2019

The Role Of Optimism In Goal Adjustment Behavior And Subjective Well-Being

Emily R. Fink
Indiana State University

THE ROLE OF OPTIMISM IN GOAL ADJUSTMENT BEHAVIOR AND SUBJECTIVE WELL-BEING

A Dissertation

Presented to

The College of Graduate and Professional Studies

Department of Psychology

Indiana State University

Terre Haute, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Clinical Psychology

---

by

Emily R. Fink

August 2019

Keywords: optimism, goal disengagement, goal reengagement, goal adjustment, subjective well-being

CURRICULUM VITAE

Emily R. Fink

EDUCATION

2019	Doctor of Psychology in Clinical Psychology Indiana State University, Terre Haute, Indiana
2016	Master of Science in Psychology Indiana State University, Terre Haute, Indiana
2003	Bachelor of Arts in Psychology Bachelor of Arts in Theater Vassar College, Poughkeepsie, New York

PROFESSIONAL EXPERIENCE

2018-Present	Psychology Intern, University of Florida Health Science Center Gainesville, Florida
2017-2018	Primary Care Student Clinician, Richard L. Roudebush VA Medical Center Indianapolis, Indiana
2016-2017	Graduate Clinician, Valley Professionals Community Health Center Terre Haute, Indiana
2015-2017	Graduate Clinician, Indiana State University Psychology Clinic Terre Haute, Indiana

AWARDS & RECOGNITION

2019	Indiana State University Ethos Award

COMMITTEE MEMBERS

Committee Chair: Thomas Johnson, Ph.D.

Professor of Psychology

Indiana State University

Committee Member: Kevin Jordan, Ph.D.

Professor of Psychology

Indiana State University

Committee Member: Virgil Sheets, Ph.D.

Professor of Psychology

Indiana State University

ABSTRACT

Research suggests that the experience of striving towards blocked goals negatively impacts subjective well-being, through decreased self-esteem and increased rumination and intrusive thoughts (Klinger, 1977; Mathews & Wells, 2004). Self-regulation theories propose that individuals may avoid these negative outcomes by engaging in goal adjustment processes comprised of goal disengagement (i.e., withdrawal of effort and resources from a desired goal) and goal reengagement (i.e., psychological and motivation commitment towards a new goal; Wrosch, Scheier, Carver & Schulz, 2003). While self-regulation theorists generally agree that optimism is likely to be linked with goal adjustment processes, there is significant disagreement as to the nature of this association; some research suggests that optimism is likely to facilitate goal adjustment processes (Aspinwall & Richter, 1999; Hanssen et al., 2015), while other research proposes that optimism hinders these same behaviors (Gibson & Sanbonmatsu, 2004). The current project aimed to clarify these associations, by creating a structural equation model detailing paths between optimism, goal adjustment and subjective well-being constructs. It further aimed to identify ways in which dispositional optimism and optimistic explanatory style constructs overlapped or diverged in their relationships with goal adjustment and subjective well-being variables. Specifically, it was hypothesized that a latent optimism construct would negatively predict goal disengagement and positively predict goal reengagement. It was further predicted that goal adjustment would mediate relationships between a latent optimism construct and subjective well-being and that perceptions of control and goal reengagement capacity would moderate relationships between optimism and goal disengagement. Lastly, it was hypothesized that goal disengagement would moderate relationships between goal reengagement and subjective well-being. A sample of 436 undergraduate participants recruited from a Midwestern

University completed a series of online questionnaires evaluating dispositional optimism, optimistic explanatory style, goal adjustment, cognitive subjective well-being, affective subjective well-being and physical subjective well-being. It was found that a measurement model evaluating dispositional optimism and optimistic explanatory style independently proved a better fit to the data than one in which these constructs contributed to a latent optimism variable as hypothesized. In the final structural model, optimistic explanatory style negatively predicted goal disengagement as predicted, such that goal disengagement fully mediated a relationship between attributional style and positive subjective well-being. In this same model, dispositional optimism positively predicted goal reengagement, such that goal reengagement partially mediated relationships between trait optimism and positive and negative subjective well-being. Unexpectedly, optimistic explanatory style was unrelated to goal reengagement or negative subjective well-being and dispositional optimism was unrelated to goal disengagement. Hypotheses suggesting that goal disengagement would moderate a relationship between goal reengagement and subjective well-being were partially supported, suggesting that goal reengagement becomes increasingly important to well-being in vulnerable populations who experience either excessive or impoverished disengagement. All other moderation hypotheses were not supported. Together these results frame dispositional optimism and optimistic explanatory style as overlapping but distinct constructs with unique relationships to goal adjustment and subjective well-being. Goal reengagement was identified as one potential method by which optimists experience increased subjective well-being, as hypothesized. Contrary to prior research, goal disengagement negatively predicted positive subjective well-being, suggesting that disengagement from goals has variable impact on well-being.

ACKNOWLEDGMENTS

First and foremost, thank you to my dissertation chair and mentor, Dr. Tom Johnson, for his support and guidance throughout this process. From the initial days of my positive psychology independent study to the eve of my dissertation defense, Dr. Johnson has been an invaluable source of knowledge and a kindred intellectual spirit. Dr. Johnson: it's been a true joy to bounce ideas back and forth with you.

Thank you also to my committee members, Dr. Sheets and Dr. Jordan for their invaluable assistance with this project and to the Indiana State University Psychology Department for their simultaneous nurturance and rigor. I have felt lucky to be given the opportunity to pursue my doctoral training within a program that was committed to both my success as a student and my well-being as an individual. In particular, thank you to Dr. Liz O'Laughlin for her guidance and mentorship in the areas of clinical supervision and professional development.

Thank you to my friends and family. To my mother and brother: You are the reason I have made it to this point. Thank you for your undying support and love throughout this process. To my father: So much of my love of science stems from you (the original Dr. Fink). I am so proud to be your daughter and wish you could be here to witness this achievement.

And last (but certainly not least), thank you to my cohort, without whom I would not have accomplished this or other professional achievements. Thank you for supporting me during difficult times, forcing me to engage in self-care, and cheering me on in moments when I doubted myself. I am so grateful and honored to have you in my life and am excited to witness your many accomplishments for years to come.

TABLE OF CONTENTS

ABSTRACT……... iii

ACKNOWLEDGEMENTS……v

TABLE OF CONTENTS……vi

LIST OF TABLES……..xi

LIST OF FIGURES…….. xiii

INTRODUCTION……... 1

REVIEW OF THE LITERATURE…… 7

Goals and Subjective Well-Being…… 7

Goal Constraints…….10

Unattainable Goals and Subjective Well-Being…… 11

Theories of Adaptive Self-Regulation……... 13

Motivational Theory of Lifespan Development…… 13

Dual-Process Theory…….. 16

Self-Regulation and Control Theory……..18

Reconciling Self-Regulation Theories……20

Self-Regulation Theories and The Present Study…….. 22

Goal Adjustment and Subjective Well-Being: Empirical Evidence……...25

Goal Disengagement……..25

Goal Reengagement……... 26

Disengagement and Reengagement……... 27

Goal Adjustment and Physical Health Outcomes……..29

Optimism……... 30

Optimistic Explanatory Style……31

Dispositional Optimism……..... 33

Reconciling Theories of Optimism…….35

Optimism and Subjective Well-Being……... 37

Optimism and Health……..... 39

Optimism and Goal Adjustment……41

Optimism and Goal Disengagement…….. 41

Optimism and Goal Reengagement……... 42

The Present Study…….. 45

Hypotheses…….....46

Primary Hypothesis 1……47

Primary Hypothesis 2……..…47

Primary Hypothesis 3……47

Primary Hypothesis 4……....48

Secondary Hypothesis 1……..... 48

Secondary Hypothesis 2……..…49

METHODOLOGY…… 50

Overview and Design……50

Participants……..... 50

Exclusion Criteria……. 51

Measures……..... 51

Demographic Information ……....51

Measures of Optimism……...52

Life Orientation Test-Revised (LOT-R)…….52

Attributional Style Assessment Test-Third Edition (ASAT-III)....53

Measure of Goal Disengagement and Reengagement……... 55

Goal Adjustment Scale (GAS)…… 55

Measures of Subjective Well-Being…….. 56

Positive and Negative Affect Schedule (PANAS)…….....56

Satisfaction with Life Scale (SWLS)……..57

Cohen-Hoberman Inventory of Physical Symptoms (CHIPS)…...58

Procedure…….. 59

RESULTS…….. 60

Overview of Analyses……60

Descriptive Statistics……..60

Optimism Variables……... 60

Goal Adjustment Variables……62

Subjective Well-Being Variables……...62

Intercorrelations of Major Variables……..... 64

Path Analyses……....66

Primary Hypothesis 1……..... 66

Hypothesized Path Model……..67

Measurement Model……..68

Structural Model……..... 69

Final Path Model……... 71

Secondary Hypothesis 1……....74

Moderation Analyses……..... 74

Primary Hypothesis 2……..... 75

Primary Hypothesis 3……..... 77

Primary Hypothesis 4……..... 80

Secondary Hypothesis 2……....81

DISCUSSION…… 89

Summary of Findings……....89

Optimism Constructs…… 91

Specificity of Expectations…….92

Different Pathways to Optimism……93

Types of Expectancies……94

Optimism and Goal Adjustment……..... 97

Optimism, Goal Adjustment and Subjective Well-Being…… 101

Moderation Analyses……... 107

Limitations…….. 111

Future Directions……..... 114

Clinical Implications…… 118

Summary……..... 121

REFERENCES…… 122

APPENDICES……..... 146

A. LIFE ORIENTATION TEST REVISED (LOT-R)…….. 146

B. ATTRIBUTIONAL STYLE ASSESSMENT TEST-THIRD EDITION (ASAT-III)…….. 148

C. GOAL ADJUSTMENT SCALE (GAS)…… 162

D. POSITIVE AND NEGATIVE AFFECT SCHEDULE (PANAS)……..…….. 164

E. SATISFACTION WITH LIFE SCALE (SWLS)…….. 165

F. COHEN-HOBERMAN INVENTORY OF PHYSICAL SYMPTOMS (CHIPS)… 166

G. INTERCORRELATIONS OF MAIN STUDY VARIABLES AND DEMOGRAPHIC VARIABLES……. 172

LIST OF TABLES

Table 1: Descriptive Statistics for Optimism Variables……..... 61

Table 2: Intercorrelations Between Optimism Variables…….. 62

Table 3: Descriptive Statistics and Intercorrelations for Goal Adjustment Variables…….. 62

Table 4: Descriptive Statistics for Subjective Well-Being Variables……....63

Table 5: Intercorrelations Between Subjective Well-Being Variables……..63

Table 6: Principal Component Analysis of Subjective Well-Being Variables…….....64

Table 7: Intercorrelations Between Main Study Variables……65

Table 8: Main Effects and Interaction of Dispositional Optimism and Goal Reengagement on Goal Disengagement……..76

Table 9: Main Effects and Interaction of Optimistic Explanatory Style and Goal Reengagement on Goal Disengagement…….....77

Table 10: Summary of Regression Analyses for Three Samples of Respondents with Low Level of Goal Disengagement, Medium Level of Goal Disengagement and High Level of Goal Disengagement……...79

Table 11: Main Effects and Interaction of Dispositional Optimism and Controllability on Goal Disengagement…….. 81

Table 12: Main Effects and Interaction of Optimistic Explanatory Style and Controllability on Goal Disengagement…… 81

Table 13: Main Effects and Interaction of Goal Disengagement and Dispositional Optimism on Positive Subjective Well-Being……..84

Table 14: Main Effects and Interaction of Goal Reengagement and Dispositional Optimism on Positive Subjective Well-Being……..84

Table 15: Main Effects and Interaction of Goal Disengagement and Dispositional Optimism on Negative Subjective Well-Being…….....85

Table 16: Main Effects and Interaction of Goal Reengagement and Dispositional Optimism on Negative Subjective Well-Being…….....85

Table 17: Main Effects and Interaction of Goal Disengagement and Optimistic Explanatory Style on Positive Subjective Well-Being……....86

Table 18: Main Effects and Interaction of Goal Reengagement and Optimistic Explanatory Style on Positive Subjective Well-Being……....86

Table 19: Main Effects and Interaction of Goal Disengagement and Optimistic Explanatory Style on Negative Subjective Well-Being……87

Table 20: Main Effects and Interaction of Goal Reengagement and Optimistic Explanatory Style on Negative Subjective Well-Being……87

LIST OF FIGURES

Figure 1: Hypothesized Relationships Between Variables…… 48

Figure 2: Hypothesized Differential Effects of Goal Adjustment Behaviors……..... 49

Figure 3: Proposed Moderating Effects of Optimism on Goal Adjustment and Subjective Well-Being……..49

Figure 4: Revised Hypothesized Relationships Between Variables…….. 67

Figure 5: Initial Measurement Model……68

Figure 6: Revised Measurement Model…….....69

Figure 7: First Structural Model…….... 70

Figure 8: Revised Structural Model…….. 71

Figure 9: Final Structural Model…….. 72

Figure 10: Hypothesized Model of Moderating Effects of Goal Reengagement on Optimism and Goal Disengagement……..75

Figure 11: Revised Hypothesized Model of Moderating Effects of Goal Reengagement on Optimism and Goal Disengagement…….. 76

Figure 12: Hypothesized Model of Moderating Effects of Goal Disengagement on Goal Reengagement and Subjective Well-Being……....77

Figure 13: Revised Hypothesized Model of Moderating Effects of Goal Disengagement on Goal Reengagement and Subjective Well-Being…….....78

Figure 14: Hypothesized Model of Moderating Effects of Controllability on Optimism and Goal Disengagement……...79

Figure 15: Revised Hypothesized Model of Moderating Effects of Controllability on Optimism and Goal Disengagement……. 80

Figure 16: Hypothesized Model of Moderating Effects of Optimism on Goal Adjustment and Subjective Well-Being……82

Figure 17: Revised Hypothesized Model of Moderating Effects of Optimism on Goal Adjustment and Subjective Well-Being…….....83

CHAPTER 1

INTRODUCTION

Research examining goal pursuit has traditionally emphasized the ways in which goal attainment efforts improve subjective well-being, a construct commonly defined as an individual's cognitive evaluations and emotional reactions to their life (Diener, Lucas, & Oishi, 2002). Heckhausen and Schulz (1998) propose that pursuit of personal goals organizes behavior aimed at optimizing life opportunities and development. Emmons (1986) argues that goal pursuit enhances an individual's sense of life purpose. Increasingly however, theorists are acknowledging that goal striving behavior may negatively impact individuals, particularly those who encounter obstacles in their pursuit of desired outcomes (Wrosch, Miller, Scheier, & de Pontet, 2007).

People commonly respond to or cope with blocked goals by increasing their effort toward a stated goal or shifting their chosen goal attainment pathway (Carver & Scheier, 1981). Although such behaviors help individuals prevail over some goal-related barriers, many obstacles prove fixed or uncontrollable, ultimately preventing successful goal fulfillment. Life span development and age-related physical decline, for example, necessitate restrictions in the types of goals that can successfully be achieved in older age. Genetic potential likewise imposes limits upon goals requiring certain physical abilities (e.g., sports), while negative life events, including disease, divorce or unemployment, render certain goals unattainable. Research suggests that failure to meet identified goals is associated with a variety of negative psychological outcomes, including decreased self-esteem, increased rumination and negative

intrusive thoughts (Klinger, 1977; Matthews & Wells, 2004). As such, the experience of facing an unattainable or blocked goal is proposed to reduce subjective well-being (Carver & Scheier, 1990).

Self-regulation theories propose that individuals may avoid distress associated with blocked goals by engaging in two complimentary goal adjustment behaviors: goal disengagement and goal reengagement (Wrosch et al., 2007; Wrosch, Scheier, Carver et al., 2003; Wrosch, Scheier, Miller, Schulz, & Carver, 2003). Goal disengagement, defined as the withdrawal of effort and psychological commitment directed toward an identified goal, is proposed to provide an adaptive function by allowing individuals to escape negative affect associated with the experience of repeated goal failure (Nesse, 2000). Linked with fewer intrusive negative thoughts (Thompson, Stanton, & Bower, 2013), this form of goal adjustment is suggested to additionally allow for the reallocation of resources to alternate goal pursuits and the reduction of physiological stress (Wrosch, Scheier, & Miller, 2013). Goal reengagement, by contrast, conceptualized as the ability to identify and commit to alternative meaningful goals, is argued to minimize distress by reorienting the individual's focus away from failure and toward success. Associated with renewed life purpose (Gollwitzer, Heckhausen, & Steller, 1990), this behavior is suggested to increase positive affect through engagement in meaningful activity (Mens & Scheier, 2015).

Both forms of goal adjustment behavior are demonstrated to predict well-being across a variety of populations; goal disengagement has been linked with psychological benefits in women who desired children but had passed childbearing age (Heckhausen, Wrosch, & Fleeson, 2001), those caring for a family member with mental illness (Wrosch, Amir, & Miller, 2011), women diagnosed with advanced breast cancer (Lam et al., 2015) and colorectal cancer patients

(Janse, Sprangers, Ranchor, & Fleer, 2016). Goal reengagement has likewise been associated with psychological adjustment in women with breast cancer (Mens & Scheier, 2015) and community-dwelling adults (Bauer, 2004). Goal reengagement behavior has also been shown to interact with goal disengagement in the prediction of subjective well-being in older adults and parents of children with cancer (Wrosch, Scheier, Miller et al., 2003).

Self-regulation theories of behavior assume that individuals vary in their capacity to disengage from unattainable goals and reengage in new goals, and suggest that these variations in goal adjustment, in turn, influence an individual's subjective well-being (Wrosch, Scheier, Miller et al., 2003). One individual difference proposed to affect the ease and frequency with which people engage in goal adjustment behaviors is optimism (Aspinwall & Richter, 1999; Hanssen et al., 2015; Rasmussen, Wrosch, Scheier, & Carver, 2006; Wrosch & Scheier, 2003). Alternately defined as a generalized positive outcome expectancy (Scheier & Carver, 1985) and an attributional style (Seligman, 1991), optimism is a trait consistently linked with positive psychological outcomes and quality of life. Optimists have been shown to experience fewer symptoms of depression, greater life satisfaction and increased psychological resilience in the face of life stressors (Aspinwall & Taylor, 1992; Daukantaite & Bergman, 2005; Forgeard & Seligman, 2012). Optimism has also been demonstrated to positively impact physical health outcomes, with research suggesting that the trait is linked with a slower progression of disease, stronger immune functioning and reduced mortality rates (Giltay, Geleijnse, Zitman, Hoekstra, & Schouten, 2004; Matthews, Raikkonen, Sutton-Tyrrell, & Kuller, 2004; Segerstrom, 2006).

While self-regulation theorists generally agree that optimism is likely to be linked with goal pursuit processes, there is significant disagreement as to the nature of this association. Some theorists propose that optimism is likely to hinder goal adjustment processes. Expectancy-value

models of behavior, which link expectations of future success with increased effort directed toward goal pursuits, argue that optimists are likely to persist in goal attainment behavior, even in the face of obstacles, due to their increased confidence of eventual goal achievement (Carver & Scheier, 1990). Gibson and Sanbonmatsu (2004) demonstrated that optimists were both more likely than pessimists to persist in gambling after losing money and more likely to report remembering more contextual evidence of near wins. Hanssen et al. (2015) likewise demonstrated that tenacious goal pursuit, defined as persistent commitment and effort directed toward goal attainment, is associated with measures of dispositional optimism. Together, these findings suggest that positive expectancies may contribute to decreased frequency and ease of goal disengagement behaviors, should optimists fail to adequately perceive or identify constraints as limiting their ability to reach stated goals.

Other research suggests that optimism promotes goal adjustment behaviors. A longitudinal study of community-dwelling adults demonstrated that optimism predicted replacement of lost or reduced activities following illness (i.e., goal reengagement), suggesting that optimism promotes goal reengagement behaviors (Duke, Leventhal, Brownlee, & Leventhal, 2002). Aspinwall and Richter (1999) found that optimists disengaged from unsolvable lab tasks more quickly than pessimists when presented with an opportunity to engage in an alternate goal. This suggests that optimism promotes goal disengagement in the presence of opportunities for reengagement. Thus a relationship between optimism and goal disengagement may be contingent upon the capacity for goal reengagement, which provides a moderating influence.

Lastly, further research suggests that optimism may influence the impact of goal adjustment behaviors on subjective well-being. In the only published study to examine optimism, goal adjustment behaviors and subjective well-being constructs, researchers evaluated ways in

which optimism moderated the effect of goal disengagement on measures of emotional distress in advanced stage breast cancer patients (Lam et al., 2015). Optimists who reported difficulty disengaging from goals indicated fewer symptoms of anxiety and depression than did pessimists who could not disengage, suggesting that optimism may confer a protective effect on those who experience difficulty relinquishing desired outcomes.

To date, little research has specifically examined the relationship between optimism, goal disengagement and reengagement processes and subjective well-being. This study aims to expand on previous research linking optimism with goal adjustment behavior and subjective well-being by examining the associations between these constructs in a group of college students, who will be asked to complete measures of optimism (Life Orientation Test-Revised; Scheier, Carver, & Bridges, 1994; Attributional Style Assessment Test; Anderson & Riger, 1991), goal disengagement and goal reengagement behaviors (Goal Adjustment Scale; Wrosch, Scheier, Miller et al., 2003) and well-being (Positive and Negative Affect Schedule; Watson, Clark, & Tellegen, 1988; Satisfaction with Life Scale; Diener, Emmons, Larsen, & Griffin, 1985; Cohen-Hoberman Inventory of Physical Symptoms; Cohen & Hoberman, 1983).

The finding that optimism is associated with goal disengagement and reengagement processes would add to the literature by suggesting potential avenues for interventions designed to facilitate goal adjustment behavior, while research suggesting that goal disengagement and reengagement account for a portion of the relationship between optimism and subjective well-being would increase understanding of the self-regulatory strategies of optimists. Alternatively, findings suggesting that optimism hinders goal adjustment might add to the research base examining potential downsides to positive expectancies and attributional styles, while links

between optimism and goal adjustment behavior would further refine understanding of the mechanisms by which individual differences impact goal pursuit behaviors.

CHAPTER 2

REVIEW OF THE LITERATURE

This review will begin by addressing issues related to goals and self-regulation, and then link this to research on optimism. The first section briefly details the relationship between goals and well-being, followed by a discussion of some constraints on goal achievement that may limit well-being. This section finishes with an extended review of ways that people self-regulate or adjust when faced with blocked goals. Optimism is often characterized as positive expectancies for the future or an explanatory style, but it also has links to goals and well-being. After reviewing these connections, the relationship between optimism and goal adjustment/self-regulation will be examined. This chapter will close with a statement of the hypotheses of the current study.

Goals and Subjective Well-Being

Whether one is attempting to find a spouse, complete a degree, or run a marathon, the act of identifying and working toward a goal represents an integral part of the human experience (Heckhausen, Wrosch, & Schulz, 2010). Commonly defined as internal mental representations of desired outcomes, goals instigate behavior aimed at bringing about an identified end-state (Austin & Vancouver, 1996) and vary in terms of content, level of abstraction, and direction of desired outcome (i.e., approach vs. avoid; Wrosch, Scheier, Miller, et. al., 2003). Over the years, goals have been conceptualized in a variety of different ways; current concerns (Klinger, 1975, 1977), personal projects (Little, 1983), personal strivings (Emmons, 1999), and life tasks (Cantor & Langston, 1989) represent some of the many variations of goal constructs proposed by

theorists. Some conceptualizations emphasize the temporal aspect of goals. Klinger (1975, 1977), for example, identified current concerns as goals in which individuals are persistently and presently engaged, thus emphasizing an immediate pursuit of outcomes and the resultant sense of mental engagement. Other theories emphasize the ways in which goals are impacted by individual differences or developmental stage. Emmon's conceptualization of personal strivings (1999) stressed the manner by which broad, general goals reflect aspects of the individual's personality as well as their values and previous experience, while Cantor and Langston's life tasks (1989) were proposed to vary and change according to the individual's phase of life.

Although goal constructs have been conceptualized differently among theorists, these models converge in their view of goals as adaptive and vital to the individual's well-being (Carver & Scheier, 1981; Emmons, 2003; Emmons & Diener, 1986; Heckhausen & Schulz, 1995; Little, 1989; Rasmussen et al., 2006). Noting that each living organism possesses drives to seek out life's necessities (i.e., food, shelter), Klinger (1998) argues that animal and human life is structured by sustained and repeated goal striving, the success of which enables the organism to survive. As such, he concludes, goals contribute to well-being by helping individuals organize their lives, giving shape to daily existence and keeping them alive. In a similar vein, Heckhausen and Schulz (1998) suggest that goals benefit individuals by providing structure and shape to human development and life course-transitions; noting that individuals play an active role in their own growth and adaptation. These theorists propose that goals facilitate life-span development by guiding activity, motivating behavior, and energizing the individual to engage in adaptive actions aimed at achieving maximal functioning and performance.

Emmons (1999) proposes that goals benefit individuals by orienting them to personal values. Characterizing goals as benchmarks by which individuals determine the worth and

direction of their lives, Emmons proposes that goals infuse human lives with meaning. A generative goal, for example, of teaching one's child to be kind to others, provides form and direction to the experience of being a parent. Research evaluating a link between meaning and subjective well-being supports this argument; increased perception of meaning has been demonstrated to predict psychological adjustment (French & Joseph, 1999), life satisfaction, and happiness (Wong & Fry, 1998) while meaninglessness predicted psychopathology (including substance use and negative mood states) in both student and psychiatric populations (Klinger, 1998). As such, it is suggested that goals help individuals by facilitating a sense of direction and life purpose that promotes psychological adjustment.

Research linking goal pursuits with subjective well-being supports a conceptualization of goals as adaptive. Wessman and Ricks (1966) found that men who had identified multiple goals and purposes endorsed more happiness than men not engaged with goal prospects, thus suggesting that the act of establishing goals confers positive affect. Making progress toward goals has likewise been demonstrated to contribute to measures of subjective well-being (Brunstein, Schultheiss & Grassman, 1998; Klug & Maier, 2015), with goals that are valued more highly (by the culture and the individual) predicting greater levels of positive affect (Cantor & Sanderson, 1999; Pomerantz, Saxon, & Oishi, 2000). Finally, goal attainment has repeatedly been linked with happiness; past attainment of goals predicts positive affect (Emmons, 1986; Emmons & Diener, 1986), while negative affect has been linked with lowered expectations for future goal success (Emmons, 1986). Identifying, working toward, and attaining goals then are each individually linked with positive psychological adjustment, suggesting that multiple stages of the goal process contribute to subjective well-being.

Goal Constraints

As noted in the previous section, individuals generally benefit from attempts at goal attainment. Reality imposes limits on the types and number of goals that can be successfully attained within a person's lifetime. Such goal constraints typically fall into one of three categories.

The first category of constraints are those associated with changes in biological resources due to development and aging processes. Although cognitive and physical resources increase in youth, these resources stabilize in adulthood, and later decline as individuals reach their senior years. Such deterioration requires that individuals relinquish goals incompatible with their given level of cognitive or physical ability (Wrosch, Scheier, Miller, et al., 2003). Setting an Olympic record for running the marathon, for example, might be feasible during an individual's 20s or 30s, but is unlikely to occur either prior to adolescence or following retirement age. Genetics likewise impose goal limits. Though many children aim to become professional athletes, only a small portion possess the physical traits necessary to realize this dream. Goals that are beyond an individual's physical or cognitive capacities, then, are unlikely to be met due to genetic limitations, regardless of the time or effort directed at their attainment.

The second category of constraints involve those associated with the duration of an individual's life-span. When choosing a goal, one must consider the time-frame necessary to attain a particular pursuit (Wrosch, Scheier, Carver, et al., 2003); indeed, research suggests that possibilities for goal pursuit decline as individuals progress through life (Heckhausen et al., 2010). Many professional objectives require years of education, consolidation of knowledge, and development of skills or techniques. The process of becoming a medical doctor, for example, involves a minimum of 11 years training before becoming eligible to sit for licensure. Depending

on the individual's age at the onset of goal pursuit, there are limits to the types of aims he or she may reliably possess the time to complete, thus necessitating that individuals consider the viability of goals that require planning beyond that assumed for their lifespan (Carstensen, Isaacowitz, & Charles, 1999).

A third category of goal constraints involves negative life events and environments. People frequently encounter life changes that impact their plans and hopes for the future (Dohrenwend & Dohrenwend, 1974). The unexpected death of a spouse, for example, negates the fulfillment of dreams associated with growing old together, or renewing vows later in life, whereas the death of a child might limit one's hopes of developing relationships with grandchildren. Individuals likewise may be impacted by environments that adversely affect goal pursuits. Living in poverty (i.e., low socioeconomic status) might limit goals of completing higher education through absence of financial resources or increased salience of alternate goal pursuits related to securing basic needs (e.g., safety, food, shelter).

Lastly, socially governed rules influence goal pursuit by determining appropriate timelines for major life transitions; normative standards with regard to the age for retirement, for example, reduce opportunities for career expansion in older age. Though such patterns hold adaptive value in their promotion of structure and expectations for common developmental tasks, they necessitate the abandonment of goals outside the scope of normative age-graded institutions (Heckhausen, 1999).

Unattainable Goals and Subjective Well-Being

The presence of goal constraints, as detailed in the previous section, negatively impacts the likelihood that an individual will meet his or her stated goal; absence of biological, motivational or environmental resources hinder goal progress, such that individuals may find

themselves blocked from successful attainment of desired outcomes. Just as working toward goals has been linked with increased subjective well-being, the experience of facing blocked or unattainable goals is proposed to confer emotional distress (Carver & Scheier, 1990). Goal disturbance, defined as the degree to which obstacles hinder successful goal attainment, significantly predicted subjective well-being in a population of cancer patients, such that those individuals scoring high on goal disturbance reported decreased quality of life and lower emotional functioning (Janse et al., 2016). Discrepancies between participants' current view of themselves (actual selves) and the goals they had set for themselves (ideal or ought selves) have likewise been shown to predict feelings of disappointment, dissatisfaction, and dejection in undergraduate populations, linked with perceptions of ineffectiveness and lack of life satisfaction (Higgins, 1987). Negative feedback associated with failed performance has been demonstrated to contribute to the formation of negative self-schemata and feelings of incompetence (Taylor & Brown, 1999), whereas rumination has been linked with forced interruptions of valued activities (Millar, Tesser, & Millar, 1988).

Goal obstacles are likewise proposed to promote negative physical outcomes (Wrosch, 2011). Psychological stress has been repeatedly linked with biological dysregulation contributing to disease vulnerability (Miller, Chen, & Zhou, 2007; Schneiderman, Ironson, & Siegel, 2005; Segerstrom & Miller, 2004); research suggests that emotional distress influences physiological activities in the endocrine and immune systems (Segerstrom & Miller, 2004), is linked with diagnosis of asthma (Afari, Schmaling, Barnhart, & Buchwald, 2001), and impacts the development of illness following exposure to common cold viruses (Cohen, Doyle, Turner, Alper, & Skoner, 2003). As the experience of goal failure is suggested to produce negative psychological states, including increased symptoms of depression and perceived stress (Wrosch

et al., 2007), it is suggested that facing blocked goals could potentially lead to physical health issues (Wrosch, 2011). The next section will discuss ways in which individuals may avoid negative outcomes associated with blocked goal pursuit by engaging in self-regulatory processes aimed at shifting resources towards more fruitful goal prospects.

Theories of Adaptive Self-Regulation

To prevent negative psychological and physical outcomes associated with blocked goal pursuit, individuals may engage in self-regulatory processes aimed at preserving personal resources and promoting psychological adjustment (Brandtstädter & Rothermund, 2002; Carver & Scheier, 1981; Heckhausen et al., 2010). Models that address these processes are broadly labeled as self-regulation theories of behavior. Various self-regulation theories identify similar patterns of behavior by which individuals manage goal-related obstacles and utilize constructs that are frequently cited interchangeably within the literature. Therefore, this review will outline concepts specific to several models before reviewing the ways in which these theories converge and discussing relevant research supporting the existence of self-regulatory processes. This review will then discuss some of the strengths associated with the model chosen for use in the current study.

Motivational Theory of Lifespan Development

Proposed by Heckhausen et al. (2010), the motivational theory of lifespan development views humans as active agents in their own development and asserts that adaptive development stems from the individual's ability to exert control over his or her own environment. Adopting concepts from Rothbaum, Weisz and Snyder (1982), Heckhausen and colleagues (2010) classify attempts to achieve developmental goals as belonging to either primary or secondary control processes.

Primary control processes involve conscious efforts aimed at adapting the environment to match the individual's desired end-state (Heckhausen et al., 2010). Directed outwards at the external world, these efforts help individuals shape their habitats to meet their specific needs and desires. Such externally goal-directed efforts may be either selective or compensatory in nature. Selective primary processes, involving personal investment of time, skill and effort toward an identified developmental goal, help individuals to impact their environment by fostering persistence in the face of difficulties and goal constraints. For example, an individual who has identified a goal of being a good student might spend several hours per day studying in order to ensure that he receives A's in all of his classes, thus modifying his environment (his teachers' evaluation of him) to match his internal desires (for academic achievement). Compensatory primary processes, involving recruitment of external resources, are used to supplant selective primary control processes in the event of goal constraints or limited goal progress. Should the previously mentioned hypothetical student, for example, fail to receive good grades by studying (i.e., investment of behavioral resources), he might seek additional tutoring in order to achieve his goal of strong academic performance. By seeking aid from others, the individual increases her or his chances of overcoming obstacles and thus modifies the environment in a way that helps attain an identified developmental goal.

