the use of specific strategies among older adults with functional disability.

KEY WORDS: functional disability; depressive symptoms; goal adjustment; older adulthood

Abbreviations: ADL = activities of daily living; ADL-GAS = *Activities of Daily Living – Goal Adjustment Scale*.

Specific Goal Adjustment Strategies in Older Adults with Functional Disability: Mediating Role in the Association between General Goal Adjustment Capacities and Depressive Symptoms

Theory and research suggest that functional health declines in later adulthood can impede individuals' ability to accomplish personal goals, and lead to depressive symptomatology through a loss of autonomy and control, and repeated failure experiences. Such effects could be avoided if older adults engage in adaptive self-regulation and adjust to the experience of unattainable goals (Brandtstädter & Renner, 1990; Brandtstädter, Wentura, & Greve, 1993; Heckhausen & Schulz, 1995; Heckhausen, Wrosch, & Schulz, 2010; Wrosch, Scheier, Miller, Schulz, & Carver, 2003b). Research further suggests that general goal adjustment capacities may lead to both adaptive and maladaptive outcomes depending on the specific behavioral and cognitive responses that they foster (Wrosch, Amir, & Miller, 2011). However, research has yet to investigate whether general goal adjustment capacities can contribute to how older adults cope with functional disability, and whether the use of such specific strategies may mediate ensuing levels of subjective well-being.

Drawing from previous work on control strategies and goal adjustment (Wrosch, Schulz, & Heckhausen, 2001; Wrosch et al., 2003b), this research describes the development and psychometric properties of a scale that measures specific coping with functional disability through the use of goal disengagement and goal reengagement strategies. In addition, it examines in cross-sectional mediation analyses whether specific coping strategies can be activated as a function of general goal adjustment capacities, and whether these strategies are functionally associated with older adults' depressive

symptoms. We expected that general goal adjustment capacities would predict lower levels of depressive symptoms by facilitating coping with functional disability.

Functional Disability, Depressive Symptoms, and Goal Adjustment Capacities

As individuals age, they become more vulnerable to illness and chronic health problems (e.g., diabetes, vision problems) which can contribute to functional disability. Functional disability refers to impairments or restrictions in individuals' abilities to accomplish daily goals related to activities of daily living (ADLs), and encompass the basic (e.g., eating, walking around the home) and instrumental (e.g., paying the bills, using the phone) requirements for independence and optimal quality of life among older adults (Badger & Collins-Joyce, 2000; Mendes de Leon et al., 1999). The inability to accomplish long-term life aspirations or short-term ADL-related goals due to the presence of functional disability can lead to feelings of failure and loss of control (Lenze et al., 2001), and subsequently increase older adults' risk for late-life depression and poor subjective well-being if they are unable to adaptively cope with these health problems (e.g., Alexopoulos et al., 1996; Bruce, Seeman, Merrill, & Blazer, 1994; Kosloski, Stull, Kercher, & Van Dussen, 2005; Williamson & Schulz, 1995; Yang & George, 2005; Zeiss, Lewinsohn, Rohde, & Seeley, 1996).

Theory and research have suggested that one way in which individuals tend to manage problems that threaten goal pursuit is to adjust to unattainable goals (Brandtstädter & Renner, 1990; Brandtstädter et al., 1993; Heckhausen & Schulz, 1995; Heckhausen et al., 2010; Wrosch et al., 2003b). Based on a proposed model of goal adjustment (Wrosch, Miller, Scheier, & Brun de Pontet, 2007a; Wrosch Scheier, Carver, & Schulz, 2003a; Wrosch et al., 2003b) two separate processes involving goal

disengagement and goal reengagement are involved in the adaptive adjustment to unattainable goals. Goal disengagement capacities include the general tendency of an individual to withdraw effort and psychological commitment from goals that are no longer attainable (Wrosch et al., 2003a, 2003b, 2007a). In the context of functional disability, an older adult who can disengage from long-term aspirations (e.g., travelling abroad) or short-term ADL-related daily tasks (e.g., doing one's own grocery shopping) may be able to avoid repeated failure experiences and the associated distress of being unable to reach these goals, and can free up resources to engage in the pursuit of other meaningful goals. In support of these ideas, research has found that goal disengagement capacities generally reduce levels of negative emotions (I. Bauer, 2004; Wrosch et al., 2003b, 2007a), and can contribute to less negative affect and fewer depressive symptoms in populations facing specific stressors that can impair goal attainment (e.g., HIV diagnosis, infertility, cancer, caregiving; Heckhausen, Wrosch, & Fleeson, 2001; Kraaij et al., 2008; Kraaij, Garnefski, & Schroevers, 2009; Wrosch & Sabiston, in press; Wrosch et al., 2003b, 2011).

Goal reengagement capacities involve the ability to identify and actively engage in other goals when a goal has become unattainable (Wrosch et al., 2003b, 2007a). For older adults whose functional disability has made some goals unattainable, the ability to invest time and energy into pursuing alternative and realistic long-term goals (e.g., locally-based tours of their own city instead of travelling abroad) or engaging in modified ADL-related goals (e.g., having their groceries delivered in place of shopping independently) may help maintain a sense of purpose in life and avoid thoughts of failure. Research on goal reengagement has predominantly shown associations with increases in

positive emotions (I. Bauer, 2004; Wrosch & Sabiston, in press; Wrosch et al., 2007a); however, some research has found that, at times, goal reengagement can alleviate negative emotions if it reduces thoughts about being unable to attain important goals (Wrosch et al., 2003b), and can lead to both positive and negative emotions in populations facing specific stressors (e.g., HIV positive men Kraaij et al., 2008; individuals with cancer, Schroevers, Kraaij, & Garnefski, 2008). Importantly, whether goal reengagement reduces psychological distress may depend on whether individuals spread their personal resources too thin by reengaging in too many, or maladaptive, pursuits (Wrosch et al., 2011).

Recent research focusing on the role of goal adjustment capacities in the context of functional disability stressors has identified individuals with functional disability as a group of older adults who are particularly vulnerable to the subsequent development of depression, but only if they are unable to effectively manage these constraints by adjusting to unattainable goals (Dunne, Wrosch, & Miller, 2011). Specifically, findings from this study showed that the ability to disengage from unattainable goals can buffer the effect of heightened functional disability on depressive symptomatology over time. In this study, older adults who were experiencing functional disability but were unable to let go of unattainable goals reported significant increases in depressive symptoms across six years. By contrast, older adults who experienced functional disability but were able to disengage from unattainable goals had relatively stable depressive symptomatology scores that were similar to those found among older adults without functional disability. Individuals' abilities to reengage in new, attainable goals showed a general, cross-sectional association with lower levels of depressive symptoms, but did not prevent the

experience of increased depressive symptoms over time for older adults with functional disability.

Other cross-sectional research supports these findings by documenting the adaptive role of goal adjustment in the management of functional disability problems. Although this research did not differentiate the effects of goal disengagement and goal reengagement capacities on measures of well-being, results showed that older adults with functional disability who were able to flexibly adjust to unattainable goals (i.e., disengage, accept, and reorient) experienced lower levels of depressive symptoms than those who were unable to adjust (Boerner, 2004; Brandtstädter et al., 1993; Schmitz, Saile, & Nilges, 1996). Thus, when goals are threatened by the presence of functional disability, the ability to adjust to these goals through processes of disengagement, acceptance, and reengagement may protect older adults from experiencing the negative emotional consequences of stunted goal progress.

However, while theory and research support the idea of the adaptive function of goal adjustment capacities in the management of functional disability, research has yet to identify *how* these general goal adjustment capacities can influence older adults' emotional well-being. In fact, extant research that has provided evidence for the emotional benefits of goal adjustment among older adults with functional disability did not examine the pathways through which general goal adjustment capacities can affect well-being (Boerner, 2004; Brandtstädter et al., 1993; Dunne et al., 2011; Schmitz et al., 1996). While it is possible that general goal adjustment capacities may ameliorate distress through the direct emotional benefits derived from avoiding repeated failure and maintaining purpose in life, it is also possible that the beneficial effects of goal

adjustment capacities are due to specific cognitive and behavioral processes that foster emotional adjustment to a stressor (Wrosch et al., 2011). Such processes may occur if older individuals' general goal adjustment capacities trigger cognitive and behavioral processes that foster the abandonment of specific unattainable goals (e.g., reduction of effort or acceptance). These processes may also free up resources that can be invested in pursuing other aspects related to goals that can still be managed by the investment of time and energy.

Processes Involved in the Adaptive Self-Regulation of Specific Goals

Several theories of adaptive self-regulation have been proposed to describe how individuals can adapt to specific problems across the lifespan and manage the experience of goal constraints. These theories can help shed light on the processes involved in the adjustment to unattainable ADL-related goals (e.g., Baltes & Baltes, 1990; Carver & Scheier, 1990; Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996). According to the motivational theory of lifespan development, when faced with problems that threaten goal pursuit, individuals can maintain subjective well-being by engaging in two different general categories of self-regulatory behaviors that are aimed at reducing the discrepancy between their actual and desired state (Heckhausen & Schulz, 1995; Heckhausen et al., 2010). Specifically, individuals may strive to maintain control by either actively making progress towards a goal (i.e., goal engagement), or by engaging in self-protective cognitive processes aimed at reducing feelings of failure and freeing up resources to engage in other meaningful goals (i.e., goal disengagement) (see also Brandtstädter & Rothermund, 2002; Carver & Scheier, 1990; Rothbaum, Weisz, & Snyder, 1982).

According the motivational theory of lifespan development, the adaptive value of

each process is dependent on the opportunities available to the individual in overcoming the difficulties they face, and on the resources available to them (Heckhausen & Schulz, 1995; Heckhausen et al., 2010; Wrosch, 2010; Wrosch, Dunne, Scheier, Schulz, 2006; Wrosch & Heckhausen, 1999*).* In the context of health challenges, individuals may seek to engage in active processes aimed at facilitating goal attainment if they feel that they can still make progress towards the fulfillment of a goal within the constraints of their health problems. Research examining active control behaviors aimed at overcoming health threats (i.e., *health engagement control strategies* or HECS) has shown that investing time and energy (selective primary control), seeking aid from others (compensatory primary control), and increasing motivational resources (selective secondary control) can buffer the effect of acute physical health problems on depressive symptoms and contribute to lower levels of depressive symptoms over time (Wrosch, Schulz, & Heckhausen, 2002, 2004; Wrosch, Schulz, Miller, Lupien, & Dunne, 2007b).

However, research has also suggested that control strategies aimed at active goal engagement may be beneficial in the context of acute health problems, but may be detrimental when confronting more permanent and uncontrollable health constraints such as functional disability (Hall, Chipperfield, Heckhausen, & Perry, 2010; Wrosch et al., 2002, 2007b). Thus, in the context of functional disability, a shift from active goal attainment processes to processes aimed at minimizing losses through the adjustment of expectations and goals (compensatory secondary control or CSC) may be necessary in order to maintain emotional well-being (Brandtstädter & Rothermund, 2002; Chipperfield, Perry, & Menec, 1999; Rothermund et al., 1982).

In this way, general goal disengagement capacities may ameliorate the experience

of depressive symptoms in older adults with functional disability if they foster the adoption of coping processes aimed at psychologically disengaging from specific ADL-related goals. Such processes would involve increasing feelings of acceptance and decreasing thoughts of failure (Brandtstädter & Renner, 1990; Heckhausen & Schulz, 1995; Heckhausen et al., 2010; Wrosch et al., 2003a, 2003b, 2007a). Conversely, while processes aimed at the active pursuit of some goals constrained by functional disability may contribute to emotional distress, it is also possible that the reengagement in other ADL-related goals could benefit the individual. In such instances, general goal reengagement capacities could foster the development of processes aimed at both the acceptance of limitations, and at active control processes that promote the pursuit attainable ADL-related goals. In this way, general goal reengagement capacities may help in the management of ADL-related goals, and could positively influence quality of life and reduce levels of distress, for example, by eliciting help from others, or discovering alternative ways to accomplish tasks. Despite these potential benefits, however, it is also possible that general goal reengagement capacities may promote the active pursuit of other goals that stretch individuals' resources too thin (e.g., traveling) and prevent them from adaptively coping with emerging ADL threats and associated emotional problems.

The previous discussion suggests that it is important for research to examine how general goal adjustment capacities may contribute to specific strategies aimed at managing ADL-related goals. In particular, it is unclear whether general goal disengagement capacities can facilitate the psychological disengagement from ADL-related goals in order to reduce negative emotions. In addition, it is important for research to ascertain whether general goal reengagement capacities can help individuals identify

the specific types of goals that are adaptive to reengage in when confronted with such stressors. Determining whether general goal adjustment capacities can promote the adoption of specific goal adjustment strategies in the context of functional disability may provide insight into how general goal adjustment capacities influence emotional well-being. In addition, this line of research could also help to explain previous findings that highlight the differential effects of goal disengagement and goal reengagement capacities on indicators of well-being (e.g., I. Bauer, 2004; Dunne et al., 2011; Wrosch et al., 2007a).

Goal Adjustment Capacities and the Adoption of Specific Coping Processes

Recent research has lent support to the idea that general goal adjustment capacities can foster specific types of coping responses and behaviors (Wrosch & Sabiston, in press; Wrosch et al., 2011). In a study examining general goal adjustment capacities and the specific coping processes involved in the management of caregiver-related stressors, general goal disengagement capacities were found to contribute to adaptive coping processes (e.g., less self-blame, lower substance use) that promoted subjective well-being (e.g., depressive symptoms). Results further showed that individuals' general goal reengagement capacities fostered both adaptive (e.g., positive reframing) and maladaptive (e.g., venting, self-distraction) coping responses (Wrosch et al., 2011). Other research has shown that general goal reengagement capacities can lead to adaptive outcomes through active coping processes when stressors can be addressed. In a sample of breast cancer survivors, general goal reengagement capacities were shown to facilitate levels of physical activity, which subsequently exerted beneficial effects on levels of positive affect and physical health symptoms (Wrosch & Sabiston, in press).

The results of these studies indicate that while active coping processes can promote well-being when individuals are confronted with manageable stressors, internally-focused cognitive coping strategies may facilitate adaptive outcomes in the context of chronic stressors that cannot be overcome.

