EFFECT OF MENTALLY SUBTRACTING GRATEFUL EVENTS ON THE AFFECTIVE STATE OF OLDER ADULTS

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Abstract

Depression among older adults is increasing, thus, addressing negative affect is relevant to the care of geriatric individuals. As part of lifespan development, older adults reflect on life events, leading to feelings of integrity or despair. The present study compared the affective state of 177 older adults that either (a) reflected on the absence of an event, (b) reflected on the presence of event; and (c) a control group that did not participate in reflection**.** All participants rated 13 affective states that were summarized as a positive affective state index after reverse scoring for the negative items. The analytic procedure compared the index means across the three conditions. Post hoc comparisons using the Tukey HSD test indicated the mean score for the absence condition (M = 5.853, SD = .762) was significantly different than the control condition (M = 5.323, SD = 0.922) and marginally different than the presence condition (M = 5.489, SD = 0.853). The difference between the presence and control conditions did not reach significance; however, a trend was apparent (M = 5.489, SD = 0.853). The one-way analysis of variance compared indices across conditions and demonstrated a significant main effect of condition at the .05 level, $F(2, 174) = 5.976$, $p = .003$. The results suggest when older adults reflect on how grateful events might never have happened, they report more positive feelings than reflecting on how grateful events were sure to happen.

Keywords: geriatric depression, older adults, counterfactual thinking, grateful

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Chapter One

The world is approaching a period of shifting demographics. For the first time in history, the majority of people can expect to live beyond age 60 (World Health Organization, 2015a). As the baby boomers continue to age, persons older than 60 will constitute an ever-increasing percentage of the population (Werner, 2011). According to the World Health Organization (2015b), by 2050 the proportion of people over the age of 60 years will nearly double from 12% of the world's population to 22%. More specifically, the number of people aged 60 years and over will increase from 900 million people to more than two billion people. These figures are further reinforced by the United States Census, which reports that between 2010 and 2050, the American population is projected to grow by 42%, while also becoming much older (Vincent & Velkoff, 2010). According to United States Census estimates, by 2050 there will be 88.5 million Americans aged 65 or older, which will more than double the population of older adults from 2010 (Vincent & Velkoff, 2010).

Depression and Aging

With estimates that the world will witness an increase in the population and percentage of older adults, recognizing the mental health needs of this population becomes increasingly important. Globally, approximately 15% of older adults experience a mental disorder, with depression being the most common as the disorder affects approximately 7% of older adults (World Health Organization, 2015b). According to a meta-analysis of current community- and clinic-based epidemiological studies, depressive disorders occur in 5% of community-dwelling adults over 60 years of age, and

8% to 16% of older adults have clinically significant depressive symptoms (Blazer, 2003).

As the population of older adults continues to increase, researchers estimate that depression rates among this population in the United States will reach concerning numbers (Heo, Murphy, Fontain, Bruce, & Alexopoulos, 2008.) In an effort to project the future growth of American adults diagnosed with depressive disorders, Heo et al. (2008) analyzed data from the 2006 behavioral risk factor surveillance survey and prevalence estimates of doctor-diagnosed depression. The researchers weighted the data from 2006 by age and sex statistics to estimate the future adult population with depressive disorder based on gender specific projections from the United States Census for 2005–2050.

Based on their calculations, Heo et al. (2008) asserted that from the years 2005-2050 the incidence of depressive disorders for adults 18-64 years of age will increase by 35% from 33.9 million to 45.8 million. Over the same period, this rate is expected to be more pronounced for adults over the age of 65 years, noting the incidence of depressive disorder will increase by 116.8% from 3.8 to 8.2 million older adults with depressive disorders (Heo et al., 2008). From 2005 to 2050, the number of women with depressive disorder will increase by 24.6% from 19.9 to 24.8 million while the number of men with depressive disorder will increase by 26.2% from 10.3 to 13.0 million. According to Heo et al. (2008), "the increase in older adults with depressive disorder is in parallel to the increase in the total elderly population, which is likely propelled by advancement of baby boomers into geriatric ages within the next 10 years" (p. 1269).

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) defines major depression as the presence of

sadness or anhedonia and five or more occurring symptoms over a 2-week period. Depression is the most common source of emotional suffering among older adults, and decreases the quality of life among these individuals (Blazer, Burchett, Service, & George, 1991).

A meta-analysis of 20 studies from January 1966 to June 2001 focused on community residents who were 50 years of age or older, and sought to identify risk factors for depression (Cole & Dendukuri, 2003). Based on pooled odds ratios, the meta-analysis suggested the most significant risk factors for depression among older adults include bereavement, sleep disturbance, disability, prior depression, and female gender. The authors noted that three of the risk factors — bereavement, sleep disturbance, and disabilities — could be modified and reduce the risk of depression (Cole & Dendukuri, 2003).

According to a United States Surgeon General's report, depression in older adults causes distress and suffering, but also can lead to physical, mental, and social functioning impairments (U.S. Department of Health and Human Services, 2006). The World Health Organization (2015) further reinforced this notion, noting mental health impacts physical health and physical health impacts mental health. For example, older adults with physical ailments such as heart disease experience higher depression rates. Conversely, depression in an older adult with heart disease can negatively affect the physical outcomes of heart disease.

The findings from government agencies are consistent with findings by academic researchers in Brazil. With a growing population of older adults, researchers in Brazil examined the decreasing physical capacity and associated depression among a population

of older adults (da Silva, Menezes & Scazufca, 2013). The study examined 2,072 participants with chronic disabilities such as hypertension, eyesight problems, stomach/intestine problems, and hearing difficulties. Findings from the study demonstrated that the prevalence of clinically significant depression was 26.2%. Severe disability was two times as likely among those older adults with depressive symptoms and three times as likely among those older adults with depression when compared to those without such depressive symptoms. In this study, the researchers defined depression according to the guidelines in the *ICD-10 International Statistical Classification of Diseases and Related Health Problems* (10th ed., text rev.; *ICD-10*; World Health Organization, 1992). The researchers concluded that depressive symptoms contribute significantly to functional disability among older adults in low- and middle-income countries, which were categorized based on Brazil's Human Development Index (da Silva et al., 2013).

Irritability, anxiety, and somatic symptoms are more common among older adults with depression than in older adults without depression (Taylor, 2014). Depression among older adults often produces functional impairment, disability, and poor quality of life, and thus, the personal, social, and economic impact associated with depressive disorders will be more substantial in the coming years, and perhaps even more significant for older adults if their depression is undetected or untreated (Heo et al., 2008). Depression in older adults is correlated with an increase in functional impairment, disabilities, poorer quality of life, and economic burdens, in part because of the stigma associated with addressing depressive symptomology (Heo et al., 2008). Furthermore, older adults with depression can experience increased distress as the depression can

contribute to strained relationships with family members, an increased dependency on family members, and eventually lead to a change in living arrangements (Wang, Su, & Chou, 2010.) Depression is a significant source of emotional suffering in older adults and contributes to decreases in quality of life, and is associated with higher mortality (Blazer, 2003; Heo et al., 2008)

Among older adults, the etiology of depression has been associated with biological, psychological, social, and spiritual factors (Blazer, 2003). Experience with adverse life events such as abuse and neglect, as well as daily hassles, are among the key psychological factors of late-life depression (Devanand, Kim, Paykina, & Sackeim, 2002). Participants of a study who were diagnosed with major depression perceived a more negative impact from life events than participants in both the health and dysthymic disorder conditions (Devanand et al., 2002). Viewed as negative or distorted cognitions, the participants of the older adult depression group reported unrealistic expectations, overgeneralized negative events, overreacted to adverse situations, and personalized negative experiences (Devanand et al., 2002). When specific events affect a person's vulnerability, a negative experience can be a predictor of depression (Devanand et al., 2002).

With an increase in the percentage of older adults, it is important to recognize that late-life depression is the most common mental disorder among this growing population. Depression can lead to several issues including decreased quality of life, social isolation, health concerns, and physical challenges (Taylor, 2014). A complicated disorder, depression is correlated with older adults who suffered adverse life experiences. These

individuals had a more negative view on life events than did individuals with less depressive symptomology (Devanand et al., 2002).

Erikson's Stages of Psychosocial Development

An older adult's negative review of life's events is related to Erik Erikson's theory of psychosocial development. Erikson's theory of development posited that individual development occurs as a life-long process that unfolds throughout a person's lifespan (Erikson, 1963). Through his work, Erikson deepened and expanded psychoanalytic theory by proposing that development begins at birth and continues until death (Richman, 1995). In each stage of development, the individual faces a psychological crisis, which increases with biological, psychological, and social changes (Sneed, Krauss Whitbourne, & Culang, 2006).