In contrast to primary control processes which are directed toward influencing the external world to match internal desires, secondary control processes involve attempts to modify one's internal experience to match that of the environment (Heckhausen et al., 2010). Affective and/or motivational in nature, these processes are likewise classified as either selective or compensatory. Selective secondary control processes involve efforts to facilitate affective commitment to an established developmental goal; such processes serve to increase motivation

and effort directed toward desired end-states by positively impacting perceived goal value and expectations regarding goal attainment chances. Should the previously mentioned failing student continue to struggle despite external tutoring, he might determine that the goal of academic achievement is even more important to him than he previously estimated, and thus worth his continued feelings of frustration and emotional distress. By modifying his stated commitment to his goal, he justifies continued devotion of motivational resources to his goal, thus enabling continued persistence despite lack of evidence of goal progress.

Compensatory secondary control processes, by contrast, are invoked in the face of perceived loss of control over one's environment (Heckhausen & Schulz, 1993). Compensatory secondary processes involve the relinquishment of commitment to developmental pursuits and allow for disengagement from unattainable goals, thus increasing resources available to be directed toward alternate primary control processes (Heckhausen et al., 2010). Should our hypothetical student, for example, continue to get failing grades despite external aid and increased effort, he might determine that he would rather be a musician than a student, and thus abandon academic pursuits. Such compensatory secondary control processes are proposed to involve self-protective attributional strategies that minimize internal perceptions of goal failure and downward social comparisons that redirect attention to the individual's successes, achievements, and strengths in alternate spheres (Heckhausen et al., 2001; Wrosch & Heckhausen, 1999).

Individuals' capacities for primary control processes are suggested to increase, plateau and eventually decrease over the course of the life-span, according to changing opportunities for developmental goals associated with sociocultural norms and biological constraints (Heckhausen et al., 2010). The capacity to become established in a career, for example, grows as individuals

move out of adolescence into adulthood, stabilizes in middle age, and ultimately diminishes as individuals reach seniority, due to both biological effects of aging and societal constraints governing appropriate life-stage roles. As such, Heckhausen et al. (2010) propose that the use of compensatory secondary control strategies that allow for disengagement from unattainable developmental goals increases with age as individuals encounter decreased opportunities for identified goal strivings.

Dual-Process Theory

A second model of self-regulatory behavior, the dual-process theory, suggests that all human lives involve a mixture of successful goal actions and unintended negative life events that preclude goal outcomes. Proposed by Brandtstädter and Renner (1990), this model proposes that optimal development requires a degree of psychological resiliency in which the individual experiences control over behavior directed toward the attainment of desired end-states, but also prepares to accept goal constraints and adjust their aims to match available resources. This interplay between goal pursuit and adjustment processes is presumed to derive from two distinct yet complementary coping approaches: assimilation and accommodation (Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 2002).

Assimilative modes of coping are those directed toward reducing disparities between desired end-states and actual progress through active and intentional modifications of personal behavior and environmental aspects (Brandtstädter & Rothermund, 2002). Initially involving the evaluation and utilization of personal resources to problem-solve solutions to barriers to goal attainment, assimilative processes may additionally demand the development of relevant skills or knowledge and the acquisition of external resources to boost the chances of goal success.

Assimilative processes imply a commitment to stated goals that allows for persistence in the face of obstacles.

Assimilative modes of coping are assumed to function as the primary coping mechanism in conditions where goals are deemed to possess high personal value and perceived attainability. Accommodative modes, by contrast, are typically used in conditions in which assimilative processes have proven ineffective (Brandtstädter & Rothermund, 2002). Characterized by efforts to reduce goal discrepancies by shifting aspirations toward more attainable goal pursuits, accommodative processes are proposed to help individuals avoid feelings of hopelessness, resignation, and depression associated with goal failure by facilitating an adaptive revision of goal priorities, disengagement from barren outcomes, and cognitive reappraisals of negative feedback.

By definition, assimilative and accommodative modes work in opposition (Brandtstädter & Rothermund, 2002). Accommodative modes of coping inhibit assimilative processes; as long as goals are viewed as attainable, efforts to disconnect from or devalue the goal should remain minimal. Assimilative tendencies likewise inhibit accommodative processes, such that individuals in the process of letting go of blocked outcomes refrain from devoting resources toward goal pursuit. Though antithetical, dual-process theory emphasizes the complementary nature of assimilative and accommodative modes, suggesting that they work in concert to help individuals manage critical life events; in the event of limited resources (i.e., time, effort, money), individuals may need to relinquish some goals in order to attain others (Brandtstädter & Renner, 1990). Brandtstädter and Rothermund (2002) likewise note the possibility for situations in which both modes may be simultaneously employed, thus canceling each other out;

individuals engaged in both modes may be perceived as wavering in their commitment to goals and are likely to experience doubts as to their hopes and desires for the future.

Self-Regulation and Control Theory

Lastly, self-regulation and control theory examines responses to goal obstacles through the lens of feedback loops. Proposed by Carver and Scheier (1990), this model suggests that discrepancies between an individual's present state (input function) and desired outcome (reference value) motivate behavior directed at reducing the discrepancy (output function), thus allowing the individual to stimulate progress toward goals. Negative discrepancies, in which an individual perceives themselves as progressing toward a goal at a rate slower than expected, are seen as conferring negative affect, whereas positive discrepancies, in which an individual perceives faster than expected goal progress, facilitate positive affect.

Two theoretical principles are considered central to Carver and Scheier's (1990) model. First, the authors propose that expectancies of eventual goal success determine the distribution of goal-directed efforts. Impediments to goal pursuit are suggested to interrupt outcome behavior by stimulating an assessment process, in which individuals evaluate their chances for eventual goal success. Favorable expectancies dictate that effort directed toward goals is renewed; the individual redoubles their efforts in the prediction that the obstacle in question will be overcome, and in doing so experiences feelings of happiness, excitement, and hope for the future. Unfavorable expectancies however, in which the individual doubts their capacity to influence goal constraints, dictate that effort and motivation are withdrawn; the individual experiences emotional distress as they confront their inability to manage obstacles to goal success.

Second, Carver and Scheier (1990) propose that negative expectancies instigate a pattern of so-called goal adjustment: behaviors aimed at regulating goal-directed pursuits. Conceived of

as individual differences, two distinct processes within the realm of goal adjustment are identified: goal disengagement and goal reengagement. Goal disengagement, defined as the simultaneous reduction of behavioral effort and withdrawal of psychological commitment from barren outcomes when expectancies for goal success are deemed unfavorable, allows for emotional and motivational distancing from unattainable goals (Wrosch et al., 2013). Goal disengagement is proposed to have two functions: first, it reduces negative affect by allowing individuals to avoid the experience of repeated goal failure. Second, goal disengagement facilitates increased movement toward alternate goals by freeing up resources necessary for successful goal pursuit (Carver & Scheier, 1981, 1990; Wrosch, 2011).

Goal reengagement by contrast, defined as the identification, commitment to, and devotion of effort toward new goals, involves movement toward alternate futures (Carver & Scheier, 1990). Linked with positive affect through increased life satisfaction, engagement, and meaning-making processes, goal reengagement is also proposed to decrease negative affect by countering the experience of being unable to make progress toward goals with new experiences of successful goal attainment.

Although goal adjustment behaviors are typically mentioned in concert, Carver and Scheier (1990) distinguish them as independent processes that work in complementary fashion. Uncorrelated or weakly correlated with one another, goal disengagement and reengagement are suggested to operate via different mechanisms. Goal disengagement has been linked with cognitive reappraisal processes, whereas goal reengagement is associated with identification of meaning and purpose (Wrosch, 2011). Such goal adjustment behaviors likewise predict different aspects of subjective well-being (Wrosch, 2011; Wrosch, Scheier, Miller et al., 2003), with goal disengagement more strongly linked to decreased negative affect and goal reengagement related

to increased positive affect (Wrosch, 2011). As such, individuals are proposed to possess the capacity to engage in one form of goal adjustment while abstaining from the other; Carver and Scheier (1990) note that people can and do disengage from barren goals without identifying or working toward alternate goal pursuits, implying a system in which goal disengagement, but not reengagement, has been enacted. They likewise suggest that individuals may identify new goals without relinquishing or reducing motivation toward older, less successful desired end-states, suggesting the enactment of goal reengagement, but not disengagement processes.

Reconciling Self-Regulation Theories

Though the above outlined theories propose unique conceptualizations of goal-directed behavior and differ in their identification of processes aimed at adjusting to unattainable outcomes, they outline overlapping concepts and propositions. Heckhausen et al. (2010), Brandtstädter and Rothermund (2002) and Carver and Scheier (1990) converge, for example, in their view of regulatory processes being comprised of two broad categories of responses to goal impediments. One category of responses consists of goal engagement behaviors; primary control, assimilative and positive expectancy processes each propose that individuals overcome difficulties by reinvesting time and effort toward attaining an imperiled goal, thus increasing chances for eventual goal success. A second category of responses, meanwhile, describes behaviors which are implemented when the continued devotion of resources toward a goal proves ineffective; compensatory secondary control, accommodation, and goal disengagement processes each propose the abandonment of unattainable goals. Emphasizing a self-protective cognitive reappraisal of failed goal efforts, these processes serve to insulate the individual from increased goal frustration or failure and facilitate conservation of resources that may later be

devoted toward more fruitful goal pursuits. Such models then identify and quantify similar patterns of behavior and mechanisms by which individuals manage goal-related obstacles.

These theories additionally converge in their portrayal of goal disengagement as adaptive (Wrosch, 2011). Historically, Western society has depicted persistence and perseverance as qualities vital to goal success (Janoff-Bulman & Brickman, 1982). "If at first you don't succeed, try, try again," "no pain, no gain," and "winners never quit and quitters never win" are idioms frequently cited to encourage renewed goal efforts following setbacks or obstacles. Prized as a virtue that confers upon its owner eventual success, persistence is lauded in movies, television shows and books that feature comeback stories of individuals who have successfully overcome severe goal impediment. Even the philosophical backbone of our nation, the so-called "American Dream," is predicated on that notion that success may be had by any willing to work hard and persist in the face of difficulty. As Calvin Coolidge, the 30th president of the United States, famously stated:

> Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful people with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence and determination alone are omnipotent. The slogan 'press on' has solved and always will solve the problems of the human race (Knowles, 1999, p. 537).

Research examining psychological constructs has traditionally echoed this stance (Sandelands, Brockner, & Glynn, 1988). Theories of motivation and adaptation emphasize that enduring maximizes the realization of life goals (Miller & Wrosch, 2007). Learned helplessness, likewise, frames disengagement from goal pursuits in the face of uncontrollable stressors as maladaptive (Abramson, Seligman, & Teasdale, 1978); individuals who relinquish goal-directed

efforts in the face of negative feedback are proposed to experience greater symptoms of depression, as well as related negative physical health outcomes (Maier & Seligman, 1976).

Self-regulation theories, however, depart from this viewpoint by noting that disengagement from barren outcomes allows for minimization of potential goal-related adverse consequences (Wrosch, 2011). Compensatory secondary control, accommodation, and goal disengagement concepts are each conceptualized as self-protective processes that safeguard against the loss of emotional and motivational resources and protect individuals from the experience of negative affect when encountering obstacles to desired outcomes. Rather than promoting emotional distress, as suggested by learned helplessness theories of depression that suggest disengagement from all goals, these processes are conceptualized as increasing positive psychological adjustment by virtue of the successful attainment of simultaneous or higher-order goal pursuits and the identification of alternate, fruitful goal pathways. Engagement in such goal-regulatory behaviors, then, is suggested to be linked with increased subjective well-being and quality of life through the reduction of negative affect associated with goal failure and the promotion of positive affect stemming from meaning-making and sense of life purpose.

Self-Regulation Theories and The Present Study

Though each of the three self-regulation theories present overlapping concepts and converge in their conceptualization of disengagement as adaptive, these theories differ with regard to the strength of their assessment methods. Heckhausen and colleagues (2001) have inferred goal disengagement via a memory recall task; arguing that information associated with pursuit of active goals should be more salient and thus easily remembered than information associated with disengaged goals, these researchers measured recall of goal-related information presented during a learning phase with the aim of determining whether individuals had

successfully disengaged with a stated goal (i.e., childbearing). Greater recall was viewed as evidence of continued engagement with the stated goal, while poorer recall was interpreted as evidence for goal disengagement. While this method effectively circumvents issues associated with more traditional self-report measures (e.g., image management, response bias), its use is limited to evaluation of specific, identified goals. As such, this method does not provide information regarding an individual's general or historical capacity for either goal disengagement or reengagement behaviors.

The Tenacious Goal Pursuit (TEN) and Felxible Goal Adjustment (FLEX) Scales created by Brandtstädter and Renner (1990) with the aim of measuring assimilative and accommodative tendencies, likewise possess limitations. A 2011 study examinining the psychometric properties of the TEN and FLEX, suggests that these scales possess poor factorial and face validity, as well as weak convergent and divergent validity (Henselmans et al., 2011). Such limitations may be caused by poor item construction; research indicates that respondents answered inversely phrased items on the TEN and FLEX differently than directly phrased items, suggesting response driven by the method of measurement, rather than its content. Henselmans et al. (2011) further proposed that item stems failed to differentiate between goal disengagement and reengagment behaviors, possibly due to the overlaps in the underlying constructs of accomodation and assimilation. Arguing for modification to item stems with the aim of clarifying for the reader whether the item is asking about responses to unalterable goal obstacles or responses to difficult to reach goals, Henselmans et al. (2011) advise against use of the TEN and FLEX until such revision can be completed.

In light of these limitations, the current study will conceptualize goal adjustment behavior through the lens of the self-regulation and control theory as conceived by Carver and Scheier

(1990). Goal disengagement and reengagement will be measured using the Goal Adjustment Scale (GAS), a 10-item self-report questionnaire which asks respondents to report the extent to which they habitually engage in goal disengagement and reengagement behaviors (Wrosch, Scheier, Miller et al., 2003). The GAS has been shown to possess good internal consistency with Cronbach alphas ranging from .71 to .88 in external studies (Kraaij, Garnefski, & Schroevers, 2009; Wrosch et al., 2013). The measure has likewise been demonstrated to correlate with self-reported past goal adjustment behavior (Wrosch, Scheier, Miller et al., 2003) and has been successfully used in a variety of populations including undergraduate students (Wrosch, Scheier, Miller et al., 2003), breast cancer patients (Lam et al., 2015; Wrosch & Sabiston, 2013), HIV infected men (Kraaij et al., 2008), those caring for relatives diagnosed with mental illness (Wrosch et al., 2011), lower limb amputees (Coffey, Gallagher, & Desmond, 2014), those experiencing suicidal ideation (O'Connor & Forgan, 2007) and couples experiencing difficulties with infertility (Kraaij et al., 2009).

In addition to providing a valid and reliable measure of goal adjustment behavior, self-regulation and control theory lends itself to an examination of the relationship between goal disengagement and reengagement and other personality constructs by virtue of conceptual links between goal adjustment constructs and dispositional optimism. According to Carver and Scheier (1990), presence of positive or negative future expectancies dictate the continuance or abandonment of goal-directed behavior; positive future expectancies are suggested to promote continued goal striving while negative expectancies are expected to result in reduced goal striving (i.e., goal disengagement). Carver and Scheier (1990) similarly frame optimism as a function of future expectancies; individuals who habitually expect positive future outcomes are characterized as possessing dispositional optimism. By defining both constructs as behavior

driven by expectations for the future, these researchers provide a conceptual framework that naturally links optimism with goal adjustment behavior and invites examination of the ways in which one construct may influence or inhibit the other.

Goal Adjustment and Subjective Well-Being: Empirical Evidence

Goal Disengagement. Research examining the psychological outcomes of goal adjustment behavior, as conceived by Carver and Scheier (1990), supports the previously noted conceptualization of goal regulation as adaptive. Goal disengagement has repeatedly been demonstrated to be linked with decreased emotional distress and increased positive psychological adjustment in a variety of populations. Studies exploring goal adjustment behaviors in undergraduate student populations suggest that goal disengagement behavior is linked with diminished negative psychological functioning; individuals who indicated greater goal disengagement reported lower levels of perceived stress, fewer intrusive thoughts, and greater feelings of self-mastery (Wrosch, Scheier, Miller et al., 2003). Compensatory secondary control processes were similarly associated with greater emotional well-being in older participants who had recently experienced the termination of a significant relationship (Wrosch & Heckhausen, 1999), while goal disengagement was linked with less self-blame, substance use, and caregiver burden in those caring for a family member with mental illness (Wrosch et al., 2011). Taken together, these results suggest that the relinquishment of barren goals protects against or alleviates negative affect associated with the experience of facing goal barriers and increases feelings of emotional well-being. As such, I hypothesize that goal disengagement will positively correlate with measures of psychological well-being in the current study.

Goal disengagement likewise confers protection against emotional distress in those experiencing illness and health-related stress. Goal disengagement has been shown to reduce

negative affect in adults who could not have children due to issues of infertility (Kraaij et al., 2009) and moderated the relationship between goal disturbance and quality of life in patients recently diagnosed with cancer (Janse et al., 2016); patients who indicated greater capacity to disengage from barren outcomes experienced increased emotional functioning. Goal disengagement additionally predicted reduced negative affect in a longitudinal study of breast cancer patients (Wrosch & Sabiston, 2013), initial anxiety symptoms in women diagnosed with advanced stage breast cancer (Lam et al., 2015), and lower levels of depressive symptoms in men diagnosed as HIV-positive (Kraaij et al., 2008), thus suggesting that the connection between the relinquishment of goals and increased subjective well-being extends toward the experience of a variety of health related goal obstacles and barriers.

Goal Reengagement. Goal reengagement processes have also been shown to predict subjective well-being. Students able to identify and devote resources toward new goals reported higher levels of life purpose and perceptions of self-efficacy, as well as reductions in negative affect (Wrosch, Scheier, Miller et al., 2003). Breast cancer patients newly diagnosed with early and advanced stage cancer reporting high reengagement with alternate goal pursuits demonstrated greater positive affect and life purpose in addition to reduced negative affect (Lam et al., 2015; Mens & Scheier, 2015), while those individuals caring for family members with mental illness reported greater use of effective coping strategies, including positive reappraisal of goal failure and increased purpose in life (Wrosch et al., 2011). As self-regulation research evaluates the effects of goal disengagement and reengagement behaviors independently, such findings support conceptualizations of goal adjustment behaviors as complementary yet distinct processes, suggesting that each confers a unique positive impact on psychological adjustment. In this vein, I hypothesize that like goal disengagement, goal reengagement will positively correlate

with measures of psychological subjective well-being, independent of the effect of goal disengagement.

Disengagement and Reengagement. While much of the research suggests that goal disengagement and reengagement both increase positive psychological adjustment and reduce negative affect, some research suggests differential effects with regard to specific aspects of well-being. Research examining adult populations struggling with infertility demonstrated that goal disengagement capacities uniquely predicted reduced negative affect, but were unrelated to positive affect, while goal reengagement capacities uniquely predicted greater positive affect but did not impact negative affect (Kraaij et al., 2009). These findings were echoed in longitudinal studies of students and adolescent girls; students with high baseline capacities for goal disengagement (but not reengagement) reported decreased growth in emotional distress (Wrosch et al., 2007). Girls demonstrating increases in goal disengagement (but not reengagement) capacities likewise reported declines in depressive symptoms (Wrosch & Miller, 2009). As a 2009 study examining Scottish students similarly demonstrated that goal reengagement (but not disengagement) uniquely predicted increased purpose for living (O'Connor, Fraser, Whyte, MacHale, & Masterston, 2009), these studies collectively suggest that the relinquishment of goals may better predict negative affect, whereas the identification of new goals may better predict positive affect associated with life purpose. In this vein, I hypothesize that in the current study, goal disengagement will uniquely predict decreases in negative affect associated with psychological well-being and that goal reengagement will uniquely predict increases in positive affect associated with psychological well-being.

Lastly, studies examining the effects of goal disengagement and reengagement efforts suggest that these behaviors may interact in their relationship with subjective well-being. Both

excessive goal disengagement and inability to disengage from goals have a negative impact on subjective well-being. Interestingly, there is evidence that goal reengagement may protect against both of these toxic effects. One body of research suggests that goal reengagement efforts may serve to shield individuals from the negative psychological effects of poor goal disengagement; goal reengagement was found to be a strong predictor of psychological well-being in young adults who reported difficulty disengaging from blocked goals, but not in those who indicated greater ease in relinquishing unattainable desired outcomes (Wrosch, Scheier, Miller et al., 2003). This finding suggests that the identification of new goals may buffer the ill effects of poor goal disengagement behavior by providing alternate avenues for life satisfaction and successful goal achievement that serve to balance negative experiences of goal failure. Thus, the relationship between goal reengagement and well-being was strengthened at low levels of goal disengagement, but not in those with greater goal disengagement capacities.

In contrast, other studies have found evidence that high goal disengagement moderated the effect of goal reengagement on well-being in vulnerable populations. Senior citizens reporting greater detachment from blocked goals, but lower reengagement with alternate pursuits, demonstrated lower levels of subjective well-being (Wrosch, Scheier, Miller et al., 2003). Multiple sclerosis patients who reported high goal disengagement in conjunction with low goal reengagement, likewise demonstrated greater depression symptoms than those who reported ease in identifying new goals (Neter, Litvak, & Miller, 2009). As such, I hypothesize that goal disengagement will moderate the relationship between goal reengagement and psychological well-being in the current study, with extreme levels of goal disengagement strengthening the impact of goal reengagement on subjective well-being.

Goal Adjustment and Physical Health Outcomes

Studies suggesting that goal failure will predict poor health outcomes by negatively impacting subjective well-being (Miller & Wrosch, 2007) have also examined the relationship between goal adjustment behaviors and physical health. Research involving a cross-sectional examination of community-dwelling adults demonstrated that goal disengagement behaviors were linked with illness symptoms; individuals who indicated greater ease in relinquishing barren outcomes reported fewer symptoms of eczema, indigestion, constipation, sleeping problems, migraines, asthma, and thyroid disease (Wrosch et al., 2007). These findings have since been replicated in a population of college students; those indicating higher rates of goal disengagement processes at the start of the semester later reported lower levels of health problems and greater sleep efficiency at semester end, suggesting that disengagement may confer protection against stress-related negative physical outcomes (Wrosch et al., 2007). As such I hypothesize that goal disengagement will positively correlate with beneficial self-reported physical health outcomes in the current study.

As reengagement was not found to predict physical health outcomes in either study, these findings support previously noted research suggesting differential effects of disengagement and reengagement on varied aspects of subjective well-being. Echoing a long history of research linking depression with a variety of physical illnesses, it is suggested that the absence of negative psychological states, as predicted by goal disengagement behaviors, is more strongly linked with physical health outcomes than is the presence of positive psychological states, as predicted by reengagement behaviors (Wrosch et al., 2007; Wrosch et al., 2013). This pattern may occur because emotional distress has a more direct impact on physiological states and processes, while positive affect strongly affects the presence and practice of health-related behaviors (Pressman &

Cohen, 2005). Research investigating the mediational role of emotional distress supports this conceptualization: in a study of community-dwelling adults, the relationship between goal disengagement and health outcomes was demonstrated to be mediated by depression and to a lesser extent, perceived stress, suggesting that goal adjustment may contribute to salubrious outcomes by reducing emotional distress associated with goal failure (Wrosch et al., 2007). As such it is further hypothesized that negative affect will mediate the relationship between goal disengagement and subjective well-being in the current study.

In an extension of previously noted studies, research is also beginning to examine the specific physiological mechanisms responsible for the associations between goal adjustment and physical health. In a study of college students, goal disengagement was found to significantly predict diurnal cortisol rhythm, a commonly used benchmark of stress-induced biological vulnerability (Wrosch et al., 2007). Students who reported greater use of goal disengagement behavior displayed steeper, more typical cortisol rhythms, whereas those students reporting difficulty relinquishing goals were found to possess atypical flattened rhythms, responses commonly associated with the experience of chronic stress (Miller, Cohen, & Ritchey, 2002). As cortisol is linked with a wide variety of biological regulatory processes, including metabolic and immune functions, this relationship may serve as one mechanism by which goal disengagement positively impacts physical health outcomes (Wrosch et al., 2013).

Optimism

Self-regulation and control theory suggests that individuals vary in their capacity for goal adjustment; research indicates that some people demonstrate better ability to adjust to goal obstacles, regardless of the nature of the desired outcome (Wrosch et al., 2007). Individual differences in goal adjustment capacity have been attributed to a variety of personality,

behavioral, and biological processes. People high in private self-consciousness, for example, may display greater goal disengagement than those low in this awareness, possibly due to increased recognition of times at which goal progress has stalled (Carver & Scheier, 1985). Orientation to success may likewise impact goal adjustment capacities, such that those motivated to avoid failure demonstrate a greater tendency toward disengagement than those motivated by pursuing success (Wrosch, Scheier, Miller, et al., 2003). Finally, age and social norms may impact goal adjustment efforts; as individuals may experience less options for goal engagement in older age due to decreased opportunities and changes in expected social roles, they may also be more reluctant to relinquish existing goals regardless of progress or have a harder time identifying alternate pursuits in which to devote their efforts.

One individual difference commonly proposed to impact an individual's capacity for goal adjustment behaviors is optimism (Aspinwall & Richter, 1999; Hanssen et al., 2015; Wrosch & Scheier, 2003; Wrosch et al., 2013). Historically, theorists have conceptualized and measured the construct of optimism in two ways: optimistic explanatory style and dispositional optimism.

Optimistic Explanatory Style

Optimistic explanatory style, as espoused by Seligman (1991) and colleagues, conceptualizes optimism as an attributional style in which individuals view negative life events as external, fleeting and unstable. Based on Seligman's reformulated learned helplessness theory (Abramson et al., 1978), the concept of optimistic explanatory style derived from research examining the ways in which individuals who gave up in the face of stressors explained the uncontrollable situations they experienced (Seligman, 1991). Those displaying learned helplessness reported utilizing a pessimistic explanatory style in which they viewed stressors and negative life events in stable ("things will always be this way"), and global ("everything is

ruined") terms, and viewed themselves as personally responsible for their experience ("I caused this"). Neither did these individuals take credit for positive events, often attributing these experiences to chance and minimizing the extent to which these experiences pervaded their lives. Individuals espousing this attributional style were found to experience more emotional distress and depression in the face of stressors and reported greater expectations with regard to future experiences of negative life events (Forgeard & Seligman, 2012; Seligman, 1991).

A more recent version of the reformulated learned helplessness model, subsequently termed the hopelessness theory of depression, emphasizes the importance of stability and globality attributions but deemphasizes the role of internality (Alloy, Abramson, Metalsky, & Hartlage, 1988). This model argues that individuals experience depressive symptoms of hopelessness when they attributed negative life events to stable and global causes. It further states that individuals experienced losses in self-esteem in addition to feelings of hopelessness when they attributed negative life events to internal causes, in addition to stable and global attributions.

By contrast, those individuals who did not experience learned helplessness characterized negative events as unstable ("this will not last"), specific ("I'm successful in other areas of my life"), and external ("this is not my fault"; Seligman, 1991). Individuals engaging in optimistic explanatory style were likewise shown to take credit for positive life events, and possessed strong expectations with regard to the likelihood of such events taking place in the future. Associated with decreased symptoms of depression (Gillham, Shatté, Reivich, & Seligman, 2001), use of effective problem solving techniques (Shatté, Gillham, & Reivich, 2000), and positive physical health outcomes (Peterson, Seligman, & Vaillant, 1988), an optimistic explanatory style is proposed to confer resiliency with regard to future experience of adversity,

such that individuals who attribute negative events to external, momentary, and specific causes will expect to exercise control over unexpected circumstances (Gillham et al., 2001).

Optimistic explanatory style has traditionally been measured with the Attributional Style Questionnaire (Peterson et al., 1982), a self-report questionnaire that identifies an individual's propensity to attribute past events in internal/external, stable/unstable and global/specific terms. However, optimistic explanatory style may also be measured via other assessments of attributional style, including the Attributional Style Assessment Test-Third Edition (ASAT-III; Anderson & Riger, 1991). This self-report measure asks respondents to produce explanations for positive and negative hypothetical events and allows responses to be coded along three dimensions (i.e., internality, stability and globality), to determine explanatory style.

The ASAT-III possesses two strengths over the ASQ that are relevant to the present study. First, the ASAT-III may be used in an online format, thus potentially increasing the number of participants that may be involved in the current study. Second, in addition to coding attributions along dimensions of internality, globality and stability, the ASAT-III allows for identification of a fourth dimension: controllability (perception of being able to impact the outcome of a given situation). As optimism's relationship with goal adjustment behavior could potentially be impacted by perceptions of controllability (as will be discussed in later portions of this review), this author has chosen to utilize the ASAT-III as a measure of optimistic explanatory style in the current study.

Dispositional Optimism

In contrast to Seligman (1991), Scheier and Carver conceptualize dispositional optimism as an inclination to anticipate or expect the best possible outcome in a given situation (Scheier & Carver, 1987) thus, linking the construct (and its polar opposite, pessimism) with their self-

regulation and control theory of behavior, which was briefly explained previously in this review. Acknowledging that situational expectancies naturally vary from goal to goal, Carver and Scheier (1985) argue that individuals who see outcomes as attainable will continue to exert efforts toward achieving desired goals, while those that see outcomes as unattainable will decrease effort devoted towards goal striving behavior. Carver and Scheier (1985) additionally propose that individuals possess broader, more overarching beliefs with regard to the general attainability of goal outcomes. Generalized expectancies for positive future outcomes confer optimism, while generalized expectancies for negative outcomes are referred to as pessimism. Stable across time and global in nature, optimism and pessimism, then, are broadly conceptualized as confidence or doubt that is directed toward life, rather than a specific situation, circumstance, or goal.

Though older research suggested that dispositional optimism may be delineated through a mix of extraversion and neuroticism traits, as associated with the five-factor model of personality (Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992), recent work indicates that it is likely distinct from such constructs (Alarcon, Bowling, & Khazon, 2013). As such, research evaluating the optimism construct typically uses assessments evaluating generalized expectancies, as reflected in the Life Orientation Test (Scheier & Carver, 1985) and the Life Orientation Test-Revised Scale (LOT-R; Scheier, Carver & Bridges, 1994) which possess strong psychometric properties. Though other measures evaluating dispositional optimism exist, including the Generalized Expectancy for Success Scale (Fibel & Hale, 1978), and Optimism and Pessimism Scale (Dember, Martin, Hummer, Howe, & Melton, 1989), these scales possess psychometric and logistical limitations (e.g., controversial items, poor concurrent validity, length) that prevent

their widespread use in the dispositional optimism literature (Burke, Joyner, Czech, & Wilson, 2000).

The LOT and LOT-R conceptualize optimism as a bipolar dimension, with individuals endorsing optimistically framed items identified as being optimists and those endorsing pessimistically framed items identified as being pessimists. However, there is controversy as to whether optimism and pessimism might be better explained as two separate, unipolar dimensions. Studies created to resolve this debate have reached conflicting conclusions: some support a unidimensional approach (Chiesi, Galli, Primi, Borgi, & Bonacchi, 2013), while others propose a bi-dimensional conceptualization (Glaesmer et al., 2012). Until further research can evaluate this issue more conclusively, this study will assume a bipolar approach in which optimism and pessimism are viewed as mutually exclusive.

Reconciling Theories of Optimism

While both dispositional optimism and optimistic explanatory style have been used to examine the construct of optimism, these models evolved separately and have rarely been studied in concert. To date only four published studies have investigated optimism by utilizing both explanatory optimism and dispositional optimism concepts (Hjelle, Busch, & Warren, 1996; Hull & Mendolia, 1991; Scheier & Carver, 1987; Tomakowsky, Lumley, Markowitz, & Frank, 2001). Much of this research suggests overlap between the two conceptualizations; as noted by Peterson (2000), both optimism concepts predict related constructs of hope, self-esteem and resiliency (Carifio & Rhodes, 2002; Ciarrochi, Heaven, & Davies, 2007; Martin-Krumm, Sarrazin, Peterson, & Famose, 2003; Segovia, Moore, Linnville, Hoyt, & Hain, 2012). Further, both dispositional optimism and optimistic explanatory style have been demonstrated to negatively correlate with depression (Abramson et al., 1998; Carver & Gaines, 1987; Seligman et al., 1988)

and predict positive health outcomes (de Ridder, Fournier, & Bensing, 2004; Peterson, Seligman, & Vaillant, 1988), suggesting that each conceptualization taps into a similar underlying construct.

