Running head: COPING ON THE BRIGHT SIDE

Coping on the Bright Side:
Examining Age, Optimism and the Coping Process.

by

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A thesis submitted to the Faculty of Graduate Studies
and Research in partial fulfillment of the requirements for
the degree of Masters of Arts.

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Abstract

Research has shown that optimists and pessimists differ in their use of coping strategies (Scheier & Carver, 1985), and that these differences may change as a function of age (Marshall & Lang, 1990). Moreover, these differences in coping styles have been shown to have serious health consequences (Carver et al., 1993). Thus, the effects of dispositional optimism and age on coping processes were investigated in a community sample aged 24 years and older. Participants ($N = 76$) completed a measure of optimism (LOT-R), stressor appraisal and the coping methods they would endorse (Matheson & Anisman, 2003) along with measures of depression (BDI) and quality of life. Hierarchical regressions indicated that optimism was limited in its predictive utility of stressor appraisals, but was strongly and positively associated with the endorsement of effective problem-focused coping methods, whereas it was negatively associated with the use of emotion-focused strategies. Although age predicted the use of religion, it did not moderate the relations between optimism and the appraisal-coping process. Moreover, although optimism and both subjective appraisals and coping strategies endorsed were related, they each independently predicted depression, and indices of quality of life. These findings suggest that the coping process is relatively stable across the life-span.

Coping on the Bright Side: Examining Age, Optimism and the Coping Process.

The impact of stressful experiences and coping processes on well-being has been the focus of considerable research (e.g., Carver, Scheier, & Weintraub, 1989; Folkman & Lazarus, 1980). Given that individuals may be exposed to multiple stressors at any given time, coupled with the overriding stress of juggling these stressors (e.g., balancing work, home, and community responsibilities), the need to understand their impact, and how to cope effectively with them has become increasingly evident. Indeed, it has become clear that impairments of quality of life, and the emergence of psychopathology and even physical illness, may stem as much from the stress of day-to-day annoyances as from traumatic events (McEwen, 2000). Of course, the effects of day-to-day hassles may be particularly marked when superimposed on a background of other more traumatic stressors.

Despite the fact that coping with stressors has been studied across a range of populations, it is remarkable how little research has been conducted to evaluate coping processes as they change or evolve over the lifespan. Certainly, there have been numerous studies that have evaluated pathology associated with aging, including reports related to spousal caregiving among the elderly (e.g. Kiecolt-Glaser, Dura, Speicher, Trask & Glaser, 1991; Vedhara, Shanks, Anderson & Lightman, 2000). Yet, there appears to be a paucity of information available concerning coping processes that occur in relation to successful aging (i.e., in the absence of pathology such as dementia). In view of the aging population, which will become more pronounced as we approach 2010 when the first wave of baby boomers reaches retirement age, it is particularly important to understand fully how appraisals and coping with stressors varies across the lifespan. For instance, are the coping styles and strategies of elderly different from those of younger individuals, given that individuals go through many lifespan transitions comprising novel stressors requiring adjustments with respect to coping methods? Moreover, new

experiences later in life (e.g. death of a spouse, retirement, or change in residence) may potentiate the impact of previous stressors, depending on whether individuals had coped effectively with these previous experiences in the first place, and whether they learned from these earlier experiences how to effectively deal with subsequent ones. The processes underlying the effectiveness of particular coping styles over the lifespan remain ambiguous. Moreover, there are bound to be individual differences that may interact with the development of particular responses to stressors over the lifespan. The nature of the coping methods endorsed may vary with characteristics such as neuroticism (Bolger & Schilling, 1991), optimism (Scheier, Weintraub, & Carver, 1986), and gender (Matheson & Anisman, 2003).

Of particular interest in the present study was the role of dispositional optimism, which is a stable characteristic that reflects the extent to which individuals hold positive general expectancies. These expectancies might influence the extent to which an event is initially evaluated as a threat, along with beliefs about the individual's ability to effectively cope with the threat. Indeed, the propensity towards using either problem-focused or emotion-focused coping strategies appears to depend on whether or not one is high in optimism (Scheier et al., 1986). However, the relation between optimism and coping among the young and naive may be less direct than among populations with greater life experiences. Specifically, optimism may affect the initial appraisals of the event (e.g., the perceived invulnerability of the young), but have a more direct effect on the coping strategies adopted by the elderly (i.e., may recognize the threat, but have positive expectancies regarding their capacity to deal with it). It was the goal of the present thesis to examine differences in coping styles and their relation to well-being across the lifespan, including an examination of the differential role of dispositional optimism.

General Coping Model

Coping has been defined both as a style and as a process by which individuals respond to an event. To differentiate between these two definitions, the former is generally described in a trait or style paradigm, whereas the latter is described as a set of steps by which an event is appraised, classified and handled. By examining coping as a process, we can explore the functional aspects of the strategies utilized by individuals in response to an event appraised as problematic. The process definition represents the predominant emphasis in research on coping since the late 1970s (Billings & Moos, 1981; Folkman & Lazarus, 1980). The focus, from this perspective, is on how individuals perceive and respond to a specific stressful event, rather than their generalized perceptions of stress. Thus, characteristics of the stressful situation are examined in relation to how it is perceived and appraised by the individual, the coping strategies that individuals report using, as well as the affective outcomes associated with the event.

Stemming from Lazarus and Folkman's (1984) model of stress and coping, this thesis will focus on stress as a process. According to this model, a person can respond as an active agent to influence the consequences of stressors through behavioral, cognitive, and emotional strategies. As such, the stress response is a dynamic, continuous process that reflects the unique subjective experience of each individual. It is also an interactive process in the sense that the appraisal of an event, and the coping methods endorsed are deemed to be context-specific (Terry, 1991, 1994; McCrae, 1984). In effect, the individual can act and react to a situation given the context in which it occurs, and this situation may or may not change in response to the individual's coping effort.

Cognitive Appraisal

Appraisal is generally understood to refer to how individuals evaluate a particular event. From a process perspective, cognitive appraisal is a mental assessment that a person makes

regarding whether an event is threatening to their well-being (referred to as primary appraisal), and whether or not they have the necessary resources to meet the demands of the perceived threat (referred to as secondary appraisal). According to Folkman and Lazarus (1980), at the primary appraisal stage, individuals classify an event as irrelevant, benign-positive, or as stressful. Once an event has been appraised as stressful, it will be viewed as either a potential source of harm or loss, a threat, or a challenge (Folkman & Lazarus, 1980; McCrae, 1984).

An event perceived as entailing harm or loss involves situations in which damage or loss to the individual has already occurred, for example, being incapacitated and in pain following surgery. An event is regarded as a threat when an individual anticipates further harm or foresees future damage or losses, for example, the loss of income and the ability to meet one's financial demands following surgery. A challenge appraisal occurs in response to events perceived to provide the possibility for growth or gain. For example, being accepted into a graduate program might be viewed by an undergraduate student as stressful, but also as an opportunity to pursue her research, expand her skills, and present an avenue for a good career. Thus, the student might appraise this event as a challenge.

As individuals, we are continuously assessing our coping resources as we deal with everyday life, and secondary appraisals, while often described as occurring after primary appraisal of an event, do not necessarily follow one's primary appraisal of an event (Cohen & Lazarus, 1983). Appraisal of one's coping ability can occur prior to an event, during the event, immediately following the event, and long after the event has passed. Thus, secondary appraisal is an iterative process that serves to provide feedback concerning one's initial assessment or appraisal of an event. The threat of an event that is initially deemed to be stressful may become lessened or eliminated if one perceives that effective coping resources are available to mitigate the effects of the event. For instance, knowing that one can seek support from a spouse who will

effectively cover upcoming and ongoing expenses may offset the stress associated with being incapacitated and facing the loss of income as a result of being on disability benefits. Or, recognizing one's capacity to problem-solve to obtain funds, such as a scholarship, may reduce the stress associated with meeting the costs of education. Thus, stress is experienced when one deems one's coping resources to be insufficient in meeting the demands of the situation or event.