According to Erikson (1963), the eight stages of development include infancy, early childhood, play age, school age, adolescence, young adult, adult, and later adult. In infancy, babies face a balance of trust and mistrust in the world, which helps create an outlook of hope awakened by caregivers. Through early childhood, toddlers face the opposition of a sense of autonomy and a sense of shame, which helps establish a basic strength of will. At the stage of play age, children learn to balance a sense of initiative between a sense of guilt in an effort to establish a sense of purpose and the courage to pursue valued goals. School-age children continue to develop and face tension between the work of learning advanced tasks and inferiority to achieve a sense of competence. During the formative adolescence, people establish the cornerstone of their identity, or fail to accrue an identity resulting in identity confusion. During this adolescence stage, a person develops an ability to maintain loyalties despite contradictions to personal values,

a sense that Erikson defines as fidelity. With fidelity, a person is able to unify one's own identity. In young adulthood the dominant theme is the crisis of intimacy and isolation. During this time, one builds the capacity for eventual commitment to lasting love and relationships. Later in adulthood, people develop a sense of care and face a crisis of generativity for others and the culture, or a sense of self-absorption and stagnation. Lastly, in later adulthood, as people enter the eighth stage of development, they often reflect on life, resulting in a crisis of ego integrity and despair. If a person is able to achieve a sense of ego integrity, it is possible to build a strength of wisdom (Erikson & Erikson, 1997).

Erik Erikson (1963) noted each age has its own responsibilities, a which an individual can succeed or fail. However, with failure at the last stage, the person can enter a state of disgust and despair; whereas with success, the ending is one of integrity and a sense of wisdom. During the crisis of ego integrity versus despair, individuals often reflect on the meaning of life and how the individual has lived his or her life. Assimilation of ego integrity involves defining a sense of wholeness, integration, and an acceptance of one's life (Sneed et al., 2006).

Focusing on the eighth stage of development in late adulthood, Erikson et al. (1986) described integrity as the purpose and strength required to maintain one's wholeness even when faced with disintegrating physical capacity. Erikson (1963) defined an integrated person as an individual with realistic self-awareness and explanations for the influences that shaped their character. In addition to being curious and involved, integrated individuals are usually content with the experiences and achievements in their life. Conversely, Erikson (1963) noted a despairing person is depressed about

disappointments, failures, and missed opportunities, and lacks the ability to synthesize interpretations in a manner that generates life satisfaction. A person who is despairing expresses sadness, regret or failure; is unsatisfied with life; and seeks more time to fulfill missed opportunities.

Researchers evaluated the merits of Erikson's theory and the relevancy of despair among the growing population of older adults. Although nearly all people feel moments of despair, researchers claim that despairing people are consistently depressed about disappointments, failures, and missed chances in life (Hearn et al., 2012). Using the definitions of integrated and despairing individuals, Hearn et al. (2012) recruited 97 adults age 65 years and older to participate in assessments and interviews. The researchers hypothesized that older adults who were defined as integrated individuals would score lower on depression symptoms as measured by the Geriatric Depression Scale, while older adults who were despairing individuals would score higher on the assessment tool. The researchers found that there was a significant mood correlation between despair and depression (Hearn et al., 2012). Supporting Erikson's premise, Hearn et al. (2012) noted people who are despairing often are closed to new experiences, less socially mature, and susceptible to negative and depressive self-reflection.

In further support of Erikson's lifespan development theory, Santor and Zuroff (1994) hypothesized that a key element of ego-integrity involved the manner in which individuals assess and reflect on previous experiences. Specifically, the researchers sought to determine if ego integrity could be measured as an individual's ability to accept the past, which could serve as a correlate of depressive symptoms (Santor & Zuroff, 1994). Individuals who are able to accept their previous experiences generate more

positive feelings without excessive negative responses and disappointments. These individuals recognize the possibility for more achievements and acknowledge the option for alternative decisions. While accepting people would have preferred to avoid challenging situations, they remain able to receive life's disappointments without continued distress (Santor & Zuroff, 1994).

To test their hypothesis, Santor and Zuroff (1994) recruited 84 individuals over the age of 55 to complete a self-report questionnaire. The dependent measure of the study included the Center for Epidemiologic Studies Depression Scale. To assess the variables, the researchers developed psychometric properties that created a scale for accepting the past and a scale for reminiscing. The scales were based on ego-integrity measure, negative affectivity scale, the Cohen-Hoberman inventory of physical symptoms, and the Marlowe-Crowne social desirability scale (Santor and Zuroff, 1994).

Women in the study reported higher depression symptomology than men; however, there were no significant differences in depression correlated with marital status, education, or religious group. Furthermore, using hierarchical regression analysis, the results suggested that accepting the past scale scores significantly predicted 5% of the difference in depression scores. Further analysis posited that an individual who failed to accept his or her past reported higher depressive symptomology even when moderating for age, sex, and physical symptoms. The relationship between accepting the past and depression symptomology was moderated by trait negative affectivity. One explanation for the moderating effect is that how an individual evaluates his/her past can contribute to depressive symptoms because the evaluation effects self-worth (Santor & Zuroff, 1994). The researchers proposed that as an individual ages, reflections on what the individual

may potentially do or become is a less important determinant of self-worth than regrets about life. While the study did not prove causality between depression and accepting one's past, the results suggested that the inability to accept one's past is associated with depressive symptoms (Santor & Zuroff, 1994).

In a more extensive examination of Erikson's theory, Richman (1995) explored the wellbeing of terminally ill people, suggesting that Erikson's entire lifespan development can extend to the very end of life. By enriching the last days of life and supporting a person as he/she deals with unfinished business, one can prepare for truly good death (Richman, 1995). Regardless of the age of the person, the developmental aim is to shift feelings of disgust and despair into integrity and acceptance, allowing an individual to die with psychological wellbeing (Richman, 1995).

Erikson and Erikson (1997) indicated that repression, regression, denial, and reaction formation might contribute to failures in integrity resolution, while sublimation, suppression, and humor might be positive coping styles. This claim is backed by studies that indicate the depressive symptoms related to despair are potentially treatable and may lead to improved functional capacity in older adults, and therefore, reduce functional disability levels among this population (Callahan et al., 2005).

Alternatives to Erikson

Erikson's psychosocial theory postulates one approach to lifespan development and the changes individuals reconcile in late adulthood. Alternatively, Kohlberg (1969) postulated that human development is an ongoing process of social exchanges involving interactions between an organism and its environment. Furthermore, motivational theory of lifespan development, proposes that developmental success is attained when an

individual can regulate his/her motivational processes through the selection, pursuit, and adaption of personal goals relative to lifespan changes (Heckhausen & Schulz, 1995).

Kohlberg's stage theory. Kohlberg's stage theory advanced the idea of progressivism, which focuses on nourishing the individual's interactions with a dynamic society and changing environment. Individuals activate their own development through interactions, and attempt to make sense of their experiences within themselves and the world in which they exist (Kohlberg, 1969). As a result, a person creates a reality from his or her own experience. Development, therefore, is activation of self-construction aimed at finding meaning for the self and others in the context of a shared social experience (Hayes, 1994). In the context of counseling, Kohlberg's theory would suggest it is important for counseling to examine the relationship between judgment, choices, and consequences that have resulted from action on previous judgments (Hayes, 1994).

As part of his theory, Kohlberg (1969) outlined a cognitive-developmental model focused on morality in stage-like changes that continue into adulthood. Specifically, Kohlberg's stages of moral development include six stages that progress with age. The first stage of moral development occurs in childhood and involves the avoidance of breaking rules that are supported through punishment (Colby & Kohlberg, 1987). Stage two focuses on an instrumental exchange to meet the one's own needs and the needs of other people (Colby & Kohlberg, 1987). Stage three is adopted in adolescence and involves upholding relationships, meeting role expectations, being perceived as a good person, demonstrating concerns for others, and valuing trust, loyalty, and gratitude (Colby, Kohlberg, Gibbs, & Lieberman, 1983). Stage four rarely appears before adolescence and has been reported to be used by 62% of adults age 36 years (Colby et al.,

1983). Stage four involves maintaining the social systems that contribute to one's progress. Stage five is utilized in adulthood and is focused on fulfilling obligations outlined in social contracts that result in the greatest good for the greatest number of people (Colby & Kohlberg, 1987). In later development, an additional sixth stage focuses on developing a moral standard based on universal human rights (Colby & Kohlberg, 1987).

To validate the stage-theory approach of Kohlberg, Dawson (2002) conducted an analysis of 30 years of pooled data regarding the ordered acquisition of moral stages and the correlation between moral stages and age, education, and sex. The results suggested that moral development progressed through the lifespan, including into adulthood. The findings raised questions that changes in adult cognition, which historically were viewed as cognitive declines, could possibly be viewed as higher order functioning (Dawson, 2002).

Critics of Kohlberg suggest the approach puts increased emphasis on moral thought at the expense of moral behavior (Walker, 2004). Others claim that Kohlberg's theory is cultural biased (Gibbs, 2010) and gender biased towards men (Gilligan, 1982); and thus, the theory is not universally applicable.