Other research however suggests that optimistic explanatory style and dispositional optimism are divergent constructs. Correlations between optimistic explanatory style (as measured by the ASQ) and dispositional measures of optimism have been shown to be fairly low; in a study of HIV-infected men, dispositional optimism as measured by the LOT, correlated with optimistic explanatory style as measured by the ASQ, at $r = .25$ (Tomakowsky, et al., 2001). Additional research suggests differences in the mechanisms by which these different types of optimism develop (Hjelle et al., 1996). In a study of college students, dispositional optimism but not optimistic explanatory style was related to perceptions of maternal support, while both measures were correlated with perceptions of paternal support, suggesting subtle differences between the development of causal attributions as compared to positive expectancies. Such discrepancies may reflect differences in the mechanisms proposed to underlie the two conceptualizations. Optimistic explanatory style views optimism as a pattern of causal beliefs about events that happened in the past. Dispositional optimism by contrast, conceptualizes optimism as a pattern of expectancies for the future. As such, any differences between these two constructs may reflect temporal variations in the patterns of beliefs driving optimism behaviors.

The current study will attempt to evaluate these two optimism conceptualizations by aggregating measures of optimistic explanatory style and dispositional optimism to create a single optimism latent variable. Should the data suggest that these constructs do not overlap, the current study will then separately test each optimism construct's relationship with goal adjustment and subjective well-being, with the aim of better understanding the ways in which

optimistic explanatory style and dispositional optimism may differ in their ability to predict goal disengagement, reengagement, and psychological and physical health outcomes.

Optimism and Subjective Well-Being

Research examining links between optimism and subjective well-being is predicated on the straightforward influence of optimism upon affect: optimists remain positive in the face of adversity due to their expectation for advantageous future outcomes, whereas pessimists experience distress stemming from beliefs in future hardship (Carver, Scheier, & Segerstrom, 2010).

Research supports relationships between optimism and subjective well-being across a variety of populations (Allison, Guichard, & Gilain, 2000; Colby & Shifren, 2013; Matthews & Cook, 2009). Optimism was found to predict psychological adjustment to college in a longitudinal study of freshman students; optimists reported greater well-being along with increased use of social support and active coping strategies (Aspinwall & Taylor, 1992). Related findings suggest that optimistic freshman experienced smaller increases in stress and depression over the course of their first semester in college (Brissette, Scheier, & Carver, 2002) and displayed greater academic performance (Chemers, Hu, & Garcia, 2001) as compared to pessimists, thus supporting a relationship between optimism and subjective well-being in academic settings.

Research examining optimism in cancer patients suggests that the presence of the construct confers similar protective effects. Carver and Scheier (1994) interviewed women diagnosed with breast cancer at four points in the treatment process: a few days post-surgery, and again at 3, 6, and 12 month follow-ups. At each interview, participants completed measures assessing mood disturbance, life satisfaction, quality of sex life, interference from pain, and

thought intrusion frequency. Results indicated that baseline optimism predicted less anxiety, depression, and anger, along with greater patient satisfaction in subjects at each follow-up date; further, those high in optimism experienced more satisfaction with their sex lives and less occurrences of thought intrusions over the year following surgery. Applebaum et al. (2014) similarly evaluated emotional well-being, but in advanced-stage cancer patients, and found that optimism was associated with fewer anxious and depressive symptoms, lower hopelessness, and greater quality of life.

Research has likewise indicated a link between optimism and psychological well-being in children and adolescents. Although optimism is viewed as a less stable trait in youths whose personalities are still forming, optimism is nonetheless proposed to play a buffering role by softening the experience of cancer-related distress (Mannix, Feldman, & Moody, 2009). Researchers evaluated adolescent pediatric oncology patients ranging in age from 13–21 through measures assessing optimism, quality of life, and health-related quality of life (more specific to the degree to which cancer-related symptoms impacted psychological adjustment). Results suggested that optimism was associated with greater overall quality of life and better psychological functioning (Mannix et al., 2009). Such results are supported by more recent research that involved younger children diagnosed with cancer (age 7 to 18), demonstrating that optimism may be associated with better psychological functioning, in the form of mental health and self-esteem, across the lifespan (Williams, Davis, Hancock, & Phipps, 2010). Taken together, these findings suggest that optimism confers a protective effect throughout the lifespan, such that individuals experience less negative affect and greater positive affect. As such, optimism is hypothesized to predict subjective well-being in the current study.

Optimism and Health

Long shown to confer a protective effect on psychological well-being, optimism has also been linked with positive physical functioning (de Ridder et al., 2004), fewer physical symptoms (Glazer, Emery, Frid, & Banyasz, 2002), and fewer rehospitalizations following surgery (Scheier et al., 1989); further, a recent meta-analysis has shown optimism to significantly predict positive health outcomes (Rasmussen, Scheier, & Greenhouse, 2009). General lines of inquiry in this area suggest that those endorsing positive future expectancies experience lower reactivity to stress and thus are subject to less bodily wear and tear over the course of the lifespan (Carver et al., 2010).

A study examining carotid intima thickness, commonly used as a barometer in the evaluation of cardiac disease development, suggests that greater pessimism at initial assessment predicted increases in intima thickness at three-year follow-up (Matthews et al., 2004). Optimists evaluated during this same three-year time period demonstrated almost no increase in intima thickness, indicating that positive expectancies may confer protection against health outcomes exacerbated by stress. These findings are supported by large-scale examinations of predictors of women's quality of life, morbidity, chronic disease, and mortality, conducted by the Women's Health Initiative. Following over 95,000 women for a period of eight years, Tindle et al. (2009) demonstrated that optimists displayed lower general mortality rates and were less likely to develop, or die from, coronary heart disease than pessimists.

Other research suggests that optimism influences physical health through differences in immunity and healing rates. A study evaluating recovery from surgical biopsy divided subjects into two groups: slow healers, who showed significantly less cutaneous wound healing at 7 to 21 days after biopsy, and fast healers, who demonstrated more than 1.5 mm of healing during this

same period. In addition to heightened perceived stress and cortisol levels, slow healers endorsed less optimism than their fast healing counterparts (Ebrecht et al., 2004). Likewise, optimism predicted stronger immune response following administration of influenza vaccines in older adults (Kohut, Cooper, Nickolaus, Russell, & Cunnick, 2002). Though these links are correlational, thus precluding claims of causation, this research supports a proposed relationship between positive expectancies and strengthened immune processes.

Lastly, optimism has been shown to promote positive health outcomes through the development of health promotion behaviors. Research suggests that optimists are more likely than pessimists to take vitamins, eat low fat foods, and increase their exercise habits (Scheier & Carver, 1992) and are more likely to be enrolled in a cardiac rehabilitation program following bypass surgery. Linked with approach coping styles, optimism is theorized to increase health promotion behaviors by prompting individuals to take action to minimize health risks through proactive problem solving strategies (Nes & Segerstrom, 2006); in a study of patients diagnosed with coronary artery disease, optimists were more likely to seek out information regarding what the physician would require of them in the months following bypass surgery and reported setting more goals for the future than did pessimists, who engaged in more avoidant coping styles (Scheier et al., 1989).

Together, the results of these studies suggest that optimism positively impacts physical outcomes such that optimists experience greater physical well-being and reduced risk for disease or mortality. As such, it is hypothesized that optimism will positively correlate with self-reported physical health in the present study.

Optimism and Goal Adjustment

Within the self-regulation literature, optimism and goal adjustment constructs are often cited side by side, due to their common role as individual differences that influence the experience of subjective well-being (Wrosch & Scheier, 2003). Both characteristics are proposed to impact the ways in which individuals pursue, attain, and relinquish goals, along with their subsequent experiences of positive and negative affect associated with goal management. However, although researchers agree that optimism and goal adjustment both positively impact psychological adjustment, they differ in their views of how these constructs might be related to one another.

Some propose that optimism is likely to impede goal adjustment behaviors due to optimists' penchant for positive illusions (Gibson & Sanbonmatsu, 2004; Janoff-Bulman & Brickman, 1982; Tennen & Affleck, 1987). Citing Carver and Scheier's (2014) characterization of optimism as expectancies for future success, these theorists propose that optimists have a harder time recognizing goal constraints as prohibitive, leading them to have difficulty identifying situations in which identified goals may be unattainable. Failing to perceive that certain end-states are beyond their control, optimists then engage in nonproductive persistence, a phenomenon in which individuals demonstrate repeated efforts to achieve unattainable outcomes, resulting in loss of resources, and increased perceived stress (Janoff-Bulman & Brickman, 1982).

Optimism and Goal Disengagement. Research linking optimism with goal persistence supports this view. In a recent study of optimism and goal adjustment behavior conducted through the lens of dual process theory, Hanssen et al. (2015) suggest that optimism is associated with increased striving toward desired goals, even in the face of obstacles; optimists reported

greater use of tenacious goal pursuit, a measure of assimilative coping in which individuals doggedly exert goal-directed efforts in an attempt to achieve goal success. Gibson and Sanbonmatsu (2004) found similar results in a study of gambling behavior; optimists were more likely than pessimists to persist in gambling following losses and reported greater expectations for winning. Optimists also demonstrated poor memory for actual performance; one week later, optimists recalled winning more hands than they had achieved, while pessimists underestimated their prior winnings, thus suggesting that optimists have difficulty accurately appraising goal constraints. Collectively, these studies suggest that optimists may be less inclined than pessimists to engage in goal disengagement behaviors due to difficulty identifying obstacles as limiting eventual goal success, and will persist in goal-directed behavior despite diminishing returns. It is hypothesized that optimism will negatively correlate with goal disengagement behavior in the current study. It is further suggested that goal disengagement will mediate the relationship between optimism and subjective well-being. However as discussed below, it is also possible that the relationship between optimism and goal disengagement may vary depending on other processes, such as opportunities for goal reengagement.

Optimism and Goal Reengagement. Other research suggests that optimism facilitates increased goal reengagement behavior, such that goal reengagement processes mediate the relationship between optimism and subjective well-being (Aspinwall & Richter, 1999; Hanssen et al., 2015; Rasmussen et al., 2009). Optimism was found to be positively correlated with goal reengagement in individuals experiencing symptoms of depression (Eddington, Burgin, & Majestic, 2016). Optimism was likewise positively correlated with identification of new activities in older adults facing health difficulties; a longitudinal study of community-dwelling adults demonstrated that optimism predicted replacement of lost or reduced activities following

illness (i.e., reengagement), thereby contributing to increased positive affect at one-year follow-up (Duke et al., 2002). This research suggests that optimism impacts subjective well-being by increasing capacity for goal reengagement behaviors, potentially through greater ability to imagine alternate possible goal pathways due to greater positive future expectancies. In the current study, it is hypothesized that optimism will positively correlate with goal reengagement behavior. It is further suggested that goal reengagement will mediate the relationship between optimism and subjective well-being.

Complementary research suggests that optimism may facilitate increased disengagement when opportunities for reengagement are present. Hanssen and colleagues (2015) demonstrated that optimism is associated with greater use of assimilative coping styles; flexible goal adjustment, a measure of accommodative coping, was found to mediate the relationship between optimism and subjective well-being, such that optimists reported greater ease in relinquishing goals and committing to new desired outcomes, thus increasing positive affect. Research examining the effect of optimism on persistence during simulated lab tasks, similarly indicates that optimists flexibly relinquished barren goals when alternate goal pursuits were present; optimists were found to disengage faster than pessimists from unsolvable anagrams when they were given the option to complete an alternate lab task (Aspinwall & Richter, 1999). This research suggests that optimists may be especially likely to disengage from barren goals when they possess opportunities for reengagement in alternate meaningful goals. As such, it is hypothesized that the relationship between optimism and goal disengagement will be moderated by goal reengagement in the current study, with greater goal reengagement increasing optimists' ability to disengage from barren goals.

Still other research suggests that differences in views regarding the controllability of goal obstacles may impact the relationship between optimism and goal disengagement. In a study of undergraduates asked to think about a recent stressful event, optimism was found to predict acceptance of the reality of the stressful situation among subjects who viewed their situation as uncontrollable (Scheier, Weintraub, & Carver, 1986). As goal disengagement may broadly be viewed as a form of psychological and motivational acceptance, this research suggests that perceptions of goal obstacles as beyond influence positively impact goal disengagement behavior; perceptions of uncontrollability may enable optimists to withdraw resources from unattainable goals that they might otherwise continue pursuing due to expectations for positive future outcomes. As such, it is hypothesized that controllability, as measured by the Attributional Style Assessment Test-III (Anderson & Riger, 1991) will moderate the relationship between optimism and goal disengagement in the current study, such that greater attributions of controllability decrease optimists penchant to disengage from stated goals.

Lastly, researchers propose that optimism interacts with goal adjustment behaviors to impact subjective well-being (Lam et al., 2015). In the only published study to specifically examine optimism, goal adjustment behaviors, and subjective well-being constructs, researchers evaluated ways in which optimism moderated the effect of goal disengagement and reengagement on measures of emotional distress in advanced-stage breast cancer patients. Suggesting that optimists who experienced difficulty disengaging from goals reported fewer symptoms of depression and anxiety than did pessimists who could not disengage, this study assumes that optimism confers a protective effect on those who have difficulty relinquishing desired outcomes by virtue of expectancies for positive futures or optimistic attributional style. In light of this research, it is hypothesized that optimism will moderate relationships between

goal adjustment behaviors (i.e., goal disengagement and reengagement) and subjective well-being in the current study, with greater optimism buffering the effect of impoverished goal disengagement and reengagement on subjective well-being.

The Present Study

Optimism, goal adjustment, and psychological and physical subjective well-being are conceptually linked in self-regulation literature; optimism, goal disengagement and reengagement are all suggested to positively influence psychological and physical health, suggesting that these qualities confer protective effects on individuals. Theorists present multiple viewpoints however as to the nature of these constructs' relationships with one another. Some propose that optimism impedes goal disengagement behaviors, citing the nonproductive persistence phenomena. Others, by contrast, characterize optimism as facilitating goal disengagement capacities, when opportunities for goal reengagement are present and suggest that optimism promotes goal reengagement behaviors. To date however, few studies have scientifically examined the ways in which these constructs may be interrelated.

This study aims to expand on previous research by examining associations between these constructs in a college student population. For the purposes of this study, subjective well-being is conceptualized as being comprised of two components; psychological well-being and physical well-being. Psychological well-being will be evaluated by examining levels of life satisfaction and positive and negative affect, a combination commonly utilized in previous optimism and goal adjustment research. Physical well-being will be evaluated through measurement of distress associated with common physical health indicators. As noted previously in this review, optimism will likewise be measured as a latent variable, with examinations of both explanatory style and future expectancies conceptualizations. As this study is exploratory in nature, a college

student population will be utilized with the aim of forming a model of the relationships between optimism, goal adjustment and well-being; it is expected that future research evaluating associations between these constructs will expand beyond this population.

Students will be asked to complete measures of optimism (Life Orientation Test-Revised; Scheier, Carver & Bridges, 1994; Attributional Style Assessment Test; Anderson & Riger, 1991), goal disengagement and goal reengagement behaviors (Goal Adjustment Scale; Wrosch, Scheier, Miller et al., 2003), and psychological and physical well-being (Positive and Negative Affect Schedule; Watson et al., 1988; Satisfaction with Life Scale; Diener et al., 1985; Cohen-Hoberman Inventory of Physical Symptoms; Cohen & Hoberman, 1983).

Hypotheses

The specific hypotheses presented below are broadly based in the work of Carver and Scheier (and colleagues), who proposed the self-regulation and control theory of behavior, and demonstrated a relationship between goal adjustment behaviors and subjective well-being (Carver & Scheier, 1990). Hypotheses will also utilize work completed by Scheier and Carver (1985) and Seligman (1991), connecting optimism with increased subjective well-being, Kraaij and colleagues (2008), outlining differential effects of goal adjustment on positive and negative affect, as well as research conducted by Wrosch, Scheier, Miller et al. (2003) demonstrating that goal reengagement moderates relationships between goal disengagement and well-being. Predictions regarding the relationship between optimism and goal adjustment will utilize research conducted by Gibson and Sanbonmatsu (2004) and Hanssen et al. (2015) suggesting that positive expectancies impede goal disengagement, and work conducted by Duke et al. (2002) suggesting paths between optimism and goal reengagement. Finally, hypotheses will utilize work by Aspinwall and Richter (1999) and Lam et al. (2015) suggesting that optimism

interacts with goal adjustment behaviors to impact subjective well-being, as well as work by Scheier and colleagues (1986), demonstrating that controllability moderates the proposed relationship between optimism and goal disengagement.

Primary Hypothesis 1. Literature demonstrates that optimism is positively correlated with adaptive psychological as well as physical health outcomes (Scheier & Carver, 1985). Research likewise suggests that goal adjustment facilitates greater psychological and physical health outcomes (Kraaij et al., 2008; Kraaij et al., 2009; Wrosch, Scheier, Miller et al., 2003). As previous studies suggest differential paths between optimism and goal adjustment behaviors (Duke et al., 2002; Gibson & Sanbonmatsu, 2004; Hanssen et al., 2015), it is hypothesized that optimism will negatively predict goal disengagement and positively predict goal reengagement. It is further hypothesized that optimism will predict subjective well-being indirectly via goal disengagement and reengagement behaviors (see Figure 1).

Primary Hypothesis 2. In light of research suggesting that optimists disengage with goals faster when opportunities for reengagement are present (Aspinwall & Richter, 1999), it is further hypothesized that goal reengagement will moderate the relationship between optimism and goal disengagement. Specifically, it is predicted that greater goal reengagement will strengthen the relationship between optimism and goal disengagement (moderation path in Figure 1).

Primary Hypothesis 3. In light of evidence suggesting that the toxic effects of both excessive and impoverished goal disengagement, may strengthen the impact of goal reengagement on subjective well-being (Wrosch, Scheier, Miller et al., 2003), it is also predicted that goal disengagement will moderate the relationship between goal reengagement and subjective well-being. Moderation analyses will test for a linear relationship between goal

reengagement and subjective well-being, at different levels of goal disengagement by splitting the sample (moderation path in Figure 1).

Primary Hypothesis 4. Based on work suggesting that optimists who view goal obstacles as uncontrollable demonstrate greater acceptance of goal constraints (Scheier et al., 1986), it is hypothesized that controllability will moderate the relationship between optimism and goal disengagement. Specifically, it is predicted that greater perceptions of controllability will decrease optimists' ability to disengage from stated goals (moderation path in Figure 1).

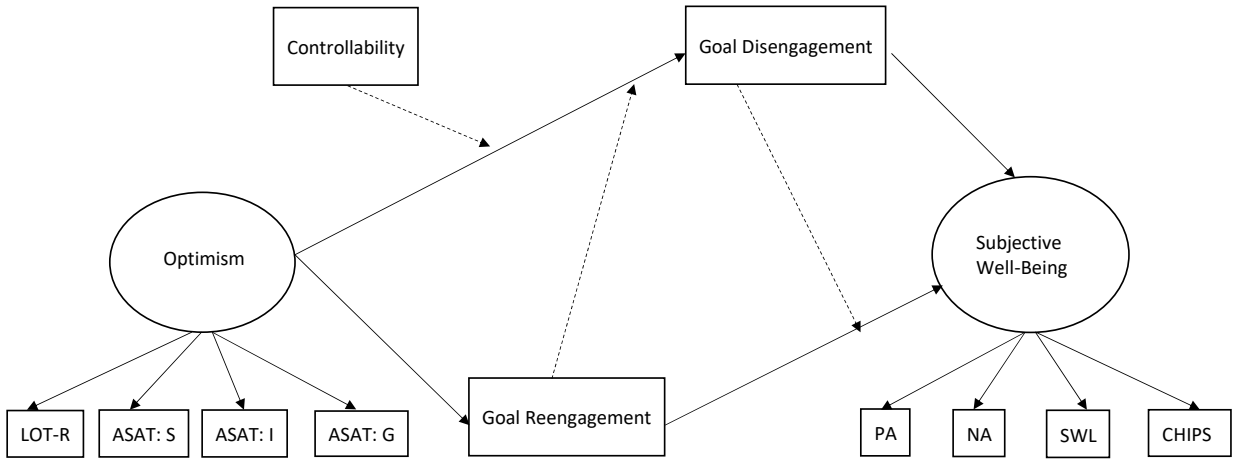

Figure 1. Hypothesized Relationships Between Variables. LOT-R = Life Orientation Test-Revised ASAT:S = ASAT-III Stability domain, ASAT: I = ASAT-III Internality domain, ASAT: G = ASAT-III Globality Domain, PA = PANAS Positive Affect Domain, NA = PANAS Negative Affect domain, CHIPS = Cohen-Hoberman Inventory of Physical Symptoms.

Secondary Hypothesis 1. Should the proposed path analysis fail to identify support for hypothesized relationships between variables as outlined above, secondary hypothesis 1 will be tested. In light of research suggesting that goal disengagement and reengagement produce differential effects on affect (Wrosch, 2011; Wrosch, Scheier, Miller et al., 2003), it is suggested that goal disengagement will predict decreased negative affect and that goal reengagement will predict increased positive affect. As literature additionally suggests that goal disengagement may positively impact physical health outcomes through reductions in emotional distress (Miller et

al., 2002; Miller & Wrosch, 2007; Wrosch et al., 2007), it is further hypothesized that goal disengagement will predict greater physical health and that negative affect will mediate the proposed relationship between goal disengagement and physical health (see Figure 2)

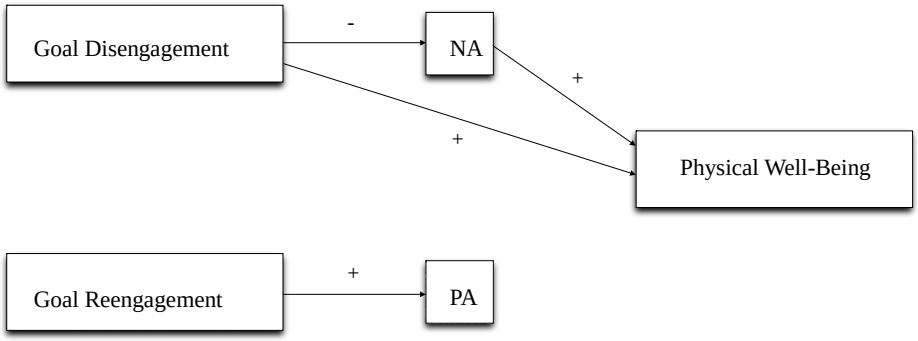

Figure 2. Hypothesized Differential Effects of Goal Adjustment Behaviors. NA = PANAS negative affect subscale. PA = PANAS positive affect subscale.

Secondary Hypothesis 2. In line with literature suggesting that optimists who experienced difficulty disengaging from goals reported fewer symptoms of depression and anxiety than did pessimists who could not disengage (Lam et al., 2015), it is hypothesized that optimism will moderate relationships between goal adjustment behaviors (i.e., goal disengagement and goal reengagement) and subjective well-being. Specifically, it is suggested that optimism will lessen the impact of impoverished goal adjustment behavior on subjective well-being (moderation paths in Figure 3).

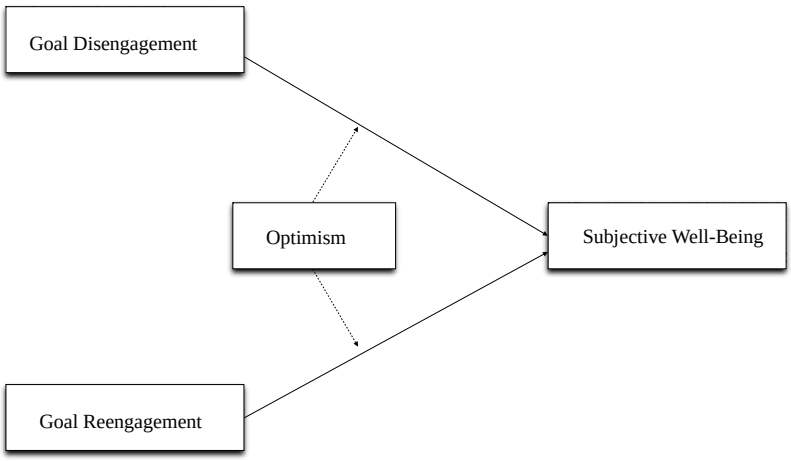

Figure 3. Proposed Moderating Effects of Optimism On Goal Adjustment and Subjective Well-Being.

CHAPTER THREE

METHODOLOGY

Overview and Design

The current study used a correlational design to examine the relationships among optimism, goal disengagement and reengagement, and subjective well-being. Measures included the Life Orientation Test-Revised (LOT-R), Attributional Style Assessment Test-Third Edition (ASAT-III), Goal Adjustment Scale (GAS), Positive and Negative Affect Schedule (PANAS), Satisfaction With Life Scale (SWLS) and Cohen-Hoberman Inventory of Physical Symptoms (CHIPS). Path analysis was utilized to determine an overall model of how these variables relate to one another. Moderation analysis was conducted using hierarchical regression.

Participants

According to Cohen (1992), it would take a *N* of 481 to detect a small effect with two predictors in a multiple regression, but only 67 participants to detect a medium effect. For SEM and path modeling, Kline (2005) notes that there are no standard means of estimating power. However, 100 to 200 participants are considered the absolute minimum necessary for testing path models. Given these parameters, the current study aimed to recruit a minimum of 200 participants and a maximum of 500 participants.

Four hundred and ninety five participants were drawn from a population of undergraduate students from Indiana State University and recruited using Sona Systems, an online portal through which students can sign up to participate in university-affiliated research studies. The

age of participants ranged from 18 to 47 years old, with an average age of 19.9 (SD = 3.7). In terms of racial and ethnic background, the majority of participants identified as Caucasian (68%); the remaining students identified as Black/African American (25%), Hispanic/Latino (4%), Asian (2%) Arab/Middle Eastern (1%) and Biracial/Multiracial (4%). There were more females (72%) participating in this study than males (28%). Breakdown of academic class year suggested that most participants were freshman (66.1%), with sophomores (23.6%), juniors (5.7%), and seniors (4.6%) making up the remainder of the sample. The majority of respondents (48.1%) reported that they made less than $5,000 per year, followed by those reporting income of $5,000–$14,999 (15.2%), $15,000–$24,999 (6.8%), $25,000–$49,999 (9.1%), $50,000–$74,000 (7.5%), $75,000–$99,999 (3%) and above $100,000 (10.2%). Though participation in the study was voluntary, many participants received some type of incentive for participation, in the form of extra credit and/or research credit.

Exclusion Criteria. Those participants who were missing half their responses, who were missing the majority of the ASAT or CHIPS measures, or who did not indicate gender were excluded from analysis (N = 59). Following this exclusion, a total of 436 undergraduate students were included in the current sample. Later in analyses, one additional respondent was identified who did not complete any of the ASAT measure, but successfully completed all other study measures. This individual's responses were excluded from all analyses involving optimism (including structural equation modeling), but were utilized in moderation analyses not impacted by absence of ASAT data.

Measures

Demographic Information. All participants completed a brief demographic questionnaire assessing for age, sex, ethnicity, year of education, and SES.

Measures of Optimism.

Life Orientation Test-Revised (LOT-R). The Life Orientation Test-Revised (LOT-R; Scheier et al., 1994) is a widely used 10-item measure of dispositional optimism. Consisting of three positively oriented statements, three negatively oriented statements and four filler items designed to disguise the scale's intended purpose, the LOT-R is a revised version of the original LOT (Scheier & Carver, 1992), which contained 12 total items. The authors of the LOT-R reported that they elected to drop two items ("I always look on the bright side of things," and "I'm a believer in the idea that 'every cloud has a silver lining'") from the LOT, due to concerns that these items measured coping style, rather than positive future expectancies. The LOT-R has demonstrated strong reliability and validity (Scheier et al., 1994); developers of the measure report adequate internal consistency (α = .78), and cite test-retest correlations at .68 (4 months), .60 (12 months), .56 (24 months), and .79 (28 months). Studies assessing external validity likewise indicate evidence for convergent and divergent validity; optimism as measured by the LOT-R strongly correlated with measures of self-efficacy, as well as the original LOT scale, and was negatively correlated with measures of trait anxiety and neuroticism.

In the current study, participants were asked to identify their degree of agreement with each item along a 5-point Likert scale, from 0 (*strongly disagree*) to 4 (*strongly agree)* (see Appendix A). Negatively worded statements (items 3, 7 and 9) were reverse scored, and scores for both positively and negatively worded items were averaged and standardized to create a composite score. Filler statements (items 2, 5, 6, and 8) were not scored. As optimism and pessimism are commonly assumed to exist along a single bipolar dimension, as noted previously in this review, such that high optimism is mutually exclusive with high pessimism and vice versa, this composite score was assumed to provide a continuous distribution of scores; larger

scores on the LOT-R were interpreted as higher levels of optimism and lower levels of pessimism, while smaller scores indicated higher levels of pessimism and lower levels of optimism. Internal consistency in the current sample was found to be strong, producing an alpha reliability coefficient of .75.

Attributional Style Assessment Test-Third Edition (ASAT-III). Developed by Anderson and Riger (1991), the third edition of the Attributional Style Assessment Test (ASAT-III) provides a dimensional assessment of attributional style, with which the current study will measure optimistic explanatory style. The ASAT-III asks respondents to consider 20 hypothetical events, five of which suggest a positive interpersonal scenario (e.g., "You just attended a party for new students and made some new friends") five of which present a negative interpersonal scenario (e.g., "You just failed at coordinating an outing for a group of people you like very much"), five of which present a positive achievement scenario (e.g., "You just received a high score on the midterm test in class") and five of which present a negative achievement scenario (e.g., "You just failed to complete the crossword puzzle in the daily newspaper"). Because the distinction between interpersonal and achievement situations is irrelevant to the proposed research question, the current study will combine across interpersonal and achievement dimensions such that there are 10 positively worded scenarios and 10 negatively worded scenarios (See Appendix B).

Respondents were asked to imagine themselves in each scenario and identify a cause for the hypothetical event outcome. Respondents were then asked to rate this cause on a 9-point Likert scale along four dimensions: internality (ranging from 1 = *outside the person* to 9 = *inside the person*), globality (ranging from 1 = *specific to a few situations* to 9 = *global, relevant to many situations*), stability (ranging from 1 = *not at all stable* to 9 = *very stable*) and

controllability (1 = *not at all controllable* to 9 = *very controllable*). As Seligman (1991) proposes opposing attributional styles for positive as compared with negative life events, scores for each dimension in the 10 negatively worded scenarios were standardized and averaged to form aggregate negative stability, aggregate negative globality, and aggregate negative internality subscale scores for each respondent. Likewise, scores for each dimension in the 10 positively worded scenarios were standardized and averaged to form aggregate positive stability, aggregate positive globality and aggregate positive internality subscales. As consistent with commonly accepted procedures demonstrated throughout the optimism explanatory style literature (Gillham et al., 2001), the aggregate negative stability subscale was then subtracted from the aggregate positive stability subscale to form an optimistic explanatory style balance composite score for stability. This same process was replicated with globality and internality subscales, such that balanced scores for stability, globality and internality were each calculated.

For use with study hypotheses involving moderation analyses, aggregate negative stability scores were subtracted from aggregate positive stability scores, aggregate negative globality scores were subtracted from aggregate positive globality scores, and aggregate negative internality were subtracted from aggregate positive internality scores. An overall optimistic explanatory style balance score was calculated by then averaging the subsequent stability, globality and internality scores; individuals scoring high on this composite were assumed to possess an optimistic explanatory style as proposed by Seligman (1991).

The controllability subscale was used separately as a measure of the individuals' beliefs regarding their ability to impact goal constraints. Scores for this dimension in both positively and negatively worded scenarios were standardized and averaged to form an aggregate score.

Individuals scoring high on controllability were assumed to have greater expectations for their ability to control and manage goal obstacles.

The ASAT-III has been demonstrated to possess adequate psychometrics; the developers of the measure report internal consistency alpha measures in the .5 to .6 range when comparing between interpersonal and achievement dimensions (Anderson, Jennings, & Arnoult, 1988). Internal consistency alpha for the current study was measured at .88 for stability, .87 for globality, .89 for internality, and .85 for controllability, suggesting that the questionnaire performed better with the present population; these alphas are consistent with previous research suggesting better internal consistency in this measure upon collapsing across interpersonal and achievement domains (Fernández-Ballesteros, 2002). Further, the scale has been shown to successfully predict self-reported depression and loneliness, as well as success-expectancies thus suggesting good convergent and divergent validity (Anderson et al., 1988).

Measure of Goal Disengagement and Reengagement.

Goal Adjustment Scale (GAS). Created by Wrosch, Scheier, Miller et al. (2003), the GAS is a commonly used measure of goal adjustment behavior designed to specifically evaluate goal disengagement and reengagement capacities (see Appendix C). A 10-item self-report measure, the GAS asks respondents to report the extent to which they habitually engage in goal adjustment behaviors on a 5-point Likert scale (ranging from 1 = *strongly disagree* to 5 = s*trongly agree*). For the current study, items 3 and 6 were reverse coded. Scores for the four items addressing goal disengagement (1, 3, 6, 8) were added together to form a goal disengagement (GD) aggregate score, such that higher scores indicated greater use of goal disengagement behaviors. Scores for the six items addressing goal reengagement (2, 4, 5, 7, 9, 10) were likewise combined to yield a goal reengagement (GR) composite, utilizing a similar

directionality. GD and GR subscales have been found to possess good internal consistency; Cronbach alphas for GD subscales range from .71 to .84 in external studies, while GR subscales range from .86 to .88 (Kraaij et al., 2009; Wrosch, Scheier, Miller et al., 2003). The current study yielded slightly lower estimates of internal consistency; Cronbach alpha was identified as .70 for GD, and .84 for GR.