Elements that influence stressor appraisals include those related to the person as well as the situation itself (Cohen & Lazarus, 1983; Lazarus & Folkman, 1984). Situational dimensions include the controllability of the event (Endler, Macrodimitris, & Kocovski, 2000; Folkman, 1984), whereas factors related to the person include social status and a priori well-being (e.g. Cronkite & Moos, 1984), as well as personality differences (e.g. McCrae & Costa, 1986).

Control. Controllability of the event is one factor that has been shown to be an important predictor of how individuals respond to a stressful life event (Folkman, 1984; Lazarus & Folkman, 1984; Peacock & Wong, 1996). Research has shown that when events are viewed as controllable, individuals tend to use more problem-focused strategies such as planning, taking direct action, or even suppressing competing activities, in order to deal with an event (Carver et al., 1989; Endler, Speer, Johnson, & Flett, 2000; Forsythe & Compas, 1987). Such coping strategies are typically adaptive when an event is deemed controllable but, some argue, maladaptive when events are not controllable (e.g. Forsythe & Compas, 1987). When an event is perceived to be out of their control, an individual may adopt a more passive response by accepting the event or by adopting spiritual or existential coping strategies, or they may choose to deal with the emotional aspects of the event (Peacock & Wong, 1996). Although such strategies are typically maladaptive when the event is controllable, they may be adaptive when faced with an uncontrollable event (Carver et al., 1993). Maladaptiveness of emotion-focused strategies in

response to controllable events and problem-focused strategies in uncontrollable events is, however, debatable (Endler et al., 2000).

Personality. Several personality variables have been identified as having an influence on appraisals, including neuroticism (e.g., Bolger & Zuckerman, 1995; Gunthert, Cohen, & Armeli, 1999), self-efficacy (e.g., Chemers, Hu, & Garcia, 2001), and dispositional optimism (e.g., Chang, 1998; Chemers et al., 2001). As a predisposition towards experiencing negative affect (McCrae, 1990) neuroticism has been found to be associated with both more negative primary appraisals and secondary appraisals (Gunthert et al., 1999). Self-efficacy has also been found to affect the appraisal process, in that students with higher academic self-efficacy were shown to be more likely to positively appraise the pressures of university work as a challenge rather than a threat (Chemers et al., 2001). Lastly, dispositional optimism, which will be further discussed in subsequent sections of this paper, has also been shown to directly affect the appraisal process (e.g. Chang, 1998; Chemers et al., 2001).

Coping Responses

Once an appraisal has been made, a coping response is formulated and/or activated by the individual. However, just as appraisals are subject to influences from other sources, the coping response is also subject to influences that impact the types of coping strategies that are endorsed in reaction to a situation or event appraised as stressful. As previously mentioned, coping responses are generally activities undertaken by an individual in reaction to an event perceived as stressful. These coping responses, or strategies, have been classified in several different ways, although the predominant framework groups strategies into those that are problem-focused versus emotion-focused (Carver et al., 1989; Lazarus & Folkman, 1984). Nonetheless, in addition to, or subsumed under, these principle categories is a broad range of strategies (Carver et al., 1989). For example, individuals may employ cognitive restructuring (re-evaluating the relation between

the person and the threat), positive activity (constructive or recreational activities), social support seeking (as a buffer or venting outlet), relationship-focused coping, religion, humor, and/or rumination (Carver et al., 1989; Endler & Parker, 1994; Nolen-Hoeksema, Parker & Larson, 1994; O'Brien & DeLongis, 1996). Furthermore, several of these dimensions may subsume other strategies. For instance, emotion-focused coping may comprise emotional expression, emotional containment, blame, withdrawal, denial, or passive resignation. Likewise, a given strategy may actually serve different functions. Social support seeking may reflect an effort to distract oneself from problems (engaging in activities with others that are unrelated to the stressor), a component of problem-solving (seeking information or assistance), or it may be a form of emotional expression (seeking out others to tell them about their problems) (Endler & Parker, 1994; Parker & Endler, 1992).

Where problem-focused coping generally refers to actions or activities that focus on changing the stressful situation directly (e.g., problem-solving), emotion-focused coping refers to activities that focus more on regulating one's emotional reactions to the situation (e.g., expressing emotions). While these are the predominant categories referred to in past research, others categorize various strategies along approach (non-avoidant) and avoidance dimensions (Suls and Fletcher, 1985). Approach coping strategies are those that focus both on the source of stress and reactions to it (e.g., focusing attention on the problem), whereas, avoidant coping strategies are those that place focus away from both the source of stress and reactions to it (e.g., withdrawal or denial). Other researchers have proposed hierarchies of types of coping in order to gain a deeper understanding of the stress process (Compas et al, 2001; Tobin, Holroyd, Reynolds, & Wigal, 1989), as well as begun to study patterns in coping responses by examining group profiles (Matheson & Anisman, 2003).

While there are many variables that can influence an individual's choice of coping strategies, two such dimensions that will be discussed here include gender (e.g., Diehl, Coyle, & Labouvie-Vief, 1996), and age (e.g. Aldwin, Sutton, Chiara, & Spiro, 1996; Diehl et al., 1996).

Sex differences in coping. It has been noted by numerous researchers that coping strategies vary as a function of gender (e.g., Diehl, Coyle, & Labouvie-Vief, 1996; Matheson & Anisman, 2003; Nolen-Hoeksema, 1998). For example, Diehl et al (1996) found that women were more likely to use coping strategies that involved having empathy, the ability to sublimate, and to suppress, and required a greater tolerance for ambiguity. Unlike men, they were less able to cope by tampering or by diminishing their feelings. Men, on the other hand, were more likely to intellectualize the problem, or to deny its existence. These findings were obtained in a cross-sectional, age-comparative study examining age and sex differences across the lifespan.

Further research has shown that women and men differ in the direction of blame when coping with a conflict situation, with men directing blame outward and women directing blame inward (Cramer, 1979, 1991; Matheson & Anisman, 2003). Contrary to what might be expected, Folkman and Lazarus (1980) found no sex differences on the use of emotion-focused coping strategies. They did, however, find differences in problem-focused coping, with men using these strategies more than women at work and in unclear situations (those needing more information), or situations requiring acceptance rather than action.

Age. Controversy surrounds the issue of how age affects the coping process. Some suggest that age does not result in any discernible systematic change in coping strategies, other than those due to situational demands (Folkman, Lazarus, Pimley, & Novacek, 1987). As part of the Normative Aging Study (NAS), Aldwin, Sutton, Chiara, and Spiro (1996) found that the type of problems reported varied systematically with age, with a shift from episodic to more chronic stressors with age. It would not be surprising if this change in the nature of the stressors affected

both appraisal and coping processes, and indeed, age differences in coping were considerably attenuated when controlling for type of problem, such that no differences were found in terms of perceived stressfulness or coping efficacy (Aldwin et al., 1996). On the whole, research examining age differences in coping have demonstrated that while the strategies utilized by older individuals may be fewer in number, they do not appear to be any less effective in dealing with either novel (health problems) or ordinary (relocating) difficulties (Meeks, Carstensen, Tamsky, Wright, & Pellegrini, 1989). Interestingly, Meeks et al. (1989) found that although age was unrelated to the effectiveness of the coping strategies used, older individuals reported much higher ratings of effectiveness than did the younger individuals in this research. Older people also reported fewer stressors overall than did the younger individuals, leading these researchers to suggest that stressful situations are perceived differently by older people. Finally, the researchers also reported that older individuals used fewer active coping strategies than did the younger individuals, and suggested that such direct active responses would likely be less effective given that older individuals generally experience more uncontrollable negative events such as failing health and loss of family and friends. Thus, the less active coping in this instance was not less effective, but rather was appropriate to the type of stressors these respondents encountered (e.g. chronic health problems, relocation to retirement apartment, hospitalization for bone-related problems).