Motivational theory. A second alternative to Erikson's stages of psychosocial development is the motivational theory of lifespan development, which is formulated around primary and secondary control mechanisms. Primary control refers to the control an individual exerts over his or her external environment to align it with one's desires, while secondary control is cognitively focused, involving an ability to adapt internally (Heckhausen & Schulz, 1995). Motivational life span theory involves an ability to control

goals, noting successful development involves individuals pursuing appropriate goals, engaging in goal-directed efforts to pursue goals, and disengaging when goals have been achieved or are no longer attainable (Heckhausen, Wrosch & Schulz, 2010). The theory suggests that developmental success is achieved by regulating or controlling motivational processes through the selection, pursuit, and adaption of developmental and personal goals that reflect lifespan changes. As a person ages, capabilities change and thus individuals can successfully anticipate emerging opportunities by activating goal-focused behavioral and motivational strategies, disengaging from futile or costly goals, and replacing inappropriate goals with appropriate ones (Heckhausen et al., 2010).

When a person is unable to attain a goal, Heckhausen et al. (2010) asserted, the person disengages and activates compensatory secondary control strategies that permit resources to focus on more attainable goals. The compensatory secondary control also activates self-protective strategies to avoid self-blame or downward social comparisons, which could negatively affect self-esteem. When an individual simply disengages from a goal without restructuring the goal to a more appropriate pursuit, he or she could experience a passive reflection of failure (Heckhausen et al., 2010).

In late adulthood, people anticipate a loss of primary control capacity with increasing age. In advanced ages, developmental changes and life regrets are expected to be less controllable (Heckhausen & Baltes, 1991; Wrosch & Heckhausen, 2002). Older adults indicate the use of more goal disengagement, downward goal adjustment, and reinterpretations of events and failures, which serve as protective factors for the self and its motivational resources (Heckhausen et al., 2010).

To assess the validity of motivational theory, researchers developed a study to examine participants' levels of perceived control as a moderator of the protective relationship between downward social comparison and well-being among adults between the ages of 79 and 97 years (Stewart, Chipperfield, Ruthig, & Heckhausen, 2013). Researchers interviewed participants at three intervals over a 9-year period to assess for perceived control over daily tasks, use of downward social comparison for restricted tasks, and overall well-being. The results suggested that older adults who engaged in downward social comparison had a greater subjective well-being even at lower levels of perceived control. As a result, Stewart et al. (2013) supported motivational theory noting that attaining congruence with goals is implicated in quality-of-life interventions for older adults.

Critics argue that the theory of motivational life span development is based on Western beliefs and does not integrate other cultural factors such as Asian-based perspectives (Gould, 1999). Specifically, Gould (1999) noted differences in primary and secondary control orientation within a culture should be evaluated and adapted as part of an effective lifespan theory.

Reminiscing and Depressive Symptomology

To address depressive symptoms and depressive disorders, psychotherapy is considered a first line therapy for older adults (Taylor, 2014). Based on a meta-analysis that examined the effects of 57 controlled intervention studies of clinically depressed older adults, cognitive behavioral therapy and reminiscence therapy demonstrated a large effect size while psychodynamic therapy, psychoeducation, physical exercise, and supportive interventions demonstrated medium effect sizes (Pinquart, Duberstein, &

Lyness, 2007). Reminiscence therapy, which involves reflecting on one's life and successes, is grounded in Erikson's theory of ego-integrity and has demonstrated a positive effect on older adults (Jo & Song, 2015; Pinquart et al., 2007).

Reminiscence therapy builds on the natural process of life review in which the individual participates in a progressive return to the consciousness of past life experiences, including unresolved conflicts. Through reminiscence therapy, conflicts are reviewed and reintegrated, and if reintegrated successfully, the events can bring new significance to the individual's life, relieve anxiety, and mitigate fears of aging and/or death (Webster & Haight, 1995). Reminiscence therapy includes five stages (Lin, Dai, & Hwang, 2003). The first stage is the antecedent, in which the person experiences the aging process and stressful experiences such as relocation or the threat of maladjustment. When a health professional detects an antecedent situation, the therapist conducts an assessment, which is the second stage. The therapist can use assessment tools such as standardized psychometric measurements, self-report instruments, or observational instruments. The third stage is focused on establishing therapeutic purposes to address the extent of social isolation, low self-esteem, and depression with varied reminiscence therapy protocols. This leads to the fourth stage of identifying a reminiscence therapy for older adults ranging from simple, relaxed social group activities to more-detailed life reviews for an individual. Finally, the fifth stage is assessment of the therapeutic process and patient progress (Lin et al., 2003).

Older adults living in residential facilities are more likely to report a lower quality of life and a higher rate of depression; therefore, Chueh and Chang (2014) sought to understand if reminiscence therapy could improve the long-term depressive

symptomology of this older population. The researchers conducted the therapy among male veterans who had a mean age of 82 years and who were living in a veterans' nursing home in Taiwan. The study included 11 individuals in the experimental group and 10 individuals in the control group.

The researchers conducted two group reminiscence therapy sessions a week for 4 weeks, with each of the eight sessions lasting 60 minutes. The therapy topics involved the participants sharing combat memories, discussing feelings of post-war displacement, identifying positive relationships in their lives, recalling life histories and transitions, and gaining new awareness of personal goals. To assess the mental state and depressive symptoms of the participants, the researchers utilized a mental state questionnaire and the Taiwan geriatric depression scale, respectively. The questionnaire and depression scales were administered prior to the group reminiscence therapy, one week after the therapy, 3 months after the therapy, and 6 months after the therapy.

Prior to the reminiscence therapy intervention, 81% of the experiment group and 70% of the control group demonstrated geriatric depression. However, after the intervention, the rate of depression dropped to 9% for the experiment group. Three months after the intervention, the depression rate for the experiment group was 27%, and 6 months after the intervention the depression rate for the experiment group was 42%. However, the rate of depression for the control group remained notably higher at 80% at the end of the intervention, 71% at 3 months post intervention, and 83% at 6 months post intervention. The research team asserted group reminiscence therapy had a long-term and positive effect on depressive symptoms and geriatric depression among the residents of that veterans' nursing home (Chueh & Chang, 2014). While the study demonstrated

encouraging results, it was limited to older male war veterans in Taiwan. Thus, the researchers recommended that the study expand to both nonveteran men and women to continue examining the long-term effects of group-reminiscence therapy.

To test if reminiscence therapy contributes to improved cognitive function in older dementia patients, Jo and Song (2015) conducted an experiment involving 19 patients with mild dementia in which the patients received eight sessions of therapy. The participants were Korean city-dwellers who also registered at a mental health center. In order to participate in the study, the participants were required to be more than 55 years of age, score greater than 21 on the Mini-Mental State Examination (MMSE), and have been diagnosed with mild dementia by a physician. To assess the efficacy of the activity-based therapy, the researchers conducted pretests and posttests that measured depression, quality of life, ego integrity, social behavior function, and activities of daily living functioning. Based on comparisons between the pretest and the posttest responses, the researchers asserted that reminiscence therapy did not produce a statistically significant difference on depression and daily living functions. However, the researchers did conclude that reminiscence therapy had a statistically significant impact on quality of life, ego integrity, and social behavior function, and that overall the therapy was beneficial providing improvements in mental and physical function (Jo & Song, 2015).

Of particular note, although the depression scores decreased between the pre- and posttest, the difference was not statistically significant. However, the researchers noted that the patients in the study had depression levels in the normal range and suggested that it would be noteworthy to apply reminiscence therapy to patients who have been clinically diagnosed with depression. Furthermore, the depression measurement tool was

a Korean version of the Short-form Geriatric Depression Scale. The authors commented that reminiscence therapy enabled the participants to listen to other patients' stories and identify their own significance. Furthermore, the patients indicated a positive response to the activities integrated into the therapy. The overall findings of the study led the researchers to report that for patients with mild dementia, reminiscence therapy is beneficial and enables natural participation in the process without generating feelings of psychological burden (Jo & Song, 2015).

To examine reminiscence therapy more broadly, a meta study evaluated 500 relevant reports from sources including Medline, CINAHL, PsycLIT, and the Cochrane Database of Systematic Review (Lin et al., 2003). The research team noted that while the practical applications of reminiscence therapy may involve healthy or depressed older adults, the effects of reminiscence therapy remain poorly understood. Research about reminiscence therapy indicates promise; however, there is an opportunity for more insight about the cognitive processes involved (Line et al., 2003).

Counterfactual Thinking

In reflecting about past events, a process of questioning "what might have been" is referred to as counterfactual thinking, and potentially provides a perspective on the process of reminiscence. Researchers have explored if counterfactual thinking heightens a person's ability to derive meaning from the experiences in their life (Kray et al., 2010). Defined as mental representations of alternative outcomes to past events, counterfactual thoughts result in an individual creating a juxtaposition of an imagined outcome rather than the factual state of the outcome (Roese, 1997). Generally, a problem will activate counterfactual thinking, which then generates behavior change.