Measures of Subjective Well-Being.

Positive and Negative Affect Schedule (PANAS). Developed by Watson et al. (1988), the Positive and Negative Affect Schedule (PANAS) is a 20-item self-report measure of positive and negative affect (see Appendix D). The PANAS has been demonstrated to possess strong psychometrics; the developers of the measure report Cronbach's alphas ranging from .86 to .90 for the PA subscale, and .84 to .87 for the NA subscale (Watson et al., 1998), indicating that the measure possesses strong internal consistency reliability. Correlations between PA and NA subscales are cited as ranging from -.12 to -.23, suggesting adequate independence of PA and NA subscales. Independent analysis of latent structure of the PANAS, similarly suggests existence of two factors, reflecting independent PA and NA dimensions (Crawford & Henry, 2004; Tellegen, Watson & Clark, 1999). With regard to stability over time, test-retest reliability was demonstrated to be very strong, for both PA (r = .95) and NA (r = .85) subscales. Measures of external validity indicate that NA significantly predicted measures of depression and anxiety, while PA negatively correlated with these same measures (Crawford & Henry, 2004).

For the purposes of this study, the PANAS was used in conjunction with the Satisfaction With Life Scale (Diener et al., 1985) and the Cohen-Hoberman Inventory of Physical Symptoms (Cohen & Hoberman, 1983) as a measure of overall subjective well-being. Participants completing the PANAS were asked to rate the extent to which they regularly experienced 20

specific emotions, on a 5-point Likert scale (ranging from 1 = *very slightly or not at all,* to 5 = *extremely*). Ten of the scale items described experiences of negative affect; participants were asked to detail the extent to which they experienced feeling distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery and afraid. Conversely, the other 10 items addressed experiences of positive affect with participants asked the extent to which they felt interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive and active. Scores for items addressing positive affect averaged and standardized to yield a positive affect (PA) subscale score, while scores for items addressing negative affect were similarly adjusted to yield a negative affect (NA) subscale score. Greater subscale scores indicated higher levels of positive and negative affect, respectively. Both the positive affect and negative affect subscales produced alpha coefficients of .87.

Satisfaction With Life Scale (SWLS). Theorists researching subjective well-being conceptualize the construct as consisting of affective and cognitive factors (Pavot, Diener, Colvin, & Sandvik, 1991). Created by Diener et al. (1985), the SWLS is an empirically supported self-report measure of this cognitive component of subjective well-being (see Appendix E) and is commonly used to supplant scales (like the PANAS) that focus on affective well-being or positive emotional states. Participants completing this measure were asked to indicate the extent to which they agreed with five items, on a 7-point Likert scale, with scores ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Individual item scores were then averaged and standardized, such that lower scores indicated less life satisfaction and higher scores suggested greater satisfaction. Example items included: “In most ways my life is close to the ideal”; “The conditions of my life are excellent”; “If I could live my life over, I would change almost nothing.”

In the instrument development study, the SWLS was demonstrated to possess strong internal consistency (α = .87) and stability over time, with test-retest reliability coefficients cited at .82 (Diener et al., 1985). Correlations between the self-report SWLS and peer and family reports of life satisfaction, were cited as .67 (Pavot et al., 1991), the SWLS was likewise demonstrated to correlate with alternate measures of life satisfaction including the Philadelphia Geriatric Morale Scale (Lawton, 1975), the Life Satisfaction Index-A (Neugarten, Havighurst, & Tobin, 1961) and the Fordyce Scale (Fordyce, 1988) suggesting good convergent validity. In the current study, the SWLS was shown to possess strong internal consistency with Cronbach alpha estimated at .83.

Cohen-Hoberman Inventory of Physical Symptoms (CHIPS). The Cohen-Hoberman Inventory of Physical Symptoms is a 33-item checklist of common physical symptoms (Cohen & Hoberman, 1983). According to the scale's creators, items were selected so as to exclude physical symptoms of an obviously psychological nature. Participants completing this measure will be asked to rate how much each symptom bothered them during the past two weeks by rating each item on a 5-point Likert scale (ranging from 0 = *not bothered* to 4 = *extremely bothered*). Individual item scores will then be added to create an overall composite score, such that higher scores indicate more distress associated with physical health symptoms and lower scores suggest less distress associated with physical health symptoms (see Appendix F).

The CHIPS has been shown to possess strong psychometric properties, with internal reliability cited at α = .88 by the scale's creators (Cohen & Hoberman, 1983). Internal consistency in the current study was found to be similarly strong, with alpha coefficients estimated at .95. Research suggests that the CHIPS possesses good construct validity; the CHIPS significantly correlated with use of student health facilities in two college samples (r = .22 and

.29; Cohen & Hoberman, 1983), as well as a measure of subjective health complaints in a sample of the general population (Allen, Wetherell, & Smith, 2017). An independent investigation of the measure suggests that the CHIPS possesses strong discriminant validity, as demonstrated by weak correlations with measures evaluating pain sensitivity and perceived stress (Allen et al., 2017). This research further indicates that the CHIPS is comprised of eight factors: sympathetic/cardiac, muscular, metabolic, gastrointestinal, vasovagal, cold/flu, headache, and minor hemorrhagic.

Procedure

After being directed anonymously to the online Qualtrics survey from the SONA systems website, respondents were presented with informed consent information and then asked to agree to the terms of the study. Participants were then presented with information on how to respond to items and directed to verify that they had read and understood these directions. Participants first completed the LOT-R, ASAT and GAS scales (see Measures section below). To reduce variance associated with potential fatigue effects, the remaining questionnaires were then presented in a randomized order. Participants were encouraged to answer all items but were permitted to skip items as needed. After completion of all measures, participants completed demographic information and were presented with debriefing information.

CHAPTER FOUR

RESULTS

Overview of Analyses

The section on descriptive statistics begins by presenting means, standard deviations, skewness and kurtosis for optimism, goal adjustment, and subjective well-being variables. Next, intercorrelations between optimism, goal adjustment, and subjective well-being variables are identified. Intercorrelations between main study variables and demographic variables are noted in the appendix.

After presenting descriptive statistics, path analyses will be discussed. The primary path model provides a means for analyzing primary hypothesis 1 and secondary hypothesis 1; the hypothesized model will be presented first, followed by models adjusted following examination of modification indices. Lastly, primary hypotheses 2–4 and secondary hypothesis 2 will be presented through moderation analyses.

Descriptive Statistics

Optimism Variables. Table 1 provides the descriptive statistics **(**means, standard deviations, univariate skew and kurtosis) of the optimism variables used in the present study. Reported is the variable representative of Dispositional Optimism, the three variables (Locus of Control, Stability, Globality) identified by Seligman's learned helplessness model as contributing to optimistic explanatory style (Abramson, Seligman & Teasdale, 1978), and the Optimistic Explanatory Style Balance (as discussed in the Methods section).

Also reported is a variable representative of participants' beliefs regarding their ability to impact goal constraints. Though grouped with other variables related to optimistic explanatory style by virtue of a common measurement method (Attributional Style Assessment Test-Third Edition; Anderson & Riger, 1991), the construct of Controllability will not be utilized as a measure of optimism in the present study.

In the present study, the Dispositional Optimism mean was lower than several studies of college-aged samples that found Dispositional Optimism means ranging from 15.8 to 17.1, with standard deviations ranging from 3.0 to 4.0 (Glaesmer et al., 2012; Hinz et al., 2017; Schou-Bredal et al., 2017).

Table 1
Descriptive Statistics for Optimism Variables

	Mean	SD	Skewness	Kurtosis
Optimistic Explanatory Style				
Locus of Control	.47	.92	-.20	1.31
Stability	.59	.87	.47	1.34
Globality	.31	.83	.14	1.67
OES Balance	.46	.63	.11	2.41
Controllability	121.32	20.35	.31	-.06
Dispositional Optimism	13.02	3.95	-.33	.17

Note. N = 435. OES Balance = Optimistic Explanatory Style Balance

Reported in Table 2 are intercorrelations for optimism variables. As expected, participants reported moderate to strong relationships between the optimistic explanatory style variables of Locus of Control, Globality and Stability. Participants likewise reported small but significant relationships between Dispositional Optimism and all optimistic explanatory style variables (i.e., Locus of Control, Globality, Stability, Optimistic Explanatory Style Balance), potentially suggesting some overlap in these constructs.

Table 2
Intercorrelations Between Optimism Variables.

	Stability	Globality	Controllability	OES Balance	Disp. Opt.
LOC	.23**	.18**	.08	.68**	.13**
Stability		.41**	.27**	.76**	.21**
Globality			.18**	.72**	.17**
Controllability				.24**	.11*
OES Balance					.23**

Note. *p<.05. **p<.01. LOC = Locus of Control; Disp. Opt. = Dispositional Optimism; OES Balance = Optimistic Explanatory Style Balance Score; N = 435

Goal Adjustment Variables. Table 3 provides the descriptive statistics **(**means, standard deviations, univariate skew and kurtosis) and intercorrelations for the goal adjustment variables used in the present study. As consistent with previous examinations of goal adjustment behavior (Wrosch, Scheier, Miller et al., 2003), there was a small correlation found between Goal Disengagement and Goal Reengagement capacities (r = .19, p<.01).

Table 3
Descriptive Statistics and Intercorrelations for Goal Adjustment Variables.

Variable	Mean	SD	Skewness	Kurtosis
Goal Disengagement	10.22	2.85	-.09	-.32
Goal Reengagement	21.83	3.71	-.32	.55

Note. GD = Goal Disengagement; GR = Goal Reengagement; N = 436

Subjective Well-Being Variables. The descriptive statistics for subjective well-being variables are provided in Table 4. In the present study, the Positive Affect mean was comparable to that of recent studies of college-aged samples that found means for Positive Affect ranging from 24.45 (SD = 8.08) to 32.77 (SD = 7.43). By contrast, the Negative Affect mean was found to be greater than those of recent studies, which ranged from 14.62 (SD = 5.57) to 20.10 (SD = 7.02; Rogatko ,2009; Warner, Frye, Morrell, & Carey, 2017). The mean for Life Satisfaction in the present study was nearly identical to a recent study of a student sample, demonstrating an average of 22.98 (SD = 6.18; Shi, Zhang, & Miao, 2016).

Table 4
Descriptive Statistics for Subjective Well-Being Variables.

Variable	Mean	SD	Skewness	Kurtosis
Positive Affect	31.40	7.71	-.13	-.16
Negative Affect	23.79	8.16	.57	-.19
SWL	22.47	5.89	-.33	-.11
Physical Complaints	34.15	25.64	1.10	.78

Note. SWL = Satisfaction with Life; N = 436.

Table 5 presents intercorrelations for subjective well-being variables. As expected, participants reported Positive Affect, Negative Affect, and Satisfaction with Life as highly intercorrelated. Positive Affect and Satisfaction with Life were positively correlated with one another. By contrast, both Positive Affect and Satisfaction with Life inversely correlated with Negative Affect. Together, these results suggest that individuals who endorse greater positive facets of subjective well-being report fewer negative facets of subjective well-being (and vice versa). In addition, Physical Complaints was found to positively correlate with Negative Affect and inversely correlate with Satisfaction with Life. Unexpectedly, no relationship was found between Physical Complaints and Positive Affect.

Table 5
Intercorrelations Between Subjective Well-Being Variables.

	Pos. Affect	Neg. Affect	SWL	Physical Complaints
Pos. Affect	1	-.12*	.45**	.02
Neg. Affect	-.12*	1	-.38**	.52**
SWL	.45**	-.38**	1	-.22**
Physical Complaints	.02	.52**	-.22**	1

Note. *p<.05. **p<.01. Pos. Affect = Positive Affect. Neg. Affect = Negative Affect. SWL = Satisfaction with Life. N = 436

Given these relationships, exploratory principal components analysis with Varimax orthogonal rotation was utilized to identify the underlying factor structure of Subjective Well-Being variables (as proposed in the methods section). Analysis yielded a two-factor solution that explained 76.68% of the variance. A component matrix identifying factor loadings for Subjective Well-Being variables following rotation is presented in Table 6.

Table 6
Principal Component Analysis of Subjective Well-Being Variables.

SWB Variables	Negative SWB	Positive SWB
Positive Affect	.09	.90
Negative Affect	.84	-.22
SWL	-.35	.79
Physical Complaints	.88	.04

Note. SWB = Subjective Well-Being; SWL = Satisfaction with Life; Negative SWB = Negative Subjective Well-Being; Positive SWB = Positive Subjective Well-Being; N = 436.

Composite scores were created for the two factors identified through PCA, based on identified component loadings. The first score was labeled Negative Subjective Well-Being, due to high loadings of variables measuring Negative Affect and Physical Complaints. By contrast, the second score was labeled Positive Subjective Well-Being, given high loadings of Positive Affect and Satisfaction with Life variables.

Intercorrelations of Major Variables. Table 7 presents intercorrelations between all major study variables utilized in the present research. As expected, Dispositional Optimism was significantly related to all facets of Subjective Well-Being; Dispositional Optimism positively correlated with Positive Affect, Satisfaction with Life, and Positive Subjective Well-Being. Conversely, Dispositional Optimism negatively correlated with Negative Affect, Physical Complaints, and Negative Subjective Well-Being. Higher levels of Dispositional Optimism were also related to greater Goal Reengagement, suggesting a relationship between positive future expectancies and the capacity to reengage with new goals. Unexpectedly, no relationship was found between Dispositional Optimism and Goal Disengagement.

By contrast, optimistic explanatory style variables significantly related to both Goal Disengagement and Goal Reengagement; the Optimistic Explanatory Style Balance positively

Table 7
Intercorrelations Between Main Study Variables.

	LOC	Stability	Glob	Cont	Opt B	GD	GR	PA	NA	SWL	Phy Cp	PSWB	NSWB
Disp	.13**	.21**	.17**	.12*	.23**	-.06	.22**	.45**	-.35**	.50**	-.17**	.53**	-.25**
LOC		.23**	.18**	.08	.68**	-.03	.10*	.06	-.09	.09	-.05	.08	-.08
Stab.			.41**	-.27**	.76**	-.11*	.10*	.12*	-.11*	.08	-.03	.12*	-.06
Glob.				.18**	.72**	-.17**	.05	.15**	-.12*	.06	-.03	.13	-.05
Cont					.24**	-.14**	.15**	.14**	-.10*	.16*	-.16**	.15**	-.14**
Opt B						-.14**	.12*	.15**	-.15**	.11*	-.05	.15**	-.09
GD							.19**	-.13**	.02	-.05	.02	-.11*	.00
GR								.23**	-.15**	.23**	-.16**	.25**	-.15**
PA									-.12*	.45**	.01	.90**	.10*
NA										-.38**	.52**	-.22**	.84**
SWL											-.22**	.78**	-.34
Phy Cp												.04	.88**
PSWB													.01

Note. *p<.05. **p<.01. Disp. = Dispositional Optimism. LOC = Locus of Control. Glob. = Globality. Cont. = Controllability. Opt B = Explanatory Style Optimism Balance. GD = Goal Disengagement. GR = Goal Reengagement. PA = Positive Affect. NA = Negative Affect. SWL = Satisfaction with Life. Phy Cp = Physical Complaints. PSWB = Positive Subjective Well-Being. NSWB = Negative Subjective Well-Being. N = 435.

correlated with Goal Reengagement (such that greater optimistic explanatory style was related to greater reengagement), and negatively correlated with Goal Disengagement (such that greater optimistic explanatory style was related to less disengagement). Like Dispositional Optimism, the Optimistic Explanatory Style Balance significantly related to Positive Affect, Negative Affect, Satisfaction with Life and Positive Subjective Well-Being; however, these relationships were generally weaker than those identified between Dispositional Optimism and Subjective Well-Being variables. Unlike Dispositional Optimism, the Optimistic Explanatory Style Balance was not found to have a relationship with either Physical Complaints or Negative Subjective Well-Being.

Lastly, Goal Disengagement and Goal Reengagement differed with regard to their relationships with Subjective Well-Being variables. Goal Disengagement inversely related to both Positive Affect and Positive Subjective Well-Being, while Goal Reengagement positively related to both variables. These findings suggest that Goal Disengagement and Goal Reengagement possess unique relationships with Subjective Well-Being variables, that may function by virtue of different mechanisms. Unexpectedly, no relationships were found between Goal Disengagement and several facets of Subjective Well-Being including Negative Affect, Satisfaction with Life, Physical Complaints and Negative Subjective Well-Being. Goal Reengagement, by contrast, positively correlated with Satisfaction with Life and negatively correlated with Negative Affect, Physical Complaints and Negative Subjective Well-Being, thus suggesting that Goal Reengagement may be more directly linked with Subjective Well-Being than Goal Disengagement.

Path Analyses

Primary Hypothesis 1. Primary hypothesis 1 was evaluated through a series of path models. The hypothesized model will be presented first, followed by the measurement model. Next,

the structural model will be presented; revisions to the structural model based on modification indices will be identified followed by a description of observed relationships between variables.

Hypothesized Path Model. Primary hypothesis 1 was that a latent optimism construct would negatively predict Goal Disengagement and positively predict Goal Reengagement. It was further proposed that a latent optimism construct would predict Subjective Well-Being indirectly via Goal Disengagement and Goal Reengagement behaviors. Given that PCA revealed a two-factor structure of the Subjective Well-Being construct (as previously noted), modifications were made to the proposed path model with the aim of testing Positive and Negative Subjective Well-Being variables separately within the same model (see Figure 4). In order to test the hypothesized relationships, a series of paths were predicted from a latent optimism construct to Goal Disengagement and from a latent optimism construct to Goal Reengagement. In addition, paths were predicted from Goal Disengagement and Goal Reengagement to Positive Subjective Well-Being and from Goal Disengagement and Goal Reengagement to a Negative Subjective Well-Being.

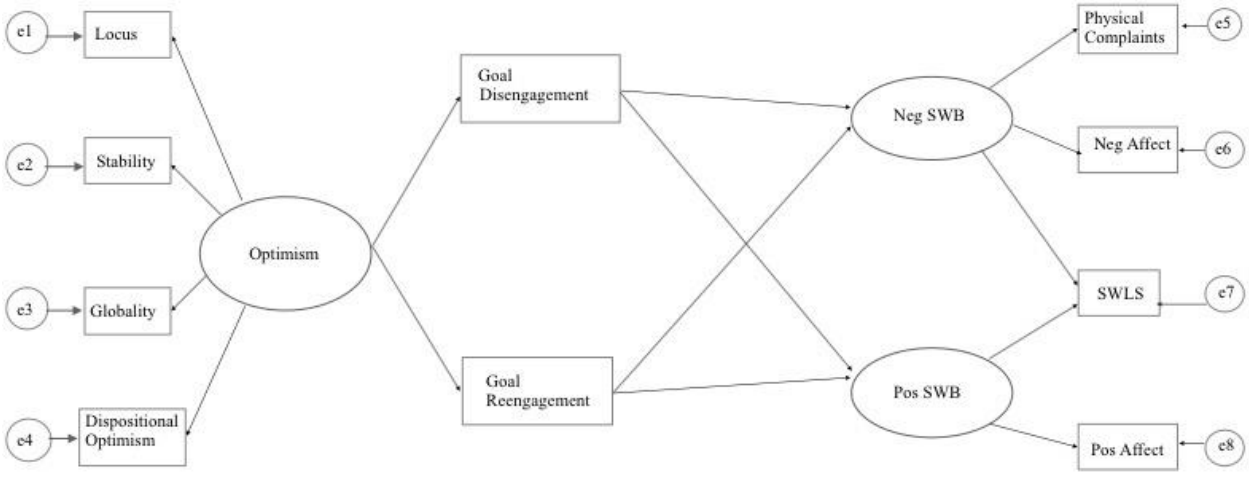

Figure 4. Revised Hypothesized Relationships Between Variables. Locus = Locus of Control. Neg. SWB = Negative Subjective Well-Being. Pos SWB = Positive Subjective Well-Being. Neg Affect = Negative Affect. SWLS = Satisfaction with Life. Pos Affect = Positive Affect.

To test the hypothesized model, a series of path models were created and examined using Amos SPSS software. Following Hoyle and Panter's (1995) suggestion to utilize multiple indices to evaluate adequacy of model fit, the hypothesized model was examined using Normed Fit Index (NFI), Comparative Fit Index (CFI) and Root Mean Squared Error of Approximation (RMSEA); NFI and CFI index values above .90 and RMSEA values below .08 were interpreted as indicating adequate fit. Modifications to the hypothesized model were made based on examination of modification indices and residuals.

Measurement Model. Figure 5 presents the initial measurement model tested in AMOS. The overall fit of the proposed model was inadequate, with fit indices falling outside previously noted standards (NFI = .84, CFI = .86, RMSEA = .09, X^2= 120.36, *df* = 26, *p* <.001). As there exists debate as to whether dispositional and explanatory style interpretations of optimism reflect overlapping constructs (Peterson, 2000), the measurement model was subsequently revised such that Dispositional Optimism and Optimistic Explanatory Style were evaluated within the model independently of one another. Figure 6 depicts the revised measurement model.

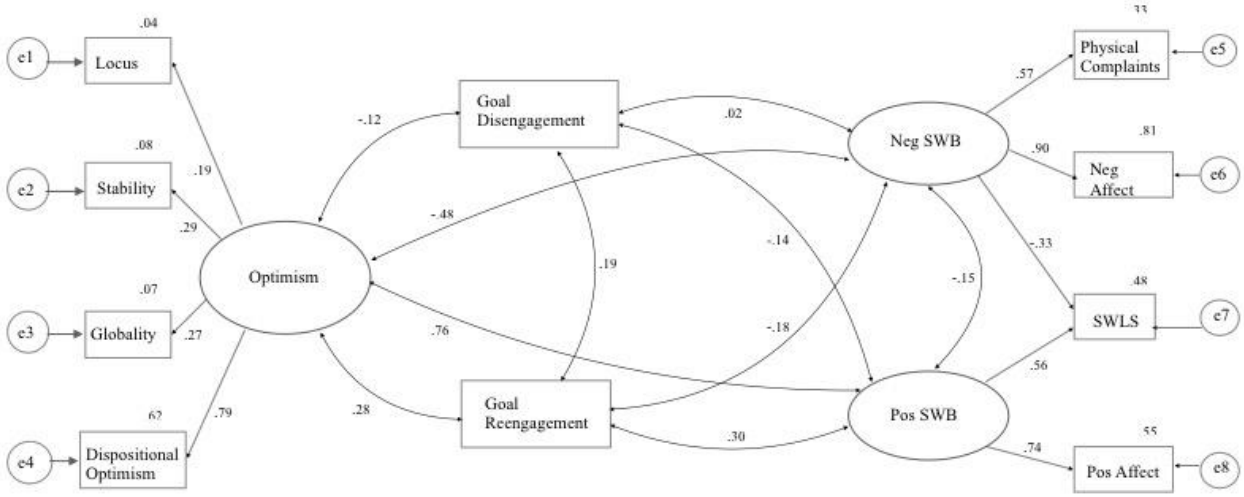

Figure 5. Initial Measurement Model. Locus = Locus of Control. Neg SWB = Negative Subjective Well-Being. Pos SWB = Positive Subjective Well-Being. Neg Affect = Negative Affect. SWL = Satisfaction with Life. Pos Affect = Positive Affect.

Following this adjustment, examinations of fit were repeated. The revised measurement model was found to possess strong fit to the data (NFI = .97, CFI = .99, RMSEA = .02, X^2 = 24.51, *df* = 22, *p* >.3).

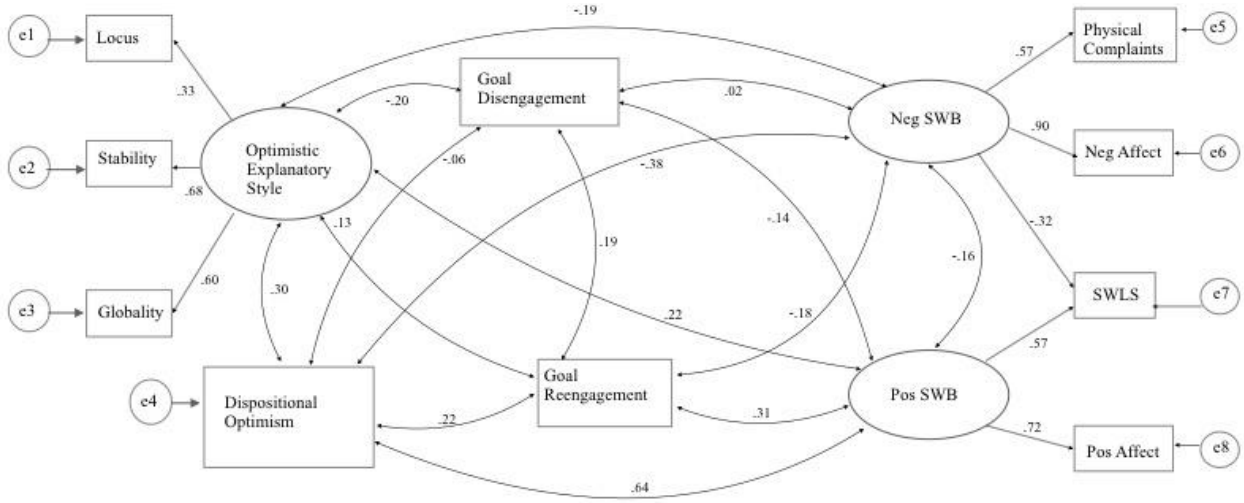

Figure 6. Revised Measurement Model. Locus = Locus of Control. Neg SWB = Negative Subjective Well-Being. Pos SWB = Positive Subjective Well-Being. Neg Affect = Negative Affect. SWL = Satisfaction with Life. Pos Affect = Positive Affect.

Structural Model. Next, the structural model was tested to examine fit of proposed paths. Covariances were estimated among error terms for goal adjustment measures (i.e., Goal Disengagement and Goal Reengagement). Initial analysis of fit was poor (see Figure 7), with suggested indices of fit falling outside identified standards (NFI = .74, CFI = .77, RMSEA = .12, X^2 = 187.99, *df* = 27, *p* <.001).

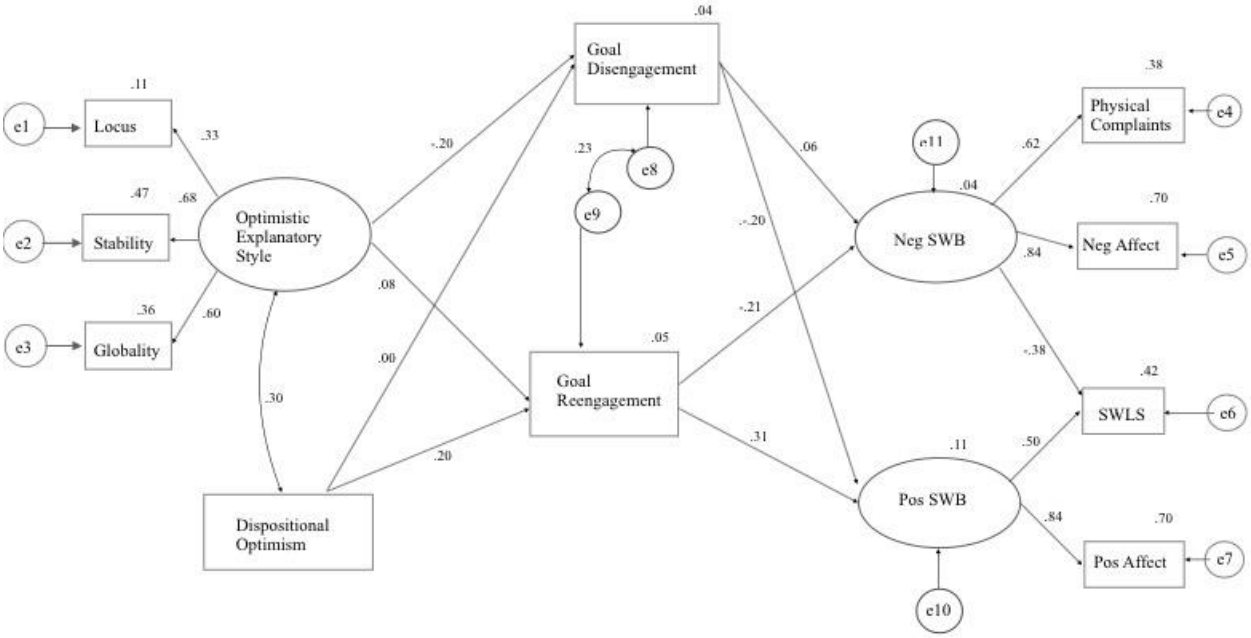

Figure 7. First Structural Model. Locus = Locus of Control. Neg SWB = Negative Subjective Well-Being. Pos SWB = Positive Subjective Well-Being. Neg Affect = Negative Affect. SWL = Satisfaction with Life. Pos Affect = Positive Affect.

Based upon examination of the results of the modification indices and the pattern of residuals in the initial structural model, the path model was adjusted. In light of previous research suggesting relationships between dispositional optimism and subjective well-being constructs (as noted earlier in this literature review), changes to the model included adding direct paths from Dispositional Optimism to Positive Subjective Well-Being and from Dispositional Optimism to Negative Subjective Well-Being (see Figure 8). Following this adjustment, analyses of fit were repeated; the structural model was found to possess strong fit, with fit indices well within previously noted standards (NFI = .96, CFI = .99, RMSEA = .02, $X^2 = 28.77$, $df = 25$, $p > .25$).

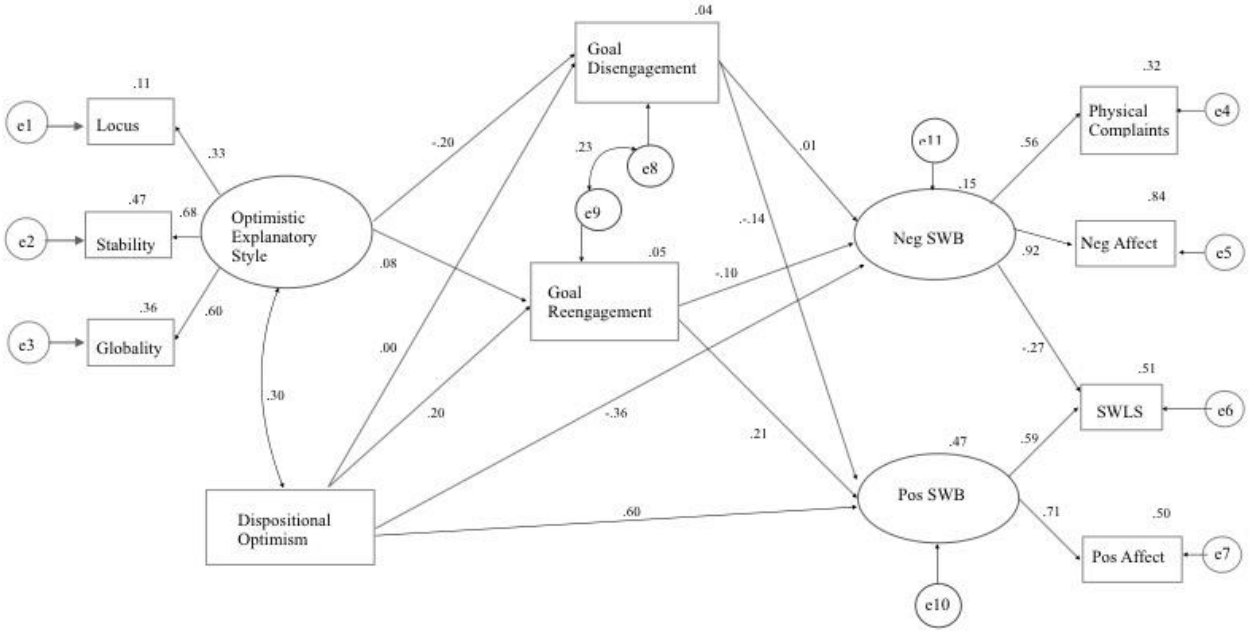

Figure 8. Revised Structural Model. Locus = Locus of Control. Neg SWB = Negative Subjective Well-Being. Pos SWB = Positive Subjective Well-Being. Neg Affect = Negative Affect. SWL = Satisfaction with Life. Pos Affect = Positive Affect.

Final Path Model. Lastly, based upon the pattern of residuals, the model was adjusted to eliminate insignificant paths, specifically those from Dispositional Optimism to Goal Disengagement and from Optimistic Explanatory Style to Goal Reengagement. Following these adjustments, examination of fit analyses were repeated. The resulting revised model was found to have excellent fit (NFI = .96, CFI =.99, RMSEA = .01, X^2 = 30.22, *df* = 28, p >.35). Figure 9 depicts the final revised model with path estimates and variance accounted for included.