Based on a model of primary versus compensatory secondary control, other research has examined specific strategies aimed at the management of restricted activities (e.g., completing important projects related to work; performing day-to-day tasks around the house) in the context of health-induced constraints (Chipperfield et al., 1999, Chipperfield, Perry, Bailis, Ruthig, & Chuchmach 2007; Chipperfield & Perry, 2006; Hall et al., 2010). Items from this questionnaire focused on primary control strategies (goal engagement through persistence, task modification) and compensatory secondary control strategies (disengagement through downgrading perceived importance; self-protection through positive reappraisal or social comparisons) in the management of daily activity limitations. Results from this line of research indicated that compensatory secondary strategies promoted better health and hospital outcomes for those participants with chronic problems, women, and higher age (> 80 years old). By contrast, active primary control strategies contributed to better survival and hospital outcomes primarily for participants with acute conditions, men, and young age (< 80 years old) (Chipperfield et al., 1999; Chipperfield & Perry, 2006; Hall et al., 2010).

However, while the measure used in this research sheds some light on how older adults can manage daily activity constraints, it was not developed to define the specific cognitive and behavioral processes that link goal adjustment capacities with emotional outcomes. As a consequence, it may not capture the most likely pathways through which

general goal adjustment capacities can influence specific ADL-related goal adjustment processes. Specifically, in addition to reducing the perceived importance of unattainable goals, goal disengagement may also require individuals to accept that they are unable to attain some of their ADL goals, and to withdraw psychological commitment from these aspirations. Further, while goal reengagement requires active efforts towards goals, in the context of functional disability the successful reengagement in other ADL-related goals may also require a person to use processes associated with secondary control strategies, such as acceptance of limitations and the scaling back of aspirations. In this sense, a new scale is required that builds specifically on the concept of general goal adjustment capacities in order to identify specific ways in which older adults can manage constrained ADL goals, and to illuminate pathways through which general capacities may lead to better well-being in the aging population.

The Present Study

The present research is divided into two parts. The first section of this study describes the development and initial validation of a scale designed to measure specific goal adjustment strategies in the context of functional disability. The *Activities of Daily Living – Goal Adjustment Scale* (ADL-GAS) was derived from past research and theory on the adaptive self-regulation of age-related difficulties. Items on the scale were designed to represent specific ways in which individuals with functional disability can both psychologically disengage from ADL-related goals, and reengage in active compensatory behaviors to maintain functioning. The purpose of the first section of this study was to examine and compare the factor structure and psychometric properties of the ADL-GAS in subsamples of older adults with and without functional disability. Including

a subsample of participants without functional disability allowed us to obtain an important reference group that permitted comparisons in responses between those with and without current functional disability. In addition, as it is likely that most individuals have experienced some form of functional limitation across their lifespan (e.g., broken bones, back problems, chronic migraines; Stineman, Lollar, & Üstün, 2005), we were interested in exploring how participants without current functional disability predicted they would respond to ADL-related problems, and whether these responses were associated with general goal adjustment capacities and subjective well-being.

Construct validity was assessed by determining both the concurrent and convergent validity of the scale. Concurrent validity was established by examining the associations between the ADL-GAS and measures of participants' subjective well-being, while convergent validity was assessed by examining the associations between the scale and other measures of adaptive self-regulation. According to our theoretical model, if the ADL-GAS represents adaptive processes with which individuals can respond to goals constrained by functional disability, we would expect that higher scores on the scale would contribute to better subjective well-being. In addition, as the ADL-GAS was developed to examine specific ways in which older adults with functional disability could cope with constraints on their daily goals, we did not expect that the scale would exhibit strong associations with subjective well-being outcomes in our subsample of older adults without functional disability. Finally, we expected that the ADL-GAS would exhibit positive associations with scales related to goal adjustment processes and control strategies from which the ADL-GAS was derived, and that these associations would be especially apparent for participants with functional disability. While we did not expect

strong associations between these scales for participants without functional disability, we also recognized the possibility that general self-regulatory measures could be related to how these individuals predicted they would cope with functional disability.

The second part of this study examines the cross-sectional associations between general goal adjustment capacities, specific goal adjustment scores on the ADL-GAS, and depressive symptoms among older adults with and without functional disability. As our subsample of participants with functional disability reported difficulties attaining ADL-related goals, we were able to assess how individuals specifically adjust to particular goal constraints. Further, we were able to examine the relationship between general goal adjustment capacities and specific goal-focused adjustment strategies, and to obtain a better understanding of the pathways through which general goal adjustment capacities may impact the subjective well-being of this population. Finally, we were also able to compare the outcomes of participants with functional disability to those of participants without functional disability. We note that we focused on predicting depressive symptomatology, as these symptoms are frequently examined in the context of functional disability, and are often observed among older adults with functional disability (see Lenze et al., 2001). In addition, depressive symptomatology can have adverse future implications on older adults' prospective health problems and mortality (e.g., Schulz et al., 2000).

Based on previous research documenting the beneficial effects of goal disengagement capacities on individuals' subjective well-being, we first hypothesized that higher levels of goal disengagement capacities would be associated with lower levels of depressive symptoms among both subsamples of participants. Although research

documenting the effect of goal reengagement capacities on negative indicators of subjective well-being has been mixed, other work has shown adaptive cross-sectional effects of goal reengagement capacities on depressive symptoms (Dunne et al., 2011; Kraaij et al., 2008; Wrosch et al., 2003b). Consequently, we also expected that higher goal reengagement capacities would be associated with lower levels of participants' depressive symptomatology for all participants.

Second, we expected that general goal adjustment capacities would be associated with the use of specific ADL-related goal adjustment strategies, and that these specific strategies would further exert beneficial cross-sectional effects on participants' levels of depressive symptoms. In this regard, we explored whether the specific goal adjustment strategies on the ADL-GAS would act as mediators and statistically explain the effects of general goal disengagement and goal reengagement capacities on participants' depressive symptomatology. We expected that the items of the ADL-GAS that represented psychological disengagement strategies would mediate the relationship between general goal disengagement capacities and depressive symptoms. In addition, we hypothesized that the items of the ADL-GAS that represented compensatory reengagement strategies would mediate the relationship between general goal reengagement capacities and depressive symptoms. We did not expect to find these associations among participants without functional disability, as we did not anticipate that responses on the ADL-GAS would be strongly related to depressive symptomatology in older adults who were not currently experiencing ADL-related constraints.

Method

Sample

A sample of 135 older adults (60 years or older) was used to establish the psychometric properties of the ADL-GAS. This heterogeneous sample consisted of community-dwelling men and women who participated in the longitudinal *Montreal Aging and Health Study* (MAHS; Wrosch et al., 2007b), and were recruited through advertisement in Montreal newspapers. The ADL-GAS was included in the battery of questionnaires measured at the fourth wave of the MAHS. Participants were invited to complete the questionnaires in the laboratory, or were visited in their homes if they were unable to come to the university. Participants were given $50 upon completion of the questionnaires.

Of the 138 older adults who participated in the fourth wave of the MAHS, two participants were excluded because of missing data on all items of the ADL-GAS, and one further participant was excluded because of missing data on all other measures. All other missing data were replaced by the sample means (*ADL-GAS*: Item 2 = 1 participant; Item 3 = 1 participant; Item 4 = 2 participants; Item 5 = 1 participant; *Subjective Well-Being Measures*: Negative affect = 5 participants; Positive affect = 5 participants; *Goal Adjustment Capacities*: Goal disengagement = 4 participants; Goal reengagement = 4 participants). The 135 participants in the final sample were on average 77.67 years old (*SD* = 5.34, *range* = 63 to 96 years), 51 percent were female, and 38 percent had attained an undergraduate degree or higher. In addition, seventy-five participants (56%) reported functional disability at some point of the MAHS (ADL participants), while 60 participants (44%) reported no functional disability (non-ADL participants) (the demographic characteristics of both groups of participants can be seen in Table 4). Participants with functional disability did not differ significantly from participants

Table 4.

Means (Standard Deviations) and Differences between ADL and Non-ADL Participants' Demographic Characteristics, Subjective Well-being Measures, and Self-Regulatory Measures.

	ADL Participants	Non-ADL Participants	*t*
Demographic Characteristics			
Age	77.84 (5.53)	77.46 (5.28)	.40
% Female	51.35	50.00	.15
% Attained undergraduate degree	35.62	40.35	-.90
% Income < $34,000	63.01	38.60	-2.83**
Perceived SES	5.65 (1.83)	6.63 (1.83)	3.02**
Subjective Well-being Measures			
Depressive Symptoms	8.64 (5.92)	5.32 (3.64)	3.80**
Life Satisfaction	4.63 (1.47)	5.36 (1.26)	-3.02**
Positive Affect	3.15 (.68)	3.42 (.60)	-2.44*
Negative Affect	1.96 (.65)	1.68 (.61)	2.53*
Self-Regulatory Measures			
Goal Disengagement	3.08 (.73)	3.12 (.78)	-.28
Goal Reengagement	3.57 (.62)	3.71 (.68)	-1.18
HECS	2.93 (.69)	3.19 (.62)	-2.29*
CSC	2.90 (.79)	3.04 (.74)	-1.06

Note. * $p < .05$. ** $p < .01$. ADL Participants = participants with functional disability; Non-ADL Participants = participants without functional disability.

without functional disability in terms of age, sex, or schooling, *t*s(132) < .90, *p*s > .36. However, participants with functional disability were more likely to have a lower income and report a lower perceived socioeconomic status, *t*s(132) > 2.96, *p*s < .01.

Materials

Development and description of the Activities of Daily Living – Goal Adjustment Scale.

The *Activities of Daily Living – Goal Adjustment Scale* (ADL-GAS) was developed to measure individuals' abilities to adjust specific ADL-related goals when confronted with functional restrictions. Based on theories of adaptive self-regulation and research examining the adjustment to unattainable goals, core aspects of the disengagement from ADL-related goals, and the reengagement in compensatory strategies towards ADL goals were identified and used to develop the items of the scale. While these aspects could be broadly classified as either psychological (relinquishment of commitment, acceptance) or behavioral (continued effort, task modification), we also recognized that action-focused reengagement processes may require psychological acceptance to be adaptive, and developed items that represented the different components of these constructs.

Specific disengagement strategies were conceptualized as processes aimed at psychological acceptance, and the relinquishment of commitment to ADL-related goals when confronted with functional disability. In this way, *psychological disengagement* includes attempts by the individual to reduce the effects of loss and failure, and increase a sense of personal control when they are unable to accomplish ADL-related goals (Chipperfield et al., 1999; Heckhausen & Schulz, 1995; Wrosch et al., 2003a, 2003b). The concept of *psychological disengagement* was derived from theory and research

related to the adaptive benefits of compensatory secondary control strategies (Chipperfield et al., 1999; Heckhausen & Schulz, 1995) and accommodative processes (Brandtstädter & Rothermund, 2002) aimed at the acceptance of limited personal resources in older adults with goal constraints. In addition, items were derived from the *Goal Adjustment Scale* (Wrosch et al., 2003b), which includes measures of individuals' general capacities to disengage from unattainable goals. Items representing *psychological disengagement* included acceptance by an individual that they could no longer accomplish ADL-related goals as well as in the past [item 1: *It's hard for me to accept that I can no longer perform some activities as well as I used to* (-)], and a withdrawal of psychological commitment from accomplishing ADLs when they are no longer attainable [item 3: *I can't stop thinking about how well I used to do these activities in the past; I can't let it go* (-)].

Specific reengagement strategies were conceptualized as behavioral processes aimed at the reengagement in ADL-related goals through the acceptance of goal constraints or task modification. Thus, *compensatory reengagement* strategies include attempts by the individual to maintain perceived control and autonomy, and to avoid the negative emotional consequences of goal failure when confronted with functional disability. Items representing *compensatory reengagement* were based on the concept of general goal reengagement capacities (Wrosch et al., 2003b), and integrated components of primary control strategies (Heckhausen & Schulz, 1995) and compensatory measures (Baltes & Baltes, 1990). In addition, previous scales developed to measure active engagement processes related to accomplishing ADLs included items aimed at continued exertion of effort, active persistence, and task modification (Chipperfield et al., 1999,

2007; Chipperfield & Perry, 2006; Hall et al., 2010). Drawing from these items, we adapted our scale to additionally integrate aspects of compensatory secondary strategies related to the acceptance of goal constraints in order to reengage in ADL-related goals through the recognition of limitations, and the modification of expectations, behaviors, and task demands. In this regard, the *compensatory reengagement* in ADL-related goals may be adaptive if individuals continue to strive towards accomplishing ADLs while acknowledging that they may not be able to complete these tasks as well as they did in the past (item 5: *Although I'll never be as good at these activities as I used to be, I keep trying to do the best I can*). In addition, older adults may use compensatory strategies to facilitate the reengagement in ADL-related goals through acceptance and consequent task modification. We identified three ways in which individuals may reengage in ADL-related goals through task modification processes, which included: a) reducing the demands of the task (item 2: *I try to scale back on some activities, and accomplish as much as I still can*); b) taking more time to complete the task (item 4: *I take all the time I need to do these activities, even if it takes much longer*); or, c) using aids or other methods to accomplish the task (item 6: *If I can't do one of these activities, I try to find new ways to get it done*). Compensatory reengagement in modified ADL goals may help individuals preserve feelings of autonomy and control, while acceptance that some ADL tasks may not be accomplished with the same ease as before can help individuals circumvent feelings of failure.

The final version of the ADL-GAS consisted of six items. Two items on the scale represented *psychological disengagement* strategies, while four items represented *compensatory reengagement* strategies. Individuals were instructed to reflect on the

activities that they were no longer able to perform due to a functional disability, and report how they typically react to such situations. If an individual was not experiencing functional disability, they were asked to reflect on how they thought they would react if they encountered such problems (see Appendix F for full questionnaire and specific instructions). Responses to the items were measured on 5-point Likert-type scales, ranging from 1 = *strongly disagree*, to 5 = *strongly agree*. All *psychological disengagement* items were framed in a negative direction and, upon analyses, were transformed by being reverse coded so that higher scores represented greater psychological disengagement from the pursuit of ADL-related goals.

Functional Disability. Functional disability status was assessed during each of the four waves of the MAHS (see Appendix D). Participants were interviewed by a research assistant and asked to report if they had difficulty or were unable to carry out each of six basic ADLs (eating, dressing, showering, using the toilet, walking around at home, and getting in and out of a bed or chair) and six instrumental ADLs (heavy housework, light housework, shopping, preparing meals, managing money, and using the phone). Basic and instrumental ADLs were significantly correlated at each wave (rs > .39, ps < .01), and a variable was computed that classified participants as having difficulty performing one or more basic or instrumental ADL during the course of the study (0 = no functional disability; 1 = presence of one or more functional disability).