The rationale for a person engaging in counterfactual thinking is related to a psychological process of striving to solve a specific need or deficit. Therefore, the primary function of counterfactual thinking is to assist an individual in problem solving by evoking problem-solving behaviors (Epstude & Roese, 2008). Additionally, the process of counterfactual thinking can initiate affective reactions including regret stemming from comparisons with better possible outcomes, to relief resulting from comparisons of worse possible outcomes (Kray et al., 2010).

This cognitive process activates when the individual recognizes a problem or negative experience that is not satisfactory, which then causes the individual to link the antecedent to a consequence. In counterfactual thinking, the individual engages in a conditional proposition whereby the antecedent links to an action and the consequent links to an outcome: e.g., if I had only trained 6 days a week, I would have won the race. If the intended behavior addresses the problem or negative experience, the outcome is a regulated behavior for an intended goal (Epstude & Roese, 2008). While the primary purpose of counterfactual thinking is steered to behavioral changes, the process can contribute to affect regulation (Epstude & Roese, 2008).

Counterfactual thinking can take the form of downward counterfactuals, which are worse alternatives, and upward counterfactuals, which are better alternatives (Epstude & Roese, 2008). When engaged in a downward counterfactual thought, the participant generates a thought about a possible worse outcome, therefore making the current outcome more pleasant. Epstude and Roese (2008) illustrated this thought process with the following example: “Consider further the instance in which an Olympic bronze medalist realizes that she barely made it onto the medal stand and thus might easily have

won no medal at all." In this way, the counterfactual downward thought can address a mood. Although research initially presumed that it was mainly downward counterfactuals that generated positive affect, research also suggests that upward counterfactuals can generate a positive affect through an assimilation effect (Markman, McMullen, & Elizaga, 2008). An upward counterfactual thought illuminates the ways in which the situations could be better to generate a more positive outcome when aimed at a behavior change: e.g., if I trained harder, I could win, (Epstude & Roese, 2008).

Epstude and Roese (2008) explained that counterfactual thinking is applied in mental health theory when it occurs in excess or as a deficit. Because upward counterfactual thinking is believed to provoke problem solving and negative affect, an abundance of counterfactual thinking could contribute to anxiety from excessive problem solving, or depression from an excessive amount of negative affect. Conversely, a deficit of counterfactual thinking would result in underachievement from too little problem solving. Counterfactuals can assist in correcting and improving behavior that previously was unsuccessful.

While research has focused on one aspect of the emotional continuum (regret), counterfactual thinking also can produce gratitude. To explore if counterfactual thinking could help people derive meaning from their experiences, Kray et al. (2010) conducted four experiments. The team proposed that by constructing counterfactual thinking, participants would highlight opportunities, relationships, and achievements that would not have occurred, thereby improving the perception of one's life narrative. In experiment one, the researchers asked 32 participants to reflect how their decision to attend a specific college could have turned out differently. The participants in the counterfactual group

reported a more meaningful and significant outcome than the control group, which did not receive the counterfactual prompt. In experiment two, 38 participants were asked to reflect on how they met a close friend. Participants in the counterfactual condition were asked to "describe all the possible ways that you might not have met this person and how things could have turned out differently," whereas the factual condition group was asked to "describe any other details about the way you met that determined how things ultimately turned out" (Kray et al., 2010, p. 108). The results indicated that those in the counterfactual condition found their friendship to be more meaningful than those in the factual condition group (Kray et al., 2010). As a result of these two experiments, Kray et al. asserted that "counterfactual reflection endows both major life experiences and relationships with greater meaning" (Kray et al., 2010, p. 109).

In the third experiment, participants were asked to reflect on a turning point in their life. The previous experiment demonstrated that counterfactual thinking about a personal turning point enhances perceptions of fate, or that an event was meant to be. The counterfactual condition group was asked to reflect on how life, relationships, and values would be today if the turning point had not happened, while the factual group was asked to recount the event as it happened including where, when, and with whom. Both groups were asked to evaluate if the event occurred because of fate. The results proposed that counterfactual thinking increases perceptions of fate, suggesting the participant believes the event was meant to be. In the fourth experiment, Kray et al. (2010) explored the underlying processes through which counterfactual thinking creates meaning. Building on the third experiment, the researchers inquired if perceptions of fate and recognizing positive consequences could mediate the impact of counterfactuals on life

meaning. The findings suggested the participants selectively focused on ways life could have been worse without the event, which led them to deem the turning event as a fated event.

The four experiments encouraged the participants in the counterfactual conditions to consider what might have been. In totality, the research findings suggested a correlation between counterfactual thinking and the ability to derive meaning from life events and relationships. Furthermore, Kray et al. (2010) concluded that counterfactual reflections identify the upside of reality, foster a belief in fate, and ultimately help derive more meaning from important life events.

A separate study embraced the theme from the film "*It's a Wonderful Life,*" (Capra, 1946) to explore the topic if people would be happier by using counterfactual thinking to recollect the many positive events that have occurred in their lifetime (Koo, Algoe, Wilson, & Gilbert, 2008). While previous research attempted to measure this "count your blessings" sentiment, the results from previous studies are mixed. Therefore, Koo et al. approached the experiment by comparing the differences in people's affect if they reflected on the presence of events versus people's affect if they reflected on the absence of an event in their life.

To test the hypothesis that thinking about the absence of a positive event in a person's life would result in improved affective states, the researchers initially studied 65 college students at the University of Virginia – 21 males and 44 females. They divided the students into groups and asked the students to write a brief statement on the topic. The first group was the "absence" group, and these students were asked to write about ways in which a positive event might not have happened to them and how this event was

a surprising part of their life. The second group was the "presence" group, and they were asked to reflect on a positive event that naturally became part of their life and was not a surprise. The third group was the control group and they did not write on any topics. Following the exercise, researchers asked the students to rate if they were experiencing each of the 13 affected states: distressed, happy, thankful, upset, grateful, joyful, sad, helpful, appreciative, lonely, depressed, secure, or optimistic. The participants received either course credit or a small gift for participating in the study.

Results from the study were highly correlated and indicated that participants in the absence condition scored higher on positive affect measures versus people in the presence condition or control group, $F(3, 56) = 2.72$, $p = .05$. The researchers asserted that people reported an improved affective state when writing about how a positive life event might not have occurred. On the other hand, people did not report an improved affective state when simply writing about how positive events occurred, describing the positive events, or not thinking about positive events (Koo et al., 2008). To understand what mediated the results, the researchers repeated the study by adding questions around surprise to rate how surprised people were by the event and how well they understood the event. The absence condition participants reported feeling more surprised and less understanding about the event in their life relative to the presence condition.

A limitation in this group was the younger age of the participants ($M = 18.8$ years of age). Therefore, participants wrote about events over which they did not have much control such as being born to capable parents or attending a suitable elementary school, and thus, it was more difficult for this younger population to imagine the event not occurring (Koo et al., 2008). Nonetheless, the two studies demonstrated that participants

who thought about the absence of a positive event in their lives reported a more positive affect. There was some initial evidence that the outcome occurred because the counterfactual process made the event more surprising to the participant.

While the study supported the hypothesis that recollecting the absence of positive events improved participants' affective states, the study was limited to college-age students who have fewer lifespan experiences upon which to draw. Expanding the study to individuals in the later stages of life would serve to test the reliability of the experiment by testing the repeatability of the results on a different participant group. Thus, conducting an extension of the "*It's a Wonderful Life*" study with older adults could reinforce the assertion that mentally subtracting positive events improves a person's affective state, including older adults.

Current Study

While replication studies rarely appear in psychology journals because publishing selects originality over reliability, the field of psychology is calling for the reproduction of studies (Simons & Holcombe, 2014). The psychology field has increased its emphasis on reproducing results as replication studies, which serve to advance the field and validate findings. To combat concerns about the validity and reliability of reported results, Anderson and Maxwell (2016) have stressed the importance of reproducing results through replication research. Increasing the emphasis on replication studies plays a critical role in the development of a cumulative science of psychology (Maxwell, Lau, & Howard, 2015).

To support the advancement of replication studies, *Perspectives on Psychological Science* produces the *Registered Replication Report*. The section is "designed to help

stabilize the foundations of our science by providing more definitive estimates of the reliability of important findings in the psychology literature" (Simons & Holcombe, 2014, p. 1). The editors of the *Registered Replication Report* suggest that researchers consider replicating studies that have been highly influential, utilize a sound methodology with an unambiguous interpretation of results, have not experienced significant replication, and encourage consideration of an important theory or theoretical position.