Other researchers have noted developmental changes in response to stressors. For instance, Diehl, Coyle, and Labouvie-Vief (1996) found that compared to younger individuals (10-29 years of age), older individuals (46-87 years of age) appeared to use a combination of coping strategies that may have had a reciprocal effect on the ability to derive more positive appraisals. Specifically, older individuals were more likely to use cognitive restructuring and suppression when faced with a stressful event, whereas younger respondents showed greater

tendencies towards blaming others and denial. As a result, older participants indicated a greater ability to learn from the experience, or to reappraise it in such a way as to make it less threatening. These results have also been replicated in longitudinal studies (e.g. Field & Millsap, 1991; Helson & Moene, 1987; Helson & Wink, 1992).

Given the inconsistencies across studies in whether coping strategies change as a function of age, it is important to determine which aspects of the individual may differentially act as moderators to the coping process across the lifespan and across different situations. One such individual difference that will be examined in this thesis is dispositional optimism. Grounded in Seligman and Czikszentmihalyi's (2000) views on moving the focus of psychology towards an examination of factors that allow individuals to flourish despite experiencing negative circumstances, optimism was selected as the individual difference variable of interest.

The Role of Dispositional Optimism

Dispositional optimism has been defined as "a generalized expectancy for positive outcomes" (Scheier & Carver, 1985) that creates an approach to the world that affects our interaction with it. An optimist is one who, when faced with a stressful life event, expects to be able to reach a positive conclusion, whereas a pessimist is one who, when faced with the same stressful life event, expects the worst. Scheier and Carver (1985) maintain that this is a stable personality characteristic and should be examined as a predictor of behavior rather than merely as an outcome (e.g. morale after a negative event), although there is also evidence that it can be influenced by environmental circumstances and life experiences (Robinson-Whelen et al., 1997).

The theoretical basis for Scheier and Carver's (1985) conceptualization and measurement of dispositional optimism comes directly from their self-regulation framework (see Carver & Scheier, 1981, 1983 for complete discussion). They reasoned that, in order to self-regulate one's sense of well-being, individuals assess situations or events to form outcome expectancies to

which they next formulate active responses. To the extent that individuals hold positive expectancies, they are more likely to demonstrate greater persistence to achieve positive outcomes than those who hold negative outcome expectancies (Carver, Blaney, & Scheier, 1979). Along these lines, Scheier and Carver (1985) hypothesized that individuals might have a generalized expectancy style, which they labeled dispositional optimism, and this general positivity bias would have similar implications for the adoption and persistence in behaviors that are intended to achieve the positive outcomes the individual anticipated. Indeed, dispositional optimism was found to be associated with a greater likelihood of adopting active coping responses that increased the individual's ability to derive positive well-being (Carver et al., 1993; Scheier & Carver, 1985; Scheier et al., 1989).

Primary appraisal is purported by Lazarus and Folkman (1984) to combine information gleaned from the environment with a person's own personality traits. Thus, dispositional optimism could be viewed as providing an expectancy-based lens that would color a person's perception of an event or situation in either a positive or negative hue (Hamid, 1990). However, based on the definition of dispositional optimism as described by Scheier and Carver (1985), one would not expect this perception to necessarily be illusory, as high levels of dispositional optimism reflect positive expectancies, which in turn lead to active responses to stressful events or situations. Thus, these appraisals may reflect realistic outcomes based on the impact of expectancies on responses. Consistent with this possibility, Hamid (1990) found that although optimists and pessimists did not differ in the number of flu episodes, they did differ in their reported perceptions of them. Specifically, pessimists reported longer flu durations, more acute symptoms, and more symptoms generally than did the optimists. As well, they reported more causes of distress and greater expectancy of recurrence. That pessimists, as compared to optimists, expected to experience influenza again in the future demonstrated a negative

expectancy that might serve to make them more hypervigilant for signs of the flu rather than towards taking action to prevent a recurrence. On the other hand, optimists reported engaging in more preventive and health promoting behavior (e.g., exercised more, watched their nutritional intake, took vitamins, got more sleep) than did the pessimists. It is, however, important to note that the data were collected using a retrospective design and relied on students' memories of the flu episodes. Thus, it is difficult to determine whether the differential reporting reflected differences in how the illness was subjectively or objectively experienced. Nonetheless, it does seem fairly clear that to the extent that the relationship between coping, appraisals, and the situation is reciprocal and dynamic, there are likely very real differences in the outcomes experienced by optimists and pessimists.

Indeed, along these lines, Chang (1998) has argued that dispositional optimism influences appraisal at the secondary but not primary appraisal stage. Chang demonstrated that among students experiencing the stress of an upcoming exam, optimists and pessimists did not differ in terms of their initial assessment of the event as stressful, but did differ in terms of their secondary appraisal and coping responses. Specifically, optimists reported higher levels of control and effectiveness for dealing with the exam, whereas optimists and pessimists did not differ in terms of how important or relevant the exam was to them. Given this, it is likely that optimists would be more likely to adopt strategies to effectively cope with the exam, potentially influencing outcomes, much as the students in the Hamid (1990) study.

As noted by Hamid (1990) there is some support for differences in coping strategies used by optimists and pessimists. Scheier, Weintraub, and Carver (1986) also noted differences in coping strategies reported by those high versus low on optimism, in that optimists who perceived a stressful event as controllable were more likely than pessimists to use problem-focused coping strategies, and to use positive reinterpretation or acceptance when it was seen as uncontrollable.

Pessimists, on the other hand, were more likely to use denial or to distance themselves from the problem. On the whole, in both student (Scheier et al, 1986) and community samples (Scheier, et al, 1989), optimists have typically favored problem-focused strategies, whereas pessimists favored more emotion-focused strategies.

Chang (1998), however, argued that it was not their use of problem-focused versus emotion-focused that differentiated optimists from pessimists, but rather their use of engaged (approach) versus disengaged (avoidance) strategies. Specifically, he found that when faced with the stress of a final exam, optimists were more likely to use strategies such as problem-solving, emotional expressiveness, and seeking social support (engaged) whereas pessimists were more likely to use strategies such as wishful thinking, self-criticism, and social withdrawal (disengaged). Chang further noted that this difference in coping strategies was associated with differences in students' physical and psychological adjustment.

Research done with community samples has further demonstrated how the differences in coping styles adopted by optimists and pessimists could have serious health consequences. Optimists' use of effective coping has been associated with better rates of recovery from coronary artery bypass surgery in men (Scheier et al, 1989), and with the ability to manage the stress of dealing with breast cancer in women (Carver et al, 1993). Optimism has also been related to outcomes such as success with completing an aftercare alcohol treatment program (Strack, Carver, & Blaney, 1987), lower levels of blood pressure (Räikkönen, Matthews, Flory, Owens & Gump, 1999) and to greater precautions to prevent colds (Hamid, 1990). Thus, it seems that as an individual difference variable, optimism may evoke responses that can affect overall well-being and health.