The revised model demonstrates the significant complexity in the relationships between optimism, goal adjustment behavior and subjective well-being constructs. Overall the final model explained 5% of the variance in Goal Disengagement, 5% of the variance in Goal Reengagement. 47% of the variance in Positive Subjective Well-Being and 15% of the variance in Negative Subjective Well-Being.

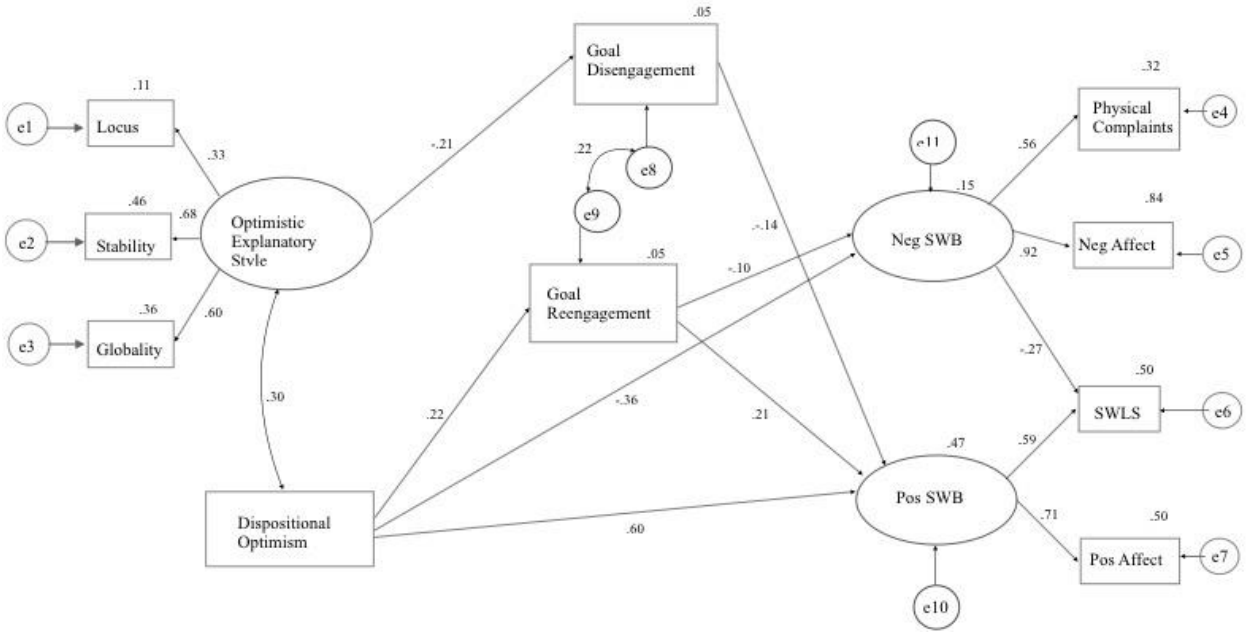

Figure 9. Final Structural Model. Locus = Locus of Control. Neg SWB = Negative Subjective Well-Being. Pos SWB = Positive Subjective Well-Being. Neg Affect = Negative Affect. SWL = Satisfaction with Life. Pos Affect = Positive Affect.

As proposed in primary hypothesis 1, Dispositional Optimism positively predicted Goal Reengagement. Unexpectedly, Dispositional Optimism both directly and indirectly predicted both Positive and Negative Subjective Well-Being via Goal Reengagement. As such, Goal Reengagement was found to partially mediate a relationship between Dispositional Optimism and Subjective Well-Being, rather than fully mediate this relationship as hypothesized. Unexpectedly, Dispositional Optimism was not directly related to Goal Disengagement; as such, Goal Disengagement did not mediate relationships between Dispositional Optimism and either Positive or Negative Subjective Well-Being as predicted.

As also proposed in primary hypothesis 1, Optimistic Explanatory Style negatively predicted Goal Disengagement, such that Goal Disengagement fully mediated a relationship between Optimistic Explanatory Style and Positive Subjective Well-Being. Though Optimistic Explanatory Style indirectly predicted Positive Subjective Well-Being via Goal Disengagement, the direction of this relationship was opposite to what was predicted; specifically, greater Goal

Disengagement was related to reductions (rather than increases) in Positive Subjective Well-Being. Additionally, Optimistic Explanatory Style was not directly related to Goal Reengagement, as suggested. Thus, Goal Reengagement did not mediate relationships between Optimistic Explanatory Style and either Positive or Negative Subjective Well-Being as predicted.

Several findings from the final path model were unexpected. As noted earlier, a measurement model evaluating Dispositional Optimism and Optimistic Explanatory Style constructs independently of one another fit the data better than the proposed model featuring a single Optimism latent variable. Further, Optimistic Explanatory Style uniquely predicted Goal Disengagement (but did not predict Goal Reengagement), while Dispositional Optimism uniquely predicted Goal Reengagement (but did not predict Goal Disengagement). Together, these findings suggest that Attributional and Dispositional conceptualizations of optimism function differently and vary in their impact on Goal Adjustment behavior.

Further, Goal Adjustment constructs were found to differ in their impact on Subjective Well-Being variables. Goal Reengagement was found to positively predict Positive Subjective Well-Being and negatively predict Negative Subjective Well-Being, as consistent with previous research depicting goal adjustment behaviors as adaptive (Wrosch, Scheier, Carver et al., 2003). By contrast, Goal Disengagement negatively predicted Positive Subjective Well-Being and showed no relation to Negative Subjective Well-Being. Together these findings suggest that Goal Disengagement as a solitary behavior negatively impacts well-being primarily through reductions in positive affect and cognitive evaluations of life satisfaction.

In summary, the revised path model provided a good fit to the data in the present study. In partial support of primary hypothesis 1, participants reporting higher Dispositional Optimism possessed greater Goal Reengagement capacities, which partially mediated both relationships

between Dispositional Optimism and Positive Subjective Well-Being, and relationships between Dispositional Optimism and Negative Subjective Well-Being. Likewise, participants reporting higher Optimistic Explanatory Style reported fewer Goal Disengagement capacities, which had a positive impact on Positive Subjective Well-Being.

The findings that Dispositional Optimism was unrelated to Goal Disengagement and that Optimistic Explanatory Style was unrelated to Goal Reengagement were unanticipated. Likewise, the finding that Goal Disengagement negatively impacted Positive Subjective Well-Being was unanticipated. Overall, the revised path model provides substantial support for the notion of Dispositional Optimism and Optimistic Explanatory Style as overlapping yet distinct constructs, each possessing unique relationships to Goal Adjustment and Subjective Well-Being constructs. The final path model also provides support for the idea that Dispositional Optimism partially impacts Subjective Well-Being through increased engagement in new goal pursuits and is consistent with previous research depicting Goal Reengagement behavior as psychologically adaptive (Duke et al., 2002; Wrosch & Heckhausen, 1999; Wrosch, Scheier, Miller et al., 2003).

Secondary Hypothesis 1. Secondary hypothesis 1 was proposed as an alternative to primary hypothesis 1, should the main structural model not fit the data. It was that Negative Affect would mediate a proposed relationship between Goal Disengagement and Physical Complaints, while Goal Reengagement would significantly predict Positive Affect. As the proposed model outlined in primary hypothesis 1 demonstrated strong fit to the data following adjustments based on modification indices, secondary hypothesis 1 was not tested.

Moderation Analyses

Primary hypotheses 2-4 and secondary hypothesis 2 were all examined using moderation analyses. To test primary hypothesis 2, primary hypothesis 4 and secondary hypothesis 2, a series of

hierarchical multiple regression equations were run as specified by Baron and Kenny (1986). In the first step, main effects were entered as predictors of the criterion variable, while the second step involved adding an interaction term to determine if additional variance was explained; a significant interaction term was assumed to indicate the presence of a moderating effect. To test primary hypothesis 3, the sample was split into tertiles and a series of regression equations run on each group.

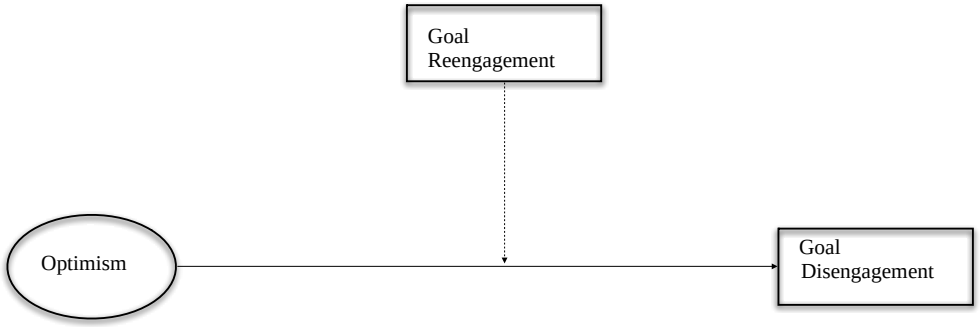

Figure 10. Hypothesized Model of Moderating Effects of Goal Reengagement on Optimism and Goal Disengagement

Primary Hypothesis 2. Figure 10 depicts the proposed moderation hypotheses specified in primary hypotheses 2. Specifically, hypothesis 2 was that greater goal reengagement would strengthen the relationship between optimism and goal disengagement. As results of the path model suggest that dispositional optimism and optimistic explanatory style represent distinct constructs (as noted previously), optimism measures were examined independently in this (and all subsequent) moderation analyses. The revised model of moderating effects proposed in primary hypothesis 2 is presented in Figure 11.

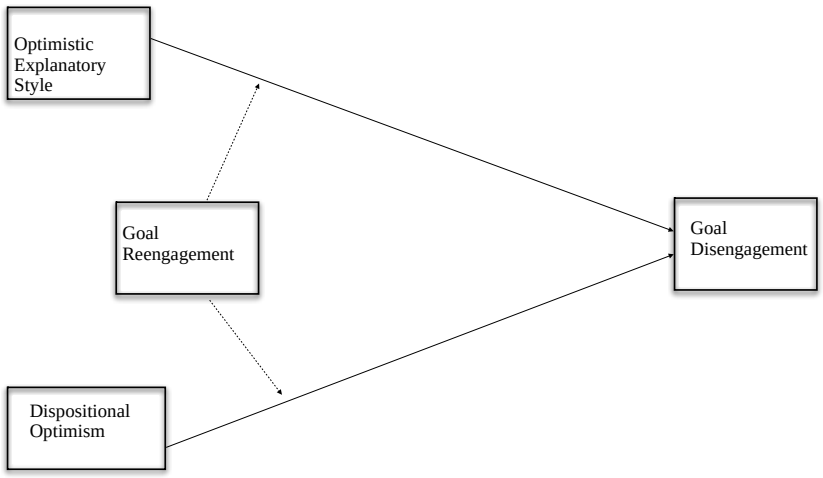

Figure 11. Revised Hypothesized Model of Moderating Effects of Goal Reengagement on Optimism and Goal Disengagement.

In the first analysis, Dispositional Optimism and Goal Reengagement were regressed onto Goal Disengagement. Although main effects were found for both Dispositional Optimism and Goal Reengagement (see Table 8), no evidence for moderation was found; the interaction term between Dispositional Optimism and Goal Reengagement did not explain any additional variance, such that the ß was not significant.

Table 8
Main Effects and Interaction of Dispositional Optimism and Goal Reengagement on Goal Disengagement.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .05, F = 11.02)				
Goal Reengagement	.17	.04	.22	4.50**
Dispositional Opt	-.08	.04	-.11	-2.27*
Step 2 ($R^2\Delta$ = .00, F = 7.85)				
Goal Reengagement X Dispositional Opt	-.01	.01	-.06	-1.22

Note. * = p<.05. ** = p <.01. Dispositional Opt = Dispositional Optimism

In the second analysis, Optimistic Explanatory Style Balance and Goal Reengagement were regressed onto Goal Disengagement. Like the previous analysis, main effects were found for both

Optimistic Explanatory Style and Goal Reengagement. Adding the interaction term did not explain any additional variance (see Table 9); as such no evidence for a moderation effect was found.

Table 9
Main Effects and Interaction of Optimistic Explanatory Style and Goal Reengagement on Goal Disengagement.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .06, F = 14.50)				
Goal Reengagement	.16	.04	.21	4.51**
OES Balance	-7.34	.21	-.16	-3.44*
Step 2 ($R^2\Delta$ = .06, F = 10.26)				
Goal Reengagement X OES Balance	.07	.05	.06	1.32

Note. * = p<.05. ** = p <.01. OES Balance = Optimistic Explanatory Style Balance

Primary Hypothesis 3. Figure 12 depicts the proposed moderation hypotheses specified in primary hypotheses 3. Specifically, hypothesis 3 suggested that both excessive and limited goal disengagement would strengthen the relationship between goal reengagement and subjective well-being. As principal components analysis suggested an underlying two-factor structure for Subjective Well-Being (as previously noted), Positive Subjective Well-Being and Negative Subjective Well-being constructs were examined independently of one another in this analysis. The revised model of hypothesized moderation effects depicting this change is presented in Figure 13.

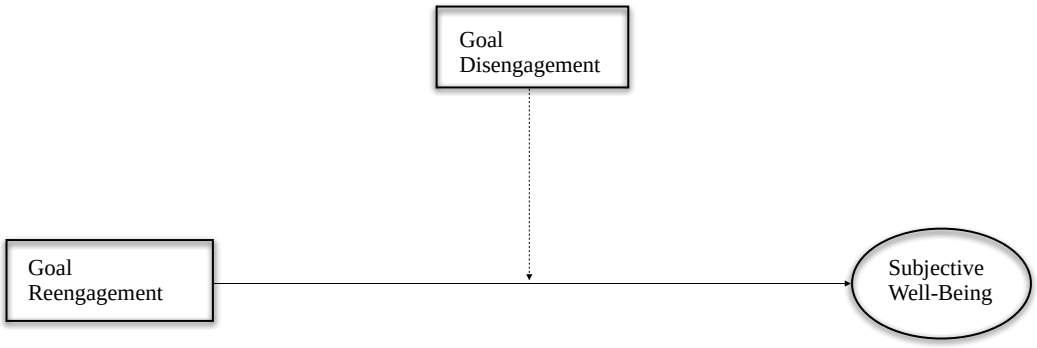

Figure 12. Hypothesized Model of Moderating Effects of Goal Disengagement on Goal Reengagement and Subjective Well-Being

Moderation was tested by performing regression analyses at different levels of Goal Disengagement. The sample was split into tertiles based on level of Goal Disengagement, using a 33.33% and 66.66% split, such that participants were identified as belonging to one of three groups: low Goal Disengagement, medium Goal Disengagement or high Goal Disengagement.

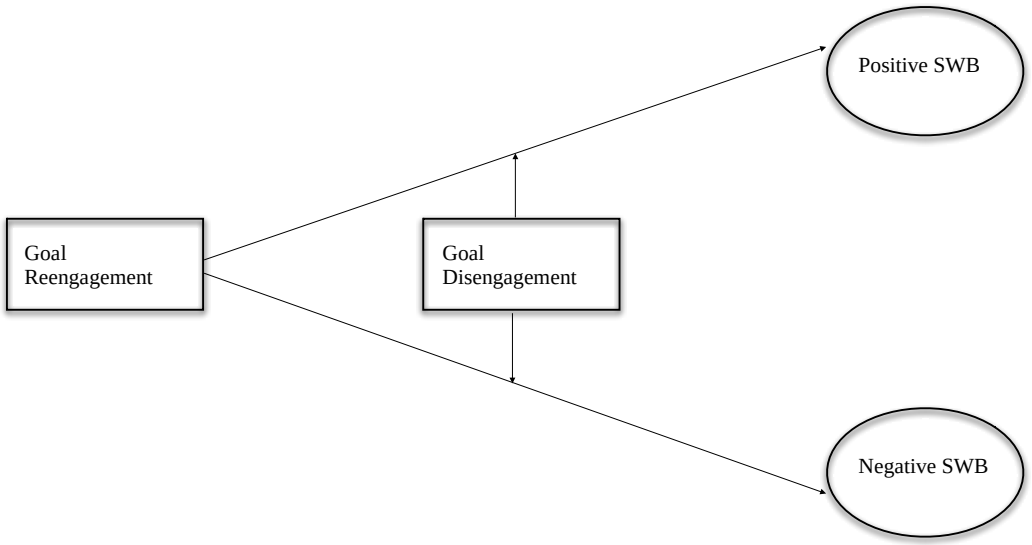

Figure 13. Revised Hypothesized Model of Moderating Effects of Goal Disengagement on Goal Reengagement and Subjective Well-Being. Positive SWB = Positive Subjective Well-Being. Negative SWB = Negative Subjective Well-Being.

In the first analysis, Negative Subjective Well-Being was regressed onto Goal Reengagement for each of the three Goal Disengagement levels (i.e., low, medium, high; see Table 10). In the medium and high Goal Disengagement levels, Goal Reengagement was found to significantly predict Negative Subjective Well-Being, suggesting that the impact of Goal Reengagement on Negative Subjective Well-Being increases as the capacity for Goal Disengagement increases.

Table 10
Summary of Regression Analyses for Three Samples of Respondents with Low Level of Goal Disengagement, Medium Level of Goal Disengagement and High Level of Goal Disengagement.

	Neg. SWB regressed onto GR			Pos. SWB regressed onto GR		
GD	F	ß	t	F	ß	t
Low	.46	-.06	-.68	20.68	.38	4.55***
Medium	6.76	-.21	-2.60*	7.85	.22	2.80**
High	6.63	-.20	-2.58*	6.06	.19	2.46*

Note. *p<.05. ** p<.01. ***p<.001. GD = Goal Disengagement. GR = Goal Reengagement. Pos. SWB = Positive Subjective Well-Being. Neg. SWB = Negative Subjective Well-Being.

In the second analysis, Positive Subjective Well-Being was regressed onto Goal Reengagement for each of the three Goal Disengagement levels (i.e., low, medium, high; see Table 10). In all three levels of Goal Disengagement, Goal Reengagement was found to significantly predict Positive Subjective Well-Being, suggesting that Goal Reengagement is generally associated with Positive Subjective Well-Being. However, the effect of Goal Reengagement on Positive Subjective Well-Being was especially strong in those low in Goal Disengagement (see Table 10), suggesting that Goal Reengagement has the most impact on Positive Subjective Well-Being in those with lower capacity for Goal Disengagement. Though these results do not fully support proposed research hypotheses, together they suggest that the relationship between Goal Reengagement and Subjective Well-Being is influenced by extremes in Goal Disengagement capacity.

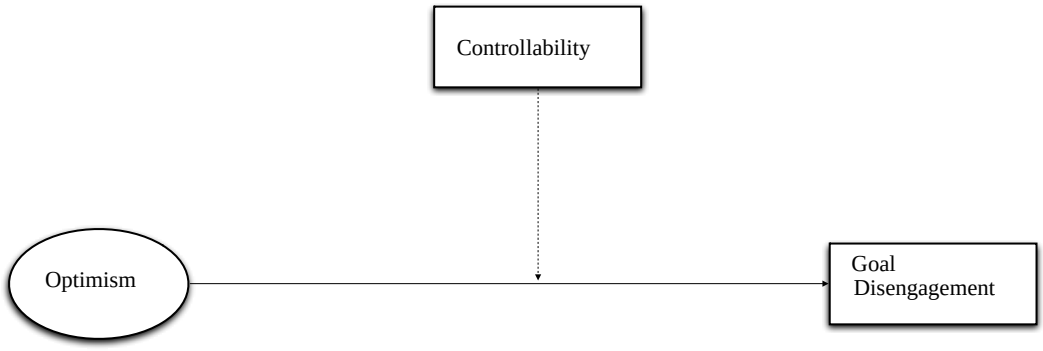

Figure 14. Hypothesized Model of Moderating Effects of Controllability on Optimism and Goal Disengagement.

Primary Hypothesis 4. Figure 14 depicts the proposed moderation hypotheses specified in primary hypothesis 4. As results of the path model suggest that Dispositional Optimism and Optimistic Explanatory Style represent distinct constructs (as noted previously), optimism measures were examined independently in this analysis. Figure 15 depicts the revised moderation hypotheses. Specifically, hypothesis 4 was that Controllability would moderate a relationship between optimism and Goal Disengagement. In the first analysis, Dispositional Optimism and Controllability were regressed onto Goal Disengagement. Although no main effect was found for Dispositional Optimism, a main effect of Controllability on Goal Disengagement was identified (see Table 11). Adding the interaction term did not produce a significant change in variance explained and the ß for the interaction term was not significant; as such, no evidence for a moderation effect was found.

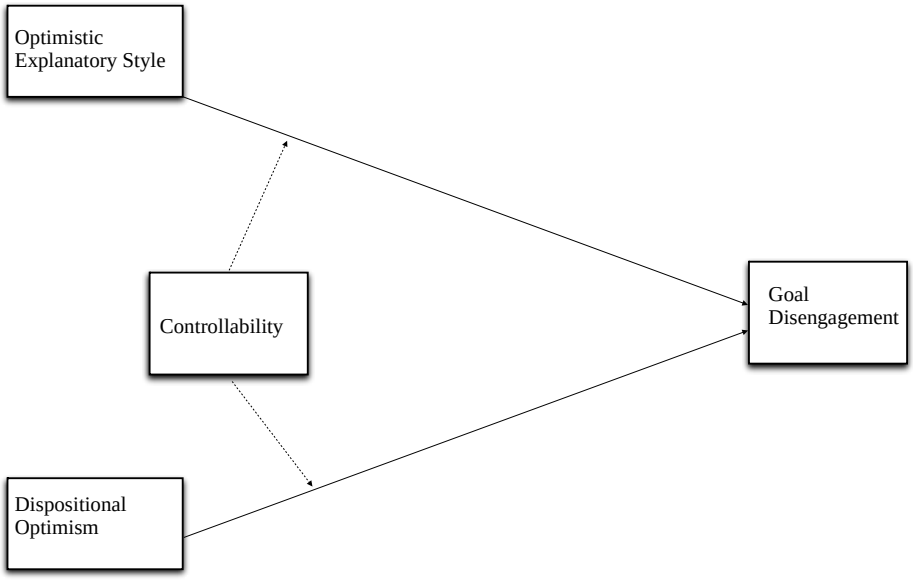

Figure 15. Revised Hypothesized Model of Moderating Effects of Controllability on Optimism and Goal Disengagement.

In the second analysis, Optimistic Explanatory Style Balance and Controllability were regressed onto Goal Disengagement. Main effects were identified for both Optimistic Explanatory

Style Balance and Controllability on Goal Disengagement (see Table 12). No moderation effect was found; adding the interaction term did not explain any additional variance and the ß for the interaction term was not significant.[1]

Table 11
Main Effects and Interaction of Dispositional Optimism and Controllability on Goal Disengagement.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .02, F = 4.94)				
Controllability	-.02	.01	-.14	-2.86*
Dispositional Opt	-.03	.04	-.05	-.98
Step 2 ($R^2\Delta$ = .03, F = 3.8)				
Controllability X Dispositional Opt	.00	.00	-.06	-1.23

Note. * = p<.05. Dispositional Opt = Dispositional Optimism

Table 12
Main Effects and Interaction of Optimistic Explanatory Style and Controllability on Goal Disengagement.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .03, F = 6.99)				
OES Balance	-.50	.22	-.11	-2.23*
Controllability	-.02	.01	-.12	-2.37*
Step 2 ($R^2\Delta$ = .00, F = 4.65)				
OES Balance X Controllability	.00	.01	.00	.08

Note. * = p<.05. OES Balance = Optimistic Explanatory Style Balance

Secondary Hypothesis 2. Figure 16 depicts the proposed moderation hypotheses specified in secondary hypothesis 2. Specifically, this hypothesis was that optimism would lessen the impact of impoverished goal adjustment behavior (i.e., Goal Disengagement and Goal Reengagement) on subjective well-being.

[1] Moderation analyses evaluating primary hypothesis 4 as shown in the results section were tested using a controllability aggregate score in which participants responses to the 20 ASAT-III items were averaged. Moderation analyses were also conducted using a balanced controllability score, created by subtracting controllability scores for failure situations from controllability scores for success situations and then averaging these scores. No moderation effect was found when utilizing this balanced controllability score.

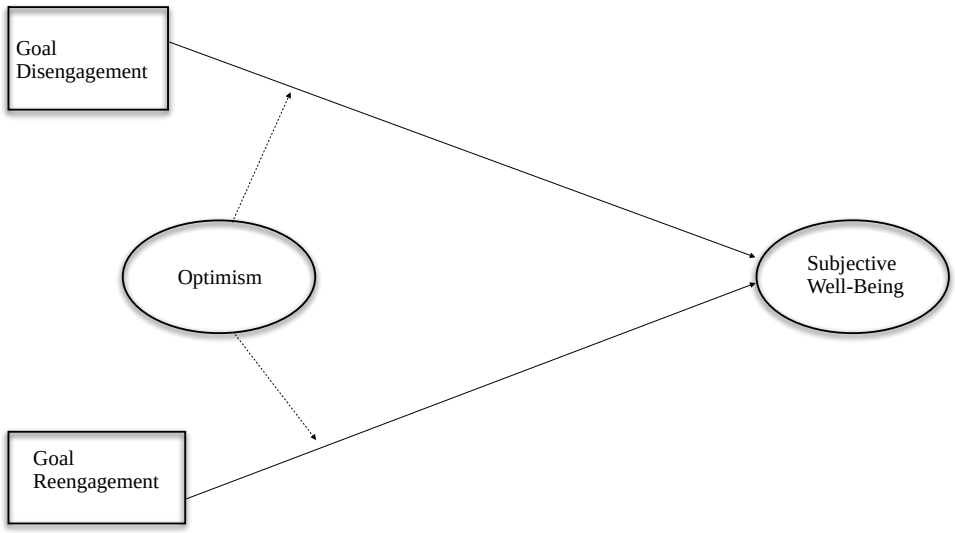

Figure 16. Hypothesized Model of Moderating Effects of Optimism on Goal Adjustment and Subjective Well-Being.

As previously noted, Dispositional Optimism and Optimistic Explanatory Style measures were examined independently in all moderation analyses based on fit to data identified by the primary path model (as previously noted). In addition, as principal components analysis suggested an underlying two-factor structure for subjective well-being (as previously noted), Positive Subjective Well-Being and Negative Subjective Well-Being constructs were also examined independently, such that eight different moderation analyses were completed: 1) Dispositional Optimism moderating the relationship between Goal Disengagement and Positive Subjective Well-Being; 2) Dispositional Optimism moderating the relationship between Goal Reengagement and Positive Subjective Well-Being; 3) Dispositional Optimism moderating the relationship between Goal Disengagement and Negative Subjective Well-Being; 4) Dispositional Optimism moderating the relationship between Goal Reengagement and Negative Subjective Well-Being; 5) Optimistic Explanatory Style Balance moderating the relationship between Goal Disengagement and Positive Subjective Well-Being; 6) Optimistic Explanatory Style Balance moderating the relationship between Goal Reengagement and Positive Subjective Well-Being; 7) Optimistic Explanatory Style

Balance moderating the relationship between Goal Disengagement and Negative Subjective Well-Being; and 8) Optimistic Explanatory Style Balance moderating the relationship between Goal Reengagement and Negative Subjective Well-Being. The revised hypothesized model depicting these proposed moderation effects is presented in Figure 17.

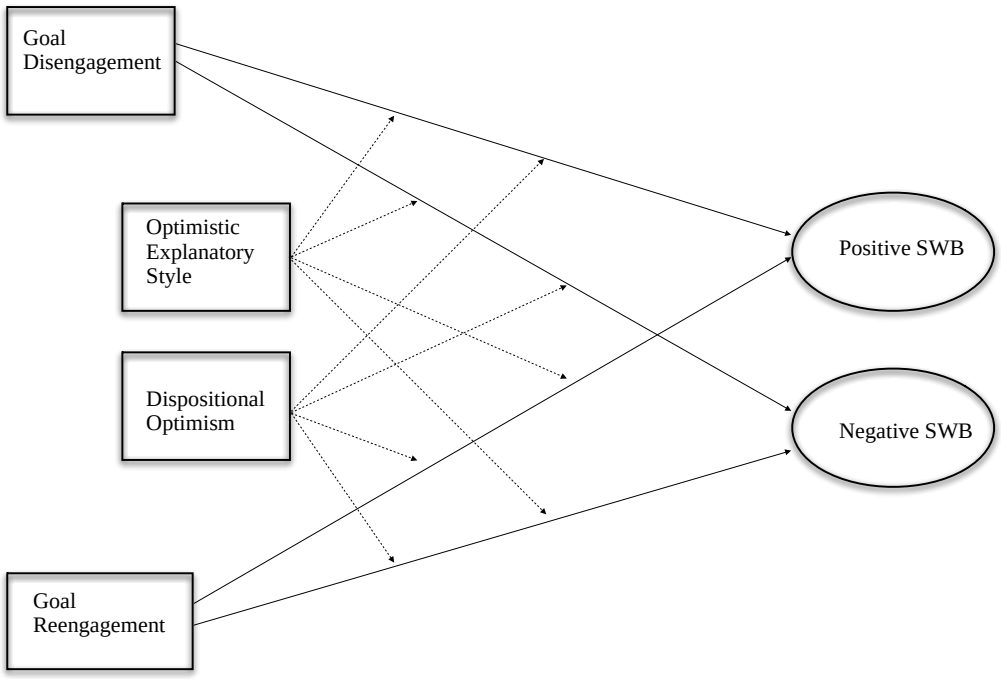

Figure 17. Revised Hypothesized Model of Moderating Effects of Optimism on Goal Adjustment and Subjective Well-Being.

In the first analysis, Goal Disengagement and Dispositional Optimism were regressed onto Positive Subjective Well-Being. Although no main effect was found for Goal Disengagement, a main effect of Dispositional Optimism on Positive Subjective Well-Being was identified (see Table 13). Adding the interaction term did not produce a significant change in variance explained and the ß for the interaction term was not significant; as such, no evidence for a moderation effect was found.

Table 13
Main Effects and Interaction of Goal Disengagement and Dispositional Optimism on Positive Subjective Well-Being.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .29, F = 88.32)				
Goal Disengagement	-.03	.01	-.07	-1.80
Dispositional Opt	.13	.01	.53	13.03**
Step 2 ($R^2\Delta$ = .00, F = 58.75)				
Goal Disengagement X Dispositional Opt	.00	.00	.01	.15

Note. ** = p <.01. Dispositional Opt = Dispositional Optimism.

In the second analysis, Goal Reengagement and Dispositional Optimism were regressed onto Positive Subjective Well-Being. Main effects were identified for both Goal Reengagement and Dispositional Optimism on Positive Subjective Well-Being (see Table 14). However, a moderation effect was not found as adding the interaction term did not explain any additional variance and the ß for the interaction term was not significant.

Table 14
Main Effects and Interaction of Goal Reengagement and Dispositional Optimism on Positive Subjective Well-Being.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .30, F = 93.56)				
Goal Reengagement	.04	.01	.14	3.28*
Dispositional Opt	.13	.01	.50	12.24**
Step 2 ($R^2\Delta$ = .00, F = 62.26)				
Goal Reengagement X Dispositional Opt	.00	.00	-.01	-.26

Note. * = p<.05. ** = p <.01. Dispositional Opt = Dispositional Optimism

In the third analysis, Goal Disengagement and Dispositional Optimism were regressed onto Negative Subjective Well-Being. Although no main effect was found for Goal Disengagement, a main effect of Dispositional Optimism on Negative Subjective Well-Being was identified (see Table 15). However, adding the interaction term did not explain any additional variance; thus, no evidence for a moderation effect was found.

Table 15
Main Effects and Interaction of Goal Disengagement and Dispositional Optimism on Negative Subjective Well-Being.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .06, F = 14.11)	.			
Goal Disengagement	-.01	.02	-.02	-.32**
Dispositional Opt	-.06	.01	-.25	-5.31
Step 2 ($R^2\Delta$ = .00, F = 10.06)				
Goal Disengagement X Dispositional Opt	.01	.00	.06	1.37

Note. * = p<.05. Dispositional Opt = Dispositional Optimism

In the fourth analysis, Goal Reengagement and Dispositional Optimism were regressed onto Negative Subjective Well-Being. Main effects were identified for both Goal Reengagement and Dispositional Optimism on Negative Subjective Well-Being (see Table 16). Adding the interaction term, however, did not produce a significant change in variance explained and the ß for the interaction term was not significant; as such, no evidence for a moderation effect was found.

Table 16
Main Effects and Interaction of Goal Reengagement and Dispositional Optimism on Negative Subjective Well-Being.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .07, F = 16.46)				
Goal Reengagement	-.03	.01	-.10	-2.12*
Dispositional Opt	-.06	.01	-.23	-4.74**
Step 2 ($R^2\Delta$ = .00, F = 11.06)				
Goal Reengagement X Dispositional Opt	.00	.00	-.03	-.56

Note. ** = p <.01. Dispositional Opt = Dispositional Optimism

In the fifth analysis, Goal Disengagement and Optimistic Explanatory Style Balance were regressed onto Positive Subjective Well-Being. Although no main effect was found for Goal Disengagement, a main effect of Optimistic Explanatory Style Balance on Positive Subjective Well-Being was identified (see Table 17). Adding the interaction term did not explain any additional variance and thus no evidence for a moderation effect was found.