Regarding the replication potential of the study by Koo et al. (2008), the published study has been cited in Google Scholar academic research 114 times, and is cited in 48 articles according to Psych Info. PlumX Metrics reports the article received 3,890 abstract reviews, 116 social media shares, and 44 index citations. The sound methodology of the study involved a one-way ANOVA to reveal the significant effect of the conditions. At this time, the current researcher has not identified any replication studies of the Koo et al. (2008) study. Lastly, the article encourages the use of counterfactual thinking to improve affective responses, a topic that is relevant to the fields of cognitive and counseling psychologies.

Rationale for the Study

With estimates suggesting the world will witness a growth in the percentage of older adults in the overall population, and an increase in the rate of depressive symptomology among older adults, counseling psychology has an obligation to explore intervention approaches that improve the affective state of this population. Erikson posited that older adults enter a crisis of ego integrity versus despair, which involves reflecting on the meaning of one's life (Erikson, 1963). Researchers suggested that although most people have feelings of despair, older adults who are able to accept their

previous disappointments and recognize achievements can generate more positive feelings and experience less depressive symptomology (Santor & Zuroff, 1994). Lifespan psychology and results from reminiscence therapy studies suggest that assisting older adults with the crisis of despair could prove helpful in decreasing depressive symptoms and increasing positive thoughts by recollecting past events (Callahan et al., 2005; Jo & Song, 2015).

As people enter the final stage of adulthood, older adults reflect on life's experiences, disappointments, and accomplishments. Researchers suggested there is a correlation between using counterfactual thinking and the ability to derive meaning from life events and relationships (Kray et al., 2010). Specifically, when researchers employed counterfactual thinking by reflecting on the absence of positive events, the process improved the affective state of university students (Koo et al., 2008). However, a gap in the research is that the counterfactual study focused on young adults, and therefore, it is not clear on the impact of counterfactual thinking on older adults who have more than 60 years of history from which to reflect (Koo et al., 2008). Further, replicative studies serve to advance the validity and reliability of psychology research, which the current study aims to support (Simons & Holcombe, 2014).

Research Question/Hypothesis

The aim of the current study is to understand if replicating counterfactual research that examined mentally undoing a grateful event also will have a significant effect when engaging participants over the age of 60. In exploring the reliability of the Koo et al. (2008) study, this research will seek to understand if the affective consequences of mentally subtracting grateful events can have affective benefits for older adults.

Specifically, the research question this study seeks to answer is: Does engaging in counterfactual thinking by reflecting on the absence of a grateful event improve the affective state of older adults? The hypothesis is that reflecting on the absence of a grateful event will have a significant effect on the affective state of older adults.

Chapter Two

To examine the effect of mentally subtracting positive or grateful events on the affective state of older adults, the researcher conducted a replicative, quantitative study. Specifically, the researcher assessed differences in the affective state of (a) participants who reflected on the ways in which a grateful event might not have happened and how this event was a surprising part of their life, (b) participants who reflected on a grateful event that naturally became part of their life and was not a surprise; and (c) participants who did not engage in reflection and served as a control group. Designed as a replicative study, the study employed measures and assessments following the design outlined by Koo et al. (2008) in their original study, with the exception of participants' ages. The present study targeted participants over age 60 in an effort to measure the degree to which counterfactual thinking has a positive effect on the affective state of older adults.

Participants

Participants in this study involved a non-random sample of male and female adults over the age of 60. To confirm that participants were among the target population, the survey included a question about participants' date of birth. In total, 195 participants were queried, which included 65 participants in the absence condition, 65 participants in the presence condition, and 65 participants in the control condition. However, 18 of the surveys were either incomplete or not returned. As a result, the sample size of the completed surveys was 177 participants, including 57 participants in the absence condition, 59 participants from the presence condition, and 61 participants from the control condition. As detailed in Table 1, of the 177 participants who completed the surveys, 21% were male (n = 38) and 78.5% were female (n = 139).

Table 1

Participants by Gender and Condition

Condition	Male	Female	*n*	%
Absence	9	48	57	32.3
Presence	16	43	59	33.3
Control	13	48	61	34.5
Totals	38	139	177	100

The mean age of participants was 75.23 years (*SD* = .60). The surveys were available to participants in English and Spanish versions, noting 79.1% of participants completed surveys in English (*n* = 140) and 20.9% of participants selected surveys in Spanish (*n* = 37).

Procedures

As described in Table 2, the surveys were administered across six community centers, senior centers, and senior residential facilities throughout the greater Seattle metropolitan region. Observationally, the participants represented varied racial backgrounds. Some of the participants attended community centers to engage in hobbies such as line dancing and racket sports while others were attending for an affordable senior lunch. The communities from which the researcher surveyed covered a range of socioeconomic status, noting some centers were located near low-income and affordable housing units while other centers were located near high-income neighborhoods with skilled technology industry employees. In general, participants were able to complete the pencil and paper surveys independently, for less than ten participants the researcher read the questions to the participants and transcribed their answers verbatim.

Table 2

Participants by Location

Location	Frequency	%
Senior Residential Facility 1	18	10.2
Community Center 1	18	10.2
Community Center 2	27	15.3
Senior Center 1	43	24.3
Senior Center 2	28	15.8
Senior Center 3	43	24.3
Totals	177	100

Consistent with the original study, the researcher offered participants a small gift in return for their participation (coffee gift card). The researcher respected and considered participants' privacy in the research process by maintaining anonymity and confidentiality of participants' names and the specific location where data was collected.

Prior to beginning data collection, the researcher received approval from the Northwest University Institutional Review Board. Participants were given the option of selecting the survey in Spanish or English. The Spanish version of the questionnaire was translated and validated by a company that is certified to conduct translations of legal documents for the U.S. Citizenship and Immigration Services administration (see Appendix E). The data collection for the study was conducted by the author-researcher from June 2018 to September 2018.

Measures

The measures included three questionnaires, one for each condition: absence, presence, and control. All questionnaires were anonymous and excluded participants' race, ethnicity, and religious affiliation. The researcher provided respondents with an in-person informed consent, which highlighted the study's purpose, content, duration, and potential risks and benefits (see Appendix A).

The researcher randomly selected the participants into the absence, presence, and control conditions by alternating the three questionnaires. The questionnaire took approximately 5 to 15 minutes to complete. Participants completed the questionnaires onsite and immediately returned the questionnaires to the researcher.

Absence. The participants who randomly selected the absence condition were asked to write about an event for which they felt grateful from one of seven categories: education, health, safety/security, possessions, break/vacation/weekend/holidays, acts of kindness/support from others, or achievement/performance (see Appendix B). Secondly, the absence condition participants were asked to describe ways this event might never have happened or might never have been part of their lives. Thirdly, the absence condition participants were asked to describe ways in which it is surprising that this thing or event is part of their lives.

Presence. The participants who randomly selected the presence condition were asked to write about an event for which they felt grateful from one of seven categories: education, health, safety/security, possessions, break/vacation/weekend/holidays, acts of kindness/support from others, or achievement/performance (see Appendix C). Secondly, the presence condition participants were asked to describe ways this event happened easily or was certain to become part of their lives. Thirdly, the presence condition participants were asked to describe ways in which it is not at all surprising this thing or event is part of their lives.

Control. The randomly selected "control" condition participants did not write about personal events (see Appendix D).

Affective states. Following the writing exercise, participants in the absence and presence conditions rated the extent to which they were experiencing 13 affective states (distressed, happy, thankful, upset, grateful, joyful, sad, hopeful, appreciative, lonely, depressed, secure, and optimistic) on a seven-point scale. Participants in the control group did not engage in the writing exercise, and therefore, the control participants immediately rated the extent to which they were experiencing the 13 affective states. For each affective state, a score of one represented "not at all" experiencing the specific affective state, and seven represented "extremely" experiencing the specific affective state. Consistent with the Koo et al. (2008) study, the responses to the 13 affective states were averaged into a positive affective state index after reverse scoring for the negative affective states, which included distressed, upset, sad, lonely, and depressed.

Surprise. The researcher assessed surprise as a mediator. Participants in the absence and presence conditions answered the following affective questions (on a 7-point scale): (a) how surprised they were that the thing/event occurred, (b) how well they thought they understood why this thing/event occurred, (c) how well they thought they understood why this thing/event was/is in their life, (d) how hard it was to explain why the thing/event occurred, (e) how mysterious, ordinary, and easy to control the event seemed to be; and (f) how long ago the event occurred.

Chapter Three

The current study replicated previous investigations of counterfactual research by comparing the affective states of participants that (a) reflected on the absence of a grateful event, (b) reflected on the presence of a grateful event, and (c) were part of a control group that did not participate in reflection. The analytic procedure focused on a comparison of the means of the positive affect state index across the three conditions – absence, presence, and control. The aim of the procedure was to examine the effect of the condition of mentally subtracting positive events on the affective state of older adults.