Issues and controversies. While dispositional optimism may be a key factor in determining adaptive responses and outcomes, it is also possible that this construct subsumes a

combination of personality characteristics that affect coping responses including self-mastery, a lack of neuroticism, and general positive affect (Scheier, Carver, & Bridges, 1994). However, although there is conceptual overlap, Scheier et al. (1994) have demonstrated that dispositional optimism has unique properties in relation to coping propensities. For example, even when controlling for self-esteem, self-mastery, neuroticism, and trait anxiety, optimism was uniquely predictive of coping responses reflecting planning, positive reinterpretations and growth, seeking support for instrumental reasons, and turning to religion. However, they did not find that optimism predicted depression or symptom reporting over and above these other characteristics. Optimism may differentially affect secondary appraisals as we age given that experience may teach us which situations can and cannot be controlled. One of the goals of this thesis is to determine whether there are lifespan differences in dispositional optimism and whether these might help differentiate appraisal and coping processes.

A second controversy surrounding the construct of dispositional optimism is whether or not it should be regarded as a unidimensional bipolar construct, or as two orthogonal dimensions (optimism and pessimism). Research on optimism has strongly relied on the use of the Life Orientation Test (LOT; Scheier & Carver, 1985) as its operational definition. However, there has been considerable criticism concerning how the LOT is used, and scoring reflects the underlying assumption that optimism is a unidimensional construct. Indeed, factor analytic studies examining responses to the LOT have consistently found a two-factor model of optimism and pessimism (Marshall & Lang, 1990; Scheier & Carver, 1985). Among those who continue to regard the construct as unidimensional note that the two factor model is more likely due to item format (positive vs. negative response bias), rather than actual item content (Scheier & Carver, 1985). Thus, one difficulty with a clear conclusion with respect to the dimensionality of optimism is that currently the two-dimensional model is confounded with a measurement artifact.

Nonetheless, it is argued that consideration of dispositional optimism as a two-dimensional construct has been found to be important in certain situations or at certain times across the lifespan (Robinson-Whelen, Kim, MacCallum, & Kiecolt-Glaser, 1997). Specifically, Robinson-Whelen et al. (1997) found that pessimism, not optimism, uniquely predicted anxiety, perceived stress, and self-rated health in both caregivers and non-caregivers. Overall, it was better, health-wise, to be low in pessimism than it was to be high in optimism. Thus, considering optimism and pessimism as independent constructs allowed consideration of whether the reported beneficial effects of optimism (Scheier et al., 1985, 1989) were due to people's tendency to "think positively", to avoid thinking negatively, or to some combination of the two.

The relation between optimism and pessimism may change over the lifespan. Specifically, although, Scheier and Carver (1985) found that pessimism and optimism were correlated among undergraduate samples, there is some research to support that optimism and pessimism are not correlated among older samples (e.g. Mroczek et al., 1993; Plomin et al., 1992). Similarly, these differences in relations may vary as a function of the extent to which individuals are under chronic stress. For example, Robinson-Whelen, Kim, MacCallum, and Kiecolt-Glaser (1997) examined the importance of both optimism and pessimism in a group of older adults, and in particular, in relation to caregiving stress and health. This longitudinal study was conducted with a sample of respondents caring for a family member with Alzheimer's disease (AD) and a second group that consisted of non-caregiving adults who resided in the community. The LOT was administered twice: once in the first year of the study and again in the third year. Their results supported the contention that the LOT consisted of two separate factors (optimism, pessimism) and the factor structure was stable across both caregivers and non-caregivers. More importantly, given the response bias confound, was the finding that among those experiencing profound life stressors (i.e., caregivers), optimism was negatively related with pessimism,

negative affect, and concurrent levels of anxiety and depression. This pattern of relations was not found among those who were not caregivers. Despite the fact that optimism and pessimism scores were found to be stable over a two year period for both caregivers and non-caregivers, on average, caregivers were less optimistic than non-caregivers as well as showing trends towards greater pessimism. Consequently, it is possible that although optimism and pessimism are stable traits, experiencing chronic stressors could, to some degree, influence one's expectations for positive outcomes.

Lifespan Changes in Optimism and Coping

To a varying degree, old age brings with it losses or unwanted changes in one's health, functional independence, social relationships and roles, as well as economic circumstances. How we cope with these changes or losses has much to do with who we are, what resources we have available, and how we approach change. For convenience, old age is often defined as persons 65 and older primarily because this is the retirement age dictated by social conventions. Nonetheless, age alone does not define what it means to be elderly or to have reached old age. Gerontologists today argue that pathology, rather than an effect of aging, is more likely responsible for early decline in the elderly (Smith, Borchelt, Maier, & Jopp, 2002). Retirement as a marker of old age has its problems and several theories of adjustment have been proposed to explain it from a psychosocial perspective (Atchley, 1976, 1989; Cummings & Henry, 1961; Havighurst & Albrecht, 1953; Nadler, Damis, & Richardson, 1997). With aging many changes in lifestyle, responsibilities, and health are experienced. Retirement is but one of the events that may be seen as stressful, and not all retirees appraise it as such and many make the transition from work to retirement quite well. Indeed, in their Normative Aging Study, Bosse, Aldwin, Levenson and Workman-Daniels (1991) found that only 30% of the participants rated retirement as stressful. Other changes that occur over the lifespan can be experienced as just as stressful, if

not more so, including such life events as marriage, having children, graduating from school, getting a new job, and so on. For this reason, aging needs to be regarded as a continuous process, bringing with it events that contribute to experiences, learning processes, and well-being occurring over the lifespan. Given this, it seems reasonable to expect that coping responses across the lifespan may evolve or adapt to those situations and circumstances that are encountered as we age.

Optimism may allow an individual the experiential latitude to appraise a difficult situation as manageable given the knowledge that they possess the necessary coping strategies to deal effectively with the event. An optimistic younger person might evaluate a situation positively, failing to recognize the seriousness and risk involved believing in the possibility that good things will result. Conversely, an optimistic older individual may evaluate the same situation as positive but challenging, recognizing the risk involved in obtaining a good result but knowing that they possess the necessary skill or experience to survive it. Moreover, potential differences in coping as a function of age may also be, in part, due to one's developmental maturity and breadth of appraisal response choices such that not all who make it to old age have necessarily acquired the experience and wisdom to deal successfully with a stressful situation or event. Optimism may play an important role in relation to the coping response and may do so differentially across the lifespan.

Purpose of this Research

Research has shown that coping strategies endorsed by optimists differ from those endorsed by pessimists (e.g. Scheier & Carver, 1985, Scheier et al., 1989), although whether the impact is on appraisals or the coping response itself is not clear. Additionally, a two-factor model of dispositional optimism may be better as a basis for predicting psychological and health outcomes, although this has only been explored, to date, in older samples (Robinson-Wheeler, et

al., 1997). Given age-related differences in experiential and life changing events, and the requisite coping responses, it is possible that the relations between optimism, appraisals, coping, and well-being vary across the life-span. The present investigation was undertaken to explore this possibility.

A sample of community individuals ranging in age from 24 years and older was examined. This sample was selected for two reasons. First, it was important to examine individuals who were not currently in a university setting, because such a sample generally has a restricted range of potentially important factors such as level of education, social class, etc. Second, there already exists a plethora of research examining the coping processes with this group (e.g. Endler, Kantor, & Parker, 1994; Scheier & Carver, 1985; Scheier et al, 1986).

Hypotheses. This study was designed to test the following hypotheses:

(1) A significant interaction between age and the relation between optimism and pessimism was predicted. Specifically, the relation between optimism and pessimism was expected to decrease as age increased. Note that the results of the first hypothesis determined whether or not the remaining hypotheses included optimism as a single variable or as two independent constructs measuring optimism and pessimism, respectively.