Additional Measures. Several additional measures were administered at the same time as the ADL-GAS questionnaire. These variables were used to establish both the convergent and concurrent validity of the scale in the first part of this study, and to test the mediation models in the second part of this study. These variables included measures

of participants' subjective well-being that have been associated with adaptive self-regulation in previous studies (i.e., depressive symptoms, negative affect, life satisfaction, positive affect), and measures of participants' general goal adjustment capacities (i.e., goal disengagement, goal reengagement), health engagement control strategies (HECS), and compensatory secondary control strategies (CSC). In addition, sociodemographic variables (age, sex, and socioeconomic status) were assessed. Table 4 shows the descriptive statistics of these variables, separately for participants with and without functional disability.

Depressive symptoms were measured with the 10-item *Center for Epidemiological Studies Depression Scale* (CES-D10) (Andresen, Malmgren, Carter, & Patrick, 1994; see Appendix C). Participants were asked to indicate how often they had felt each of ten depressive symptoms during the past week on 4-point Likert-type scales (0 = *less than one day*, to 3 = *5-7 days*), and a sum score was computed (α = .83). Sample items included: *I felt depressed* or *I could not get "going"*.

Life satisfaction was measured with the *Satisfaction with Life Scale* (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985; see Appendix G). Sample items on this scale included: *I am satisfied with my life* or *In most ways my life is close to ideal*. Participants rated their agreement to five statements on 7-point Likert-type scales (0 = *strongly disagree*, to 6 = *strongly agree)*, with higher scores reflecting greater life satisfaction, and a mean score was calculated (α = .92).

Positive and *negative affect* were assessed by administering the *Positive and Negative Affect Schedule* (PANAS) (Watson, Clark, & Tellegen, 1988; see Appendix H). Participants were asked to indicate the extent to which they experienced ten positive

emotions (e.g., interested, excited, proud) and ten negative emotions (e.g., distressed, upset, ashamed) during the previous year on 5-point Likert-type scales (1 = *very slightly or not at all*, to 5 = *extremely*). A score representing participants' levels of positive affect and negative affect were computed separately by averaging the ten positive emotions (α = .89) and the ten negative emotions (α = .89).

Participants' general *goal adjustment capacities* were measured by administering a previously validated 10-item self-report questionnaire (Miller & Wrosch, 2007; Wrosch & Miller, 2009; Wrosch et al., 2003b, 2007a; see Appendix E). Participants were asked to report how they usually react when they have to stop pursuing important goals that they have set. Four items assessed goal disengagement capacities (e.g., *It's easy for me to stop thinking about the goal and let it go*), and six items measured goal reengagement capacities (e.g., *I put effort towards other meaningful goals*). Participants rated their agreement with these items on 5-point Likert-type scales, ranging from 1 = *strongly disagree*, to 5 = *strongly agree.* Mean scores were computed for goal disengagement (α = .70) and goal reengagement (α = .90) separately, with higher scores representing higher goal adjustment capacities.

Health engagement control strategies (HECS) were measured by administering a previously validated 9-item questionnaire (Wrosch et al., 2002; see Appendix I). The questionnaire measured control strategies aimed at addressing physical health problems (e.g., *If I develop a new health problem, I immediately get help from a health professional (e.g., doctor, nurse)*; *Once I decide what I need to do to improve my health, I avoid things that could distract me from doing these things*). We additionally included three items that were used to measure *compensatory selective control* (CSC; Wrosch,

Miller, & Schulz, 2009), because this type of control strategy is aimed protecting individuals against the negative effects of failure through processes of goal disengagement, such as attributions or positive reappraisals (e.g., *When I am faced with a bad health problem, I try to look at the bright side of things*). Responses were measured on 5-point Likert-type scales, ranging from 0 = *almost never true* to 4 = *almost always true*, and a mean score was computed separately for HECS (α = .88) and CSC strategies (α = .66).

Sociodemographic characteristics included participants' age, sex, and socioeconomic status, and were entered into the analyses as covariates in order to reduce the likelihood of spurious associations (see Appendix B). A global measure of SES was obtained by aggregating the standardized scores of participants': 1) education level (0 = no education, 1 = high school, 2 = collegial or trade school, 3 = bachelor's degree, 4 = masters or doctorate); 2) annual family income (0 = less than $17,000, 1 = up to $34,000, 2 = up to $51,000, 3 = up to $68,000, 4 = up to $85,000, 5 = more than $85,000); and 3) perceived socioeconomic status (measured by asking participants to rate their socioeconomic status relative to others in their society on a 10-rung SES ladder, as described by Adler, Epel, Castellazzo, & Ickovics, 2000). These three measures were correlated with one another in our study (rs > .26, ps < .01).

Data Analyses

Factor Analysis and Internal Consistency. An exploratory factor analysis was used to determine the facture structure of the ADL-GAS scale in each subsample. Prior to conducting the factor analyses, Bartlett's test of sphericity and Kaiser's measure of sampling adequacy were performed to evaluate whether each subsample was appropriate

for factor analytic procedures. Exploratory factor analyses using principal component analysis with oblique (Oblimin) rotation and Kaiser normalization were performed, and the Kaiser-Guttman rule (i.e., retaining factors with Eigenvalues > 1), and Cattell's scree test were used to determine the number of factors. Items with factor loadings greater than .50 were considered to load on a factor. Internal consistency was assessed by Cronbach's alpha coefficients. This procedure was conducted in both subsamples of participants to determine if the scale's factor structure and reliability would differ in populations with and without functional disability.

Concurrent Validity. To examine the concurrent validity of the ADL-GAS, we associated the ADL-GAS with several indicators of participants' subjective well-being that have been associated with adaptive coping in prior research. These measures included depressive symptoms, negative affect, life satisfaction, and positive affect. A series of partial correlations were performed between the ADL-GAS and these measures, controlling for sociodemographics factors (age, sex, and socioeconomic status). We performed these analyses with the subsample of older adults with functional disability, and repeated the analyses with the comparison group of older adults without functional disability.

Convergent Validity. Convergent validity was assessed by conducting a series of partial correlations between the ADL-GAS and participants' scores on other self-regulatory measures associated with goal regulation processes. These measures included participants' goal disengagement capacities, goal reengagement capacities, HECS, and CSC strategies, and all associations were controlled for age, sex, and SES. These analyses were conducted with the subsample of older adults with functional disability,

and were repeated for the subsample of older adults without functional disability.

Mediation Analyses. The hypotheses of the second part of this study were tested by conducting two sets of analyses. Both sets of analyses were carried out by using the subsample of older adults with functional disability, and were repeated with the subsample of older adults without functional disability. In the first set of analyses, we examined whether higher goal adjustment capacities would be associated with lower levels of depressive symptomatology among older adults with functional disability. To test this hypothesis, we conducted two hierarchical regression analyses, using levels of depressive symptoms as the outcome variable. In the first step of the regressions, we controlled for participants' age, sex, and SES, and in the second step we included the main effects of participants' levels of goal disengagement capacities and goal reengagement capacities, separately.[1]

In the second set of analyses, we investigated whether the association between general goal adjustment capacities and depressive symptomatology would be mediated by individuals' specific goal adjustment strategies. This was done by repeating the first set of analyses, and additionally including levels of both ADL-related goal adjustment strategies in the regression models as mediators in the second step. We further conducted bootstrap analyses (Preacher & Hayes, 2008), which examined whether levels of specific goal adjustment (compensatory reengagement, psychological disengagement) would exert a significant indirect effect on the association between goal adjustment capacities (goal disengagement, goal reengagement) and depressive symptoms. Although we included multiple mediation models in our analyses, we were particularly interested in whether the effect of goal disengagement capacities on levels of depressive symptoms

would be mediated by participants' psychological disengagement scores on the ADL-GAS. Similarly, we were interested in determining whether the association between goal reengagement capacities and depressive symptoms would be mediated by participants' compensatory reengagement scores on the ADL-GAS. These analyses were based on 5000 bootstraps and the indirect effects were evaluated as significant if the bias-corrected 95% confidence interval did not cross zero (see Preacher & Hayes, 2008). All analyses were controlled for a number of covariates (i.e., age, sex, and SES), and all predictor variables were standardized prior to conducting both sets of analyses.[2]

Results

The results section is broadly organized into the two separate parts of the study. The first part reports results on the structural and validation analyses of the ADL-GAS scales, and is divided into four subsections. The first of these subsections describes the differences between the functional disability and non-functional disability subsamples, while the second subsection reports the factor structure and internal consistency for the ADL-GAS among both subsamples. The third and fourth subsections examine the concurrent and convergent validity of the ADL-GAS, respectively, among participants with and without functional disability.

The second part of the results section is divided into two subsections that describe the results of the predictive analyses examining whether ADL-related goal adjustment strategies can mediate the associations between general goal adjustment capacities and depressive symptoms. The first subsection reports the findings from the regression analyses, which examine the association between depressive symptoms and general goal disengagement and goal reengagement capacities in both of the subsamples. The second

subsection looks at two mediation models involving the specific goal adjustment factors of the ADL-GAS as potential mediators in the association between general goal adjustment capacities and depressive symptomatology.

Part 1: Factor Structure, Reliability, and Validity of the ADL-GAS

Comparison of Subsamples. Table 4 displays the differences between the scores on subjective well-being measures and self-regulatory measures for participants with and without functional disability. Consistent with previous literature showing that functional disability can contribute to poorer psychological well-being and quality of life, participants with functional disability reported poorer subjective well-being scores on all measures of our study. Specifically, participants with functional disability had higher levels of depressive symptomatology, $t(133) = 3.80$, $p < .01$, and negative affect, $t(133) = 2.53$, $p = .01$, and lower levels of life satisfaction, $t(133) = -3.02$, $p < .01$, and positive affect, $t(133) = -2.44$, $p = .02$, than participants who did not suffer from functional disability. Analyses of the self-regulatory measures showed that there were no significant differences in goal adjustment capacities, CSC strategies, or responses on the ADL-GAS (Table 5) between participants, regardless of their functional disability status, ts$(133) < 1.34$, ps $> .18$. However, participants with functional disability were less likely to use health engagement control strategies compared to participants without functional disability, $t(133) = -2.29$, $p = .02$.

Factor Structure and Internal Consistency. Table 6 shows the zero-order correlations between the six ADL-GAS items for participants with and without functional disability, separately. In preliminary support for a two-factor structure of the scale, items

Table 5. *Item Analyses and Exploratory Factor Analyses of the ADL-GAS by Functional Disability Status: Oblimin Solution with Two Factors.*

	Item Analyses			Exploratory Factor Analysis			
	ADL Participants	Non-ADL Participants		ADL Participants		Non-ADL Participants	
	M (SD)	*M (SD)*	*t*	F1	F2	F1	F2
Factor 1: Compensatory Reengagement							
I try to scale back on some activities, and accomplish as much as I still can	2.60 (1.07)	2.41 (1.17)	.99	**.59**	.09	**.61**	-.15
I take all the time I need to do these activities, even if it takes much longer	2.86 (.89)	2.87 (.83)	-.02	**.74**	-.14	**.70**	-.18
Although I'll never be as good at these activities as I used to be, I keep trying to do the best I can	3.17 (.76)	3.00 (.71)	1.34	**.71**	-.03	**.76**	-.10
If I can't do one of these activities, I try to find new ways to get it done	2.88 (.93)	2.87 (1.00)	.08	**.76**	.15	**.77**	.10
Factor 2: Psychological Disengagement							
It's hard for me to accept that I can no longer perform some activities as well as I used to	1.79 (1.19)	1.97 (1.26)	-.85	.02	**.88**	-.20	**.89**
I can't stop thinking about how well I used to do these activities in the past; I can't let it go	2.58 (1.29)	2.47 (1.24)	.52	.04	**.90**	-.04	**.89**
Eigenvalues				1.99	1.64	2.46	1.35
% variance explained				33.08	27.24	41.04	22.52
α				.65	.76	.67	.75

Note. Items loadings on each factor are in boldface. F1 = Factor 1; F2 = Factor 2. ADL Participants = participants with functional disability; Non-ADL Participants = participants without functional disability. * $p \leq .05$. ** $p \leq .01$.

Table 6.

Zero-Order Correlations between the Six ADL-GAS Items, Separately for Participants With and Without Functional Disability.

Item	Item Description	(1)	(2)	(3)	(4)	(5)	(6)
1	*It's hard for me to accept that I can no longer perform some activities as well as I used to*	1.00	-.40**	.61**	-.26*	-.32*	-.13
2	I try to scale back on some activities, and accomplish as much as I still can	**.03**	1.00	-.19	.21[i]	.27*	.41**
3	*I can't stop thinking about how well I used to do these activities in the past; I can't let it go*	**.61****	**.06**	1.00	-.15	-.10	.00
4	I take all the time I need to do these activities, even if it takes much longer	**-.04**	**.26***	**-.10**	1.00	.49**	.28*
5	Although I'll never be as good at these activities as I used to be, I keep trying to do the best I can	**-.02**	**.20[i]**	**.01**	**.39****	1.00	.50**
6	If I can't do one of these activities, I try to find new ways to get it done	**.06**	**.32****	**.13**	**.39****	**.37****	1.00

Note. Items designed to indicate *psychological disengagement* tendencies are italicized. Correlations for participants with functional disability are bolded. [i] $p = .08$. * $p \leq .05$. ** $p \leq .01$.

representing *compensatory reengagement* were generally positively correlated with one another in both subsamples (*r*s > .25, *p*s < .10), while items representing *psychological disengagement* were positively correlated with one another in both subsamples (*r*s = .61, *p*s < .01). Among participants with functional disability, items measuring *compensatory reengagement* were not significantly correlated to those measuring *psychological disengagement* (*r*s = .01 to .13, *p*s > .28). However, among participants without functional disability, items representing *compensatory reengagement* (Items 2, 4, and 5) were negatively and significantly correlated with Item 1 that represented *psychological disengagement* (*r*s = -.25 to -.40, *p*s < .05), which may indicate that the data are a better fit among those with functional disability. Bartlett's test of sphericity, χ^2s(15) > 74.70, *p*s < .01, and the Kaiser-Meyer-Olkin measure of sampling adequacy (*KMO*s = .61-.64) indicated that both subsamples' correlation matrices were appropriate for factor analytic procedures.