Analytic Strategy

In each of the three conditions, participants' responses to the 13 affective states were represented by the positive affective state index after reverse scoring for the negative items. A one-way ANOVA was used to test the effect of each condition (absence, presence, control) on the positive affective state index. A second, planned comparison was conducted to examine the effect of gender on the affective state of the participants.

Similar to the previous counterfactual study by Koo et al. (2008), the association among affective state and age was explored using a Pearson's correlation. In addition, to assess if experiencing surprise about the grateful event had a correlation to the positive affective state index, a second Pearson's correlation was conducted. The correlation between degree of surprise and reported positive affective state was conducted for the absence and presence conditions only, as the control condition did not reflect on an event.

Results

Positive affective state by condition. The positive affective state index scores summarizing the 13 affective measures for participants in each of the three conditions are highlighted in Table 3. The one-way ANOVA compared positive affective state indices in conditions in which the participants (a) reflected on the absence of a positive event, (b) reflected on the presence of a positive event, (c) or did not reflect on any event (control group). The results of the between-subjects effect analysis demonstrated a significant main effect of condition on the affective states of older adults at the .05 level, $F(2, 174) = 5.976$, $p = .003$. Regarding effect size, there was an effect of condition with a partial Eta squared score of .064. This difference represents a medium effect size (Cohen, 1992; Maher, Markey, & Ebert-May, 2013; Rosenthal, 1996).

Post-hoc comparisons using the Tukey HSD test indicated the mean score for the absence condition ($M = 5.853$, $SD = .762$) was significantly different than the control condition ($M = 5.323$, $SD = 0.922$), and marginally different than the presence condition ($M = 5.489$, $SD = 0.853$). The difference between the presence and control conditions did not reach significance; however, a trend was apparent. Further comparisons between conditions are described in Table 4.

Table 3

Measured Positive Affective State Index by Condition

Condition	Mean of Index Scores	*SD*	*n*
Absence	5.853	.762	57
Presence	5.489	.853	59
Control	5.323	.922	61
Totals	5.549	.874	177

Table 4

Comparison between Conditions

Condition	Comparative Condition	Mean difference	Standard Error	Significance	95% confidence interval	
					Lower bound	Upper bound
Absence	Presence	.365	.158	.057	-.008	.739
	Control	.532	.157	.002	.161	.902
Presence	Absence	-.365	.158	.057	-.739	.008
	Control	.166	.155	.534	-.201	.533
Control	Absence	-.532	.157	.002	-.902	-.161
	Presence	-.166	.155	.534	-.533	.201

Affective state correlations for gender and language. Further analysis of affective state revealed there was no correlation between affective state and age, $r = .064$, $n = 177$, $p = .399$. Comparison of the means of the positive affective state index between male ($M = 5.567$, $SD = .872$) and female ($M = 5.567$, $SD = .877$) participants suggested that gender had a marginally significant effect on affective state at the .05 level, $F(2, 171) = 2.971$, $p = .054$. Female participants generally reported a higher affective state than male participants.

Comparison of the means of the positive affective state index between participants who selected the English version ($M = 5.622$, $SD = .8388$) and participants who selected the Spanish version ($M = 5.274$, $SD = .962$) of the survey indicated a difference. The mean score of the participants selecting English was higher than participants who selected Spanish versions of the survey; however, it is unclear if the difference is a result of language or the impact of a small Spanish language sample size ($n = 37$) (see Appendix F). Of the surveys completed in Spanish, the majority were completed by female participants ($n = 33$) versus male participants ($n = 4$).

When assessing for surprise in the absence and presence conditions, a Pearson's correlation coefficient determined no correlation between affective state and surprise, $r(116) = -.004$, $p = .963$. The control condition participants did not engage in writing and therefore were not assessed for surprise.

Summary

The results of the study demonstrate that condition (absence, presence, or control) had a significant effect on the positive affective state index as reported by participants. Specifically, the mean score of positive affective state index for the absence condition was significantly different than the control condition, and marginally different than the presence condition, while the difference in the mean score of the positive affective state index between the presence and control conditions did not reach significance. These results support the hypothesis that engaging in counterfactual thinking by mentally subtracting positive events effects the affective state of older adults. The measured affective state by participants' ages did not have a significant effect on the affective state of participants, which further reinforces the effect of condition. While women tended to report a greater overall positive affective state, gender was not influential on affective state at a statistically significant level.

Chapter Four

As the overall percentage of older adults in the overall population and the percentage of older adults with depressive symptomology both increase, identifying approaches to address negative affect is relevant to the care of geriatric individuals. As part of lifespan development, older adults reflect on life events, which can lead to feelings of integrity or despair. When employed as a counterfactual process, the act of reflection can serve to improve the affective state of older adults. Specifically, reflecting on how a grateful event might not have occurred versus simply describing a grateful life event can have an improved outcome on the affective state of older adults. Recognized as the "George Bailey" effect, this counterfactual process of reflecting on the absence of a positive event was examined in the present study. The results of the investigation demonstrated that when older adults wrote about how a positive event might never have happened, they reported a higher affective state than simply writing about how a positive event was sure to happen.

Taken together, these results demonstrate when older adults reflect on how grateful events might never have happened or might never have become part of their lives, those older adults will report more positive feelings than if they reflected on how grateful events were sure to have happened. In other words, asking "what would your life be like if you *never* lived in Washington" will improve the affective state of an older adult more than simply asking "what was your life like because you lived in Washington."

George Bailey Effect on Older Adults

In 2008, Koo et al. discussed the impact of the "George Bailey" effect, noting that college students who wrote about how a grateful event might not have occurred reported a higher affective state than individuals who simply described an event for which they were grateful. The present study is the first study to support Koo et al.'s findings by extending the research to adults over the age of 60. As noted, the approach of using counterfactual questions focused on the absence of a grateful event was not correlated with age or gender. Thus, when addressing older adults, one can conclude that the "George Bailey" effect is applicable to male and female adults from 60 to more than 100 years of age. As older adults reflect on life's events, finding new meaning from experiences and relationships can serve to enrich the developmental process later in life (Erikson, 1963). The "George Bailey" effect potentially serves as an approach to help older adults synthesize reflections and uncover new significance in life's events and relationships.

The findings from the present study yielded a significant effect of condition for the Koo et al. (2008) procedure. Older male and female participants who wrote about the absence of an event for which they were grateful reported a more positive affective state than the older adults who simply described an event for which they were grateful or older adults who did not engage in any writing exercises. The present findings fill an important gap in counterfactual reasoning noting that when adults over the age of 60 reflect on how a positive life event might never have happened, they report feeling better than if they reflected on the occurrence of the event.

Differences between the present study and that of Koo et al. (2008) included gender variances, sample size and age. In the Koo et al. study, 47% of the participants were male, whereas in the present study 21% of participants were male. The sample size of Koo et al.'s study (n = 60) was smaller than the present study (n = 177). Furthermore, the different studies represented two spectrums of the age continuum, with Koo et al. surveying college-age students (M = 18.8 years of age) and the present study focused on older adults (M = 75.5 years of age). These comparisons further illustrate that age was not correlated with affect, providing more support for the effect of condition on affective state. These findings suggest that the application of mentally subtracting grateful events improves the affective state of individuals regardless of age, creating opportunities for broader implementation.

Koo et al. (2008) demonstrated that the absence condition reported more positive feelings as measured by the positive affective state index than participants in the other conditions. Similarly, the results of the present study demonstrate a statistically significant effect of condition. Erikson and Erikson (1986) argued that in the eighth stage of development, older adults synthesize life events to find meaning as part of the crisis of ego integrity and despair occurring later in adulthood. Furthermore, Butler (1963) described the natural process of life review and suggested that older adults reviewed their lives as a naturally occurring process in the face of an approaching death. Thus, a possible explanation for the stronger effect of condition in the present study is that the act of reflection and reminiscence is a natural part of the developmental process for participants over the age of 60.

Koo et al. tested the theory that participants reported a more positive affect because thinking about the absence of the event made it more surprising. However, the original researchers did not identify a statistically significant effect of surprise, although the researchers suggested surprise can intensify affect. Similarly, the present study did not find a correlation between affective state and the degree to which the event was surprising in the participants' lives, which is in line with the responses from the Koo et al. (2008) investigation.

Presence Effect

The present study demonstrated that reflecting on the absence of an event had a statistically significant effect on the affective state of older adults. It is also worth noting, however, that simply reflecting on the presence of an event produced a smaller effect on affective measures relative to the control group. This finding would support conclusions from Pinquart et al. (2007) and Jo and Song (2015) that highlight reflecting on one's life and success through reminiscence therapy has demonstrated a positive effect on older adults. The participants in the presence condition in the present study engaged in written reflection, and therefore, experienced a level of reminiscence activities. While the presence condition participants reported a higher positive affective state index than the control group, the outcome did not reach the statistical significance demonstrated by the absence condition. This finding would support research that general reminiscence improves affective state (Lin et al., 2003); however, the reminiscence of the absence of an event demonstrated more significance than the reminiscence of the presence of an event in the current investigation. Furthermore, previous research has suggested that the act of writing and journaling about topics that are meaningful can contribute to well-

being (Pennebaker, 1997), which would support a higher mean score for the presence condition versus the control condition.