(2) The relation between optimism/pessimism and appraisal was expected to be moderated by age. Specifically, among older individuals high levels of optimism were expected to predict higher levels of perceived threat, and stressfulness of the situation. However, no effects of age were expected on the relation between optimism/pessimism and the perceived controllability or importance of the event.

(3) The relation between optimism/pessimism and coping methods endorsed were expected to be moderated by age. Specifically, as age increased, high levels of optimism ought to

have predicted the endorsement of problem-focused coping methods but not the use of emotion-focused coping methods.

(4) As age increased optimism/pessimism was expected to be related to lower depressive symptomatology and higher quality of life.

(5) The relations between optimism/pessimism and well-being were expected to be mediated by appraisal and coping processes. To the extent that these processes were differentially related to optimism as a function of age, they were further expected to play different roles in the mediation process, as a function of age.

Method

Participants

Both men and women from the community ($N = 76$) were solicited by means of flyers, a newspaper advertisement, and word of mouth (see recruitment notices Appendix A). The study was advertised as involving an assessment of how individuals deal with stress. Those who contacted us were invited to participate in a study on stress and coping involving three measurement times (due to the fact that this study was integrated with the conduct of a separate study that is not the focus of this thesis). Individuals who were 25 years of age or older were eligible. Participants were compensated for travel costs.

Respondents were between the ages of 24 and 89 ($M = 55.93$, $SD = 15.69$), and age, as a variable, did not violate the assumption of normality nor showed any evidence of skewness or kurtosis issues. Roughly, a quarter of the sample ($n=21$; 27.6%) was male, and 55 (72.4%) were female, and they did not significantly differ in age. In terms of their reported marital status, 11 (14.5%) were single, 43 (56.6%) were either married or cohabiting, 15 (19.7%) were divorced and 7 (9.2%) were widowed. Roughly 75% of the sample had post-secondary education, such that, 31 (40.8%) indicated they had 1-3 years of college or university, 24 (31.6 %) had an

undergraduate degree, and 10 (13.2 %) had a master's degree. Of the remaining respondents, 1 (1.3 %) had grade 8 or less, 3 (3.9 %) had some high school, 3 (3.9 %) had completed high school, 1 (1.3 %) had a doctorate degree and 3 (3.9%) had professional degrees.

Procedure

Appointments were made to meet with participants either at their home, work, or at the university. The first phase of this study involved the completion of a series of questionnaires assessing demographic information, and of interest to the present study was the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) (see Appendix B for all measures).

The second phase involved the self-administered provision of neuroendocrine indices of stress (salivary cortisol), and was not included in the present thesis. Additional measures relevant to the present thesis were assessed in the final phase of the study, which took place approximately 7- 21 days later. Among other measures, participants completed the Life Orientation Test-Revised (LOT-R; Carver, 2001), a measure of stressor appraisal and coping styles (SCOPE) (Matheson & Anisman, 2003) , and a Quality of Life scale (Ravicki, Turner, Brown & Martindale, 1992).

Informed consent and contact numbers and debriefing were provided at each phase (see Appendix C for all forms). Responses were monitored in the event that an individual may have responded with 2a or higher on item 9 of the Beck Depression Inventory (suicidal ideation). Had there been any such individuals, they would have been contacted within 24 hours of completing the questionnaire in order to encourage them to seek counseling after consulting with their own physician. There were no instances of this occurring in the present study.

Measures

Background information. All participants were asked to provide general background information including their age, gender, marital status and highest educational level attained.

Dispositional Optimism. The 10-item revised version of the Life Orientation Test (LOT-R) (Carver, 2001) was used to measure generalized positive outcome expectancies (dispositional optimism). This version consists of six true items and four filler items to which participants indicate their agreement on 5-point Likert scales ranging from strongly disagree (0) to strongly agree (4). The revised version of the scale was used because the original scale was demonstrated to overlap with other constructs (Marshall & Lang, 1990; Marshall, Wortman, Kusulas, Hervig, & Vickers, Jr., 1992; Smith, Pope, Rhodewalt, & Poulton, 1989). Scheier et al. (1994) reassessed the items on the original LOT for built-in confounds and identified two items from the positively worded set as potentially problematic because neither explicitly referred to expectations of positive outcomes. Thus, they revised the scale and replaced these two items with a new expectancy item worded in the positive direction and removed one item from the set of negatively worded items. Construct validity and discriminant validity were assessed and empirically demonstrated for this scale (Carver et al., 1994).

At least initially in the present study, the scale was scored along two factors (optimism, pessimism), with high scores on the positively stated items reflecting the degree of expected positive outcomes (optimism) (Cronbach's $\alpha = .81$), and high scores on the negatively stated items reflecting the degree of expected negative outcomes (pessimism) (Cronbach's $\alpha = .69$) (Carver et al., 1994). However, because the two factors were empirically related to each other, a total score measuring a person's tendency towards positive outcome expectancies is typically examined.

Appraisal. At the outset of the appraisal/coping measure, participants identified a recent (in the past month) difficult social interaction that they had experienced. By choosing a specific category of stress, it was more likely that responses across participants could be compared. They then provided their subjective appraisals of this social stressor in relation to four items rated along

7-point scales ranging from (1) not at all to (7) totally or extremely. The items assessed appraisals of control ("How much control do you feel in the situation described above?"), importance ("How important was achieving a good resolution to you?"), range of threat ("Did this event only affect you in a minor way, or do you feel that it affected almost everything you did"), and stress ("How stressed do you feel about this event?").

Coping strategies. A 48-item measure of coping strategies was used to assess respondents' endorsed actions in relation to the self-identified difficult social interaction (Matheson & Anisman, 2003). Respondents rated each item using a 5-point scales ranging from never (0) to almost always (4). This coping scale was selected for its multidimensional assessment of coping strategies including both cognitive/behavioral (problem-solving, cognitive restructuring, active distraction, cognitive distraction, and rumination) and socio-emotional strategies (humour, social support seeking, emotional expression, other-blame, self-blame, and passive resignation). Responses were averaged for each subscale to create 13 composite coping indices, such that higher scores reflected greater endorsement of the specific strategy.

To evaluate whether particular strategies co-occurred and hence could be combined for subsequent analyses, scores from the 13 coping subscales were factor analyzed. Following a principle components analysis, the scree test indicated the presence of four factors. Based on rotated (varimax) loadings of greater than .40, these four composite indices appeared to reflect (1) problem-focused coping (social support, cognitive restructuring, problem solving, humor) (Cronbach's $\alpha = .90$, based on all items included in this index), (2) emotion-focused coping (rumination, blame, emotional containment, emotional expression) (Cronbach's $\alpha = .87$), (3) avoidance-focused (passive resistance, avoidance, activities) (Cronbach's $\alpha = .78$), and (4) religion, which did not load onto any of the four factors, and so was treated as a separate strategy

(Cronbach's $\alpha = .92$). Scores on the respective subscales were unit-weighted and averaged, where relevant, to create the four coping indices.

Depression. The 21-item Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) was used to assess depressive symptoms. Respondents were asked to select from sets of response choices reflecting increasing degrees of problem severity (e.g., from 0 ("I do not feel sad") to 3 ("I am so sad or unhappy that I can't stand it")), with sets of responses varying in number from 4 to 6 response choices. Responses were summed to provide a single index of depressive symptomatology, such that higher scores reflect greater depressive symptoms (Cronbach's $\alpha = .82$).

Quality of Life. An additional set of single item questions was used to assess general life satisfaction in 7 areas including: physical health, professional life, social life, home life, emotional state, recreational life, and life as a whole (Ravicki et al., 1992). Respondents rated these questions using 11-point scales ranging from completely dissatisfied (0) to completely satisfied (10).