The factor analyses revealed a two-factor solution for both subsamples (see Table 5 for factor loadings), with items containing factor loadings of .50 and higher considered meaningful. Items 2, 4, 5, and 6 loaded on a factor representing *compensatory reengagement* (F1) for both subsamples (range = .59 to .77). Items 1 and 3 loaded on a factor representing *psychological disengagement* (F2), with factor loadings ranging from .88 to .90 among both subsamples. Both factors exceeded the established cut-off eigenvalue score for retention (> 1.00) among participants with functional disability ($eigenvalue_{F1}$ = 1.99; $eigenvalue_{F2}$ = 1.64) and without functional disability ($eigenvalue_{F1}$ = 2.46; $eigenvalue_{F2}$ = 1.35). Analyses of the scree plots confirmed the two-factor solution for both subsamples. Among participants with functional disability,

compensatory reengagement accounted for 33.08% of the total variance, and *psychological disengagement* accounted for 27.24%, while these values were 41.04% and 22.52%, respectively, for participants without functional disability. Both factors produced acceptable Cronbach's alphas among participants with functional disability (*compensatory reengagement* = .65; *psychological disengagement* = .76) and without functional disability (*compensatory reengagement* = .67; *psychological disengagement* = .75). The factors were not significantly correlated with one another among participants with functional disability (r = .03, p = .81); however, the factors were negatively correlated among participants without functional disability (r = -.31, p = .02). Scale scores were subsequently computed by calculating the mean of Items 2, 4, 5, and 6 for *compensatory reengagement* (ADL Participants: M = 2.89, SD = .64; Non-ADL Participants: M = 2.79, SD = .67), and the mean of Items 1 and 3 for *psychological disengagement* (ADL Participants: M = 2.18, SD = 1.11; Non-ADL Participants: M = 2.22, SD = 1.12).

Concurrent Validity. Concurrent validity tests are presented in Table 7. The partial correlations between the ADL-GAS factors and measures of participants' levels of depressive symptoms, negative affect, life satisfaction, and positive affect generally supported our hypotheses. Among participants with functional disability, *compensatory reengagement* was associated with lower levels of depressive symptoms (r = -.31, p < .01), and higher levels of life satisfaction (r = .27, p = .03). In addition, the positive association between *compensatory reengagement* and positive affect approached significance (r = .21, p = .08). *Compensatory reengagement* was not correlated with negative affect (r = -.07, p = .56). *Psychological disengagement* was significantly

Table 7.

Partial Correlations (Controlled for Age, Sex, and SES) between Compensatory Reengagement, Psychological Disengagement, and Subjective Well-Being Measures, Separately for Participants With and Without Functional Disability.

	Depressive Symptoms	Life Satisfaction	Negative Affect	Positive Affect
	R	*r*	*R*	*r*
ADL Participants				
Compensatory Reengagement	-.31**	.27*	-.07	.21[i]
Psychological Disengagement	-.44**	.45**	-.41**	.36**
Non-ADL Participants				
Compensatory Reengagement	-.13	.03	-.19	.05
Psychological Disengagement	.13	-.05	.09	-.13

Note. All results controlled for age, sex, and SES. ADL Participants = participants with functional disability; Non-ADL Participants = participants without functional disability. *$^{**}p \leq .01$; $^{*}p \leq .05$; $^{i}p \leq .10$.*

associated with lower levels of depressive symptoms (r = -.44, p < .01) and negative affect (r = -.41, p < .01), and higher levels of life satisfaction (r = .45, p < .01) and positive affect (r = .36, p < .01). The ADL-GAS scales were not significantly associated with any of the subjective well-being measures among participants without functional disability (rs < .19, ps > .16).

Convergent Validity. Convergent validity tests are presented in Table 8. Among participants with functional disability, *compensatory reengagement* was positively and significantly correlated HECS (r = .32, p < .01) and CSC strategies (r = .45, p < .01). In addition, in support of our theoretical model, *compensatory reengagement* was positively associated with goal reengagement capacities (r = .25, p = .04), but unrelated to participants' goal disengagement capacities (r = .12, p = .33). Similarly, *psychological disengagement* was positively and significantly associated with participants' goal disengagement capacities (r = .33, p < .01), HECS (r = .29, p = .01), and CSC strategies (r = .30, p = .01), but was unrelated to participants' goal reengagement capacities (r = .15, p = .20). No significant associations were found between the ADL-GAS factors and any self-regulatory measures among participants without functional disability (rs < .21, ps > .13), although the negative association between *psychological disengagement* and CSC strategies approached significance (r = -.24, p = .08).

Part 2: Mediation Analyses

General Goal Adjustment Capacities and Depressive Symptoms. The results of the regression analyses testing the main effects of general goal disengagement capacities (Model 1a) and goal reengagement capacities (Model 1b) on depressive symptoms are presented in Table 9, separately for participants with and without

Table 8.

Partial Correlations (Controlled for Age, Sex, and SES) between Compensatory Reengagement, Psychological Disengagement, and Goal Adjustment Capacities and Control Strategies, Separately for Participants With and Without Functional Disability.

	Goal Disengagement	Goal Reengagement	HECS	CSC
	R	*r*	*r*	*r*
ADL Participants				
Compensatory Reengagement	.12	.25*	.32**	.45**
Psychological Disengagement	.33**	.15	.29*	.30**
Non-ADL Participants				
Compensatory Reengagement	-.17	-.04	.21	.11
Psychological Disengagement	.17	.12	-.02	-.24[i]

Note. All results controlled for age, sex, and SES. ADL Participants = participants with functional disability; Non-ADL Participants = participants without functional disability **$p \leq .01$; *$p \leq .05$; [i]$p \leq .10$.

Table 9. *Cross-Sectional Hierarchical Regression Analyses Predicting Levels of Depressive Symptoms by Goal Disengagement Capacities (Model 1a), and Goal Reengagement Capacities (Model 1b), and Controlling for the ADL-GAS Factors (Models 2a, 2b).*

	Levels of Depressive Symptoms			
	ADL Participants		Non-ADL Participants	
Predictors	R^2	Beta	R^2	Beta
Model 1a				
Goal Disengagement Capacities	.24**	-.50**	.03	-.19
Model 2a				
Psychological Disengagement	.07**	-.28**	.00	.03
Compensatory Reengagement	.06**	-.24**	.04	-.21
Goal Disengagement Capacities	.12**	-.37**	.05	-.23
Model 1b				
Goal Reengagement Capacities	.08**	-.28**	.07*	-.29*
Model 2b				
Psychological Disengagement	.15**	-.39**	.00	.05
Compensatory Reengagement	.05*	-.24*	.02	-.16
Goal Reengagement Capacities	.03	-.18	.07*	-.29*

Note. The models predicted baseline levels of depressive symptoms by participants' goal adjustment capacities, separately (Models 1a, 1b), and by controlling for specific goal adjustment strategies in order to test mediation effects (Models 2a, 2b). Analyses controlled for age, sex, and SES. R^2s for predictors represent the unique amount of variance explained in the outcomes. ADL Participants = participants with functional disability; Non-ADL Participants = participants without functional disability. * $p \leq .05$. ** $p \leq .01$.

functional disability. Among both subsamples, the first step of the regression analyses revealed a significant association between participants' SES and depressive symptomatology, Fs > 4.85, ps < .04. Participants with a lower SES experienced higher levels of depressive symptoms compared to those with a higher SES, regardless of their functional disability status. Age and sex were unrelated to participants' levels of depressive symptoms for both subsamples, Fs < 2.72, ps > .10.

Among participants with functional disability, an examination of the main effects showed that levels of goal disengagement capacities were significantly associated with participants' levels depressive symptoms, $F(1, 70) = 25.06$, $p < .01$. Participants with poorer goal disengagement capacities experienced higher levels of depressive symptoms than those who were able to successfully disengage from unattainable goals. Similarly, goal reengagement capacities exerted a significant effect on participants' levels of depressive symptoms, $F(1, 70) = 6.38$, $p = .01$. Participants who reported poorer goal reengagement capacities experienced higher levels of depressive symptoms than those who were better able to successfully reengage in alternative goals.

Among participants without functional disability, only goal reengagement capacities were associated with depressive symptomatology, $F(1, 55) = 5.81$, $p = .02$. Older adults without functional disability experienced lower levels of depressive symptoms if they reported higher levels of goal reengagement capacities. Goal disengagement capacities were unrelated to depressive symptomatology in this subsample, $F(1, 55) = 2.42$, $p = .13$.

Specific Goal Adjustment Strategies as Mediators. To examine whether the association between goal adjustment capacities and depressive symptoms would be

mediated by participants' ADL-related goal adjustment strategies, we conducted bootstrap analyses on the multiple mediation models. To this end, we used the "indirect SPSS macro" (Preacher & Hayes, 2008), and repeated the above-reported analyses for predicting depressive symptoms, additionally incorporating both ADL-related goal adjustment strategies (psychological disengagement, compensatory reengagement) as potential mediators in each analyses.

Figure 3 illustrates the first mediation model tested among older adults with functional disability. The results of the analysis demonstrated that general goal disengagement capacities were significantly related to specific psychological disengagement strategies pertaining to ADLs, $F(1, 70) = 9.01$, $p < .01$ (see path A in Figure 3). Higher levels of goal disengagement capacities were associated with higher levels of psychological disengagement from ADL-related goals. The findings further showed that higher levels of psychological disengagement were significantly associated with lower levels of depressive symptoms in this model, $F(1, 68) = 8.36$, $p < .01$ (see path B in Figure 3). Moreover, the analyses demonstrated that psychological disengagement accounted for 50% of the association between goal disengagement capacities and depressive symptoms, $F(1, 68) = 14.95$, $p < .01$, indicating that it partially mediated the relationship between goal disengagement capacities and depressive symptomatology (see path C, Figure 3). Bootstrap analyses confirmed that psychological disengagement exerted a significant indirect effect on the association between general goal disengagement capacities and levels of participants' depressive symptoms (95% BCI [-.201, -.023]). This pattern of results suggests that the effect of general goal disengagement capacities on depressive symptoms among older adults with functional

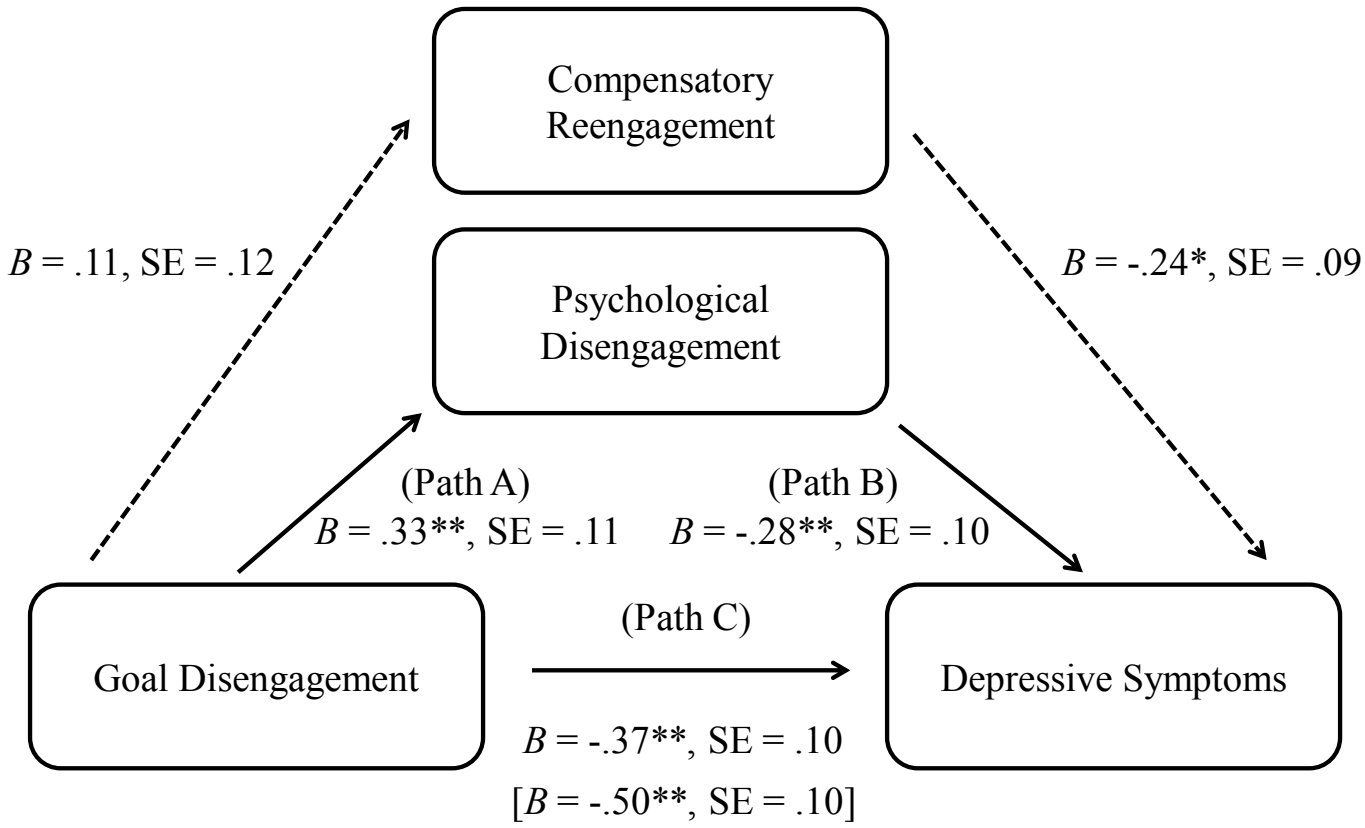

Figure 3 Multiple mediation model examining the effect of psychological disengagement on the association between goal disengagement capacities and depressive symptoms. ** $p \leq .01$.

disability can be partially explained by specific goal adjustment processes aimed at the psychological disengagement from accomplishing ADL-related goals. Goal disengagement capacities were unrelated to compensatory reengagement strategies, $F(1, 70) = .92$, $p = .34$, and compensatory reengagement did not exert any indirect effects on the relationship between goal disengagement and depressive symptoms, (95% BCI [-.109, .027]). None of the covariates in the regression analysis predicting psychological disengagement were significant, Fs$(1, 71) < 1.61$, ps $> .20$.