Table 17

Main Effects and Interaction of Goal Disengagement and Optimistic Explanatory Style on Positive Subjective Well-Being.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .03, F = 6.72)				
Goal Disengagement	-.03	.02	-.09	-1.81
OES Balance	.22	.08	.14	2.91**
Step 2 ($R^2\Delta$ = .00, F = 4.82)				
Goal Disengagement X OES Balance	.03	.03	.05	1.01

Note. ** = p <.01. OES Balance = Optimistic Explanatory Style Balance

In the sixth analysis, Goal Reengagement and Optimistic Explanatory Style Balance were regressed onto Positive Subjective Well-Being. Main effects were identified for both Goal Reengagement and Optimistic Explanatory Style Balance on Positive Subjective Well-Being (see Table 18). Adding the interaction term did not produce a significant change in variance explained and the ß for the interaction term was not significant; as such, no evidence for a moderation effect was found.

Table 18

Main Effects and Interaction of Goal Reengagement and Optimistic Explanatory Style on Positive Subjective Well-Being.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .08, F = 17.60)				
Goal Reengagement	.06	.01	.23	4.95**
OES Balance	.20	.07	.12	2.67**
Step 2 ($R^2\Delta$ = .00, F = 11.94)				
Goal Reengagement X OES Balance	.02	.02	.04	.81

Note. ** = p <.01. OES Balance = Optimistic Explanatory Style Balance

In the seventh analysis, Goal Disengagement and Optimistic Explanatory Style Balance were regressed onto Negative Subjective Well-Being. Neither main effects nor interaction effects were identified in this analysis, such that there was no evidence for a moderation effect (see Table 19).

Table 19
Main Effects and Interaction of Goal Disengagement and Optimistic Explanatory Style on Negative Subjective Well-Being.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .01, F = 1.72)				
Goal Disengagement	.00	.02	-.01	-0.25
OES Balance	-.14	.08	-.09	-1.86
Step 2 ($R^2\Delta$ = .00, F = 1.15)				
Goal Disengagement X OES Balance	.00	.03	-.01	-0.10

Note. OES Balance = Optimistic Explanatory Style Balance

In the eighth and final analysis, Goal Reengagement and Optimistic Explanatory Style Balance were regressed onto Negative Subjective Well-Being. Although no main effect was found for Optimistic Explanatory Style Balance, a main effect of Goal Reengagement on Negative Subjective Well-Being was identified (see Table 20). However, adding the interaction term did not explain any additional variance; thus no evidence for a moderation effect was found.

Table 20
Main Effects and Interaction of Goal Reengagement and Optimistic Explanatory Style on Negative Subjective Well-Being.

	B	SE	ß	t
Step 1 ($R^2\Delta$ = .03, F = 6.13)				
Goal Reengagement	-.04	.01	-.14	-3.00**
OES Balance	-.11	.08	-.07	-1.50
Step 2 ($R^2\Delta$ = .00, F = 4.26)				
Goal Reengagement X OES Balance	.01	.02	.04	.73

Note. ** = p <.01. OES Balance = Optimistic Explanatory Style Balance

In summary, of the proposed moderating effects suggested by primary hypotheses 2-4 and secondary hypothesis 2, only one was observed. Goal Disengagement did moderate relationships between Goal Reengagement and subjective well-being variables (primary hypothesis 3). Specifically, medium and high Goal Disengagement strengthened a relationship between Goal Reengagement and Negative Subjective Well-Being, while low Goal Disengagement strengthened a relationship between Goal Reengagement and Positive Subjective Well-Being. Goal

Reengagement failed to moderate the relationship between Dispositional Optimism and Goal Disengagement, or the relationship between Optimistic Explanatory Style Balance and Goal Disengagement. Likewise, Controllability failed to moderate the relationship between either Dispositional Optimism and Goal Disengagement or Optimistic Explanatory Style Balance and Goal Disengagement. Lastly, both Dispositional Optimism and Optimistic Explanatory Style Balance failed to moderate relationships between Goal Disengagement and subjective well-being composite scores, as well as relationships between Goal Reengagement and subjective well-being composite scores.

CHAPTER FIVE

DISCUSSION

Discussion of the present study begins with a brief summary of key findings. Next, the relationship between Dispositional Optimism and Optimistic Explanatory Style is evaluated, followed by consideration of the impact of optimism and goal adjustment (i.e., goal disengagement and goal reengagement) on subjective well-being. Moderation analyses are then examined with the aim of identifying factors contributing to null findings. Lastly, limitations of the present study will be delineated, future directions for research in this area discussed and clinical implications identified.

Summary of Findings

The present study sought to extend the work of Abramson et al. (1978), Aspinwall and Richter (1999), Carver and Scheier (1981, 1990), Gibson and Sanbonmatsu (2004), Hanssen et al. (2015), Kraaij et al. (2008), Lam et al. (2015), Scheier et al. (1986), and Seligman (1991) by examining relationships between optimism, goal adjustment, and subjective well-being constructs. The final revised version of the path model possessed strong fit to the data and accounted for a large portion of the variance in Positive Subjective Well-Being. The present study provides strong support for the conceptualization of dispositional optimism and optimistic explanatory style as partially independent constructs, each with unique relationships with goal adjustment and subjective well-being variables; unexpectedly, a path model in which Dispositional Optimism and Optimistic Explanatory Style were evaluated independently proved a better fit to the data than one in which these constructs contributed to an optimism latent variable. Likewise, principal components

analysis suggested the presence of two latent subjective well-being variables (i.e., Positive Subjective Well-Being, Negative Subjective Well-Being), rather than the single latent variable originally predicted. As such, some study hypotheses involving optimism and/or subjective well-being constructs were found to be partially supported by one form of optimism or subjective well-being, but not the other.

For example, primary hypothesis 1 suggested that optimism would predict both Goal Disengagement and Goal Reengagement behaviors. While Dispositional Optimism predicted Goal Reengagement in the present study, Optimistic Explanatory Style did not. Conversely, Optimistic Explanatory Style predicted Goal Disengagement, but Dispositional Optimism did not. Together, these findings partially support connections between optimism and both goal adjustment variables as hypothesized, but suggest complexities within these relationships that were not originally predicted.

Primary hypothesis 1 also suggested that Goal Disengagement and Goal Reengagement would fully mediate a relationship between optimism and subjective well-being. This hypothesis too was partially supported. As predicted, Goal Disengagement fully mediated a relationship between Optimistic Explanatory Style and Positive Subjective Well-Being. Unexpectedly, however, Optimistic Explanatory Style was unrelated to both Negative Subjective Well-Being and Goal Reengagement. With regard to trait optimism, the relationship between Dispositional Optimism and both Positive and Negative Subjective Well-Being was partially rather than fully mediated by Goal Reengagement, as hypothesized. Further, Dispositional Optimism was entirely unrelated to Goal Disengagement. Together, these results again suggest unanticipated complexities in the relationships between optimism, goal adjustment and subjective well-being constructs.

Lastly, the majority of the hypothesized moderation effects were not significant. Specifically, neither Goal Reengagement nor Controllability moderated relationships between either optimism construct and Goal Disengagement. Likewise, neither optimism construct moderated relationships between Goal Disengagement and Positive and Negative Subjective Well-Being variables or Goal Reengagement and Positive and Negative Subjective Well-Being variables.

Only one of four moderation hypotheses received partial support: there was evidence to suggest that Goal Disengagement impacted a relationship between Goal Reengagement and subjective well-being (i.e., primary hypothesis 3). Specifically, Goal Reengagement was found to significantly predict Negative Subjective Well-Being at medium and high levels of Goal Disengagement, suggesting a trend in which the impact of Goal Reengagement on Negative Subjective Well-Being increases as the capacity for Goal Disengagement increases. By contrast, Goal Reengagement was generally associated with Positive Subjective Well-Being at all levels of Goal Disengagement, but was especially strong in those low in Goal Disengagement. Though these results do not fully support moderation hypotheses, they do suggest a pattern in which higher Goal Disengagement predicts a relationship between Goal Reengagement and Negative Subjective Well-Being, whereas lower Goal Disengagement strengthens existing relationships between Goal Reengagement and Positive Subjective Well-Being.

Optimism Constructs

Historically, theorists have conceptualized optimism using either Dispositional Optimism or Optimistic Explanatory Style constructs. To date, however, very little research has measured optimism using both constructs within the same study (Tomakowsky et al., 2001). The present study sought to identify ways in which these constructs overlapped and diverged, while

simultaneously evaluating their relationships with goal adjustment and subjective well-being variables.

Given that Dispositional Optimism and Optimistic Explanatory Style have both been found to predict related constructs of hope, resilience and self-esteem (Carifio & Rhodes, 2002; Ciarrochi et al., 2007; Martin-Krumm et al., 2003; Segovia et al., 2012), the current study hypothesized that the two optimism measures would tap into a singular underlying optimism construct. However, the present study suggests that the aforementioned optimism constructs exist as partially distinct forces. A path model in which each optimism construct was evaluated independently provided a better fit to the data than that utilizing an optimism latent variable. The present study additionally found low correlations between the two optimism variables (nearly identical to those identified by Tomakowsky et al., 2001), and identified several differences in how these constructs relate to both goal adjustment and subjective well-being variables. Specifically, Dispositional Optimism (but not Optimistic Explanatory Style) was directly related to Goal Reengagement, and both Positive and Negative Subjective Well-Being variables. Optimistic Explanatory Style, by contrast, negatively predicted Goal Disengagement but possessed no direct paths to subjective well-being variables.

Together, these findings strongly suggest that Dispositional Optimism and Optimistic Explanatory Style exist as overlapping but ultimately independent constructs. Differences between these forms of optimism, and their ensuing relationships with both goal adjustment and subjective well-being constructs, may reflect the influence of one or several of the following proposed factors.

Specificity of Expectations. First, differences in optimism constructs may reflect variance in the specificity with which future expectancies are focused. For example, some expectancies target very narrow future events, such that these expectations are easily translated into concrete experiences (e.g., the belief 'I will find a convenient place to park'). This "little optimism," as

identified by Peterson (2000, pg. 49), is likely to be impacted by situational factors that color beliefs regarding future outcomes (e.g., the belief 'I will find a convenient place to park' may be impacted by knowledge of time of day, traffic patterns, weather or number of parking spaces). As measures of attributional style ask respondents to provide causal explanations for concrete and finite events (e.g., winning a Scrabble game), Optimistic Explanatory Style may be more likely to tap into a "little optimism" that is impacted by knowledge of events themselves and/or previous learning related to similar experiences (e.g., predictions of winning a Scrabble game could be impacted by knowledge of past performance on word search puzzles). In this way, Optimistic Explanatory Style may reflect a bottom-up processing style in that it is data driven, relying upon observations about a specific event, experience or moment in time.

By contrast, other expectancies are broad or abstract in nature (e.g., the belief "I will have a good life"). Less easily translated into concrete experiences, such "big optimism" (Peterson, 2000, pg. 49), may reflect a general positivity factor in which expectations for positive future outcomes can be met in one of several ways according to the individual (Cohn & Fredrickson, 2009; Rand, 2009). As measures of Dispositional Optimism assess strength of agreement with general expectations for the future (e.g., 'I usually expect the best'), this construct may tap into a superordinate optimism that represents the sum of specific expectations or reflects an interpretation of the general tenor of distinct future predictions. In this way, Dispositional Optimism may reflect a top-down processing style, whereby generalized expectations reflect the individual's hypotheses for the future based on inferences made from collections of events.

Different Pathways to Optimism. Dispositional Optimism is typically characterized as an individual difference variable, similar to personality traits or dimensions of temperament. Such traits are often conceptualized as biologically or genetically driven. In contrast, Optimistic

Explanatory Style assumes that past experiences inform future predictions, suggesting an element of growth from experience. As such, distinctions between "big" and "little" optimism (Peterson, 2000, pg. 49), denoting specificity of future expectations may also reflect variations in development, with genetics or biology dictating Dispositional Optimism, and learning dictating Optimistic Explanatory Style. If so, we might expect to see more variance in Optimistic Explanatory Style over time, due to changes in recent learning histories or acquisition of knowledge. Dispositional Optimism, by contrast, may prove more fixed due to a grounding in biological determinants, such that level of optimism in childhood resembles that in older age.

In a similar fashion, distinctions between "big" and "little" optimism (Peterson, 2000, pg. 49), may reflect differences in the mechanisms governing each optimism construct. Dispositional Optimism may exist as an affective component of optimism, such that these future expectations are driven by emotions and/or moods. This is consistent with Carver and Scheier's (2014) description of Dispositional Optimism as a broad form of confidence and Peterson's (2000) argument that optimism holds inherent emotional components. Optimistic Explanatory Style, by contrast, may represent a more analytical or cognitively driven approach. Based in thought, these predictions for the future may be impacted by the schemas and attitudes the individual possess involving the goal or future outcome in question.

Types of Expectancies. Third, distinctions between Dispositional Optimism and Optimistic Explanatory Style may reflect differences in the types of future expectancies proposed by each model (Zullow, 1991). Given evidence suggesting relationships between stable, global and internal attributions for negative events and future depression, the theorists behind the hopelessness theory of depression proposed that causal attributions about negative past events inform both: 1) negative future expectancies in which highly desired outcomes will not occur (i.e., outcome expectancies;

Abramson, Metalsky & Alloy, 1989), as consistent with the Dispositional Optimism definition of pessimism; and 2) expectancies involving response-outcome independence (i.e., helplessness expectancies): beliefs that personal efforts do not impact the individual's environment or situation. The hopelessness model of depression conflates these two types of expectancies under the singular definition of hopelessness, suggesting that feelings of helplessness are a component of expectations for negative future outcomes. In doing so, Optimistic Explanatory Style incorporates beliefs regarding causality and agency into evaluations regarding future goal success. In this way, Optimistic Explanatory Style may resemble the construct of hope, as defined by Synder (2002) comprised of both agency (motivation to achieve goals) and pathways components (beliefs that the individual can generate plans to meet specific goals and possesses the ability to enact these plans). Snyder's hope construct suggests that beliefs regarding future outcomes reflect considerations of the individual's capacity to instigate efforts to achieve desired outcomes (i.e., response-outcome dependence).

However, the link between hopelessness, helplessness expectancies and outcome expectancies has yet to be established. Critics of attributional style research note that studies linking pessimistic attributional style with depression symptoms evaluate hopelessness, but do not typically measure either the presence or nature of future expectancies (Campbell & Fairey, 1985; Riskind, Rholes, Brannon, & Burdick, 1987). As such, there is little evidence to suggest that presence of hopelessness reflects the influence of negative future outcome expectations (Abramson et al., 1989; Hammen, Adrian, & Hiroto, 1988); should helplessness expectancies be elicited by pessimistic explanatory style, depression symptoms may actually be caused by changes in cognitions related to cause and effect, self-efficacy, or resilience. Until a connection between attributional style and outcome expectancies specifically has been established, Optimistic Explanatory Style should be

assumed to reflect an attributional style for past events that may or may not inform both outcome and helplessness expectancies.

Further, cognitive mediational theories of depression argue for a diathesis-stress model in which attributional style is characterized as a distal contributory factor for future hopelessness, rather than a causal agent (Abramson et al., 1989). In such theories, only the interaction of attributional style with presence of negative life events within the same content domain produces hopelessness (i.e., negative future predictions); in and of itself, attributional style is not assumed to impact future expectancies. As support for such a stress-diathesis model has been demonstrated within a variety of populations (Hammen & Cochran, 1981; Metalsky, Halberstadt, & Abramson, 1987), there is evidence to suggest that additional environmental influences impact the relationship between attribution and beliefs about future outcomes, such that optimistic explanations for past events may not independently translate into positive future predictions as consistent with Dispositional Optimism.

In sum, differences between Dispositional Optimism and Optimistic Explanatory Style may reflect variations in the specificity of the expectancy (i.e., broad vs. specific), pathways to optimism (i.e., affective vs. cognitive), underlying mechanisms (i.e., biology vs. learning), or the type of expectancy (e.g., outcome vs helplessness or agency expectancies). Next, the relationship between optimism constructs and goal adjustment variables will be evaluated, with the aim of identifying how variations between the two optimism constructs may explain differences in their relationships with Goal Disengagement and Goal Reengagement processes. The discussion will then turn to examination of relationships between Optimisms, Goal Adjustment and Subjective Well-Being constructs.

Optimism and Goal Adjustment

Hypothesis 1 of the current study suggested that an optimism latent variable would negatively predict Goal Disengagement behavior and positively predict Goal Reengagement. As Dispositional Optimism and Optimistic Explanatory Style were evaluated independently in the path model, each optimism construct's relationship with goal adjustment variables was tested individually. Consistent with study predictions and previous research completed by Hanssen et al. (2015), Gibson and Sambonmatsu (2004), and Rasmussen et al. (2009), Dispositional Optimism positively predicted Goal Reengagement, while Optimistic Explanatory Style negatively predicted Goal Disengagement. However, contrary to study hypotheses, Dispositional Optimism did not predict Goal Disengagement, nor did Optimistic Explanatory Style predict Goal Reengagement.

One explanation for finding an inverse relationship between Goal Disengagement and Optimistic Explanatory Style, but no relationship between Goal Disengagement and Dispositional Optimism, is that Goal Disengagement is specifically influenced by causal attributions for past events. As conceived by Carver and Scheier (1990), Goal Disengagement is preceded by an evaluation of the likelihood of eventual goal success, through comparison of input and reference values (i.e., present state vs. desired goal) and consideration of recent goal progress. Should individuals historically interpret negative events as related to unstable, specific and external factors as consistent with Optimistic Explanatory Style, they may inaccurately predict the likelihood of these same factors impacting future goal success; in this way, potential obstacles to successful goal achievement may be perceived as unlikely to impede goal progress, leading to reduced disengagement from blocked goals.

Alternately, strong beliefs in the relationship between response and outcome, proposed to be consistent with Optimistic Explanatory Style (Gillham et al., 2001; Zullow, 1991), may increase

estimations of goal success during the comparison process. Optimistic individuals, confident in the impact of their personal effort on situational goal constraints, may overestimate their ability to mitigate goal obstacles. Should they believe that they can remove obstacles to goals, they may be less likely to disengage from blocked goals (i.e., engage in Goal Disengagement). This explanation is supported by findings in the present study that Controllability was moderately correlated with Optimistic Explanatory Style and significantly predicted Goal Disengagement. Together these results suggest a relationship between Optimistic Explanatory Style and perceptions of influence over external events, and indicate that expectancies involving response-outcome dependence influence capacity to disengage with goals.

In contrast, Dispositional Optimism is defined as the expectation of positive futures. Individuals who broadly expect positive futures may skip the comparison process described by Carver and Scheier (1990), which could explain the lack of a relationship between Dispositional Optimism and Goal Disengagement. Alternatively, the broad expectancies described as constituting Dispositional Optimism may be less likely to influence this comparison process or evaluation of current goal progress than the specific attributions posited in Optimistic Explanatory Style. Dispositional Optimism's lack of influence could be due to a hierarchy within the self-regulation operation whereby the broad nature of generalized future predictions influence behavior less than specific details regarding perceived discrepancies between current and desired states. Once triggered by goal obstacles, the Goal Disengagement comparison process may override Dispositional Optimism's generalized positive expectations pending more situation-specific evaluation of the likelihood of goal success in that particular domain.

Findings suggesting a relationship between Goal Reengagement and Dispositional Optimism, but not Optimistic Explanatory Style, may reflect overlaps in processes involved with

identifying positive future outcomes and those involved with identifying potential new goals. As conceived by Carver and Scheier (1990), Dispositional Optimism involves generalized expectations for positive futures, unconstrained by considerations of agency or pathways to success. Should these generalizations stem from the capacity to envision a multitude of specific positive future outcomes, such that optimists conclude that all possible pathways will produce desired futures, individuals high in Dispositional Optimism may be especially good at identifying new goals.

By contrast, the idea behind an Optimistic Explanatory Style is that future expectations are based on causal attributions for past events. This focus on causality and agency regarding past events may be less likely to impact Goal Reengagement than the expectations for positive futures thought to be part of Dispositional Optimism. Individuals high in Optimistic Explanatory Style may assume that future goal success must follow the same rules of cause and effect as that identified for past successful events. In doing, so these individuals may unintentionally reduce their capacity to imagine a multitude of potential positive future outcomes, by making assumptions as to how goals are achieved.

In general, while Dispositional Optimism and Optimistic Explanatory Style predicted Goal Disengagement and Goal Reengagement respectively, these optimism constructs together accounted for very little of the variance in goal adjustment processes. Such findings may reflect the youth of the population examined within this study; just beginning to pursue significant goal pursuits, college students may yet to have experienced obstacles to desired goals such that they can accurately report on their capacity to disengage with barren goals and/or reengage with new pursuits.

In a similar vein, these results may reflect the difficulties of accurately self-reporting upon goal adjustment capacities in the absence of major goal disruption; previous studies of goal

adjustment have been conducted with those experiencing significant situational stressors likely to impact goal pursuits, including breast cancer (Lam et al., 2015; Wrosch & Sabiston, 2013), HIV-positive status (Kraaij et al., 2008), caregiving for a family member with mental illness (Wrosch et al., 2011), and termination of a significant relationship (Wrosch & Heckhausen, 1999). Without reference points to inform perceptions of goal adjustment capabilities, college students in the current study may have inaccurately identified their ability to adjust to goal obstacles, such that everyday perceptions of goal adjustment capacities differ from that perceived directly following blocked goal pursuit.

Alternately, these results may reflect a potential limitation of the ASAT measure of Optimistic Explanatory Style (Anderson & Riger, 1991) relating to goal importance. The ASAT asks respondents to provide casual explanations for a set of 20 fixed and specific scenarios, and then rate these explanations along stability, globality and internality domains. Due to individual differences, however, it is unlikely that respondents will evaluate the importance of each goal scenario similarly; some respondents may view successes or failures relating to academics as vital to their well-being, while others may more strongly identify with experiences relating to interpersonal achievements. As the hopelessness theory of depression identifies perceived consequence of goal failure as an additional factor contributing to well-being (Abramson et al., 1989), the minimal predictive value of Optimistic Explanatory Style on Goal Disengagement may reflect population variations with regard to perceptions of ASAT item goal importance, and thus, variations in perceived consequences of being unable to meet these proposed aims. If so, this issue might be addressed by asking respondents to either rate the importance with which they view each goal on the ASAT or identify the goals they perceive to hold the most significant consequences in

the event of failure. Ratings of internality, globality and stability could then be weighted to reflect the respondent's goal priorities accordingly.

Finally, these results may reflect the fact that the current student sample reported less average dispositional optimism than found in recent studies utilizing college student populations (Glaesmer et al., 2012; Hinz et al., 2017; Schou-Bredal et al., 2017). Previous research has established links between lower SES and greater pessimism (Taylor & Seeman, 1999) as well as relationships between racial minority status and greater optimism in low SES populations (Graham & Pinto, 2018). As such, the college population from which the current sample was drawn may have possessed less trait optimism because it was comprised of primarily Caucasian individuals from a lower SES demographic than populations sampled in other studies. Alternately, the optimism average in the current population may reflect the overwhelming majority of female respondents. Survey data suggests that women were found to be less optimistic than men in rural populations (Puskar et al., 2010), possibly reflecting a relative lack of opportunities available to females in these settings and/or an expectation for more traditional gender role behaviors. Should the current study population experience gendered pressures, this factor may explain both the optimism mean and variance in goal adjustment accounted for by optimism constructs.

Optimism, Goal Adjustment and Subjective Well-Being

Secondly, hypothesis 1 included the prediction that goal adjustment processes would mediate a relationship between an optimism latent variable and subjective well-being. As previously noted, Dispositional Optimism and Optimistic Explanatory Style were evaluated independently in the path model, while principal components analysis suggested the presence of two latent subjective well-being variables (i.e., Positive Subjective Well-Being, Negative

Subjective Well-Being). Thus, each optimism construct's relationship with each subjective well-being and goal adjustment variable was tested individually.

In partial support for study predictions, Goal Reengagement mediated relationships between Dispositional Optimism and both Positive and Negative Subjective Well-Being. Unexpectedly, this mediation was partial; Dispositional Optimism was found to possess direct and indirect paths to both subjective well-being variables, suggesting that the act of reengaging with goals is one method of many by which optimists experience positive psychological and physical outcomes. Though the influence of Goal Reengagement on subjective well-being was small in comparison to direct paths from Dispositional Optimism to subjective well-being, these results support previous conceptualizations of goal pursuit as adaptive, such that pursuing goals organizes behavior, orients individuals to personal values, and contributes to perceptions of life meaning, as proposed by Diener et al. (2002), Heckhausen and Schulz (1998), and Emmons (1986). This finding further adds to the literature by demonstrating that the act of identifying and working towards goals both predicts reduced negative subjective well-being and increased positive subjective well-being, suggesting the existence of two complimentary mechanisms working in concert to facilitate positive outcomes.

It should be noted that in the current study, Dispositional Optimism accounted for greater variance in Positive Subjective Well-Being as compared to Negative Subjective Well-Being. One explanation for this finding is that positive future expectations function as a self-fulfilling prophecy, thus enabling individuals to better meet their goals. Should individuals persist in goal pursuits due to beliefs that they will prevail over obstacles or alternately, devote more resources towards meeting desired outcomes, they may be more likely to achieve eventual goal success. Resulting feelings of positive affect and achievement, theorized by Carver and Scheier (1990) to accompany successful

goal progress, may then be reflected in the strength of the relationship between Dispositional Optimism and Positive Subjective Well-Being.

Alternately, the relationship between Dispositional Optimism and Positive Subjective Well-Being (as compared to Negative Subjective Well-Being) may reflect the impact of positive affect, as consistent with the "broaden-and build" theory of positive emotion (Cohn & Fredrickson, 2009; Fredrickson, 2001). Proposing that the experience of positive emotion leads to formation of enduring personal resources through more flexible and expanded response tendencies, the broaden and build theory suggests a process whereby temporary positive affect begets exponential long-term resilience. This theory provides a basis for research investigating relationships between constructs of optimism, hope, gratitude, and self-efficacy (Carifio & Rhodes, 2002; Grant & Gino, 2010; Magaletta & Oliver, 1999; Martin-Krumm et al., 2003; McCullough, 2002). As such, relationships between Dispositional Optimism and Positive Subjective Well-Being in the current study may reflect the larger influence of positive emotion in enabling the development of adaptive resources.

Also in partial support of hypothesis 1, Goal Disengagement fully mediated a relationship between Optimistic Explanatory Style and Positive Subjective Well-Being; greater optimism negatively predicted Goal Disengagement as hypothesized, which was related to Positive Subjective Well-Being. Contrary to study hypotheses however, Goal Disengagement was inversely related to Positive Subjective Well-Being, such that reduced disengagement predicted greater well-being. Further, Optimistic Explanatory Style did not predict Goal Reengagement, nor did Dispositional Optimism predict Goal Disengagement. Together these results are of consequence for two reasons.

First, indirect paths between Optimistic Explanatory Style and Positive Subjective Well-Being support previous assertions framing attributional style as a distal rather than proximal predictor of psychological and physical adjustment. As noted previously, the hopelessness theory of

depression (Alloy et al., 1988) identifies pessimistic explanatory style as a predisposing factor that elevates risk of developing subsequent depression symptoms, upon interaction with negative life events. The current model supports this theory by suggesting a similar process with regard to optimism, in which Optimistic Explanatory Style lacks direct influence upon subjective well-being, but impacts goal adjustment processes that are directly influencing subjective well-being.

Second, in conjunction with evidence suggesting that Dispositional Optimism has both direct and indirect influences on subjective well-being, these findings suggest a fourth important distinction between optimism constructs: impact on subjective well-being. Dispositional Optimism was found to directly influence both Positive and Negative Subject Well-Being. This finding suggests that trait optimism functions as a proximal resiliency factor that directly facilitates increased positive affect and cognitions related to satisfaction and simultaneously protects against the experience of negative psychological and physical outcomes, possibly by changing the duration or nature of goal-directed behavior. By contrast, Optimistic Explanatory Style appears to function as a distal protective factor, that under the right conditions (e.g., interaction with positive life events) influences other processes that then directly impact well-being.

Lastly, in contrast to study hypotheses, these findings depict Goal Disengagement as a maladaptive process that detracts from well-being. In the current study, Goal Disengagement was found to negatively predict Positive Subjective Well-Being, suggesting that as capacity for disengagement increases, experiences of positive affect and satisfaction with life decrease. This result directly contradicts self-regulation theories in which goal adjustment is conceptualized as an adaptive process that contributes to subjective well-being (Carver & Scheier, 1990) and likewise contradicts evidence suggesting that Goal Disengagement predicts decreased perceived stress,

anxiety, depression, intrusive thoughts, and self-blame (Kraaij et al., 2008; Lam et al., 2015; Wrosch et al., 2011; Wrosch, Scheier, Miller et al., 2003).

One explanation for this finding involves a limitation of the GAS (Goal Adjustment Scale) measure of goal adjustment (Wrosch, Scheier, Miller et al., 2003) related to failure to differentiate between capacity for disengagement due to controllable goal obstacles as compared to uncontrollable goal obstacles. Self-Regulation and Control Theory posits that persistence in the face of controllable goal obstacles permits increased goal success and resultant experiences of positive affect (Carver & Scheier, 1990); as such, goal pursuit is proposed to have adaptive functions, such that it organizes behavior and provides life meaning (Emmons, 1999; Klinger, 1998). This same theory notes however, that these benefits cease when individuals face unmanageable goal constraints; repeated exposure to barriers unlikely to be impacted through personal effort or environmental resources is proposed to result in negative affect such that disengagement from barren goals safeguards against experiences of failure and the loss of emotional and motivational resources (Carver & Scheier, 1990). As such, benefits from persistence in the face of goal obstacles are determined by whether continued effort is likely to impact the constraint in question.

However, the GAS does not differentiate between disengagement from goals due to obstacles that may be overcome as compared with those that are immovable; in asking respondents to consider how they behave when they must relinquish an important goal ("If I have to stop pursuing an important goal in my life"), the scale sidesteps the question of whether the goal obstacle is permanent or mutable. Though this allows for a pure measure of goal disengagement, it also conflates a form of goal disengagement that may have positive benefits upon subjective well-being (i.e., following uncontrollable goal obstacles) with one that may negatively impact psychological and physical outcomes (i.e., following controllable goal obstacles). As such, a

negative relationship between Goal Disengagement and Positive Subjective Well-Being in the current study may reflect premature disengagement in the face of goal constraints that might have been overcome with continued persistence, thus preventing potential for positive affect and achievement.

Complicating this issue is the subjective nature of goal obstacle evaluation. Though some obstacles to stated goals are likely to be identifiable as permanent or uncontrollable (e.g., age is likely to limit certain physical capabilities regardless of individual strengths), many obstacles may be less readily categorized as either yielding to personal effort or immutable. As such, inverse relationships between Goal Disengagement and Positive Subjective Well-Being may reflect the difficulty of identifying whether continued pursuit of a future goal will be fruitful. In a similar fashion, this finding may suggest that the consequences of Goal Disengagement vary depending on qualities related to the goal itself. Disengaging from goals for which attainment or failure is associated with significant reward or punishment might produce a different response than disengagement from goals for which attainment does not bring obvious costs or benefits. Alternately, disengagement from goals closely related to self-esteem or identity (regardless of likelihood for goal success) may have a different impact on subjective well-being as compared to goals that are peripheral.

In sum, partial support for primary hypothesis 1 of the current study suggests that Dispositional Optimism both directly and indirectly impacts subjective well-being via reengagement with new goals. This finding supports previous conceptualizations of goal pursuit as adaptive and is consistent with previous literature showing connections between optimism and positive psychological and physical outcomes. In demonstrating that Goal Reengagement partially mediates relationships between Dispositional Optimism and both forms of subjective well-being,

there is support for identification of goals as one method by which optimists experience greater well-being. Optimistic Explanatory Style was found to have an indirect positive impact on Positive Subjective Well-Being through reduced Goal Disengagement. This relationship both provides support for hopelessness theories of depression that frame attributional style as a distal contributory factor for subsequent psychological outcomes and highlights the nature of impact on subjective well-being (i.e., proximal vs distal) as an additional manner by which Dispositional Optimism differs from Optimistic Explanatory style. It further suggests potential limitations within the Goal Adjustment Scale related to conflation of disengagement due to immutable goal constraints as compared with modifiable goal obstacles. Next, moderation analyses pertaining to primary hypotheses 2-4 and secondary hypothesis 2 will be considered, with the aim of identifying factors that may have contributed to null findings.