Results

Initial analyses were conducted to document the descriptive characteristics of the present sample on the conceptual variables of interest. To assess the hypotheses, series of hierarchical regressions were conducted. Given the interest in moderating effects, prior to conducting analyses, continuous measures were standardized in order to ensure their equivalent contribution to the variance associated with their interaction terms. Significant interactions were followed up by simple slope analyses.

For items that respondents left unanswered, missing data was replaced with their mean response on the respective scale. Assumptions of normality and heteroscedasticity were examined for each of the variables to ensure that no serious violations of these assumptions were evident.

Although several variables showed mild negative skewness (optimism, stressor importance, and several quality of life dimensions, namely, physical health, home life, and life as a whole), and depressive symptomatology was slightly positively skewed, none of these distributions was sufficiently skewed to consider transformations (ie., z-values did not exceed ± 3). Further, generally speaking, regression analyses are robust to even moderate violations of the normality assumption (Stevens, 2002). The presence of outliers was also assessed, and although there were a few outliers, none were found to be influential in altering the results of any analyses, and therefore all cases were retained. Because multicollinearity can make for ill-definable results in multiple regression, this assumption was examined in all regression analyses, and no violations were observed for any of the analyses.

Initial Analyses

Descriptive statistics. As shown in Table 1, respondents reported high levels of optimism overall with means comparable to those reported by Scheier et al. (1994) for both college students ($M = 14.33$, $SD = 4.28$) and for a community sample of bypass patients ($M = 15.16$, $SD = 4.05$). Levels of optimism and pessimism did not differ for men and women. In terms of the appraisals of the stressor experience reported, Table 1 shows that respondents tended to appraise the difficult social interaction as relatively highly important and low on controllability, but moderate in terms of perceived range of threat and stressfulness. There were no differences in the subjective appraisals reported by male and female participants.

Consistent with past research, a 4 (coping strategy) $\times$ 2 (sex) mixed model analysis of variance, indicated that participants differentially endorsed the four coping strategies, $F(3, 204) = 9.19$, $p < .001$; $\eta^2 = .119$. A Greenhouse-Geisser correction was used to deal with sphericity. As Table 1 shows, respondents tended to endorse problem-focused strategies more than any other strategies. There was a marginal main effect for sex, $F(1, 68) = 3.15$, $p = .08$, in that women

were more likely to indicate higher endorsements overall. Although this was only significant at a pairwise level for problem-focused strategies, the interaction was not significant, $F(3, 204) = 2.16, ns$.

There was a fair range of depressive symptoms (from 0 to 28) in the present sample ($M = 8.23, SD = 6.17$). Although the majority reported minimal, if any, symptoms of depression (68.4% scored less than 11, $n = 52$), a sizable proportion reported mild mood disturbance symptoms (19.7% scored between 11 and 16, $n = 15$), whereas relatively few reported borderline clinical depression symptoms (3.9% scored between 17 and 20, $n = 3$) or moderate levels of depression (5.3% scored between 21 and 30, $n = 4$).

Finally, as indicated in Table 1, on average participants reported modestly high levels of satisfaction with each of the quality of life dimensions assessed in the present study, with values comparable to those reported in other normative samples.

Table 1
Summary of Descriptive Statistics.

Measure (potential range)	Men M (SD)	Women M (SD)	Total M (SD)	t	df
Optimism (0-4)	2.60 (.834)	2.96 (.834)	2.86 (.805)	-1.74	67
Pessimism (0-4)	1.70 (.708)	1.50 (.569)	1.55 (.569)	1.21	67
LOT-R (0-24)	14.70 (3.32)	16.34 (3.83)	15.86 (3.74)	-1.67	67
Appraisal (1-7)					
Control	3.15 (1.18)	3.56 (1.83)	3.44 (1.67)	-0.93	68
Importance	6.30 (.66)	5.96 (1.44)	6.06 (1.27)	1.01	67
Range of threat	4.55 (1.70)	4.22 (1.97)	4.31 (1.89)	0.66	68
Stress	4.45 (1.96)	3.88 (1.93)	4.04 (1.94)	1.11	68
Coping Strategies (0-4)					
Problem-focused	2.23 (.76)	2.62 (.65)	2.51 (.69)	-2.19*	68
Emotion-focused	1.91 (.69)	1.66 (.53)	1.73 (.59)	1.61	68
Avoidance-focused	1.82 (.48)	2.11 (.62)	2.02 (.59)	-1.88	68
Religion	1.40 (1.57)	1.88 (1.48)	1.75 (1.41)	-1.32	68
Depression (0-3)	9.12 (5.07)	8.18 (6.40)	8.43 (6.05)	0.59	73
Quality of Life (0-10)					
Physical health	6.95 (2.26)	6.64 (2.76)	6.72 (2.61)	0.44	68
Professional life	4.66 (2.42)	6.10 (2.80)	5.64 (2.75)	-1.86	54
Social life	5.90 (2.38)	6.90 (2.56)	6.61 (2.54)	-1.50	68
Home life	7.20 (2.06)	7.56 (2.42)	7.45 (2.31)	-0.58	68
Emotional state	6.25 (2.55)	6.98 (2.52)	6.77 (2.54)	-1.08	68
Recreational life	6.45 (2.42)	6.64 (2.78)	6.58 (2.67)	-0.26	68
Life as a whole	6.85 (2.06)	6.96 (2.86)	6.93 (2.65)	-0.15	68

* $p < .05$

Note. t-values provided are for the differences between male and female participants.

Correlations among predictors. In order to examine the associations between age, appraisals (controllability, importance, range of threat, and stress), and coping strategies (problem-, emotion-, avoidance-focused, and religion), Pearson correlation coefficients were examined (see Table 2). Examination of these correlations revealed that age was not related to any of the appraisal measures. Further, the appraisal indices were not related to one another, with the exception that greater perceptions that the threat affected a range of activities was related to greater self-reported stress in relation to that event.

Although, on the whole, age was unrelated to coping strategies, it was significantly related to religion, in that religious coping was increasingly likely to be endorsed with greater age. Interesting, three of the four appraisal dimensions were related to emotion-focused coping, in that the more participants endorsed this form of coping, the more likely they were to appraise the stressor as less controllable, more wide-ranging, and more stressful. In contrast, but not surprisingly, greater endorsement of problem-focused coping was associated with reduced stress. Finally, endorsements of the coping strategies were relatively independent of one another, with the exception of a positive association between problem-focused and avoidance coping strategies.

Table 2.

Summary of Correlational Statistics.

Predictor	1	2	3	4	5	6	7	8	9
(1)Age									
(2)Control	.032								
(3)Importance	-.111	.210							
(4)Range of threat	.004	.029	.205						
(5)Stress	-.039	-.162	-.138	.477**					
(6)Problem-focused	-.057	-.012	.235	.019	-.261*				
(7)Emotion-focused	-.097	-.404**	-.043	.304*	.511**	-.001			
(8)Avoidance	.157	-.131	.217	-.113	-.037	.285*	.062		
(9)Religion	.302*	.077	.054	.090	-.072	.200	-.106	.192	

* $p < .05$, ** $p < .01$ *Main Analyses*

Relation between optimism and pessimism as a function of age. It was hypothesized that the relation between optimism and pessimism would decrease with age, and if this was in fact the case, that these dimensions ought to be considered as distinct constructs. To assess this, a hierarchical regression was conducted in which optimism subscale scores were regressed onto age on the first step, followed by pessimism subscale scores, and finally the interaction between these two predictor variables (in their standardized forms). Contrary to expectations, the interaction was not significant, $R^2_{cha} = .002$, $F < 1$. However, main effects for both age, $B = .314$, $R^2_{cha} =$

.099, $F(1,66) = 7.24$, $p < .01$, and pessimism, $B = .369$; $R^2_{cha} = .309$, $F(1,65) = 33.91$, $p < .001$, were significantly positively associated with optimism. Given the lack of a significant interaction, and the finding that the two subscales were highly related ($r = -.522$, $p < .001$) even after controlling for age, it was concluded that based on these criteria, pessimism and optimism were not unique constructs that varied in their relations as a function of age. Thus, they were combined and total scores employed for all further analyses (Cronbach's $\alpha = .81$).