Figure 4 illustrates the second mediation model tested in our analyses with participants with functional disability. In support of our hypothesis, results demonstrated that general goal reengagement capacities were significantly associated with compensatory reengagement strategies related to accomplishing ADL-related goals, $F(1, 69) = 4.58$, $p = .04$ (see path A, Figure 4). Higher levels of goal reengagement capacities contributed to higher levels of compensatory reengagement strategies in our subsample of older adults with functional disability. Results further showed that levels of compensatory reengagement strategies were independently associated with levels of depressive symptoms in this model, $F(1, 68) = 5.36$, $p = .02$ (see path B, Figure 4). Moreover, the analyses demonstrated that the association between goal reengagement capacities and depressive symptoms was rendered non-significant, $F(1, 68) = 3.15$, $p = .08$, if compensatory reengagement strategies were included as a potential mediator into the model (see path C, Figure 4). Bootstrap analyses confirmed that compensatory reengagement exerted a significant indirect effect on the association between goal reengagement capacities and levels of participants' depressive symptoms (95% BCI [-.166, -.002]). This pattern of results suggests that specific strategies involving the use of

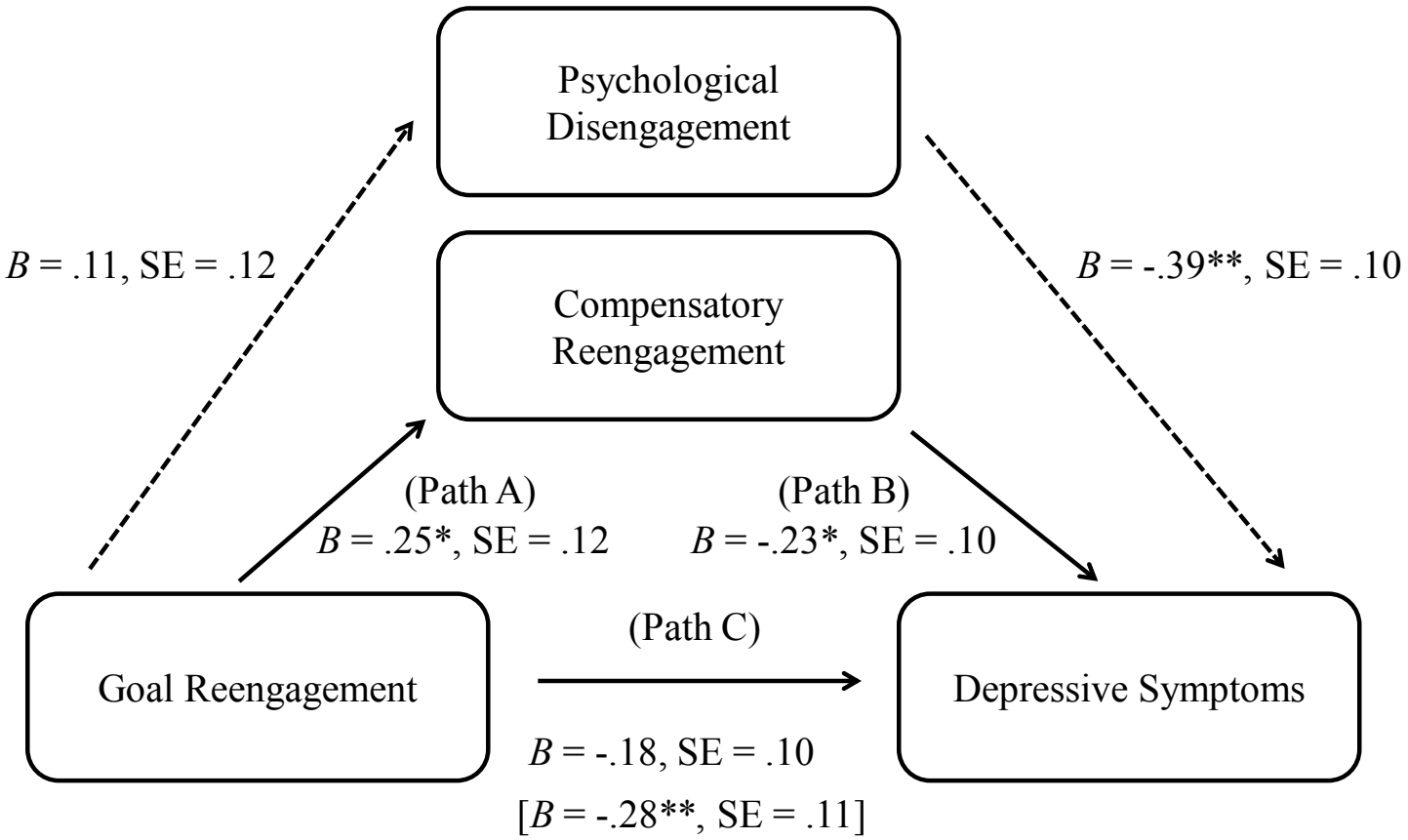

Figure 4 Multiple mediation model examining the effect of compensatory reengagement on the association between goal reengagement capacities and depressive symptoms. * $p \leq .05$. ** $p \leq .01$.

compensatory reengagement when coping with ADL-related goals mediated the beneficial effect of general goal reengagement capacities on lower levels of depressive symptoms among older adults suffering from functional disability. Goal reengagement capacities were unrelated to psychological disengagement strategies, $F(1, 70) = .80$, $p = .37$., and psychological disengagement did not exert any indirect effects on the relationship between goal reengagement and depressive symptoms (95% BCI [-.165, .084]). None of the covariates in the regression analysis predicting compensatory reengagement were significant, Fs$(1, 71) < 1.33$, ps $> .25$. Neither mediation model was significant among participants without functional disability (see Table 9).[3]

Discussion

Part 1: Factor Structure, Reliability, and Validity of the ADL-GAS

Part 1 of the present study developed and examined a new scale that measures individuals' specific goal adjustment strategies when encountering problems that impede their ability to carry out ADL-related goals. The reliability and validity of the ADL-GAS were determined by assessing its psychometric properties in subsamples of older adults with and without functional disability. Among both subsamples of participants, factor analyses revealed a two-factor structure of the scale, representing *psychological disengagement* and *compensatory reengagement* strategies, and both factors exhibited good internal consistency. These factors were designed to measure inward-focused cognitive processes aimed at letting go of unattainable ADL goals (psychological disengagement), and externally-focused behavioral processes aimed at engaging in modified ADL-related goals (compensatory reengagement). We hypothesized that higher scores on these scales would be related to better subjective well-being outcomes and

other self-regulatory measures, but only among participants with functional disability.

The ADL-GAS demonstrated good concurrent and convergent validity. In support of the concurrent validity of the scale, both factors on the ADL-GAS were generally associated with adaptive subjective well-being outcomes, but only among participants with functional disability. Among participants with functional disability, psychological disengagement strategies were associated with lower levels of depressive symptoms and negative affect, and higher levels of life satisfaction and positive affect. Compensatory reengagement strategies were significantly correlated with adaptive levels of depressive symptoms and life satisfaction, and approached significance in the association with positive affect for participants with functional disability. By contrast, neither specific goal adjustment strategy was associated with any of the subjective well-being measures among participants without functional disability. These results were consistent with our hypothesis that the specific adjustment of ADL-related goals would contribute to better subjective well-being, but only among older adults with functional disability. In addition, these findings support our expectations that specific goal adjustment strategies would not have an effect on the well-being of older adults who do not need to adjust their ADL-related goals.

The results also lend preliminary support to the idea that adjusting specific ADL-related goals can protect older adults with functional disability from emotional distress. These results are important given that our subsample of older adults with functional disability also showed higher levels of depressive symptomatology and negative affect, and lower levels of life satisfaction and positive affect than our subsample of older adults without functional disability. Consistent with previous research on general goal

adjustment capacities, the ability of individuals to adjust their specific ADL-related goals contributed to better subjective well-being outcomes. However, while general goal disengagement capacities have been predominantly associated with reduced negative emotions, specific psychological disengagement strategies were associated with both negative and positive indicators of well-being. In this sense, other cross-sectional research has also shown that goal disengagement capacities can at times be associated with positive indicators of well-being (e.g., self-mastery; Wrosch et al., 2003b) if they allow individuals to free up resources to pursue other adaptive goals (Carver & Scheier, 1990; Wrosch et al., 2003b, 2007a). In addition, compensatory reengagement was significantly correlated with both positive *and* negative indicators of participants' well-being. While general goal reengagement capacities have been primarily associated with positive aspects of well-being (e.g., I. Bauer, 2004; Kraaij et al., 2009; Schroevers et al., 2009), other research has shown that reengagement processes may be generally associated with depressive symptoms (e.g., Dunne et al., 2011; Kraaij et al., 2008). These associations are in line with the idea that general goal reengagement capacities can contribute to less emotional distress if they foster the adoption of goals that decrease thoughts of failure, and allow older adults to effectively manage ADL-related stressors (Wrosch et al., 2011).

The ADL-GAS also exhibited good convergent validity for our subsample of older adults with functional disability, and supported our hypotheses that the ADL-GAS would be associated with other adaptive self-regulation measures from which they were derived. In this regard, psychological disengagement strategies were positively and significantly correlated with general goal disengagement capacities, HECS, and CSC

strategies, but not with general goal reengagement capacities. By contrast, compensatory reengagement strategies were positively and significantly correlated with general goal reengagement capacities, HECS, and CSC strategies, but not to general goal disengagement capacities.

These results are important for several reasons. First, these preliminary associations lend support to the assumption that general goal disengagement and goal reengagement capacities may be associated with different cognitive and behavioral responses to specific stressors. These different associations may shed some light on the different pathways through which general goal adjustment capacities contribute to emotional outcomes in future research. Second, while one would expect the significant association found between compensatory reengagement strategies and other action-oriented strategies (i.e., HECS), the significant correlation between compensatory reengagement strategies and CSC strategies also suggested that our items represented core aspects of secondary control processes related to acceptance. Third, while the association between psychological disengagement and HECS may be counterintuitive, it may represent an underlying ability of an individual to effectively self-regulate in the face of both acute and chronic health stressors. For example, an individual may invest time and energy, and seek medical advice when confronted with an acute stressor (e.g., chest pain) that can be addressed. Such strategies could help the individual overcome their health problems, and lead to adaptive outcomes (e.g., Wrosch & Schulz, 2008; Wrosch et al., 2002). Conversely, in the context of a more chronic long-term stressor (e.g., functional disability) it may be most adaptive for the same individual to accept health limitations and withdraw effort and commitment from a health challenge (e.g.,

Dunne et al., 2011; Hall et al., 2010). Thus, while these constructs may represent two different processes related to the management of health problems, both may signify the presence of effective self-regulatory capabilities.

Finally, significant associations were found only among participants with functional disability. In this regard, we did not expect that ADL-related goal adjustment strategies would be strongly associated with measures of subjective well-being if participants were not currently experiencing functional limitations. Conversely, given that most individuals have had experience with some functional problems throughout their lifespan, (e.g., broken bones, back problems, surgery, migraines; Stineman et al., 2005), it was possible that general goal adjustment capacities would be significantly associated with how participants predicted that they would react if they encountered functional disability in the future. However, results from our study imply that individuals' general capacities may only predict specific coping processes when faced with an actual stressor. These results can have important implications for theory and research which suggest that general goal adjustment capacities become especially important in the context of specific challenges (e.g., Kraaij et al., 2008; Wrosch et al., 2003b). In such instances, general capacities may help individuals confront a given stressor by instigating the development of specific adaptive coping responses that can further reduce emotional distress.

Part 2: Mediation Analyses

The second part of this study aimed to determine whether specific goal adjustment strategies could explain the relationship between general goal adjustment capacities and depressive symptomatology. We first expected that higher levels of general goal

adjustment capacities would be associated with lower levels of depressive symptomatology. We also expected that these effects would be mediated by specific ADL-related goal adjustment strategies, but only for our subsample of older adults experiencing functional disability. In this regard, we hypothesized that individuals' general goal disengagement capacities would be positively related to the use of specific strategies aimed at the psychological disengagement from ADL-related goals, which would, in turn, be associated with reduced levels of depressive symptomatology. Similarly, we hypothesized that individuals' general goal reengagement capacities would foster the compensatory reengagement in modified ADL goals, which would, in turn, be related to reduced levels of depressive symptomatology. We did not expect to find these mediation effects in our subsample of older adults without functional disability.

Consistent with previous research, our results showed that higher levels of general goal disengagement and goal reengagement capacities were associated with lower levels of depressive symptoms among older adults with functional disability. Results were also consistent with our hypotheses that these effects could be mediated by specific goal adjustment strategies aimed at managing ADL-related constraints. In particular, the relationship between general goal disengagement capacities and depressive symptomatology was partially mediated by individuals' specific psychological disengagement strategies, while specific compensatory reengagement strategies completely mediated the relationship between general goal reengagement capacities and depressive symptoms. Among participants without functional disability, only general goal reengagement capacities were associated with lower levels of depressive symptoms, and neither mediation model was supported.

These findings support our hypothesis that individual differences in general goal adjustment capacities can contribute to specific goal adjustment processes when older adults confront functional disability. While our results showed that general goal disengagement and goal reengagement capacities were directly associated with levels of depressive symptoms in older adults with functional disability, our findings also suggested that these capacities were indirectly associated with levels of well-being through the promotion of specific goal adjustment processes. In particular, our results support the idea that a better general capacity of abandoning unattainable goals can foster the ability to psychologically disengage from specific ADL-related goals for older adults with functional disability. In turn, the psychological disengagement from ADL-related goals can reduce levels of depressive symptomatology through the acceptance of ADL constraints and decreased thoughts of failure. These results are consistent with previous research showing that general goal disengagement capacities can facilitate the use of adaptive coping strategies when confronted with specific stressors, and subsequently contribute to better subjective well-being (Wrosch et al., 2011).

Similar results were found for the association between goal reengagement and depressive symptoms among older adults with functional disability. In this regard, our results were consistent with the idea that individuals who are generally better at identifying, committing to, and pursuing new goals can more easily reengage in specific, scaled back ADL-related goals when they encounter functional disability. While previous research has suggested that goal reengagement may contribute to poor subjective well-being if it leads to the adoption of maladaptive coping behaviors (Wrosch et al., 2011), our results support theory and research that suggest that goal reengagement can

contribute to better subjective well-being if it leads to the engagement in new, purposeful goals (Kraaij et al., 2008, 2009; Wrosch & Sabiston, in press; Wrosch et al., 2003b). In our subsample of older adults who were facing ADL-related goal constraints due to functional disability, general goal reengagement capacities were positively related to older adults' ability to accept and reengage in modified ADL-related goals (e.g., by eliciting help from others). In turn, these specific strategies were associated with lower levels of depressive symptomatology. Thus, overall our findings indicate that individual differences in general goal adjustment tendencies can instigate the use of specific goal adjustment strategies. These strategies, in turn, can help older adults manage the experience of functional disability and contribute to lower levels of depressive symptomatology.