Moderation Analyses

Primary hypotheses 2-4 and secondary hypothesis 2 all proposed moderation effects in relationships between optimism, goal adjustment and subjective well-being variables. Specifically, primary hypothesis 2 and 4 proposed that Goal Reengagement and Controllability respectively, would moderate relationships between optimism and Goal Disengagement. Secondary hypothesis 2 proposed that optimism would moderate relationships between both goal adjustment variables (i.e., Goal Disengagement and Goal Reengagement) and subjective well-being. Lastly, primary hypothesis 3 suggested that excessive and impoverished Goal Disengagement would moderate relationships between Goal Reengagement and subjective well-being. As noted previously, Dispositional Optimism and Optimistic Explanatory Style were evaluated independently in the path model, while principal components analysis suggested the presence of two latent subjective well-being variables (i.e., Positive Subjective Well-Being, Negative Subjective Well-Being). As such,

moderation analyses involving optimism and subjective well-being evaluated each optimism and subjective well-being construct individually.

In general, the current study did not find evidence for moderation effects as predicted. For example, Goal Reengagement was not found to moderate relationships between either optimism construct and Goal Disengagement, as predicted in primary hypothesis 2. The basis for this prediction was a study in which it was demonstrated that optimists disengaged from an unsolvable lab task faster than pessimists when presented with an opportunity to engage in an alternate task (Aspinwall & Richter, 1999). As such, one explanation for the current null finding relates to the artificial nature of the lab setting, which may not adequately reflect either the goal disengagement or reengagement process in real life. Deliberately simplifying the process of goal adjustment, the experimental procedure for the aforementioned study forced participants to choose between pursuing the unsolvable task or abandoning this task in favor of a supplied new goal pursuit. However, as noted in the previous literature review, goal disengagement and reengagement are not linear or mutually exclusive processes; in real life, individuals may pursue new goals while continuing to put forth effort towards barren goal pursuits and/or disengage with blocked goals prior to identifying replacement desired outcomes. As such, forcing participants to choose one path or the other may have unnaturally distilled the goal adjustment process, such that relationships between optimism, Goal Disengagement, and Goal Reengagement were found that do not exist outside of the lab setting.

Similarly, Controllability was not found to moderate relationships between either optimism construct and Goal Disengagement, as predicted in primary hypothesis 4. This finding may make more sense in light of differences between optimism constructs as discussed at the beginning of this discussion section. As Dispositional Optimism appears to exist as a measure of pure expectation,

unconstrained by considerations of how the individual will meet such desired outcomes, the trait optimism construct may not be impacted by perceptions of control over goal obstacles. Likewise, Optimistic Explanatory style, conceptualized to facilitate both expectancies related to outcome and agency, may already involve increased perceptions of control, such that individuals high in this domain expect that personal efforts impact their environment (Alloy et al., 1988). If so, optimists in the current study may not possess enough variability in Controllability to identify a moderation effect.

Also, contrary to study predictions outlined in secondary hypothesis 2, neither optimism construct moderated relationships between Goal Disengagement and Positive and Negative Subjective Well-Being, nor Goal Reengagement and Positive and Negative Subjective Well-being. These findings are inconsistent with a previous study demonstrating that optimism moderated relationships between Goal Disengagement and anxiety and depression symptoms in advanced breast cancer patients (Lam et al., 2015). One explanation for the current null finding is that relationships between optimism, goal adjustment and subjective well-being constructs in those possessing everyday levels of stress, as would be expected in a college student population, may differ from those possessing heightened stress, such as individuals with severe negative health difficulties. Alternately, relationships between goal adjustment, optimism and subjective well-being may change in the face of accelerated goal disturbance, such as with a terminal illness that is likely to impact the individual's goal pursuit due to decreased longevity. If so, advanced breast cancer patients may possess increased need for goal adjustment processes as compared with a college population due to goal constraints, potentially impacting the emergence of optimism as a moderating influence.

Only one of four moderation hypotheses received partial support. Primary hypothesis 3 proposed that high and low levels of Goal Disengagement (but not moderate levels of Goal Disengagement) would both strengthen a relationship between Goal Reengagement and subjective well-being. Although this hypothesis was not strictly supported, there was evidence to suggest a trend in which extreme levels of Goal Disengagement strengthened relationships between Goal Reengagement and subjective well-being constructs. Findings that Goal Reengagement was significantly negatively predictive of Negative Subjective Well-Being at medium and high levels of Goal Disengagement may suggest that as rate of disengagement increases beyond a critical level, the influence of engaging in alternate goals becomes important in reducing negative well-being. Should premature or nonproductive disengagement from goals hinder the individual from ever achieving desired outcomes, the act of identifying a new goal may buffer against negative affect associated with feelings of failure due to non-achievement, by organizing behavior and providing life meaning. As some of the previous studies, upon which this portion of hypothesis 3 was based, were conducted with vulnerable older populations and multiple sclerosis populations, stronger evidence for a moderation effect may not have been found in the current study due to the age of the population and/or lack of goal disturbance and goal constraints as consistent with overall good health.

Similarly, findings that Goal Reengagement was generally associated with Positive Subjective Well-Being at all levels of Goal Disengagement, but was especially strong in those low in Goal Disengagement, frames low disengagement as a vulnerability factor that may be lessened through engagement with new goals. This finding is partially consistent with previous research in which goal reengagement predicted greater feelings of mastery and less perceived stress and in young adults who reported difficulty disengaging from blocked goals, but not in those who

indicated greater ease in relinquishing unattainable desired outcomes (Wrosch, Scheier, Miller et al., 2003). Should poor disengagement from barren goals facilitate repeated exposure to feelings of failure, identification with new more productive goal pursuits may offset this defeat by providing feelings of achievement and life satisfaction. In this way, the current study provides support for the conceptualization of goal adjustment as an adaptive process, but additionally frames the individual processes of goal disengagement and reengagement as providing a series of checks and balances against each other, such that vulnerabilities caused by excessive levels of one of the goal adjustment processes, may be mitigated by presence of the other.

Limitations

In regards to conducting the current study, one significant limitation is the use of the ASAT (Anderson & Riger, 1991) as a measure of optimistic explanatory style. This measure, which possesses strong similarities to the most commonly used measures of optimistic explanatory style, the Attributional Style Questionnaire (ASQ; Peterson et al., 1982) was utilized in the current study due to difficulties procuring permission to use the ASQ for online data collection. Though the ASAT has been demonstrated to possess adequate psychometrics (Anderson et al., 1988), it is rarely utilized as a measure of optimistic explanatory style within the literature. As such, the current study cannot examine how relationships between optimistic explanatory style and subjective well-being in the current study differ from that of other studies in the literature. Future research following this dissertation might involve replication utilizing the ASQ to measure optimistic explanatory style, with the goal of better evaluating results in the context of other studies.

Similarly, use of the ASAT may have limited study results, due to the measure's focus on specific events that may vary with regard to importance in participants, as noted earlier in this discussion. As goal importance and consequences of failure to meet desired goals may impact

relationships between the Optimistic Explanatory Style construct and goal adjustment processes, future research might consider asking participants to rate the importance of suggested goal scenarios and weighting these scenarios accordingly. Alternately, future studies might utilize an ideographic approach that allows participants to identify individualized goals, in the manner of the Personal Strivings Assessment (Emmons, 1986) thus additionally permitting comparison of the types of goals identified as important to respondents.

Finally, use of the ASAT may have limited study results given use of the optimism balance composite score that sums across the dimensions of internality, stability and globality. As noted in the literature review, there exists shifting views within the explanatory style literature as to the role of internality. The theorists responsible for the reformulated learned helplessness theory identified internality as one of three vital domains that contributed to later depression symptoms. Later, these same theorists deemphasized the role of internality; when creating the hopelessness theory of depression (Alloy et al., 1988), they proposed that the internality construct impacts self-esteem, rather than hopelessness. Correlations between internality and other optimistic explanatory style domains (stability, globality) have historically been demonstrated to be small (Gillham et al., 2001), which is consistent with current study findings suggesting that an underlying optimistic explanatory style construct explained less variance in locus of control as compared to stability or globality domains. As such, questions remain as to whether an optimistic explanatory style measure that weighted globality and stability domains over that of internality might better reflect the relationships that appear to exist within this construct.

Though reflecting the present state of the optimism literature, another limitation of the current study is the assumption that optimism and pessimism reflect two ends of one spectrum, such that individuals high on optimism are believed to be low on pessimism and vice versa. As this

assumption is primarily based in the dispositional optimism literature, which argues that individuals cannot hold simultaneous expectations for both positive and negative future outcomes (Gillham et al., 2001), there may be greater confusion as to the distinction between optimism and pessimism within the optimistic explanatory style literature. Though explanatory style researchers, using an optimism balance composite similar to the current study, assume that individuals providing optimistic explanations for negative past events (i.e., unstable, specific, external) will also provide optimistic explanations for positive past events (i.e., stable, global, internal), little research has examined relationships between these attributions (Gillham et al., 2001). Further, the existing evidence suggests that attributions for positive events are weakly, if at all, correlated with attributions for negative events (Peterson, 1991). As much of the optimistic explanatory style literature is inferred from research examining pessimistic explanatory style and thus focuses on attributions for negative events, it is imperative to clarify whether relationships exist between explanations for past positive and negative events.

Another limitation of the current study is the reliance on correlational relationships between variables, precluding assumptions with regard to causality. Though we can state with confidence that optimism and goal adjustment variables in the current study account for a certain amount of variability in subjective well-being, we cannot assume that these processes cause either increases in positive subjective well-being or decreases in negative subjective well-being without an experimental examination that isolates the impact of these variables over time. Similarly, the current study utilizes self-report data that by definition is subject to an array of respondent biases with the potential to influence results. If respondents answered in a manner that preserved their self-image or reflected recent experiences and learning histories rather than stable response styles, the current findings may not actually reflect participant behavior.

Finally, one last limitation to the present study involves the use of a college student population that lacked racial diversity, and reported relatively low levels of optimism as compared to recent studies with similar samples. As noted earlier in this section, previous studies have identified meaningful differences in optimism related to racial minority status (Graham & Pinto, 2018). The demographic breakdown of the current study sample, which was primarily comprised of Caucasian students, may then have contributed to trait optimism averages that were found to be less than that of similar studies (Glaesmer et al., 2012; Hinz et al., 2017; Schou-Bredal et al., 2017). Future research should utilize a more diverse sample, thus allowing for both greater generalizability of results and potentially, a Dispositional Optimism mean more in line with comparative studies. Though the current sample was weighted heavily towards female participants, it should be noted that gender did not significantly correlate with either optimism variable or goal adjustment variable. As such, gender makeup of the current research was unlikely to significantly impact study findings.

Future Directions

Several avenues for continued research in the area of optimism, goal adjustment and subjective well-being were identified by the current study. First, as previously noted, optimistic explanatory style research has yet to formally establish relationships between attributions for negative and positive events, as theorized by the developers of the reformulated learned helplessness theory and hopelessness theory of depression; correlations between internality and stability subscales for positive and negative events were not found to be statistically significant by the developers of the ASQ (Peterson et al., 1982), a finding that has been detected in subsequent studies (Peterson, 1991). Similarly, research in this area has yet to establish that attributions for past events impact expectations for future outcomes in a consistent manner. Until these missing links in the explanatory style literature are addressed, optimistic explanatory style as an optimism construct

lacks the grounding in evidence possessed by its counterpart, dispositional optimism, and should be considered a less substantiated, and thus, weaker, optimism construct.

Should future research provide these missing links, another research avenue involves the development of an optimism measure that simultaneously evaluates both attributional style and expectations for future outcomes. As findings in the current study suggesting partial independence between dispositional optimism and optimistic explanatory style, both of which contribute to the conceptualization of optimism in meaningful ways, a measure with a two-factor structure that assesses both constructs in turn might provide a more comprehensive picture of the individual's capacity for optimism. In making this measure, developers might consider whether weighting domains assessing globality and stability over that of internality improves construct validity, thus allowing for a more pure measure of attributional style as related to optimism.

Third, given suggestions that optimistic explanatory style may be influenced by cognitions relating to agency or cause and effect, results of the current study argue for examination of the manner by which attributional style overlaps with the conceptualization of hope as espoused by Snyder (2002), which possesses both motivational and agency components. Such an investigation is especially important given the emphasis on hopelessness in explanatory style investigations of optimism; rather than measure presence of future expectancies, explanatory style researchers have inferred their presence from measurements of hopelessness, as noted previously (Abramson et al., 1989). Though previous research has confirmed relationships between trait optimism and hope (Bryant & Cvengros, 2004) and successfully identified an underlying construct entitled goal attitude, that predicted both dispositional optimism and hope in a population of college students (Rand, 2009), there is evidence to suggest that these constructs differ in how expectancies are conceptualized to influence behavior (Snyder, Sympson, Michael, & Cheavens, 2001). Snyder's

hope emphasizes the role of personal efficacy in expectations for the future. By contrast, Carver and Scheier's trait optimism suggests that expectations for favorable outcomes may exist for a variety of reasons, including beliefs in self, beliefs in luck and beliefs in others (Scheier & Carver, 1985). Though Carver and Scheier (2002) argue that the items in the Hope Scale measuring the component of agency actually reflect an index of confidence for the future, as consistent with dispositional optimism, there are clear conceptual distinctions between these two constructs.

However, little research appears to have been completed that examines the similarities or overlaps between hope and optimistic explanatory style. Given that the explanatory style model of optimism appears to incorporate evaluations of agency, in a similar manner to Synder's (2002) hope, identification of how the construct of hope might fit into the current path model would broaden understanding of resilience factors that impact both goal pursuit and subjective well-being and potentially expand distinctions between dispositional optimism and optimistic explanatory style constructs.

Fourth, given previous research suggesting the adaptive nature of goal disengagement, an inverse relationship between Goal Disengagement and Positive Subjective Well-Being found in the current study suggests that disengagement from goals may have variable impact on well-being. As noted earlier, such variability may reflect qualities related to the individual goals themselves, such that disengaging from goals that have greater consequences or are more central to identity, negatively impacts well-being. Examination of goal qualities that may moderate a relationship between disengagement and well-being might increase understanding of circumstances in which ending goal pursuit costs rather than benefits the individual. Should disengagement from goals more central to identity or holding greater consequences in the event of failure be demonstrated to

possess greater impact on subjective well-being, this might provide a direction to clinical efforts to address goal pursuits as discussed later in this section.

Fifth, given that goal disengagement and reengagement are conceived as individual difference variables, another research avenue involves examination of potential relationships between goal adjustment capacities and behavioral inhibition system (BIS) and behavioral activation system (BAS) sensitivities, as consistent with Gray's Theory of Brain Functions and Behavior (Gray, 1972). Gray proposes the existence of individual differences in the sensitivity of two neurological systems in response to environmental cues. The behavioral inhibition system is proposed to regulate aversive motivation; sensitive to signals of punishment or absence of reward, the BIS inhibits movement toward goals expected to facilitate negative experiences. By contrast the behavioral activation system is believed to regulate appetitive motivation. Sensitive to reward cues and/or escape from punishment, the BAS is proposed to initiate goal-directed pursuits.

In one of the few published studies to examine these relationships, goal disengagement was significantly inversely correlated with BIS and BAS sensitivities (O'Connor & Forgan, 2007). By contrast, goal reengagement was unrelated to either BAS or BIS. Together, these findings suggest that goal disengagement, but not reengagement, may be impacted by both reward and punishment environmental cues, and suggest a trend by which greater sensitivity to reward or punishment cues is negatively related to capacity for disengagement. Such a relationship could potentially support hopelessness theories of depression that frame greater perceived consequences of goal failure as a predictive factor for future depression. Should individuals persist in pursuing blocked goals due to increased sensitivity to punishment cues, they may experience more failure experiences and negative affect stemming from lack of goal progress.

Lastly, given limitations associated with the current study population and use of the ASAT measure, findings argue for replication of the current study with a different measure of Optimistic Explanatory Style in medical populations that might experience increased goal disturbance (e.g., oncology or AIDS populations). Evaluation of the current path model utilizing the ASQ (Peterson et al., 1982) as a measure of Optimistic Explanatory Style would better allow for comparison with similar research in the optimism field. Use of medical populations experiencing increased constraints to goal pursuit due to physical limitations might allow for relationships between optimism, goal adjustment and subjective well-being to emerge as hypothesized in the current study. Should proposed relationships be established in alternate populations, this would add to the understanding of goal adjustment processes by highlighting differences between everyday Goal Disengagement and Reengagement and that occurring following goal disturbance. Use of a medical population might additionally address potential current study limitations involving youth and lack of experience with goal constraints; evaluation of older populations experiencing physical limitations ensures that the sample has enough life experience to have required use of both Goal Disengagement and Reengagement processes.

Clinical Implications

Given that Goal Reengagement was found to predict both Positive and Negative Subjective Well-Being constructs, the current study provides evidence for clinical approaches that emphasize the identification and evaluation of goals, as consistent with previous research linking goal pursuit and subjective well-being (Klug & Maier, 2015). On a broad scale, these findings suggest discussion of patient goals and goal obstacles, with the aim of identifying appropriate disengagement from barren goals and assisting with goal reengagement, as a viable treatment activity. Clinicians might be able to assist patients in identifying goal obstacles that may be

mitigated through personal effort, as compared with those that definitively preclude successful goal attainment. They may alternately work with patients to identify new interests and goal pursuits, in a manner similar to pleasant event scheduling. This activity may be especially useful in populations identified to possess either excess or inadequate goal disengagement, potentially consistent with medical patients experiencing significant chronic illness or aging populations. Should patients have difficulty disengaging from goals that they cannot achieve due to physical limitations or abandon all previous goals due to expectations for poor health, they may benefit from treatment approaches that guide them to initiate goal pursuits that promote greater well-being.

More specifically, these findings lend support for the use of Acceptance and Commitment Therapy (ACT) based approaches that emphasize commitment to short-, medium-, and long-term behavioral goals (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Miller & Rollnick, 2012). Addressing the issue of nonproductive goal persistence through the concept of "workability," ACT-based approaches challenge patients to both identify goals that reflect qualities they would like to foster in themselves (i.e., values) and undermine negative psychological patterns that might disrupt purposive action. In guiding patients to develop flexibility with regard to feelings of discomfort while strengthening committed action, this orientation promotes increased likelihood of goal attainment in conjunction with capacity for goal reengagement processes.

It should additionally be noted that Carver and Scheier's (1981) Self-Regulation and Control theory provides theoretical support for Motivational Interviewing techniques involving developing discrepancy (Miller & Rollnick, 2012). Miller and Rollnick propose that motivation for change occurs upon perception of disparities between current behavior and future goals. Clinicians utilizing Motivational Interview techniques assist patients to consider how current behavior impacts goal-directed efforts, with the aim of increasing awareness of potential consequences of current actions

and eliciting patient arguments for change. This discrepancy-building technique echoes the feedback loop comparison process theorized by Carver and Scheier (1981), in which discrepancies between an individual's present state and desired outcome, motivate behavior aimed at reducing the discrepancy. Carver and Scheier frame their comparison process as an automatized mechanism triggered by negative affect linked with the presence of obstacles to goal pursuit or absence of goal progress. Motivational Interviewing techniques then may represent the deliberate instigation of self-regulation processes, potentially necessary when difficulty recognizing goal obstacles hamstrings the automatized comparison process.

Lastly, as Dispositional Optimism both directly and indirectly predicted subjective well-being and accounted for a significant portion of the variance in Positive Subjective Well-Being, the current study provides preliminary support for optimism interventions suggested to facilitate positive future expectations. Peters, Flink, Boersma and Linton (2010) demonstrated that participants asked to write for 15 minutes about a future in which they had succeeded at accomplishing all their desired goals reported both greater positive future expectancies and greater positive affect as compared to a control condition. Moreover, the increase in future expectancies as consistent with dispositional optimism, was found to be independent from the mood effects. While the impact of the optimism manipulation in this study was found to be temporary, findings suggesting that imagined success influences future expectancies raises interesting questions with regard to the use of visualization exercises, as consistent with sport psychology. Should repeated exposure to pictured goal achievement be found to increase the duration of subsequent expectations for the future, mental rehearsal techniques might be incorporated into more traditional psychotherapeutic approaches with the aim of increasing well-being.

Summary

In summary, the current study extended the work of Abramson et al. (1978), Aspinwall and Richter (1999), Carver and Scheier (1981, 1990), Gibson and Sanbonmatsu (2004), Hanssen et al. (2015), Kraaij et al. (2008), Lam et al. (2015), Scheier et al. (1986) and Seligman (1991). Results frame dispositional optimism and optimistic explanatory style as overlapping but distinct constructs with unique relationships with goal adjustment and subjective well-being. Goal Reengagement was identified as one potential method by which optimists experience increased subjective well-being, as hypothesized. Contrary to prior research and study hypotheses, Goal Disengagement negatively predicted Positive Subjective Well-Being, suggesting that disengagement from goals has variable impacts on well-being. These results support the use of treatment approaches involving the identification and evaluation of goals and suggest the need for future research examining relationships between optimism and hope constructs and relationships between attribution for past events and future predictions. Results further suggest that future studies utilize a medical or aging population, so as to identify relationships between optimism, goal adjustment and subjective well-being in individuals who have experienced significant obstacles to stated goals and/or have reference points with which to evaluate goal adjustment capabilities.

References:

Abramson, L. Y., Alloy, L. B., Hogan, M. E., Whitehouse, W. G., Cornette, M., Akhavan, S., & Chiara, A. (1998). Suicidality and cognitive vulnerability to depression among college students: A prospective study. *Journal of Adolescence, 21*(4), 473–487. doi:10.1006/jado.1998.0167

Abramson, L. Y., Metalsky, G., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review, 96*(2), 358–372. doi:10.1037/0033-295X.96.2.358

Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: critique and reformulation. *Journal of Abnormal Psychology, 87*(1), 49–74. doi:10.1037/0021-843X.87.1.49

Afari, N., Schmaling, K. B., Barnhart, S., & Buchwald, D. (2001). Psychiatric comorbidity and functional status in adult patients with asthma. *Journal of Clinical Psychology in Medical Settings, 8*(4), 245–252. doi:10.1023/A:1011912712262

Alarcon, G. M., Bowling, N. A., & Khazon, S. (2013). Great expectations: A meta-analytic examination of optimism and hope. *Personality and Individual Differences, 54*(7), 821–827. doi:10.1016/j.paid.2012.12.004

Allen, S. F., Wetherell, M. A., & Smith, M. A. (2017). The Cohen-Hoberman inventory of physical symptoms: Factor structure, and preliminary tests of reliability and validity in the general population. *Psychological Health, 32*(5), 567–587. doi:10.1080/08870446.2017.1290237

Allison, P. J., Guichard, C., & Gilain, L. (2000). A prospective investigation of dispositional optimism as a predictor of health-related quality of life in head and neck cancer patients. *Quality of Life Research, 9*(8), 951–960. doi:10.1023/a:1008931906253

Alloy, L. B., Abramson, L. Y., Metalsky, G. I., & Hartlage, S. (1988). The hopelessness theory of depression: Attributional aspects. *British Journal of Clinical Psychology, 27*(1), 5–21. doi:10.1111/j.2044-8260.1988.tb00749.x

Anderson, C. A., Jennings, D. L., & Arnoult, L. H. (1988). Validity and utility of the attributional style construct at a moderate level of specificity. *Journal of Personality and Social Psychology, 55*(6), 979–990. doi:10.1037/0022-3514.55.6.979

Anderson, C. A., & Riger, A. L. (1991). A controllability attributional model of problems in living: Dimensional and situational interactions in the prediction of depression and loneliness. *Social Cognition, 9*(2), 149–181. doi:10.1521/soco.1991.9.2.149

Applebaum, A. J., Stein, E. M., Lord-Bessen, J., Pessin, H., Rosenfeld, B., & Breitbart, W. (2014). Optimism, social support, and mental health outcomes in patients with advanced cancer. *Psycho-Oncology, 23*(3), 299–306. doi:10.1002/pon.3418

Aspinwall, L. G., & Richter, L. (1999). Optimism and Self-Mastery Predict More Rapid Disengagement from Unsolvable Tasks in the Presence of Alternatives. *Motivation and Emotion, 23*(3), 221–245. doi:10.1023/a:1021367331817

Aspinwall, L. G., & Taylor, S. E. (1992). Modeling cognitive adaptation: A longitudinal investigation of the impact of individual differences and coping on college adjustment and performance. *Journal of Personality and Social Psychology, 63*(6), 989–1003. doi:10.1037/0022-3514.63.6.989

Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin, 120*(3), 338–375. doi:10.1037/0033-2909.120.3.338

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. doi:10.1037/0022-3514.51.6.1173

Bauer, I. (2004). *Unattainable goals across adulthood and old age: Benefits of goal adjustment capacities on well-being* (Master's thesis). Retrieved from: https://clues.concordia.ca/search/c?SEARCH=BF%20713.5%20B38%202004.

Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative strategies of coping. *Psychology and Aging, 5*(1), 58–67. doi:10.1037/0882-7974.5.1.58

Brandtstädter, J., & Rothermund, K. (2002). The life-course dynamics of goal pursuit and goal adjustment: A two-process framework. *Developmental Review, 22*(1), 117–150. doi:10.1006/drev.2001.0539

Brissette, I., Scheier, M. F., & Carver, C. S. (2002). The role of optimism in social network development, coping, and psychological adjustment during a life transition. Journal of *Personality and Social Psychology, 82*(1), 102–111. doi:10.1037/0022-3514.82.1.102

Brunstein, J. C., Schultheiss, O. C., & Grassmann, R. (1998). Personal goals and emotional well-being: The moderating role of motive dispositions. *Journal of Personality and Social Psychology, 75*(2), 494–508. doi:10.1037/0022-3514.75.2.494

Bryant, F. B., & Cvengros, J. A. (2004). Distinguishing hope and optimism: Two sides of a coin of two separate coins? *Journal of Social and Clinical Psychology, 23*(2), 273–302. doi:10.1521/jscp.23.2.273.31018

Burke, K. L., Joyner, A. B., Czech, D. R., & Wilson, M. J. (2000). An investigation of concurrent validity between two optimism/pessimism questionnaires: The life orientation test-revised and the optimism/pessimism scale. *Current Psychology, 19*(2), 129–136. doi:10.1007/s12144-000-1009-5

Campbell, J. D., & Fairey, P. (1985). Effects of self-esteem, hypothetical explanations, and verbalization of expectancies on future performance. *Journal of Personality and Social Psychology, 48*(5), 1097–1111. doi:10.1037/0022-3514.48.5.1097

Cantor, N., & Langston, C. A. (1989). Ups and downs of life tasks in a life transition. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology*. (pp. 127–167): Lawrence Erlbaum Associates, Inc, Hillsdale, NJ.

Cantor, N., & Sanderson, C. A. (1999). Life task participation and well-being: The importance of taking part in daily life. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), Well-being: *The foundations of hedonic psychology*. (pp. 230–243): Russell Sage Foundation, New York, NY.

Carifio, J., & Rhodes, L. (2002). Construct validities and the empirical relationships between optimism, hope, self-efficacy, and locus of control. *Work, 19*(2), 125–136.

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist, 54*(3), 165–181. doi:10.1037/0003-066x.54.3.165

Carver, C. S., & Gaines, J. G. (1987). Optimism, pessimism, and postpartum depression. *Cognitive Therapy and Research, 11*(4), 449–462. doi:10.1007/BF01175355

Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behavior*. New York: Springer-Verlag. doi:10.1007/978-1-4612-5887-2

Carver, C. S., & Scheier, M. F. (1985). Aspects of self and the control of behavior. In B. R. Schlenker (Ed.), *The self and social life* (pp. 146–174). New York: McGraw-Hill.

Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review, 97*(1), 19–35. doi:10.1037/0033-295x.97.1.19

Carver, C. S., & Scheier, M. F. (1994). Situational coping and coping dispositions in a stressful transaction. *Journal of Personality and Social Psychology, 66*(1), 184–195. doi:10.1037/0022-3514.66.1.184

Carver, C. S., & Scheier, M. F. (2002). The hopeful optimist. *Psychological Inquiry, 13*(4), 288–290.

Carver, C. S., & Scheier, M. F. (2014). Dispositional optimism. *Trends in Cognitive Sciences, 18*(6), 293–299. doi:10.1016/j.tics.2014.02.003

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review*, 30(7), 879–889. doi:10.1016/j.cpr.2010.01.006

Chemers, M. M., Hu, L.T., & Garcia, B. F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology, 93*(1), 55–64. doi:10.1037/0022-0663.93.1.55

Chiesi, F., Galli, S., Primi, C., Borgi, P. I., & Bonacchi, A. (2013). The accuracy of the Life Orientation Test–Revised (LOT-R) in measuring dispositional optimism: Evidence from item response theory analyses. *Journal of Personality Assessment, 95*(5), 523–529. doi:10.1080/00223891.2013.781029

Ciarrochi, J., Heaven, P. C., & Davies, F. (2007). The impact of hope, self-esteem, and attributional style on adolescents' school grades and emotional well-being: A longitudinal study. *Journal of Research in Personality, 41*(6), 1161–1178. doi:10.1016/j.jrp.2007.02.001

Coffey, L., Gallagher, P., & Desmond, D. (2014). A prospective study of the importance of life goal characteristics and goal adjustment capacities in longer term psychosocial adjustment to lower limb amputation. *Clinical Rehabilitation, 28*(2), 196–205. doi:10.1177/0269215513497736

Cohen, J. (1992). A power primer. *Psychological bulletin, 112*(1), 155–159. doi:10.1037/0033-2909.112.1.155

Cohen, S., Doyle, W. J., Turner, R. B., Alper, C. M., & Skoner, D. P. (2003). Emotional style and susceptibility to the common cold. *Psychosomatic Medicine, 65*(4), 652–657. doi:10.1097/01.PSY.0000077508.57784.DA

Cohen, S., & Hoberman, H. M. (1983). Positive events and social supports as buffers of life change stress. *Journal of Applied Social Psychology, 13*(2), 99–125. doi:10.1111/j.1559-1816.1983.tb02325.x

Cohn, M. A., & Fredrickson, B. L. (2009). Positive emotions. *In Oxford handbook of positive psychology* (pp. 13–24). New York: Oxford University Press.

Colby, D. A., & Shifren, K. (2013). Optimism, mental health, and quality of life: A study among breast cancer patients. *Psychology, Health & Medicine, 18*(1), 10–20. doi:10.1080/13548506.2012.686619

Crawford, J. R., & Henry, J. D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 43*(3), 245–265. doi:10.1348/0144665031752934

Daukantaite, D., & Bergman, L. R. (2005). Childhood roots of women's subjective well-being: The role of optimism. *European Psychologist, 10*(4), 287–297. doi:10.1027/1016-9040.10.4.287

de Ridder, D., Fournier, M., & Bensing, J. (2004). Does optimism affect symptom report in chronic disease? What are its consequences for self-care behaviour and physical functioning? *Journal of Psychosomatic Research, 56*(3), 341–350. doi:10.1016/s0022-3999(03)00034-5

Dember, W. N., Martin, S. H., Hummer, M. K., Howe, S. R., & Melton, R. S. (1989). The measurement of optimism and pessimism. *Current Psychology, 8*(2), 102–119. doi:10.1007/BF02686675

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71–75. doi:10.1207/s15327752jpa4901_13

Diener, E., Lucas, R. E., & Oishi, S. (2002). Subjective well-being: The science of happiness and life satisfaction. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology*. (pp. 463–473): Oxford University Press, New York, NY.

Dohrenwend, B. S., & Dohrenwend, B. P. (1974). *Stressful life events: Their nature and effects*: John Wiley & Sons, Oxford.

Duke, J., Leventhal, H., Brownlee, S., & Leventhal, E. A. (2002). Giving up and replacing activities in response to illness. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 57*(4), 367–376. doi:10.1093/geronb/57.4.P367

Ebrecht, M., Hextall, J., Kirtley, L.G., Taylor, A., Dyson, M., & Weinman, J. (2004). Perceived stress and cortisol levels predict speed of wound healing in healthy male adults. *Psychoneuroendocrinology, 29*(6), 798–809. doi:10.1016/s0306-4530(03)00144-6

Eddington, K. M., Burgin, C. J., & Majestic, C. (2016). Individual differences in expectancies for change in depression: Associations with goal pursuit and daily experiences. *Journal of Social and Clinical Psychology, 35*(8), 629–642. doi:10.1521/jscp.2016.35.8.629

Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology, 51*(5), 1058–1068. doi:10.1037/0022-3514.51.5.1058

Emmons, R. A. (1999). *The psychology of ultimate concerns: Motivation and spirituality in personality:* Guilford Press, New York, NY.