Optimism and the appraisal process. To examine whether dispositional optimism and stressor appraisals were differentially related as a function of age, a series of hierarchical regressions was conducted in which each of the four dimensions of appraisal was regressed first onto age, followed by dispositional optimism on the next step and the interaction term (between the standardized variables) entered on the final step (see Table 3). It was hypothesized that the relation between optimism and both the perceived range of the threat and self-reported stressfulness of the situation would increase with age. Contrary to what was predicted, none of the appraisals varied as a function of age, as the interaction terms were not significant (see Table 3). However, as seen in Table 3, optimism was significantly related to three of the four appraisal dimensions. Specifically, greater dispositional optimism was associated with attributing greater perceived control and importance to finding a resolution, and lower perceived stress.

Table 3

Results of Regressing Appraisals onto Age and Optimism and their Interaction

Predictor	$R^2_{cha}^a$	r	B	Semi-partial
Control				
Age	.001	.026	-.013	-.013
Optimism	.047	.219*	.214	.211
AgeXOptimism	.008	-.104	-.090	-.090
Importance				
Age	.016	-.127	-.155	-.153
Optimism	.074*	.250*	.286*	.282*
AgeXOptimism	.031	.168	.176	.175
Range of threat				
Age	.000	.016	.030	.030
Optimism	.021	-.142	-.153	-.152
AgeXOptimism	.008	-.084	-.093	-.092
Perceived stress				
Age	.000	-.011	.035	.034
Optimism	.092*	-.301**	-.304*	-.301*
AgeXOptimism	.001	.046	.027	.027

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

a. While the values presented for standardized B and semi-partial correlations are for the final step, the R^2 provided was based on the step at which the variable was entered.

Coping strategies, optimism and age. To examine whether dispositional optimism and coping strategies were differentially related as a function of age, another series of hierarchical regressions was conducted in which each of the four types of coping strategies represented the outcome variables. Once again, as shown in Table 4, none of the interaction terms between age and optimism were significant predictors of coping strategies endorsed. As noted earlier, the only

coping strategy that varied significantly as a function of age was a reliance on religion, in that this strategy was more evident among the older participants. However, consistent with previous research (Scheier et al., 1986), higher levels of optimism were significantly related to higher endorsements of problem-focused coping and a reduced tendency to endorse emotion-focused strategies.

Table 4

Results of Regressing Coping Strategies onto Age and Optimism and their Interaction

Predictor	R^2_{cha} ^a	r	B	Semi-partial
Problem-solving				
Age	.002	-.047	-.088	-.087
Optimism	.129**	.348**	.370**	.366**
AgeXOptimism	.016	.110	.128	.128
Emotion-coping				
Age	.007	-.086	-.016	-.016
Optimism	.174**	-.425**	-.414**	-.409**
AgeXOptimism	.013	.145	.113	.112
Avoidance-coping				
Age	.029	.171	.144	.142
Optimism	.012	.131	.100	.099
AgeXOptimism	.018	-.155	-.134	-.134
Religion				
Age	.100**	.316**	.295*	.291*
Optimism	.003	.102	.049	.049
AgeXOptimism	.022	-.180	-.149	-.148

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

a. While the values presented for standardized B and semi-partial correlations are for the final step, the R^2 provided was based on the step at which the variable was entered.

Well-being and Optimism

Depressive affect. To test the hypothesis that well-being and optimism were differentially related as a function of age, a hierarchical regression was conducted in which BDI scores were regressed onto age, optimism, and their interaction, each on a separate step. As seen in Table 5, as with appraisals and coping strategies, only the main effect for dispositional optimism was predictive of symptoms of depression, in that greater optimism was associated with lower BDI scores.

Quality of life indices. To test whether quality of life indices would be associated with higher levels of optimism, and whether this relation would change with age, a series of hierarchical regressions was conducted with each of the seven quality of life indices representing the outcome variables. As with all of the previous analyses, as shown in Table 5, the interaction between age and optimism did not significantly predict any of the quality of life indices. Although age was positively related to quality of professional life, none of the remaining quality of life indices varied significantly as a function of age. However, as predicted, higher levels of optimism were significantly related to higher ratings of perceived quality of life in all seven domains, including the ratings of their quality of life as a whole.

Table 5
Results of Regressing Well-Being onto Age and Optimism and their Interaction

Predictor	R^2_{ch} ^a	r	B	Semi-partial
BDI				
Age	.025	.158	.237*	.234*
Optimism	.350**	-.563**	-.603**	-.596**
AgeXOptimism	.007	-.061	-.084	-.093
QOL - Physical health				
Age	.001	.032	-.014	-.014
Optimism	.117**	.343**	.347**	.343**
AgeXOptimism	.001	.008	.031	.033
QOL - Professional life				
Age	.056	.236*	.234	.222
Optimism	.130**	.389**	.441**	.393**
AgeXOptimism	.024	-.091	.182	.156
QOL - Social life				
Age	.011	.104	.042	.042
Optimism	.262**	.522**	.527**	.520**
AgeXOptimism	.021	.105	.147	.146
QOL - Home life				
Age	.010	.100	.036	.035
Optimism	.258**	.517**	.520**	.513**
AgeXOptimism	.012	.070	.111	.110
QOL - Emotional state				
Age	.001	-.038	-.126	-.124
Optimism	.364**	.592**	.609**	.602**
AgeXOptimism	.000	-.044	-.012	-.012
QOL - Recreational life				
Age	.015	.124	.059	.058
Optimism	.232**	.495**	.490**	.485**
AgeXOptimism	.003	.018	.059	.059
QOL - Life as a whole				
Age	.009	.094	.013	.013
Optimism	.313**	.567**	.565**	.558**
AgeXOptimism	.000	-.052	-.010	-.010

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

a. While the values presented for standardized B and semi-partial correlations are for the final step, the R^2 provided was based on the step at which the variable was entered.

Mediating Effects of Appraisals and Coping between Optimism and Well-being

Given that none of the outcome variables was affected by the interaction between age and optimism, it appears that the relations between optimism and stress and coping process are fairly constant across the life span. Nonetheless, it remained of interest to determine whether the relation between optimism and well-being was mediated by the potential impacts on subjective appraisals and/or coping strategies endorsed, given the common relations between optimism and both the appraisal, coping, and well-being variables. To assess this possibility, the indices of well-being were each regressed first onto the stressor appraisals that could potentially mediate these relations, that is, those appraisal dimensions predicted by optimism, including perceived control, importance of resolving the issue, and perceived stressfulness of the issue. Optimism scores were entered on the second step to evaluate whether they remained predictive of well-being after controlling for subjective appraisals. A second series of analyses was then conducted examining problem-focused and emotion-focused coping as potential mediating variables.

The mediating effect of appraisals. As seen in Table 6, subjective appraisals were predictive of most of the indices of well-being, and therefore could potentially serve as the process mediating the relation between optimism and well-being. It should be noted that there was some variation in which appraisal dimensions were related to the indices of well-being. For the most part, greater well-being was associated with placing greater importance on finding a resolution to the situation. However, appraisals of the event as more stressful while related to, did not uniquely predict affective well-being (depressive symptoms, quality of emotional life, and quality of life as a whole) nor home quality of life. Likewise, perceptions of control while related to, did not uniquely predict emotional quality of life, perceived quality of home life and life as a whole. Control, however, did uniquely predict perceptions of recreational quality of life.