We note that our results were not replicated among participants without functional disability. In particular, goal reengagement capacities, but not goal disengagement capacities, were associated with reduced levels of depressive symptoms in this population. While previous research has found a relationship between goal disengagement capacities and negative emotions in some specific populations (e.g., Kraaij et al., 2008; 2009; Wrosch et al., 2003b), other research has shown that goal disengagement capacities were not related to changes in depressive symptoms among older adults with low levels of functional disability (Dunne et al., 2011). In addition, neither goal disengagement nor goal reengagement capacities contributed to specific ADL-related goal adjustment strategies, and specific strategies were not related to depressive symptoms in this population. These results support our expectations that specific goal adjustment strategies would only be adaptive for those older adults who

experienced functional disability and had to adjust to such constraints. Further, these findings are consistent with the idea that self-regulation involving goal adjustment becomes paramount when individuals face specific stressors that threaten important life goals (e.g., parents of children with cancer; Wrosch et al., 2003b).

This study's findings have important implications for theory and research in the area of aging and self-regulation. First, results support extant research showing that older adults who can adaptively adjust to the challenges and constraints of functional disability can reduce the negative consequences to their well-being (Boerner, 2004; Brandtstädter et al., 1993; Dunne et al., 2011; Schmitz et al., 1996). Our results also expand on previous research by suggesting that the experience of functional disability and other age-related problems may instigate the development of specific self-regulatory abilities in old age. For older adults who are able to adjust to unattainable goals, the onset of functional disability may create a circumstance in which they utilize their general capacities to produce specific strategies toward their ADL-related goals (e.g., psychological disengagement, compensatory reengagement). Thus, when confronted with age-related stressors, general self-regulatory tendencies may facilitate the development of specific self-regulatory behaviors, which can subsequently affect well-being and quality of life.

Second, the findings from our study suggested that general goal adjustment capacities can exert both direct and indirect effects on subjective well-being. In this regard, results from the present study showed that general goal adjustment capacities were positively related to the development of specific goal adjustment strategies for older adults experiencing functional disability, and that these specific strategies were subsequently linked to reduced depressive symptomatology. Thus, while there may be

multiple pathways through which general capacities can influence emotional well-being in the context of different stressors, our results identified one potential pathway as through the development of specific ADL-related goal adjustment strategies. These results contribute to a better understanding of some of the processes involved in the successful adjustment to unattainable goals, and the ways in which general self-regulatory capacities can influence subjective well-being in old age. While other research has shown that general goal adjustment capacities can predict psychological and physical well-being outcomes in the context of specific stressors (Heckhausen et al., 2001; Kraaij et al., 2008, 2009; Schroevers et al., 2008; Wrosch et al., 2003b), and can influence specific coping behaviors (Wrosch et al., 2011; Wrosch & Sabiston, in press), this is the first study to compare general capacities to specific goal adjustment strategies. In addition, this research was the first to identify these specific strategies as one pathway through which general goal adjustment capacities can influence well-being. These results highlight the importance for research to investigate both general goal adjustment tendencies and specific goal adjustment strategies in order to garner a full understanding of the successful adjustment to unattainable goals across the lifespan.

Third, this study identified two different strategies involved in the adaptive adjustment to ADL-related goals, and can help inform clinical interventions aimed at maintaining the well-being of older adults with functional disability. We conceptualized these strategies as psychological disengagement and compensatory reengagement, and found both to contribute to lower levels of depressive symptomatology in older adults with functional disability. However, these strategies also included distinctly separate processes involved in the adaptation to ADL-related goal constraints, and were both

associated with different general goal adjustment capacities. For instance, psychological disengagement was associated with general goal disengagement capacities, and involved inward-focused cognitive processes aimed at acceptance and the withdrawal of commitment and effort from the goal. Conversely, compensatory reengagement was associated with general goal reengagement capacities, and involved processes primarily pertaining to externally-focused actions aimed at engaging in modified ADL goals, while concurrently accepting those limitations that cannot be overcome.

Importantly, these findings also imply that individual differences in general goal adjustment tendencies can result in the adoption of different cognitive and behavioral strategies when confronting unattainable goals. While goal disengagement may promote the use of specific cognitive strategies aimed at protecting individuals from thoughts of failure and the subsequent negative emotions, goal reengagement capacities may protect individuals from depressive symptoms through the acceptance of limitations and the focus on externally-directed behaviors that promote purpose in life and negate failure experiences. These results can also help explain the differential effects found for goal disengagement and goal reengagement capacities on psychological and physical well-being outcomes in previous research (e.g., I. Bauer, 2004; Wrosch et al., 2007a). In this regard, goal disengagement capacities have consistently been shown to contribute to reduced emotional distress, whereas support for the adaptive benefit of goal reengagement capacities on negative emotions is mixed (e.g., I. Bauer, 2004; Wrosch et al., 2007a), and may depend on whether individuals additionally disengage from unattainable goals (Wrosch et al., 2003b). This may also explain why goal reengagement has not been associated with depressive symptoms in longitudinal studies. In this regard,

the continued reengagement in new or modified goals may reduce negative emotions in the short-run, but may also cause distress if individuals spread their resources too thin by continuing to pursue constrained goals.

In support of these assumptions, follow-up analyses of our results indicated that the indirect effect of goal disengagement capacities on depressive symptoms through psychological disengagement strategies remained significant when additionally including goal reengagement capacities as a covariate in the mediation model. These findings suggest that goal disengagement capacities can promote the development of specific ADL-related coping behaviors regardless of individuals' general ability to reengage in other goals. However, the indirect effect of general goal reengagement capacities on depressive symptoms through compensatory reengagement strategies was not supported when additionally controlling for participants' general goal disengagement capacities. These results indicate that the beneficial effects of general goal reengagement capacities are shared with individuals' general goal disengagement tendencies, and may only be supported when individuals are also capable of freeing up resources by disengaging from unattainable goals. In this sense, individuals who strive to pursue modified, or scaled-down, ADL-related goals may only be able to benefit from reduced depressive symptomatology if they are able to free up internal resources by disengaging from unattainable goals.

Limitations and Future Directions

There are limitations in the present study that need to be addressed by future research. First, our analytic approach examined the cross-sectional associations between levels of general goal adjustment capacities, specific goal adjustment strategies, and

depressive symptoms, and precludes establishing causal effects. Future research should include fine-grained longitudinal studies, and examine how changes in functional disability status may impact changes in specific coping. In addition, future studies should look at how general goal adjustment capacities can influence the development of specific goal adjustment strategies over time, and whether these changes in specific strategies can also mediate the impact of goal adjustment on subjective well-being across years.

Second, the present study focused solely on the compensatory reengagement in specific ADL-related goals that were considered beneficial, and did not determine whether goal reengagement capacities could be related to the adoption of detrimental goals in the context of functional disability. To address this possibility, future research should also examine whether general goal reengagement capacities are associated with the adoption of specific maladaptive ADL-related goals, and whether these processes could be related with lower levels of subjective well-being. In addition, while the beneficial effects of general goal reengagement capacities on depressive symptomatology were observed in our cross-sectional analyses, evidence for longitudinal effects in other studies is lacking (e.g., Dunne et al., 2011). Thus, it would also be interesting to determine whether specific goal reengagement strategies (i.e., compensatory reengagement) remained adaptive over time. For example, the continued engagement in modified ADL-related goals across several years may become detrimental for older adults if it stretches their resources too thin, and results in repeated failure experiences. In such instances, compensatory reengagement strategies may only become adaptive if individuals are also able to psychologically disengage from ADL-related goals.

Third, although the separation of participants into subsamples that reflected older

adults with and without functional disability allowed for comparisons between these two populations, this dichotomous classification was done on the basis of whether or not participants reported the presence of functional disability, and did not account for the severity of participants' limitations. It is possible that specific goal adjustment strategies varied depending on participants' level of functional disability. In this regard, we note that our study also included information pertaining to functional disability severity, and all reported effects remained significant if we included functional disability severity as a covariate into our analyses. Nevertheless, future research should extend our findings by examining how specific goal adjustment strategies develop for participants with differing levels of disability. This research should also evaluate objective measures of psychological well-being and physical health (e.g., physician reports), to determine whether specific self-regulatory behaviors can predict both psychological and biological outcomes (e.g., cortisol secretion) in this vulnerable group of older adults.

Finally, this study provided a new instrument to measure specific goal adjustment strategies in the context of functional disability, and identified one important pathway through which general goal adjustment capacities may affect subjective well-being. However, it is unclear whether general capacities can lead to the adoption of specific goal adjustment strategies in other domains. Functional disability oftentimes represents a chronic condition that can require older adults to adjust to changes in many life circumstances, and our findings may not be generalizable to older adults with different goal constraints or fewer physical limitations. However, we note that focusing on older adults with functional disability may be particularly important as these individuals have been identified as an especially vulnerable population for the subsequent development of

clinical levels of depression if they are unable to adjust their goals (e.g., Dunne et al., 2011). Nonetheless, future research should examine specific goal adjustment strategies in the context of other life stressors in later adulthood. Such studies can further help inform theory and research about the specific processes involved in the adaptive self-regulation of unattainable goals, and can help practitioners develop clinical interventions aimed at maintaining the well-being of vulnerable populations across the lifespan.

Footnotes

1. We conducted two separate regression analyses for general goal disengagement capacities and goal reengagement capacities in order to examine the pure associations within the mediation models. However, we also conducted follow-up analyses that controlled for both general goal adjustment capacities by simultaneously entering goal disengagement and goal reengagement capacities into our hierarchical regression analyses predicting depressive symptomatology, psychological disengagement, and compensatory reengagement, and by including them as covariates in the respective mediation analyses.
2. Missing data pertaining to participants' age and sex (Age = 2 participants; Sex = 1 participant) were replaced by the sample means so that these participants were not excluded from the mediation analyses using the "indirect SPSS macro" (Preacher & Hayes, 2008).
3. Follow-up analyses controlling for both general goal adjustment capacities replicated all results from our hierarchical regression analyses. When controlling for the effects of goal reengagement capacities, general goal disengagement capacities showed a significant positive association with psychological disengagement strategies, $F(1, 69) = 8.32$, $p < .01$. Similarly, general goal reengagement capacities were positively related to compensatory reengagement strategies when controlling for general goal disengagement capacities, $F(1, 69) = 4.06$, ps $< .05$. Further, both general goal disengagement, $F(1, 69) = 22.91$, $p < .01$, and goal reengagement capacities, $F(1, 69) = 3.30$, $p = .03$, showed significant associations with depressive symptoms among participants with functional disability when entered simultaneously into the regression analysis. Results from our first

mediation model (see Figure 3) were also replicated. When controlling for the effects of goal reengagement capacities, the association between goal disengagement capacities and depressive symptoms was partially mediated by psychological disengagement strategies, $F(1, 67) = 14.10$, $p < .01$, and this indirect effect were confirmed by bootstrap analyses (95% BCI [-.217, -.022]). However, results from the second mediation model (see Figure 4) were not supported when entering goal disengagement capacities as a covariate into the analyses. While the effect between goal reengagement capacities in predicting depressive symptoms was rendered non-significant if compensatory reengagement strategies were included as a potential mediator into the model, $F(1, 67) = 2.56$, $p = .11$, follow-up bootstrap analyses did not confirm that compensatory reengagement exerted a significant indirect effect on the association between goal reengagement capacities and depressive symptoms (95% BCI [-.118, .052]).

CHAPTER 5:

GENERAL DISCUSSION

Summary of the Research Findings

This dissertation aimed to contribute to the literature on successful aging by elucidating ways in which older adults can adaptively manage age-related stressors in later adulthood. In particular, this dissertation sought to examine the role of both general goal adjustment capacities and specific goal adjustment strategies in protecting the emotional well-being of older adults with functional disability. Further, the studies of this dissertation were expected to expand on models of goal adjustment by addressing the limitations in the extant research literature. In particular, Study 1 examined how general goal adjustment capacities could protect the emotional well-being of older adults' with functional disability across a time-span of six years. Study 2 provided a new research tool that identified and measured the specific goal adjustment strategies involved in confronting ADL-related goals that have been made unattainable by functional disability (Part 1). In addition, Study 2 explored the interplay between general goal adjustment tendencies and specific ADL-related goal adjustment strategies in the adaptive management of functional disability in old age (Part 2). We expected that individuals with higher capacities to adjust to unattainable goals would be protected from the adverse effects of functional disability on their well-being. We also hypothesized that the general ability to adjust to unattainable goals would contribute to the use of specific ADL-related goal adjustment strategies when individuals were confronted by functional disability. In turn, it was expected that these specific strategies would be associated with lower levels of depressive symptomatology among older adults with functional disability.

The results from the reported studies strongly supported our hypotheses. Study 1 identified general goal adjustment capacities as a significant mechanism for protecting the well-being of older adults with functional disability. In particular, in longitudinal analyses, this study found that goal disengagement capacities, but not goal reengagement capacities, could buffer the effect of functional disability on depressive symptoms over time. Older adults with functional disability who were generally better at withdrawing effort and commitment from unattainable goals experienced less depressive symptomatology across the six years of our study, than those who were unable to goal disengage. Further, our results showed that the average levels of depressive symptoms found among our sample of participants with high levels of functional disability, but poor capacities to disengage were indicative of mild clinical depression (Andresen et al., 1994). Goal reengagement capacities were generally associated with lower levels of depressive symptoms, but did not exert an effect over time. These findings suggest that although goal reengagement capacities may be generally related to depressive symptomatology, only goal disengagement capacities play a significant role in the prevention of depressive symptomatology over time among older adults with functional disability.

Study 2 consisted of two separate parts with distinct objectives. Part 1 aimed to develop and validate a new scale that would measure the specific goal adjustment processes that older adults may engage in when confronted by functional disability. Derived from theories on successful aging and adaptive self-regulation (Baltes & Baltes, 1990; Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 2002; Heckhausen et al., 2010; Heckhausen & Schulz, 1995; Wrosch et al., 2003b), the *Activities of Daily*

Living – Goal Adjustment Scale (ADL-GAS) included important components of both psychological disengagement and compensatory reengagement strategies aimed at the management of ADL-related goals. Results indicated that the ADL-GAS included two separate factors that each showed good internal consistency. These factors were identified as psychological disengagement, which focused on cognitive processes related acceptance and disengagement, and compensatory reengagement, which focused on acceptance and the behavioral engagement in new and modified ADL-related goals. The ADL-GAS showed both good concurrent and convergent validity, and overall the results indicated that the ADL-GAS was a reliable and valid instrument to measure specific strategies in the management of ADL-related goals for older adults with functional disability.