Present Study and Lifespan Theories

Erikson et al. (1986) argued that psychosocial development is a life-long process, and in the final stage of development, reflecting on the meaning of one's life and how one lived can create a sense of wholeness. During the developmental stage of ego integrity and despair, older adults seek meaning in their life and reflect on how they have lived (Erikson et al., 1986). Further explained by Richman (1995), strengthening one's wholeness, even when facing physical challenges associated with aging, can serve to shift feelings of regret into acceptance, contributing to the developmental growth of older adults. The process of subtracting grateful events from a life story and then reflecting on what might have been potentially serves as a means to synthesize interpretations that generate life satisfaction. Therefore, the "George Bailey" effect may help to foster the process of reflection, integral in lifespan development as defined by Erikson (1963).

Similarly, Kohlberg (1969) noted that development is aimed at finding meaning for the self and others through the lens of shared social experiences. Helping older adults examine the intersection between choices and consequences, and finding meaning for the self and others, is a process to activate development as adults engage in self-construction. The process of mentally subtracting events from one's life examination possibly can serve to help older adults reconstruct their experiences and find new meaning for the self and others, as suggested by Kohlberg. In this way the "George Bailey" effect supports the developmental process outlined in Kohlberg's stage theory.

Motivational theory suggests that examining goals and attaining goal congruence improves overall well-being (Heckhausen & Baltes, 1991). When older adults are able to reinterpret events and failures, the process can serve as a protective feature (Heckhausen et al., 2010). The process of re-examining what might have been, as tested in the present study, may serve to provide new interpretations of life's events, contributing to improved affective state, which aligns with principles discussed in motivational theory.

Each of these lifespan theories postulates that reflection and assimilation of life experiences are critical in the pursuit of psychological development in older adulthood. Through the process of counterfactual thinking, the "George Bailey" effect helps older adults foster the ability to reflect on past events and relationships, aligning with the lifespan approaches of integrating experiences into life stories and goals. Furthermore, as noted by Santor and Zuroff (1994), reflecting and learning to accept one's past is associated with reduced depressive symptomology, which the present study recognizes through the finding that older adults who reflected on the absence of a grateful event reported an improved positive affective state index.

Implications for Practice

From a therapeutic perspective, the process of reminiscence therapy encourages individuals to reflect upon and reintegrate events into the consciousness of life experiences with the goal of bringing new significance to past experiences. Grounded in lifespan development, reminiscence therapy assists with the process of assimilating ego integrity into one's life narrative. Specifically, in the fourth stage of reminiscence therapy, treatment interventions range from comfortable group activities to complex life reviews, providing a window for the integration of counterfactual reflections and life

review assimilation (Lin et al., 2003). The process of recollection is a core tenet of reminiscence therapy, even among older adults facing declining cognitive skills associated with dementia. Researchers state that recollecting and discussing quality of life during reminiscence therapy demonstrated improved feelings of accomplishment for participants (Jo & Song, 2015). Potentially recollecting experiences through the integration of a counterfactual thought about the absence of a grateful event into the process of reminiscence therapy could prove effective in extending the benefits of reminiscence therapy interventions.

Not exclusive to the field of psychology, reminiscence therapy is efficient to conduct with older adults in varied environments such as residential facilities and home nursing (Li et al., 2012). Researchers have suggested reminiscence therapy is an effective nursing intervention both in treating the progression of dementia and generally improving the quality of life of older adults (Li et al., 2012). Integrating the "George Bailey" effect into reminiscence therapy interventions conducted by nursing professionals can encompass the affective benefits of the counterfactual approach of subtracting events from a life review process.

Suggesting a remarkably broad application, Armstrong (2017) explored the use of reminiscence therapy in community settings in which intergenerational interventions occurred. Specifically, Armstrong (2017) advocated for the use intergenerational reminiscence therapy and oral histories in which school children can help improve the wellbeing of isolated older people through life history reviews. Armstrong proposed that the community as a whole can serve to support the wellbeing of older adults through oral histories and reminiscence integrated with counseling psychologists, group or individual

therapeutic settings, collaboration with family members, integration with local schools, and locally based students or volunteers. Applying the "George Bailey" effect to intergenerational oral history and reminiscence discussions suggests a broad and widely impactful outcome.

Nurses, mental health providers, and potentially the community at large can assist older adults in the reflection of the absence of an event versus the presence of an event, generating more positive affective responses as part of the integration process. For example, in a reminiscence therapy intervention a factual, presence reflection would be, "What are the positive things about your life partner?" However, a counterfactual reflection focused on the absence of an event would be "What would your life be like if you *never* met your life partner?" A second example of a factual, presence question would be "What did you appreciate about being a teacher," whereas a slight change to the wording shifts the question into a counterfactual question about the absence of an event: "What would your life have been like if you *never* became a teacher?" The approach of subtracting a positive or grateful event (*not* meeting a life partner and *never* becoming a teacher) would employ the absence reflections highlighted in the present study. Based on the findings in the present study, the slight change to the question could significantly improve the affective state of older adults.

The present study and the study by Koo et al. (2008) were administered to participants in the form of simple questions on paper, and participants responded by writing their answers with a pencil. This format of intervention is simple and inexpensive to administer to individuals or groups. In this way, it would be easy and affordable to integrate counterfactual questions that mentally subtract positive or grateful events into

numerous senior settings. For example, caregivers, nurses, activities directors, support group leaders, mental health professionals, and even family members can encourage older adults to reflect on the absence of a grateful event in any setting that is suitable for a piece of paper and a pencil. Furthermore, of the 195 participants queried in the present study, none reported distress as a result of reading and responding to the questions.

Limitations

The present study identified limitations to the approach of mentally subtracting positive events on the affective state of older adults. Specifically, it is unclear if the measured positive affective state index is consistent when administered in Spanish. Observationally, but not scientifically measured, the participants of the present study represented a range of racial backgrounds – Caucasian, Asian, African American, and Hispanic. However, the only measured characteristic related to ethnicity or race in the present study was the selection of Spanish or English versions of the survey. Participants were not asked to indicate the race or ethnic group with which they identified.

An additional limitation of the study is the smaller sample size of males in the absence group (n = 9). Overall across the study, 21% of the participants were male; however, it is worth highlighting that specific to the absence group the sample of males was smaller than males in the presence (n = 16) and control (n = 13) conditions. Estimates suggest that the rates of depression among men over 65 years of age will increase faster than the rates of depression among women over 65 years of age (Heo et al., 2008). Thus, given the concerning depression rate projections for older adult males, it would be important to further understand the effect of condition on males by evaluating a larger sample size.

Future Directions

Given the results of the Spanish version of the survey, it would be beneficial to replicate the study and identify a statistically significant participant size of varied racial and ethnic backgrounds to determine if the results of the present study translate across languages and/or cultures. Secondly, the present study focuses on mentally subtracting a positive event and does not explore the effect of mentally subtracting a difficult event or an event for which a participant is not grateful. Examining, with caution, the effect of mentally subtracting an event for which a person is not grateful, could prove interesting in therapeutic settings.

The results of this study are focused on comparing the means of three conditions – absence, presence, and control. To further understand the effect of mentally undoing a grateful event as a therapeutic intervention, a study could measure affective state before reflection and re-measure affective state after the reflection exercise. A finding pre-test post-test examination could reinforce a therapeutic implication of the counterfactual intervention. Furthermore, an area of potential investigation is understanding the cumulative effect of mentally subtracting grateful events on the affective state of older adults. Longitudinal studies demonstrated cumulative gratefulness can contribute to the subjective well-being of participants (Fredrickson, 2004; Liao & Weng, 2018). Similarly, it would be interesting to explore the cumulative impact of the "George Bailey" effect on the subjective well-being of participants.

Conclusion

The population growth of older adults is rapidly outpacing the growth of younger populations. At the same time, depression rates among older adults are rising. Given that

depression can lead to physical, mental, and social distress as well as poor quality of life, economic impacts, and higher mortality among older adults, providing broad approaches to address distress and depression symptoms for this large population is critical.

Approaching interventions through a lifespan model such as Erikson's (1963) stage theory provides an opportunity to assist older adults with the biological, psychosocial, and physical changes associated with aging. As individuals age, finding meaning in and relevancy of life events and relationships can lower depression symptoms. In this way, reminiscence therapy is aimed at reflecting on past events to build on the natural process of life review and address the health of older adults.