Emmons, R. A. (2003). Personal goals, life meaning, and virtue: Wellsprings of a positive life. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived.* (pp. 105–128): American Psychological Association, Washington, DC. doi:10.1037/10594-005

Emmons, R. A., & Diener, E. (1986). A goal–affect analysis of everyday situational choices. *Journal of Research in Personality, 20*(3), 309–326. doi:10.1016/0092-6566(86)90137-6

Fernández-Ballesteros, R. (2002). *Encyclopedia of psychological assessment*: Sage. doi:10.4135/9780857025753

Fibel, B., & Hale, W. D. (1978). The generalized expectancy for success scale: A new measure. *Journal of Consulting and Clinical Psychology, 46*(5), 924–931. doi:10.1037/0022-006x.46.5.924

Fordyce, M. W. (1988). A review of research on the happiness measures: A sixty second index of happiness and mental health. *Social Indicators Research, 20*(4), 355–381. doi:10.1007/BF00302333

Forgeard, M., & Seligman, M. (2012). Seeing the glass half full: A review of the causes and consequences of optimism. *Pratiques Psychologiques, 18*(2), 107–120. doi:10.1016/j.prps.2012.02.002

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and build theory of positive emotions. *American Psychologist, 56*(3), 218–226. doi:10.1037/0003-066X.56.3.218

French, S., & Joseph, S. (1999). Religiosity and its association with happiness, purpose in life, and self-actualisation. *Mental Health, Religion & Culture, 2*(2), 117–120. doi:10.1080/13674679908406340

Gibson, B., & Sanbonmatsu, D. M. (2004). Optimism, pessimism, and gambling: The downside of optimism. *Personality and Social Psychology Bulletin, 30*(2), 149–160. doi:10.1177/0146167203259929

Gillham, J. E., Shatté, A. J., Reivich, K. J., & Seligman, M. E. P. (2001). Optimism, pessimism, and explanatory style. In E. C. Chang (Ed.), *Optimism & pessimism: Implications for theory, research, and practice*. (pp. 53–75): American Psychological Association, Washington, DC. doi:10.1037/10385-003

Giltay, E. J., Geleijnse, J. M., Zitman, F. G., Hoekstra, T., & Schouten, E. G. (2004). Dispositional optimism and all-cause and cardiovascular mortality in a prospective cohort of elderly Dutch men and women. *Archives of General Psychiatry, 61*(11), 1126–1135. doi:10.1001/archpsyc.61.11.1126

Glaesmer, H., Rief, W., Martin, A., Mewes, R., Brähler, E., Zenger, M., & Hinz, A. (2012). Psychometric properties and population-based norms of the Life Orientation Test Revised (LOT-R). *British Journal of Health Psychology, 17(*2), 432–445. doi:10.1111/j.2044-8287.2011.02046.x

Glazer, K. M., Emery, C. F., Frid, D. J., & Banyasz, R. E. (2002). Psychological predictors of adherence and outcomes among patients in cardiac rehabilitation. Journal of *Cardiopulminary Rehabilitation, 22*(1), 40–46. doi:10.1097/00008483-200201000-00006

Gollwitzer, P. M., Heckhausen, H., & Steller, B. (1990). Deliberative and implemental mind-sets: Cognitive tuning toward congruous thoughts and information. *Journal of Personality and Social Psychology, 59*(6), 1119–1127. doi:10.1037/0022-3514.59.6.1119

Graham, C., & Pinto, S. (2018). Unequal hopes and lives in the USA: Optimism, race, place, and premature mortality. *Journal of Population Economics, 32*(2), 1–69. doi:10.1007/s00148-018-0687-y

Grant, A. M., & Gino, F. (2010). A little thanks goes a long way: Explaining why gratitude expressions motivation prosocial behavior. *Journal of Personality and Social Psychology, 98*(6), 946–955. doi:10.1037/a0017935

Gray, J. A. (1972). The psychophysioloigcal basis of introversion-extraversion: A modification of Eysenck's theory. In V. D. Nebylitsyn & J. A. Gray (Eds.), *The biological bases of individual behavior* (pp. 182–205). San Diego: Academic Press. doi:10.1016/B978-0-12-515350-8.50017-X

Hammen, C. L., Adrian, C., & Hiroto, D. (1988). A longitudinal test of the attributional vulnerability model in children at risk for depression. *British Journal of Clinical Psychology*, *27*(1), 37–46. doi:10.1111/j.2044-8260.1988.tb00751.x

Hammen, C. L., & Cochran, S. D. (1981). Cognitive correlates of life stress and depression in college students. *Journal of Abnormal Psychology, 90*(1), 23. doi:10.1037/0021-843X.90.1.23

Hanssen, M. M., Vancleef, L. M., Vlaeyen, J. W., Hayes, A. F., Schouten, E. G., & Peters, M. L. (2015). Optimism, motivational coping and well-being: Evidence supporting the importance of flexible goal adjustment. *Journal of Happiness Studies, 16*(6), 1525–1537. doi:10.1007/s10902-014-9572-x

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44*(1), 1–25. doi:10.1016/j.brat.2005.06.006

Heckhausen, J. (1999). *Developmental regulation in adulthood: Age-normative and sociostructural constraints as adaptive challenges*: Cambridge University Press, New York, NY. doi:10.1017/CBO9780511527852

Heckhausen, J., & Schulz, R. (1993). Optimisation by selection and compensation: Balancing primary and secondary control in life span development. *International Journal of Behavioral Development, 16*(2), 287–303. doi:10.1177/016502549301600210

Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review, 102*(2), 284–304. doi:10.1037/0033-295x.102.2.284

Heckhausen, J., & Schulz, R. (1998). Developmental regulation in adulthood: Selection and compensation via primary and secondary control. In J. Heckhausen & C. S. Dweck (Eds.), *Motivation and self-regulation across the life span*. (pp. 50–77): Cambridge University Press, New York, NY. doi:10.1017/CBO9780511527852

Heckhausen, J., Wrosch, C., & Fleeson, W. (2001). Developmental regulation before and after a developmental deadline: The sample case of 'biological clock' for childbearing. *Psychology and Aging, 16*(3), 400–413. doi:10.1037/0882-7974.16.3.400

Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological Review, 117*(1), 32–60. doi:10.1037/a0017668

Henselmans, I., Fleer, J., van Sonderen, E., Smink, A., Sanderman, R., & Ranchor, A. V. (2011). The tenacious goal pursuit and flexible goal adjustment scales: a validation study. *Psychology and Aging, 26*(1), 174–180. doi:10.1037/a0021536

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*(3), 319–340. doi:10.1037/0033-295x.94.3.319

Hinz, A., Sander, C., Glaesmer, H., Brähler, E., Zenger, M., Hilbert, A., & Kocalevent, R.D. (2017). Optimism and pessimism in the general population: Psychometric properties of the Life Orientation Test (LOT-R). *International Journal of Clinical and Health Psychology, 17*(2), 161–170. doi:10.1016/j.ijchp.2017.02.003

Hjelle, L. A., Busch, E. A., & Warren, J. E. (1996). Explanatory style, dispositional optimism and reported parental behavior. *Journal of Genetic Psychology, 157*(4), 489-499. doi:10.1080/00221325.1996.9914881

Hoyle, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoye (Ed.), *Structural equation modeling: Concepts, issues and applications* (pp. 158–176). Thousand Oaks, CA: Sage.

Hull, J. G., & Mendolia, M. (1991). Modeling the relations of attributional style, expectancies and depression. *Journal of Personality and Social Psychology, 61*(1), 85–97. doi:10.1037/0022-3514.61.1.85

Janoff-Bulman, R., & Brickman, P. (1982). Expectations and what people learn from failure. In N.T. Feather (Ed.), *Expectations and actions: Expectancy-value models in psychology,* (pp. 207–237): Lawrence Erlbaum Associates Publishers, Hillsdale, NJ.

Janse, M., Sprangers, M. A. G., Ranchor, A. V., & Fleer, J. (2016). Long-term effects of goal disturbance and adjustment on well-being in cancer patients. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation, 25*(4), 1017–1027. doi:10.1007/s11136-015-1139-8

Kline, R. B. (2005). *Principles and practice of structural equation modeling*. New York: Guilford.

Klinger, E. (1975). Consequences of commitment to and disengagement from incentives. *Psychological Review, 82*(1), 1–25. doi:10.1037/h0076171

Klinger, E. (1977). *Meaning & void: Inner experience and the incentives in people's lives:* University of Minnesota Press, Minneapolis, MN.

Klinger, E. (1998). The search for meaning in evolutionary perspective and its clinical implications. In P. T. P. Wong & P. S. Fry (Eds.), *The human quest for meaning: A handbook of psychological research and clinical applications*. (pp. 27–50): Lawrence Erlbaum Associates Publishers, Mahwah, NJ.

Klug, H. J. P., & Maier, G. W. (2015). Linking Goal Progress and Subjective Well-Being: A Meta-analysis. *Journal of Happiness Studies, 16*(1), 37–65. doi:10.1007/s10902-013-9493-0

Knowles, E. (1999). The Oxford dictionary of quotations. New York: Oxford University Press.

Kohut, M. L., Cooper, M. M., Nickolaus, M. S., Russell, D. R., & Cunnick, J. E. (2002). Exercise and psychosocial factors modulate immunity to influenza vaccine in elderly individuals. *The Journals of Gerontology: Series A: Biological Sciences and Medical Sciences, 57*(9), 557–562. doi:10.1093/gerona/57.9.M557

Kraaij, V., Garnefski, N., & Schroevers, M. J. (2009). Coping, goal adjustment, and positive and negative affect in definitive infertility. *Journal of Health Psychology, 14*(1), 18–26. doi:10.1177/1359105308097939

Kraaij, V., van der Veek, S. M. C., Garnefski, N., Schroevers, M., Witlox, R., & Maes, S. (2008). Coping, goal adjustment, and psychological well-being in HIV-infected men who have sex with men. *AIDS Patient Care and STDs, 22*(5), 395–402. doi:10.1089/apc.2007.0145

Lam, W. W. T., Yeo, W., Suen, J., Ho, W. M., Tsang, J., Soong, I., . . . Fielding, R. (2015). Goal adjustment influence on psychological well-being following advanced breast cancer diagnosis. *Psycho-Oncology, 25*(1), 58–65. doi:10.1002/pon.3871

Lawton, M. P. (1975). The Philadelphia geriatric center morale scale: A revision. Journal of *Gerontology, 30*(1), 85–89. doi:10.1093/geronj/30.1.85

Little, B. R. (1983). Personal projects: A rationale and method for investigation. *Environment and Behavior, 15(*3), 273–309. doi:10.1177/0013916583153002

Little, B. R. (1989). Personal projects analysis: Trivial pursuits, magnificent obsessions, and the search for coherence. In D. Buss & N. Cantor (Eds.), *Personality psychology: Recent trends and emerging directions* (pp. 15–31). New York, NY: Springer. doi:10.1007/978-1-4684-0634-4_2

Magaletta, P. R., & Oliver, J. M. (1999). The hope construct, will, and ways: Their relations with self-efficacy, optimism, and general well-being. *Journal of Clinical Psychology, 55*(5), 539–551. doi:10.1002/(SICI)1097-4679(199905)55:5<539::AID-JCLP2>3.0.CO;2-G

Maier, S. F., & Seligman, M. E. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology: General, 105*(1), 3–46. doi:10.1037/0096-3445.105.1.3

Mannix, M. M., Feldman, J. M., & Moody, K. (2009). Optimism and health-related quality of life in adolescents with cancer. *Child: Care, Health and Development, 35*(4), 482–488. doi:10.1111/j.1365-2214.2008.00934.x

Marshall, G. N., Wortman, C. B., Kusulas, J. W., Hervig, L. K., & Vickers, R. R., Jr. (1992). Distinguishing optimism from pessimism: Relations to fundamental dimensions of mood and personality. *Journal of Personality and Social Psychology, 62*(6), 1067–1074. doi:10.1037/0022-3514.62.6.1067

Martin-Krumm, C. P., Sarrazin, P. G., Peterson, C., & Famose, J.P. (2003). Explanatory style and resilience after sports failure. *Personality and Individual Differences, 35*(7), 1685–1695. 10.1016/S0191-8869(02)00390-2

Matthews, E. E., & Cook, P. F. (2009). Relationships among optimism, well-being, self-transcendence, coping, and social support in women during treatment for breast cancer. *Psycho-Oncology, 18*(7), 716–726. doi:10.1002/pon.1461

Matthews, G., & Wells, A. (2004). Rumination, depression, and metacognition: The S-REF model. In C. Papageorgiou & A. Wells (Eds.), *Depressive rumination: nature, theory and treatment* (pp. 125–151). West Sussex, UK: John Wiley & Sons Ltd. doi:10.1002/9780470713853.ch7

Matthews, K. A., Raikkonen, K., Sutton-Tyrrell, K., & Kuller, L. H. (2004). Optimistic attitudes protect against progression of carotid atherosclerosis in healthy middle-aged women. *Psychosomatic Medicine, 66*(5), 640–644. doi:10.1097/01.psy.0000139999.99756.a5

McCullough, M. E. (2002). Savoring life, past and present: Explaining what hope and gratitude share in common. *Psychological Inquiry, 13*(4), 302–304.

Mens, M. G., & Scheier, M. F. (2015). The benefits of goal adjustment capacities for well-being among women with breast cancer: Potential mechanisms of action. *Journal of Personality*, *84*(6), 777-788. doi:10.1111/jopy.12217

Metalsky, G., Halberstadt, L. J., & Abramson, L. (1987). Vulnerability to depressive mood reactions: Toward a more powerful test of the diathesis-stress and causal mediation components of the reformulated theory of depression. *Journal of Personality and Social Psychology, 52*(2), 386–393. doi:10.1037/0022-3514.52.2.386

Millar, K. U., Tesser, A., & Millar, M. G. (1988). The effects of a threatening life event on behavior sequences and intrusive thought: A self-disruption explanation. *Cognitive Therapy and Research, 12(*5), 441–457. doi:10.1007/bf01173412

Miller, G. E., Chen, E., & Zhou, E. S. (2007). If it goes up, must it come down? Chronic stress and the hypothalamic-pituitary-adrenocortical axis in humans. *Psychological Bulletin, 133*(1), 25–45. doi:10.1037/0033-2909.133.1.25

Miller, G. E., Cohen, S., & Ritchey, A. K. (2002). Chronic psychological stress and the regulation of pro-inflammatory cytokines: a glucocorticoid-resistance model. *Health Psychology, 21(*6), 531–541. doi:10.1037/0278-6133.21.6.531

Miller, G. E., & Wrosch, C. (2007). You've gotta know when to fold 'em: Goal disengagement and systemic inflammation in adolescence. *Psychological Science, 18*(9), 773–777. doi:10.1111/j.1467-9280.2007.01977.x

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*: Guilford Press.

Nes, L. S., & Segerstrom, S. C. (2006). Dispositional optimism and coping: A meta-analytic review. *Personality and Social Psychology Review, 10*(3), 235–251. doi:10.1207/s15327957pspr1003_3

Nesse, R. M. (2000). Is depression an adaptation? *Archives of General Psychiatry, 57*(1), 14–20.

Neter, E., Litvak, A., & Miller, A. (2009). Goal disengagement and goal re-engagement among multiple sclerosis patients: Relationship to well-being and illness representation. *Psychology & Health, 24*(2), 175–186. doi:10.1080/08870440701668665

Neugarten, B. L., Havighurst, R. J., & Tobin, S. S. (1961). The measurement of life satisfaction. *Journal of Gerontology, 16*(2), 134–143. doi:10.1093/geronj/16.2.134

O'Connor, R. C., Fraser, L., Whyte, M. C., MacHale, S., & Masterston, G. (2009). Self-regulation of unattainable goals in suicide attempters: The relationship between goal disengagement, goal reengagement and suicidal ideation. *Behaviour Research and Therapy, 47*(2), 164–169. doi:10.1016/j.brat.2008.11.001

O'Connor, R. C., & Forgan, G. (2007). Suicidal thinking and perfectionism: The role of goal adjustment and behavioral inhibition/activation systems (BIS/BAS). *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 25*(4), 321–341. doi:10.1007/s10942-007-0057-2

Pavot, W. G., Diener, E., Colvin, C. R., & Sandvik, E. (1991). Further validation of the Satisfaction With Life Scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment, 57*(1), 149–161. doi:10.1207/s15327752jpa5701_17

Peters, M. L., Flink, I. K., Boersma, K., & Linton, S. J. (2010). Manipulating optimism: Can imagining a best possible self be used to increase positive future expectancies? The *Journal of Positive Psychology, 5*(3), 204–211. doi:10.1080/17439761003790963

Peterson, C. (1991). The meaning and measurement of explanatory style. *Psychological Inquiry, 2*(1), 1–10. doi:10.1207/s15327965pli0201_1

Peterson, C. (2000). The future of optimism. *American Psychologist, 55*(1), 44–55. doi:10.1037/0003-066X.55.1.44

Peterson, C., Seligman, M. E., & Vaillant, G. (1988). Pessimistic explanatory style as a risk factor of physical illness: A 35-year longitudinal study. *Journal of Personality and Social Psychology, 55*, 23–27. doi:10.1037/0022-3514.55.1.23

Peterson, C., Semmel, A., Baeyer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The Attributional Style Questionnaire. *Cognitive Therapy and Research, 6*(3), 287–300. doi:10.1007/bf01173577

Pomerantz, E. M., Saxon, J. L., & Oishi, S. (2000). The psychological trade-offs of goal investment. *Journal of Personality and Social Psychology, 79*(4), 617–630. doi:10.1037/0022-3514.79.4.617

Pressman, S. D., & Cohen, S. (2005). Does positive affect influence health? *Psychological Bulletin, 131*(6), 925–971. doi:10.1037/0033-2909.131.6.925

Puskar, K. R., Marie Bernardo, L., Ren, D., Haley, T. M., Hetager Tark, K., Switala, J., & Siemon, L. (2010). Self-esteem and optimism in rural youth: Gender differences. *Contemporary Nurse, 34*(2), 190–198. doi:10.5172/conu.2010.34.2.190

Rand, K. L. (2009). Hope and optimism: Latent structures and influences on grade expectancy and academic performance. *Journal of Personality, 77*(1), 231–260. doi:10.1111/j.1467-6494.2008.00544.x

Rasmussen, H. N., Scheier, M. F., & Greenhouse, J. B. (2009). Optimism and physical health: A meta-analytic review. *Annals of Behavioral Medicine, 37*(3), 239–256. doi:10.1007/s12160-009-9111-x

Rasmussen, H. N., Wrosch, C., Scheier, M. F., & Carver, C. S. (2006). Self-regulation processes and health: The importance of optimism and goal adjustment. *Journal of Personality, 74*(6), 1721–1747. doi:10.1111/j.1467-6494.2006.00426.x

Riskind, J. H., Rholes, W. S., Brannon, A. M., & Burdick, C. A. (1987). Attributions and expectations: A confluence of vulnerabilities in mild depression in a college student population. *Journal of Personality and Social Psychology, 53*(2), 349–354. doi:10.1037/0022-3514.53.2.349

Rogatko, T. (2009). The influence of flow on positive affect in college students. *Journal of Happiness Studies, 10(*2), 133–148. doi:10.1007/s10902-007-9069-y

Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology, 42*(1), 5–37. doi:10.1037/0022-3514.42.1.5

Sandelands, L. E., Brockner, J., & Glynn, M. A. (1988). If at first you don't succeed, try, try again: Effects of persistence-performance contingencies, ego involvement, and self-esteem on task persistence. *Journal of Applied Psychology, 73*(2), 208–216. doi:10.1037/0021-9010.73.2.208

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology, 4*(3), 219–247. doi:10.1037/0278-6133.4.3.219

Scheier, M. F., & Carver, C. S. (1987). Dispositional optimism and physical well-being: The influence of generalized outcome expectancies on health. *Journal of Personality, 55*(2), 169–210. doi:10.1111/j.1467-6494.1987.tb00434.x

Scheier, M. F., & Carver, C. S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research, 16*(2), 201–228. doi:10.1007/bf01173489

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology, 67*(6), 1063–1078. doi:10.1037/0022-3514.67.6.1063

Scheier, M. F., Matthews, K. A., Owens, J. F., Magovern, G. J., Lefebvre, R. C., Abbott, R. A., & Carver, C. S. (1989). Dispositional optimism and recovery from coronary artery bypass surgery: The beneficial effects on physical and psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1024–1040. doi:10.1037/0022-3514.57.6.1024

Scheier, M. F., Weintraub, J. K., & Carver, C. S. (1986). Coping with stress: divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology, 51*(6), 1257–1264. doi:10.1037/0022-3514.51.6.1257

Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: psychological, behavioral, and biological determinants. *Annual Review of Clinical Psychology, 1*, 607–628. doi:10.1146/annurev.clinpsy.1.102803.144141

Schou-Bredal, I., Heir, T., Skogstad, L., Bonsaksen, T., Lerdal, A., Grimholt, T., & Ekeberg, Ø. (2017). Population-based norms of the Life Orientation Test–Revised (LOT-R). *International Journal of Clinical and Health Psychology, 17*(3), 216–224. doi: 10.1016/j.ijchp.2017.07.005

Segerstrom, S. C. (2006). How does optimism suppress immunity? Evaluation of three affective pathways. *Health Psychology, 25*(5), 653–657. doi:10.1037/0278-6133.25.5.653

Segerstrom, S. C., & Miller, G. E. (2004). Psychological stress and the human immune system: a meta-analytic study of 30 years of inquiry. *Psychological Bulletin, 130*(4), 601–630. doi:10.1037/0033-2909.130.4.601

Segovia, F., Moore, J. L., Linnville, S. E., Hoyt, R. E., & Hain, R. E. (2012). Optimism predicts resilience in repatriated prisoners of war: A 37-year longitudinal study. *Journal of Traumatic Stress, 25*(3), 330–336. doi:10.1002/jts.21691

Seligman, M. E. (1991). *Learned optimism*. New York: Knopf.

Seligman, M. E., Castellon, C., Cacciola, J., Schulman, P., Luborsky, L., Ollove, M., & Downing, R. (1988). Explanatory style change during cognitive therapy for unipolar depression. *Journal of Abnormal Psychology, 97*(1), 13–18. doi:10.1037/0021-843X.97.1.13

Shatté, A. J., Gillham, J. E., & Reivich, K. J. (2000). Promoting hope in children and adolescents. In J. E. Gillham (Ed.), *The science of optimism and hope: Research essays in honor of Martin E.P. Seligman* (pp. 215–234). Radnor, PA: Templeton Foundation Press.

Shi, R., Zhang, S., & Miao, D. (2016). Failure-Related Action Orientation and Life Satisfaction: The Mediating Role of Forgivingness. *Journal of Happiness Studies, 17*(5), 1891–1903. doi:10.1007/s10902-015-9676-y

Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry, 13*(4), 249-275.

Snyder, C. R., Sympson, S. C., Michael, S. T., & Cheavens, J. (2001). Optimism and hope constructs: Variants on a positive expectancy theme. In E. C. Chang (Ed.), *Optimism & pessimism: Implications for theory, research and practice.* (pp. 101–125). Washington, DC: American Psychological Association. doi:10.1037/10385-005

Taylor, S. E., & Brown, J. D. (1999). Illusion and well-being: A social psychological perspective on mental health. In R. F. Baumeister (Ed.), *The self in social psychology*. (pp. 43–68): Psychology Press, New York, NY.

Taylor, S. E., & Seeman, T. (1999). *Psychosocial resources and the SES-health relationship*. Annals of the New York Academy of Sciences, 896(1), 210–225.

Tellegen, A., Watson, D., & Clark, L. A. (1999). On the dimensional and hierarchical structure of affect. *Psychological Science, 10*(4), 297–303. doi:10.1111/j.1749-6632.1999.tb08117.x

Tennen, H., & Affleck, G. (1987). The costs and benefits of optimistic explanations and dispositional optimism. *Journal of Personality, 55*(2), 377–392. doi:10.1111/j.1467-6494.1987.tb00443.x

Thompson, E., Stanton, A.L., & Bower, J. E. (2013). Situational and dispositional goal adjustment in the context of metastatic cancer. *Journal of Personality, 81*(5), 441–451. doi:10.1111/jopy.12025

Tindle, H. A., Chang, Y.F., Kuller, L. H., Manson, J. E., Robinson, J. G., Rosal, M. C., . . . Matthews, K. A. (2009). Optimism, cynical hostility, and incident coronary heart disease and mortality in the Women's Health Initiative. *Circulation, 120*(8), 656–662. doi:10.1161/CIRCULATIONAHA.108.827642

Tomakowsky, J., Lumley, M. A., Markowitz, N., & Frank, C. (2001). Optimistic explanatory style and dispositional optimism in HIV-infected men. *Journal of Psychosomatic Research, 51*(4), 577–587. doi:10.1016/S0022-3999(01)00249-5

Warner, R., Frye, K., Morrell, J., & Carey, G. (2017). Fruit and Vegetable Intake Predicts Positive Affect. *Journal of Happiness Studies, 18*(3), 809–826. doi:10.1007/s10902-016-9749-6

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063–1070. doi:10.1037/0022-3514.54.6.1063

Wessman, A. E., & Ricks, D. F. (1966). *Mood and personality*. New York: Holt, Rinehart, & Winston.

Williams, N. A., Davis, G., Hancock, M., & Phipps, S. (2010). Optimism and pessimism in children with cancer and healthy children: Confirmatory factor analysis of the Youth Life Orientation Test and relations with health-related quality of life. *Journal of Pediatric Psychology, 35(*6), 672–682. doi:10.1093/jpepsy/jsp084

Wong, P. T. P., & Fry, P. S. (1998). *Handbook of personal meaning: Theory, research and application.* Mahwah, NJ: Erlbaum.

Wrosch, C. (2011). Self-regulation of unattainable goals and pathways to quality of life. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping*. (pp. 319–333): Oxford University Press, New York, NY. doi:10.1093/oxfordhb/9780195375343.013.0016

Wrosch, C., Amir, E., & Miller, G. E. (2011). Goal adjustment capacities, coping, and subjective well-being: The sample case of caregiving for a family member with mental illness. *Journal of Personality and Social Psychology*, *100*(5), 934–946. doi:10.1037/a0022873

Wrosch, C., & Heckhausen, J. (1999). Control processes before and after passing a developmental deadline: Activation and deactivation of intimate relationship goals. *Journal of Personality and Social Psychology, 77*(2), 415–427. doi:10.1037/0022-3514.77.2.415

Wrosch, C., & Miller, G. E. (2009). Depressive symptoms can be useful: Self-regulatory and emotional benefits of dysphoric mood in adolescence. *Journal of Personality and Social Psychology, 96*(6), 1181–1190. doi:10.1037/a0015172

Wrosch, C., Miller, G. E., Scheier, M. F., & de Pontet, S. B. (2007). Giving up on unattainable goals: Benefits for health? *Personality and Social Psychology Bulletin*, *33*(2), 251–265. doi:10.1177/0146167206294905

Wrosch, C., & Sabiston, C. M. (2013). Goal adjustment, physical and sedentary activity, and well-being and health among breast cancer survivors. *Psycho-Oncology, 22*(3), 581–589. doi:10.1002/pon.3037

Wrosch, C., & Scheier, M. F. (2003). Personality and quality of life: The importance of optimism and goal adjustment. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation, 12*(Suppl1), 59–72. doi:10.1023/a:1023529606137

Wrosch, C., Scheier, M. F., Carver, C. S., & Schulz, R. (2003). The importance of goal disengagement in adaptive self-regulation: When giving up is beneficial. *Self and Identity, 2*(1), 1–20. doi:10.1080/15298860309021

Wrosch, C., Scheier, M. F., & Miller, G. E. (2013). Goal adjustment capacities, subjective well-being, and physical health. *Social and Personality Psychology Compass, 7*(12), 847–860. doi:10.1111/spc3.12074

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin, 29*(12), 1494–1508. doi:10.1177/0146167203256921

Zullow, H. M. (1991). Explanations and expectations: Understanding the 'doing' side of optimism. *Psychological Inquiry, 2*(1), 45–49. doi:10.1207/s15327965pli0201_13

Appendix A

Life Orientation Test-Revised (LOT-R)

Please answer the following questions about yourself by indicating the extent of your agreement using the following scale.

Be as honest as you can throughout, and try not to let your responses to one question influence your response to other questions. There are no right or wrong answers.

1. In uncertain times, I usually expect the best.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. It's easy for me to relax.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. If something can go wrong for me, it will.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. I'm always optimistic about my future.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. I enjoy my friends a lot.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. It's important for me to keep busy.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. I hardly ever expect things to go my way.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. I don't get upset too easily.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. I rarely count on good things happening to me.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10. Overall, I expect more good things to happen to me than bad.

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Appendix B

Attributional Style Assessment Test-Third Edition (ASAT-III)

The items on the following pages present specific situations and outcomes that might happen to anyone. For each item, imagine yourself in that situation, then write down the one major cause of that outcome. That is, think of the most likely cause of the outcome if you were in the situation and try to express the reason for the outcome in a single sentence. Then, rate the cause on each of the four scales provided. Definitions of the rating scales are listed below.

Locus: The degree to which the cause is due to something about you, rather than to other people or circumstances.

Globality: The degree to which the cause is relevant to many different situations, rather than being specific to a few situations.

Stability: The degree to which the cause can be expected to be present at the same level every time the same situation arises.

Controllability: The degree to which the cause is a factor that you have control over.

Remember, for each of the 20 situations you should:

1) imagine yourself in that situation
2) write down the one major cause of that outcome
3) rate the cause by writing the number of your rating (from the scales above) on the blank beside each scale.

1. You have just failed at coordinating an outing for a group of people you like very much.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

2. You have just lost a competitive match in your favorite sport.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

3. You have just attended a party for new students and did not make any new friends.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

4. You have succeeded in selling your best photographs to a national magazine.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

5. You find yourself enjoying some social activity most every Saturday night.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

6. You have just won a game of Scrabble (the word game).

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

7. You were recently unsuccessful at trying to cheer up your roommate who was having a personal problem.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

8. You have just succeeded at completing the crossword puzzle in the daily newspaper.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

9. You have just received a high score on the midterm test in a class.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

10. While working as a volunteer caller for the American Lung Association you succeeded at persuading a lot of people to donate money.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

11. You have failed to complete the crossword puzzle in the daily newspaper

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

12. You have just succeeded at coordinating an outing for a group to people you like very much.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

13. You have just failed the midterm test in a class.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

14. You were recently successful at cheering up your roommate who was having a personal problem.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

15. You have failed to sell you best photographs to a national magazine.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

16. You have just attended a party for new students and made some new friends.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

17. While working as a volunteer caller for the American Red Cross you failed to persuade very many people to donate blood.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

18. You have just lost a game of Scrabble (the word game).

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

19. You have just won a competitive match in your favorite sport.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

20. You find yourself alone on a Saturday night and regret that you had not arranged to do something with a friend.

cause: _____

Locus:

1	2	3	4	5	6	7	8	9
Outside the Person								Inside the Person

Globality:

1	2	3	4	5	6	7	8	9
Specific to a few situations								Global, relevant to many situations

Stability:

1	2	3	4	5	6	7	8	9
Not at all stable								Very stable

Controllability:

1	2	3	4	5	6	7	8	9
Not at all controllable								Very controllable

Appendix C

Goal Adjustment Scale (GAS)

During their lives people cannot always attain what they want and are sometimes forced to stope 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…

1. It's easy for me to reduce my effort towards the goal.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. I convince myself that I have other meaningful goals to pursue.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. I stay committed to the goal for a long time; I can't let it go.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. I start working on other new goals

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. I think about other new goals to pursue.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. I find it difficult to stop trying to achieve the goal

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. I seek other meaningful goals

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. It's easy for me to stop thinking about the goal and let it go

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. I tell myself I have a number of other new goals to draw upon.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10. I put effort toward other meaningful goals.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Appendix D

The Positive and Negative Affect Schedule (PANAS)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. Indicate to what extent you feel this way in general, that is on average.

1	2	3	4	5
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 E

Satisfaction With Life Scale (SWLS)

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

1. In most ways my life is close to my ideal.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

2. The conditions of my life are excellent.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

3. I am satisfied with my life.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

4. So far I have gotten the important things I want in life.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

5. If I could live my life over, I would change almost nothing.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree

Appendix F

Cohen-Hoberman Inventory of Physical Symptoms (CHIPS)

Mark the number for each statement that best describes HOW MUCH THAT PROBLEM HAS BOTHERED OR DISTRESSED YOU DURING THAT PAST TWO WEEKS INCLUDING TODAY. Mark only one number for each item. At one extreme, 0 means that you have not been bothered by the problem. At the other extreme, 4 means that the problem has been an extreme bother.

HOW MUCH WERE YOU BOTHERED BY:

1. Sleep problems (can't fall asleep, wake up in middle of night or early in morning)

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

2. Weight change (gain or loss of 5 lbs. or more)

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

3. Back pain

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

4. Constipation

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

5. Dizziness

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

6. Diarrhea

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

7. Faintness

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

8. Constant fatigue

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

9. Headache

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

10. Migraine headache

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

11. Nausea and/or vomiting

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

12. Acid stomach or indigestion

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

13. Stomach pain (e.g., cramps)

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

14. Hot or cold spells

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

15. Hands trembling

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

16. Heart pounding or racing

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

17. Poor appetite

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

18. Shortness of breath when not exercising or working hard

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

19. Numbness or tingling in parts of your body

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

20. Felt weak all over

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

21. Pains in heart or chest

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

22. Feeling low in energy

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

23. Stuffy head or nose

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

24. Blurred vision

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

25. Muscle tension or soreness

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

26. Muscle cramps

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

27. Severe aches and pains

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

28. Acne

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

29. Bruises

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

30. Nosebleed

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

31. Pulled (strained) muscles

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

32. Pulled (strained) ligaments

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered

33. Cold or cough

0	1	2	3	4
Not Bothered		Neutral		Extremely Bothered