Part 2 examined whether the specific goal adjustment strategies identified on the ADL-GAS could represent one way in which general goal adjustment tendencies could affect the emotional well-being of older adults with functional disability. In cross-sectional analyses, results indicated that both general goal disengagement and goal reengagement capacities were associated with depressive symptoms among older adults experiencing functional disability. Further, the findings from this study showed that higher levels of general goal adjustment capacities were associated with a greater use of specific goal adjustment processes, and that these processes were subsequently related to lower levels of depressive symptoms among participants who reported functional disability. Finally, follow-up analyses indicated that the relation between general capacities and depressive symptoms were mediated by the use of specific goal adjustment strategies. The results from the second part of Study 2 suggest that general goal

adjustment capacities can have indirect effects on emotional well-being by fostering the use of specific goal adjustment strategies in the face of unattainable goals.

Contributions to Theory and Research

The findings from the present studies both confirm and expand upon theory and research in the area of life-span development and successful aging (Baltes & Baltes, 1990; Heckhausen et al., 2010; Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996). In particular, by demonstrating that older adults who engage in both general and specific goal adjustment processes may be able to avoid the emotional sequela of functional disability, the present findings confirm the importance of adaptive self-regulation among populations facing stressors that impede the pursuit of personal goals. Importantly, this research also indicates that despite the prevalence of age-related problems in later adulthood, older adults do not necessarily need to experience emotional distress. Rather, our findings support the idea of resilience in old age (Baltes & Baltes, 1990), and the continued ability of older adults to maintain high levels of psychological functioning through the management of developmental difficulties. Although both functional disability and depressive symptoms increased over time in our study, our findings substantiate theory and research that have indicated that older adults may avoid the psychological distress associated with age-related problems if they engage in effective self-regulation (Brandtstädter & Renner, 1990; Carstensen et al., 1999; Heckhausen et al., 2010; Wrosch et al., 2004). In this regard, older adults with functional disability, but who were able to let go of unattainable goals, experienced lower levels of depressive symptoms that were commensurate with their peers who did not experience functional disability. These results extend the findings of the adaptive role of goal

adjustment in the management of age-related problems, and have important implications for models of self-regulation across the lifespan.

The present research further illustrates the importance of compensatory secondary control strategies (Heckhausen et al., 2010; Heckhausen & Schulz, 1995) and accommodative goal processes (Brandtstädter & Rothermund, 1994) in later adulthood, by highlighting how the use of these processes can protect older adults' well-being when encountering age-related difficulties. These findings support the motivational theory of life-span development by demonstrating the heightened use of secondary control processes in later adulthood, and a shift towards goal disengagement processes when individuals confront unfeasible goals (Heckhausen et al., 2010). In addition, our results lend support to the notion that older adults focus on the development of adaptive accommodative strategies when opportunities for goal attainment are reduced (Brandtstädter & Renner, 1990). In this regard, our studies showed that general goal disengagement and goal reengagement capacities were related to the use of specific goal adjustment strategies, but only for older adults who were experiencing functional disability. Conversely, these general capacities were unrelated to specific strategies for older adults without functional disability. These findings suggest that the occurrence of age-related problems may actually lead some older adults to further improve their ability to adaptively self-regulate by using specific processes to manage the experience of unattainable goals. Further, our results extend extant theory on successful aging by showing that individuals may continue to develop self-regulation abilities throughout the entire lifespan in order to negotiate the increasing losses that occur in later life (Baltes & Baltes, 1990).

The identification and examination of the specific ADL-related goals that older adults reengaged in when encountering functional disability can also provide further insight into the optimization heuristics for goal selection (Heckhausen, 1999; Heckhausen & Schulz, 1993; Heckhausen et al., 2010). As outlined by the motivational theory of lifespan development, it is unclear when individuals decide to give up on goals which are no longer opportunity-matched, but which represent a basic fundamental need (Heckhausen et al., 2010). In particular, it is uncertain how individuals respond to repeated failure experiences in striving towards a highly valued goal, and whether individuals choose to pursue alternative, but highly similar goals in such instances. In this regard, our results showed that older adults reengaged in modified ADL goals after the onset of functional disability. These results imply that following goal failure in domains associated with fundamental goal areas (i.e., autonomy), individuals may continue to select goals that are closely related to those that have become unattainable (Heckhausen & Heckhausen, 2008).

Our findings can also be integrated into theories that include processes of selection, optimization, and compensation (Baltes, 1987; Baltes & Baltes, 1990). Given the resource-related constraints associated with functional disability, goal adjustment capacities can help older adults select appropriate pursuits when these problems restrict their opportunities to achieve certain goals. In this regard, our findings showed that in such instances, goal disengagement capacities are important for assisting individuals to let go of goals that stretch their resources too thin (Heckhausen et al., 2010; Baltes, 1987; Baltes & Baltes, 1990). In addition, our findings also imply that goal reengagement can be important for optimizing older adults' ability to pursue alternative goals through the

use of compensatory strategies (e.g., seeking help from others, spending more time on a task).

The findings from the present studies also have important implications for models of goal adjustment across the lifespan (Wrosch et al., 2003a, 2003b, 2007a). In particular, the nature of the present research enabled us to garner a more comprehensive picture of the general and specific processes involved in the adaptive self-regulation of unattainable goals. By shedding light onto the short- and long-term adaptive benefits of both general and specific goal disengagement and reengagement processes, this dissertation expands upon models of goal adjustment in several important ways (Figure 1).

First, our findings contribute new insights into long-term adaptive benefits of general goal adjustment capacities in the management of age-related problems for older adults. In particular, our results extend the application of models of goal adjustment to a vulnerable population comprised of older adults with functional disability. While previous cross-sectional research examined flexible goal adjustment capacities in the context of functional limitations (Boerner, 2004; Brandtstädter et al., 1993; Schmitz et al., 1996), the current research was the first to investigate these relationships in a longitudinal design. The advantages inherent in longitudinal analyses allowed us to make some interpretations about the possible causal direction of these effects. In this regard, our results indicated that older adults' emotional well-being may be protected over time if individuals are able to disengage from unattainable goals (Figure 1, path a). These results underscore the importance of goal adjustment in old age, when opportunities for goal attainment may become increasingly reduced. In addition, the results from our research

also highlight the need to identify vulnerable groups of older adults who encounter age-related problems, but do not have the ability to adaptively self-regulate.

Second, this research was the first to apply a model of goal adjustment capacities involving both goal disengagement and goal reengagement to the management of functional disability. This was essential, as research that has looked at these two processes separately has documented that both goal disengagement and goal reengagement can be associated with different emotional outcomes for populations facing other stressors (e.g., Kraaij et al., 2008, 2009; Wrosch et al., 2003b, 2007a). In addition, previous research on populations with functional limitations failed to disentangle the effects of these different processes (Boerner, 2004; Brandtstädter et al., 1993; Schmitz et al., 1996). Our research showed that while goal reengagement may be generally associated with depressive symptoms (Figure 1, path b), only goal disengagement capacities could buffer the effect of functional disability on depressive symptoms over time. Thus, it appears that avoiding the negative emotional experiences associated with goal failure may be a crucial component of the management of unattainable goals in older adulthood.

Third, previous research has predominantly focused on individual differences in general goal adjustment capacities, and has not explored the specific processes that are involved in adjusting to particular goals that are constrained. In this regard, the current research developed and validated a new tool that identified the important aspects of goal adjustment in the management of ADL-related goals that have been hindered by functional disability. Using existing theory and research, these processes were identified as including both the psychological disengagement from specific ADL-related goals, and

the compensatory reengagement in modified ADL-related goals. This tool will be useful to the research and clinical communities in establishing how specific goals that are impeded by functional disability can be managed. In addition, it can provide insight into the processes that are involved in the management of other specific unattainable goals.

Fourth, through the use of this new tool, the present research found that goal adjustment capacities could exert both a general effect on emotional well-being outcomes (Figure 1, paths b), and could also instigate the development and use of specific processes that further influence well-being (Figure 1, paths c-d). In this regard, this research confirmed that individual differences in goal disengagement and goal reengagement capacities can have an impact on how older adults are able to specifically manage constraints posed on their ADLs by functional disability. The nature of this research allowed us to uncover one pathway through which general goal adjustment capacities can contribute to the emotional well-being of older adults facing age-related problems (see Figure 1, paths c-d). In addition, our finding that general goal disengagement capacities and general goal reengagement capacities were associated with separate ADL-related goal adjustment strategies sheds light on the differential outcomes found in previous literature. In this way, it appears that goal disengagement may lead to reduced distress primarily through the use of cognitive strategies aimed at acceptance and the withdrawal of psychological commitment to the goal. Conversely, goal reengagement may contribute to lower levels of distress through an acceptance of limitations, and the use of primarily behavioral strategies aimed at proactively adjusting to the external environment. While these behavioral strategies were found to be adaptive in our sample, other research has suggested that goal reengagement can contribute to increased psychological distress if

these new tasks stretch an older adult's resources too thin (Wrosch et al., 2011). Thus, our findings can help explain some of the observed inconsistencies in the literature with regards to the effects of goal reengagement capacities on negative indicators of well-being. In particular, our results indicate that goal reengagement can contribute to lower levels of psychological distress (i.e., depressive symptoms) if individuals reengage in adaptive, versus maladaptive, goals (Wrosch & Sabiston, in press; Wrosch et al., 2011).

Finally, the results of the present studies also highlight how models of goal adjustment can interact with broader concepts of self-regulation. In this regard, the nature of this research allowed us to show how primary control and goal adjustment processes can work together (Heckhausen et al., 2010). In particular, our studies showed that the adaptive management of unattainable ADL-related goals can involve both the downward adjustment of goals (i.e., general goal disengagement capacities, psychological disengagement strategies) and the subsequent continued pursuit of similar, modified goals through processes that include primary control strategies (i.e., compensatory reengagement strategies). These findings imply that as the potential for primary control decreases in the face of age-related problems, individuals need to activate secondary control processes in order to adjust expectations and free up resources. In a broader sense, these results also indicate that both cognitive and behavioral strategies are necessary for the adaptive management of unattainable goals across the lifespan.

Clinical Implications

The finding that adaptive self-regulation involving goal adjustment is an important component for the management of age-related problems has significant implications for clinical practice. More specifically, these studies can inform clinical

interventions aimed at reducing depressive symptomatology and psychological distress in older adults with functional disability. In this regard, the reported studies identified older adults with functional disability as being especially vulnerable to the development of poor emotional well-being. Among participants in Study 1, those with poor goal disengagement capacities and heightened functional disability experienced an average level of depressive symptoms that was equivalent to clinical levels for mild depression. Further, Study 2 showed that older adults with functional disability had significantly higher levels of depressive symptoms and negative affect, and lower levels of life satisfaction and positive affect, than older adults without functional disability. Together, these findings highlight the psychological vulnerability of this population, and the crucial need for clinical interventions aimed at protecting their well-being, and enhancing quality of life.

Results from the present research identified that goal adjustment capacities may contribute to reduced depressive symptomatology for older adults experiencing functional disability through the development of specific coping processes. In this regard, clinical interventions can help older adults adapt to the experience of functional disability by fostering the development of cognitive and behavioral strategies aimed at adjusting to personal pursuits and ADL-related goals that have become unattainable. In particular, the results of the present research indicated that clinical interventions should focus on identifying high-risk older adults (i.e., those with functional disability, but a low capacity to manage constrained goals), and teaching these older adults how to adjust to functional health decline. Given that our results showed the primacy of goal disengagement capacities in the management of functional disability increases over time, clinical

interventions aimed at this population should primarily concentrate on helping individuals to recognize important goals in their lives that may have been constrained by functional disability, assess the attainability of these goals, select appropriate goals, and disengage from unattainable goals (see also Baltes & Baltes, 1990). Such processes may involve assisting older adults to shift to an objective, "reality-oriented" mindset when reevaluating the likelihood of achieving a certain goal, and determining the consequences associated with its continued pursuit (Heckhausen et al., 2010). By conducting comprehensive assessments of older adults' goal pursuits and their available resources, clinical interventions can help individuals withdraw both psychological commitment and effort from unrealistic goals, and focus their efforts on other important and attainable aspirations. In this regard, although goal reengagement capacities did not buffer the effect of functional disability increases on depressive symptoms over time, they were generally associated with depressive symptoms in both studies of this dissertation. Thus, clinical interventions may also include the identification of new, attainable goals within the constraints of functional disability, and teach individuals how to form cautious and realistic expectations for future pursuits that fall within their personal capacities (Heckhausen et al., 2010). Further, interventions may also focus on behavioral activation strategies to help older adults accomplish important life goals and maintain purpose in life (Jacobson, Martell, & Dimidjian, 2001). Such interventions would be in line with existing treatment protocols that focus on the identification, development, and pursuit of meaningful and realistic life goals in the context of other life stressors (e.g., bipolar disorder; Aubry et al., 2011; de Andrés et al., 2006; M. Bauer & McBride, 2003).

While previous research has identified general goal adjustment capacities as beneficial when confronting stressors across the lifespan, this research can further guide clinical practice by pinpointing the specific ways in which individuals can either disengage from or reengage in ADL-related goals. In particular, both psychological disengagement and compensatory reengagement strategies included processes related to the acceptance of functional limitations. These results imply that clinical interventions should foster the development of acceptance in clients facing disability, and are commensurate with research highlighting the importance of acceptance in populations facing other chronic stressors (e.g., chronic pain, McCracken & Eccleston, 2003; being HIV positive, Lutgendorf et al., 1998).

The present research also indicates that both cognitive and behavioral strategies can be important for older adults facing functional disability. In particular, beyond acceptance, items on the ADL-GAS showed that cognitive strategies aimed at psychological disengagement also included reducing ruminative thoughts about one's inability to accomplish daily activities (see Appendix F). In addition, the onset of functional disability may be an impetus for the development of regrets in old age, as these disabilities can severely infringe on individuals' autonomy and life goals, and may prompt new developmental deadlines in older adults' lives (see Heckhausen et al., 2010). Thus, clinical interventions may seek to integrate strategies aimed at the management of life regrets in older populations, such as the use of downward social comparisons (I. Bauer, Wrosch, & Jobin, 2008). Further, behavioral strategies that were identified on the ADL-GAS involved engaging in modified ADL-related goals through compensatory actions. In this regard, clinical interventions should also promote problem-solving skills

among older adults (D'Zurilla & Goldfried, 1971; D'Zurilla & Nezu, 2001), wherein older adults with functional disability can learn to generate effective solutions to daily and chronic stressors that impede goal attainment (Nezu, 2004). Such solutions can integrate important aspects of compensatory reengagement strategies, such as taking more time, asking for help, or finding other ways to accomplish ADLs (see also Baltes & Baltes, 1990).