The present study utilized the reflective approach of counterfactual thinking to assist a person in a reminiscence process. The simple process of reflecting on what might not have been or the absence of an event from one's life has a demonstrated effect on the affective state of older adults. Specifically, imagining what if a positive relationship or event never happened results in an individual reporting an improved affective state. In this way, integrating the counterfactual "George Bailey" effect into encounters with older adults in social, health, and general community settings could foster opportunities that encourage psychosocial development. As noted by Erikson (1963), helping an older adult become curious, involved, and able to integrate experiences and achievements into their life assists in generating more positive feelings. The present study examined this process by having participants reflect on the absence of life's experiences and achievements, garnering more positive affective responses. In conclusion, the present study suggests that a simple turn of phrase from "what did you enjoy about being a psychologist" to

"what would your life be like if you *never* were a psychologist" can enrich and support the development of older adults.

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Appendix A

Consent Form

Consent Form

You are invited to participate in a research study conducted by a doctoral student in counseling psychology in the College of Social and Behavioral Sciences at Northwest University. The study is being conducted as part of dissertation research. The purpose of this study is to examine correlations between counterfactual thinking and the affective state of adults the age of 60 years.

If you agree to participate in the study, you will answer questions in an anonymous survey. We anticipate it will take 20-30 minutes to complete.

There are minimal risks associated with participation. Some individuals may be uncomfortable answering personal questions. You may choose not to participate in this research study. The benefit of taking part in this study is the opportunity to participate in the research process as a research subject investigating mood of older adults. In the rare event that participation causes distress, it is recommended that you contact the Institute of Aging Crisis Line at 1.800.971.0016. This is a 24-hour toll-free Friendship Line, and the only accredited crisis line in the country for people aged 60 years and older.

Participation in this study is voluntary. You may choose not to participate in this study at any time and for any reason. There will not be any negative consequences for you if you refuse to participate. You may refuse to answer any questions asked. Therefore, it is important that you DO NOT put your name on your response. You may keep this consent form for your records. By turning in this questionnaire, you are giving permission to use your responses in this research study.

The results from this study will be presented in a dissertation defense at Northwest University. All data forms will be destroyed by August 1, 2020.
If you have any questions about this study, contact Susan Johannsen at susan.johannsen15@northwestu.edu. If you have further questions, please contact my faculty advisor Leihua Edstrom at leihua.edstrom@northwestu.edu or 425-889-5367. You may also contact the Chair of the Northwest University IRB, Dr. Molly Quick, at molly.quick@northwestu.edu or 425-889-5327.

Thank you for your consideration of this request.

Susan Johannsen

Graduate Student
College of Social &
Behavioral Sciences

Leihua Edstrom, PhD

Associate Professor
College of Social &
Behavioral Sciences

Appendix B

Absence Group Questionnaire

Absence Group Questionnaire

Your Date of Birth_____ Your gender _____

Please describe one event for which you felt grateful from one of the following categories

1. Education
2. Health
3. Safety/security
4. Possessions
5. Break/vacation/weekend/holidays
6. Acts of kindness/support from others
7. Achievement/performance

Please describe ways this event might NEVER have happened or might NEVER have been part of your life?

Please describe ways in which it is surprising that this thing or event is part of your life?

In what year did the event occur? _____

Rate the extent to which you are feeling distressed.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling happy.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling thankful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling upset.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling grateful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling joyful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling sad.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling hopeful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling appreciative.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling lonely.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling depressed.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling secure.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling optimistic.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

How surprised were you that the thing/event you described occurred?

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

How well do you think you understood why this thing/event occurred?

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

How well do you think you understand why this thing/event was is in your life?

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

How hard it was to explain why the thing/event occurred?

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Appendix C

Presence Group Questionnaire

Presence Group Questionnaire

Your Date of Birth_____ Your gender _____

Please describe one event for which you felt grateful from one of the following categories

1. Education
2. Health
3. Safety/security
4. Possessions
5. Break/vacation/weekend/holidays
6. Acts of kindness/support from others
7. Achievement/performance

Please describe ways this event happened easily or was certain to become part of your life?

Please describe ways in which it is NOT at all surprising that this thing or event is part of your life?

In what year did the event occur? _____

Rate the extent to which you are feeling distressed.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling happy.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling thankful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling upset.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling grateful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling joyful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling sad.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling hopeful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling appreciative.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling lonely.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling depressed.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling secure.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling optimistic.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

How surprised were you that the thing/event you described occurred?

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

How well do you think you understood why this thing/event occurred?

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

How well do you think you understand why this thing/event was is in your life?

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

How hard it was to explain why the thing/event occurred?

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Appendix D

Control Group Questionnaire

Control Group Questionnaire

Your Date of Birth_____ Your gender _____

Rate the extent to which you are feeling distressed.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling happy.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling thankful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling upset.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling grateful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling joyful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling sad.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling hopeful.
1 2 3 4 5 6 7
1 = Not at all 7 = Extremely

Rate the extent to which you are feeling appreciative.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling lonely.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling depressed.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling secure.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Rate the extent to which you are feeling optimistic.

1 2 3 4 5 6 7

1 = Not at all 7 = Extremely

Appendix E

Translation Certification

Translation Certification

ASAPTranslate
support@asaptranslate.com

ata
Member # 265128

Certification of Translation

We, ASAP Translate, a professional translation services company having no relation to the client, hereby certify that our companies translations have been translated by qualified and experienced translators. In our companies best judgment the certified translations we provide are a true and accurate translation of the original documents, which truly reflects the content, meaning and style of the original documents.

We do not guarantee that the original is a genuine document, or that the statements contained in the original document are true. ASAP Translate assumes no liability for the way in which the customer uses the translation or any third party, including end-users of the translation.

Sincerely,

Thunder Hawk LLC
d/b/a ASAP Translate
State of New York
Address: 107 Edgemont Rd Scarsdale, NY 10583

CERTIFIED TRANSLATION
CERTIFIED
TRANSLATION
ATA MEMBER
ASAP TRANSLATE

Signed: Elizabeth Hawley

Grupo A: **Participante_____**

Fecha de Nacimiento_____ **Género _____**

Por favor describa un evento por el cual se sintió agradecido de una de las siguientes categorías.

1. Educación
2. Salud
3. Seguridad
4. Pertenencias
5. Descanso/vacaciones/fin de semana/días feriados
6. Actos de bondad/apoyo de otros
7. Logro/rendimiento

Por favor, describa las formas en que este evento NUNCA pudo haber sucedido o NUNCA pudo haber sido parte de su vida.

Por favor, describa las formas en que es sorprendente que esta cosa o evento sea parte de su vida.

¿En qué año(s) ocurrió dicho evento? _____

Valore hasta qué punto usted se siente **angustiado.**
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **feliz**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **agradecido**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **disgustado**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **agradecido**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **alegre**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **triste**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **esperanzado**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **apreciativo**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **solo**.
1 2 3 4 5 6 7
1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **deprimido**.

1 2 3 4 5 6 7

1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **seguro**.

1 2 3 4 5 6 7

1 = En lo absoluto 7 = Extremadamente

Valore hasta qué punto usted se siente **optimista**.

1 2 3 4 5 6 7

1 = En lo absoluto 7 = Extremadamente

¿Qué tan sorprendido estaba de que ocurriera la cosa/evento que describió?

1 2 3 4 5 6 7

1 = En lo absoluto 7 = Extremadamente

¿Qué tan bien cree que entendió por qué ocurrió esta cosa/evento?

1 2 3 4 5 6 7

1 = En lo absoluto 7 = Extremadamente

¿Cuán bien cree que entiende por qué esta cosa/evento estuvo en su vida?

1 2 3 4 5 6 7

1 = En lo absoluto 7 = Extremadamente

¿Qué tan difícil fue explicar por qué ocurrió la cosa/evento?

1 2 3 4 5 6 7

1 = En lo absoluto 7 = Extremadamente

Grupo B **Participante_____**

Fecha de Nacimiento_____ **Género _____**

Por favor describa un evento por el cual se sintió agradecido de una de las siguientes categorías.

1. Educación
2. Salud
3. Seguridad
4. Pertenencias
5. Descanso/vacaciones/fin de semana/días feriados
6. Actos de bondad/apoyo de otros
7. Logro/rendimiento

Por favor, describa cómo este evento sucedió fácilmente o era seguro que se convertiría en parte de su vida.

Por favor, describa las formas en que NO es para nada sorprendente que esta cosa o evento sea parte de su vida.

¿En qué año (s) ocurrió el evento? _____

Appendix F

Spanish Versus English Measured Affective State

Spanish Versus English Measured Affective State

Condition	English Mean of Index Scores	Spanish Mean of Index Scores	English Standard Deviation	Spanish Standard Deviation	English N	Spanish N
Absence	5.944	5.550	.703	.899	44	13
Presence	5.600	4.946	.814	.880	49	10
Control	5.344	5.253	.889	1.058	47	14
Totals	5.622	5.274	.8383	.962	140	37