Overall, clinical interventions aimed at promoting the successful adaptation to unattainable goals should focus on assisting older adults to select appropriate goals and disengage from unrealistic pursuits, optimize the conditions to achieve these goals, and compensate for the loss of abilities by seeking out other ways to accomplish tasks (Baltes & Baltes, 1990). Although we have emphasized the importance of these processes in treating older adults with functional disability, it should also be noted that these skills may be generalized to other older adults as well. In particular, given the normative changes and losses in later adulthood, community-based interventions and outreach groups should also integrate treatment components that help older adults adjust to unattainable goals, and highlight how they might cope with specific stressors that are relevant to their particular life circumstances. Such developments in individuals' goal adjustment capacities should help older adults adapt to other losses and difficulties across the lifespan, and help this growing population maintain a better quality of life.

Limitations and Future Research

Although this dissertation expanded upon models of adaptive self-regulation and goal adjustment, there are limitations that need to be addressed in future research.

The present studies suggest that individual differences in general goal adjustment capacities are associated with the use of specific goal adjustment strategies, which can, in turn, further affect emotional well-being. While identifying and examining the specific processes involved in the adjustment to unattainable ADL-related goals was an essential step in uncovering the processes involved in goal adjustment, future research should look at these associations longitudinally in order to determine causality. In particular, research should determine whether participants' levels of general goal adjustment capacities and functional disability can predict changes in the development and use of specific processes, and whether these specific processes remain adaptive over time. For example, while compensatory reengagement strategies were associated with better emotional well-being in our study, it is possible that these strategies could eventually stretch an individual's resources too thin and contribute to psychological distress. In line with this idea, the results from the Study 1 showed that only goal disengagement, but not goal reengagement, was associated with changes in depressive symptoms across six years. Thus, it would be interesting to identify particular goals that individuals can reengage in that can foster emotional well-being over the long-run. Further, it is also possible that new pathways are developed over time, and that general and specific goal adjustment processes can interact to produce different outcomes. In particular, it would be interesting to determine whether general goal disengagement capacities could help individuals free up resources to pursue new goals, and thus contribute to the use of compensatory reengagement strategies across years. While the present research developed and validated the necessary questionnaire to explore these associations, the administration of the ADL-GAS to older adults with functional disability longitudinally could further extend models

of goal adjustment, and provide insight into the potentially complex interactions between these variables.

In a similar vein, examining the impact of functional disability onset on both general and specific goal adjustment processes over time can also answer important questions regarding developmental deadlines. For example, as developmental deadlines may influence behavior both before and after they are reached (Heckhausen, 1999; Heckhausen et al., 2010), future research should determine whether functional disability onset may also be related to intensified compensatory reengagement efforts aimed at sustaining ADL-related autonomy. Alternatively, steep rises in psychological disengagement efforts could be seen when older adults are experiencing chronic and stable levels of functional disability. In addition, because the onset of functional disability may make individuals anticipate additional restrictions to goal attainment in other domains in the future, the onset of these limitations may actually instigate general goal engagement processes and reduce goal disengagement processes if individuals feel an urgent need to invest time and effort to reach a goal before more functional disability sets in (Heckhausen et al., 2010).

While the present research demonstrated the importance of goal adjustment capacities in the management of unattainable goals, it remains unclear how individuals assess the attainability of a goal, and whether or not individuals are realistic in judging what goals they are able to pursue. Thus, in order to further expand upon theories of goal adjustment, research should also seek to determine what factors can impair or promote individuals' abilities to accurately evaluate the attainability of future pursuits. In particular, such research should focus on how psychological and physical health factors

influence decisions regarding goal engagement versus goal disengagement. For example, individuals who experience functional disability onset may poorly evaluate their ability to accomplish ADLs or other future goals if they are unable to accept these new limitations in their lives. Such biased judgments could subsequently impact their ability to adaptively adjust to unattainable goals, and could have consequences on their well-being. Along the lines of this inquiry, other research has identified psychological variables that can influence goal pursuit selection. For example, it has been suggested that depressed individuals are better able to give up on unrealistic goals more easily than their non-depressed peers (Beck, 2002; Klinger, 1975; Nesse, 2000), and research has shown that depressive symptoms can facilitate increases in goal disengagement processes over time (Wrosch & Miller, 2009).

Finally, the results from the present research highlight the importance for future research on goal adjustment to examine both the general and specific processes involved in the adjustment to unattainable goals. In this regard, the findings from this research were the first to examine the role of goal disengagement and goal reengagement processes in the management of functional disability over time, and to examine the specific processes involved in the adjustment to ADL-related goals. While this research focused on older adults with functional disability, future studies should examine other areas of older adults' lives that are constrained by functional limitations, and should apply this methodology to populations facing other stressors. For example, our results identified specific processes related to the management of ADL-related goals, and therefore may not be generalized to other areas of older adults' lives. In this regard, future research should also examine goals that were constrained by functional disability

in other domains, such as social interactions or leisure activities, and determine whether different cognitive and behavioral strategies can also be adaptive in other contexts. Further, research examining other vulnerable populations should seek to determine both the general and specific goal adjustment processes involved in the management of unattainable goals.

Although addressing all of these issues was beyond the scope of this dissertation, we believe that future studies should involve longitudinal research designs and more fine-grained measures pertaining to perceptions of goal attainability, goal selection, and goal adjustment in the management of functional disability and other age-related problems. By further including measures of both general and specific goal adjustment processes, such research can contribute to models of successful aging by uncovering different pathways to well-being in vulnerable populations across the lifespan.

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APPENDIX A

Consent Form

CONSENT FORM TO PARTICIPATE IN RESEARCH

This is to state that I agree to participate in a program of research being conducted by Dr. Carsten Wrosch of the Psychology Department of Concordia University.

A. PURPOSE

I have been informed that the purpose of the research is to study older adults' goal management, well-being, and health.

B. PROCEDURES

This research will involve a questionnaire and 15 salivary cortisol samples collected over the course of three typical days. A research assistant will go to the participant's home to administer part of a questionnaire on goal management, well-being and health, as well as to explain the saliva collection procedure. The rest of the questionnaire will be filled in by the participant while alone and should take approximately one hour to complete. The saliva collection will involve chewing a provided cotton swab for one minute before replacing it in its salivette. The saliva collection will be performed five times a day at specific times. The participant will receive phone calls from the research assistant to remind him/her to take a salivary cortisol sample. The participant will receive $50 for participating in the study.

There should be no risks or discomfort involved in answering the questions or collecting the salivary cortisol samples. The participant's name will not be attached to the questionnaire, although the signatures and names on the consent forms will be collected and stored separately by the supervising professor. The participant is free to refuse to answer any question that makes him or her uncomfortable answering.

C. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences. Even if I discontinue my participation, I will receive $50.
- I understand that my participation in this study is CONFIDENTIAL (i.e., the researcher will know, but will not disclose my identity)
- I understand that the data from this study might be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) _____

SIGNATURE _____

WITNESS SIGNATURE _____

DATE _____

APPENDIX B:

Assessment of Basic Sociodemographic Characteristics

Personal information

1. **Sex** ☐ Female ☐ Male

2. **Age** _____ yrs.

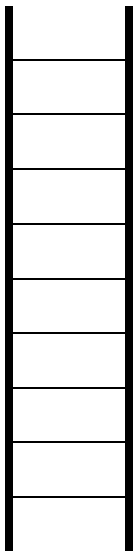
3. **Highest Level of Education Completed**

   ☐ None
   ☐ High School
   ☐ Collegial or Trade School
   ☐ Bachelor's Degree
   ☐ Masters or Doctorate Degree

4. **Current Family income (per year):**

   ☐ Less than 17 000$ ☐ 17 001$ - 34 000$ ☐ 34 001$ - 51 000$
   ☐ 51 001$ - 68 000$ ☐ 68 001$ - 85 000$ ☐ more than 85 000$

Think of this ladder as representing where people stand in our society. At the top of the ladder are the people who are the best off, those who have the most money, most education, and best jobs. At the bottom are the people who are the worst off, those who have the least money, least education, and worst jobs or no job. Please, place an X on the rung that best represents where you think you stand on the ladder.



APPENDIX C:

Assessment of Depressive Symptoms:
Center for Epidemiological Studies Depression Scale – 10 Item

Well-Being

Below is a list of the ways you might have felt or behaved. Please indicate by a check how often you have felt this way **during the past week** using the following scale.

Rarely or None of the Time = Less than 1 Day
Some or a Little of the Time = 1 – 2 Days
Occasionally or a Moderate Amount of the Time =3 - 4 Days
Most or All of the Time = 5 - 7 Days

During the past week ….	**Less than 1 Day**	**1 – 2 Days**	**3 – 4 Days**	**5 – 7 Days**
1. I was bothered by things that usually don't bother me.				
2. I had trouble keeping my mind on what I was doing.				
3. I felt depressed.				
4. I felt that everything I did was an effort.				
5. I felt hopeful about the future.				
6. I felt fearful.				
7. My sleep was restless.				
8. I was happy.				
9. I felt lonely.				
10. I could not get "going."				

APPENDIX D:

Assessment of Functional Disability

Activities of Daily Living

Please answer the following questions regarding your daily chores. Place a check under "No" if you do not experience any difficulty with the specific chore. If you do experience some difficulty with that chore, we would like you to first evaluate the amount of: 1) difficulty completing the chore; 2) physical strain involved **and** 3) emotional strain experienced with this chore, using the scale below. Please write the corresponding number under each of the "yes" columns.

1 = very slightly or not at all
2 = a little
3 = moderately
4 = quite a bit
5 = extremely

Because of health or physical problems, do you have any difficulty or are you unable:	*No*	**Yes**		
		Difficulty	**Physical strain**	**Emotional strain**
…to eat, including feeding yourself?				
…to dress yourself?				
…to bathe or shower?				
…to use the toilet including getting to the toilet?				
…to walk around the home?				
…to get in and out of a bed or a chair?				
…to do heavy housework, like scrubbing floors or washing windows, or yard work, like raking leaves or mowing?				
…to do light housework?				
…to do shopping for personal items?				
…to prepare meals?				
…to manage money, such as paying bills?				
…to use the phone?				

APPENDIX E:

Assessment of General Goal Adjustment Capacities:
Goal Adjustment Scale

Goal Adjustment

During their lives people cannot always attain what they want and are sometimes forced to stop pursuing the goals they have set. We are interested in understanding how you usually react when this happens to you. Please indicate the extent to which you agree or disagree with each of the following statements, as it usually applies to you.

If I have to stop pursuing an important goal in my life…	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. It's easy for me to reduce my effort towards the goal.					
2. I convince myself that I have other meaningful goals to pursue.					
3. I stay committed to the goal for a long time; I can't let it go.					
4. I start working on other new goals.					
5. I think about other new goals to pursue					
6. I find it difficult to stop trying to achieve the goal.					
7. I seek other meaningful goals.					
8. It's easy for me to stop thinking about the goal and let it go.					
9. I tell myself that I have a number of other new goals to draw upon.					
10. I put effort toward other meaningful goals.					

APPENDIX F:

Final ADL-GAS Instructions and Questionnaire

Activities of Daily Living

You may have mentioned before that you have difficulty with activities of daily living. If so, please think for a moment about situations in your life when you recognize that you can no longer perform these activities the way you used to. We would like to ask you how you typically react in such situations.

If you have no difficulties with activities of daily living, please tell us how you think you would react if you experience problems with activities of daily living in the future.

If I experience problems with activities of daily living …	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1. It's hard for me to accept that I can no longer perform some activities as well as I used to.					
2. I try to scale back on some activities, and accomplish as much as I still can (e.g., doing only 30 minutes housework or going shopping only once per week).					
3. I can't stop thinking about how well I used to do these activities in the past; I can't let it go.					
4. I take all the time I need to do these activities, even if it takes much longer.					
5. Although I'll never be as good at these activities as I used to be, I keep trying to do the best I can.					
6. If I can't do one of these activities, I try to find new ways to get it done (e.g., use an aid or assistive device, make modifications in my home, or get other people to help me).					

APPENDIX G

Assessment of Life Satisfaction:
Satisfaction with Life Scale

Well-Being

Below are five statements with which you may agree or disagree. Please indicate your agreement with each item by putting a check in the appropriate box next to the statement.

	Strongly Disagree	**Disagree**	**Slightly Disagree**	**Neither Agree nor Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**
1. In most ways my life is close to my ideal.							
2. The conditions of my life are excellent.							
3. I am satisfied with my life.							
4. So far I have gotten the important things I want in life.							
5. If I could live my life over, I would change almost nothing.							

APPENDIX H:

Assessment of Positive and Negative Affect:
The Positive and Negative Affect Schedule

Well-Being

This scale consists of a number of words that describe different feelings and emotions. Read each item and indicate to what extent you experienced the following emotions **during the past year**.

	Very slightly or not at all	**A little**	**Moderately**	**Quite a bit**	**Extremely**
1. Interested					
2. Distressed					
3. Excited					
4. Upset					
5. Strong					
6. Guilty					
7. Scared					
8. Hostile					
9. Enthusiastic					
10. Proud					
11. Irritable					
12. Alert					
13. Ashamed					
14. Inspired					
15. Nervous					
16. Determined					
17. Attentive					
18. Jittery					
19. Active					
20. Afraid					

APPENDIX I:

Assessment of Health Engagement Control Strategies
and Compensatory Secondary Control

Health Management

To what extent does each of the following statements apply to you? For each statement, please indicate the extent to which of the following statements *usually* applies to you.

	Almost Never True	**Seldom True**	**Some-times True**	**Often True**	**Almost Always True**
1. I invest as much time and energy as possible to improve my health.					
2. If I develop a new health problem, I immediately get help from a health professional (e.g., doctor, nurse).					
3. When I decide to do something about a health problem, I am confident that I will achieve it.					
4. I do whatever is necessary to be as healthy as I possibly can be.					
5. When a treatment doesn't work for a health problem I have, I try hard to find out about other treatments.					
6. Once I decide what I need to do to improve my health, I avoid things that could distract me from doing these things.					
7. If I have a health problem that gets worse, I put in even more effort to get better.					
8. When I first notice a health problem, I try to get as much advice as I can from people who might know something about the problem.					
9. I often think about how important good health is to me.					