Despite the variability in the relations between these three appraisal dimensions and well-being, all three were included in all of the analyses assessing the mediated effects for the sake of comparative consistency. Indeed, when the relations between optimism and well-being were examined, in none of these instances was it rendered nonsignificant after controlling for appraisals. Thus, optimism had a unique direct effect on well-being, independent of the initial appraisals of the importance, controllability and perceived stressfulness of the reported event.

Table 6
Results of Regressing BDI and QOL Scores onto Appraisals and Optimism

Predictor	R^2_{ch}	r	B	Semi-partial
BDI				
Appraisal	.222**			
Control		-.170	-.001	-.001
Importance		-.367**	-.224*	-.213*
Stress		.339**	.156	.148
Optimism	.201**	-.591**	-.487**	-.448**
QOL - Physical health				
Appraisal	.084			
Control		.032	-.076	-.073
Importance		.286**	.229	.219
Stress		-.075	.039	.038
Optimism	.084*	.344**	.316*	.290*
QOL - Professional life				
Appraisal	.083			
Control		.217	.073	.068
Importance		.156	.156	.151
Stress		-.181	-.094	-.091
Optimism	.108*	.382**	.348*	.328*
QOL - Social life				
Appraisal	.173**			
Control		.162	.013	.012
Importance		.406**	.297**	.283**
Stress		-.100	.081	.077
Optimism	.189**	.523**	.472**	.434**
QOL - Home life				
Appraisal	.195**			
Control		.256*	.113	.109
Importance		.368**	.235*	.224*
Stress		-.222*	-.051	-.049
Optimism	.150**	.518**	.421**	.388**
QOL - Emotional state				
Appraisal	.264**			
Control		.273*	.111	.106
Importance		.364**	.204*	.195*
Stress		-.364**	-.184	-.175
Optimism	.184**	.594**	.466**	.429**

QOL - Recreational life				
Appraisal	.252**			
Control		.372**	.241*	.232*
Importance		.391**	.246*	.235*
Stress		-.185	-.008	-.007
Optimism	.123**	.495**	.382**	.351**
QOL - Life as a Whole				
Appraisal	.240**			
Control		.226*	.065	.063
Importance		.364**	.218*	.208*
Stress		-.347**	-.176	-.168
Optimism	.170**	.568**	.448**	.412**

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

a. While the values presented for standardized B and semi-partial correlations are for the final step, the R² provided was based on the step at which the variable was entered.

Well-being and coping. As seen in Table 7, coping strategies were predictive of depressive symptoms, as well as to five of the indices of well-being, including quality of professional, social, home, emotional, and recreational life. Although professional quality of life was predicted by the extent to which individuals endorsed problem-focused coping, emotion-focused coping was unrelated to this index. Conversely, quality of emotional life was related to both emotion-focused coping and problem-solving but was only directly predicted by emotion-focused coping alone. Although well-being was clearly associated with coping strategies, in only one of these instances was the relation between optimism and well-being rendered nonsignificant (professional life). Thus, optimism had a unique direct effect on well-being, independent of the coping strategies that it evokes.

Table 7
Results of Regressing BDI and QOL Scores onto Coping Strategies and Optimism

	R^2_{ch}	r	B	Semi-partial
BDI				
Coping Strategies	.367**			
Problem-focused		-.447**	-.323**	-.299**
Emotion-focused		.424**	.267*	.238*
Optimism	.076**	-.562**	-.332**	-.276**
QOL - Physical health				
Coping Strategies	.027			
Problem-focused		.152	.023	.021
Emotion-focused		-.066	.092	.082
Optimism	.099**	.344**	.375**	.314**
QOL - Professional life				
Coping Strategies	.184**			
Problem-focused		.350**	.294*	.290*
Emotion-focused		-.222	-.115	-.100
Optimism	.056	.382**	.276	.238
QOL - Social life				
Coping Strategies	.167**			
Problem-focused		.245*	.096	.089
Emotion-focused		-.330**	-.150	-.134
Optimism	.128**	.522**	.426**	.358**
QOL - Home life				
Coping Strategies	.159**			
Problem-focused		.299**	.149	.138
Emotion-focused		-.267*	-.084	-.075
Optimism	.130**	.517**	.430**	.361**
QOL - Emotional state				
Coping Strategies	.265**			
Problem-focused		.324**	.169	.156
Emotion-focused		-.402**	-.214*	-.192*
Optimism	.138**	.591**	.443**	.371**
QOL - Recreational life				
Coping Strategies	.076			
Problem-focused		.159	-.011	-.010
Emotion-focused		-.226*	-.020	-.018
Optimism	.169**	.494**	.489**	.411**
QOL - Life as a Whole				
Coping Strategies	.294**			
Problem-focused		.296**	.158	.147
Emotion-focused		-.457**	-.291**	-.261**
Optimism	.107**	.568**	.390**	.327**

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

a. While the values presented for standardized B and semi-partial correlations are for the final step, the R^2 provided was based on the step at which the variable was entered.

Summary. Both appraisal and coping processes were associated with well-being.

Nonetheless, in virtually all instances, optimism continued to have direct relation to well-being. However, although optimism continued to have a direct effect, in many instances the relation to well-being appeared to be partially mediated, particularly by the effects on coping. While tests of the significance of a mediated model are available (e.g., Sobel's), these tests are geared to models involving a single mediating variable. As an alternative criterion, given the multiple mediators employed in the present thesis, partial mediation could be considered to have occurred if the variability in the outcome variable that could be explained by the optimism (direct effect) dropped at least 9% when the mediating variables were taken into account. This benchmark was somewhat arbitrary but was based upon Cohen's (1977) suggestion that an effect size of 9% may be considered medium.

Using this criterion, as can be seen in Table 8 when the measures of well-being were regressed onto optimism directly, they shared roughly between 20-30% of their variance on most of the indices. When appraisal processes were controlled for, the variability in well-being accounted for by optimism dropped by more than 9% on five of the indices, and was most notable with respect to emotional (16.5%) and overall quality of life (15.0%). Controlling for coping endorsements also resulted in notable reductions in the shared variability between well-being and optimism on six of the indices. However, these reductions were consistently greater than those following appraisal processes, and were particularly marked in relation to depressive symptoms (24.0%), emotional quality of life (21.0%), and quality of life as a whole (21.5%). Thus, these comparisons suggest that the relation between optimism and quality of life is partially mediated

by appraisals and coping strategies, but that coping may play a particularly important mediating role.

Table 8

Summary of effect sizes of relations between optimism and well-being in the direct effects and mediated models

	R^2 Direct	R^2_{cha} Controlling Appraisals	R^2_{cha} Controlling Coping
BDI	.316**	.201**	.076**
QOL			
Physical health life	.118**	.084*	.099**
Professional life	.146**	.108*	.056
Social life	.272**	.189**	.128**
Home life	.267**	.150**	.130**
Emotional state	.349**	.184**	.138**
Recreational life	.244**	.123**	.169**
Life as a Whole	.322**	.170**	.107**

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

Discussion

While considerable research has been conducted across a wide-range of populations on the impact of stress and coping processes on well-being (e.g., Carver et al., 1989; Folkman & Lazarus, 1980), there is remarkably little research evaluating the lifespan evolution of stress and coping processes. In the present investigation we argued that the relations between stressor appraisals and coping responses with psychological well-being would shift across the lifespan. While it would seem intuitive that past experiences might alter the subjective appraisals of subsequently encountered stressors, this study did not find support for broad age-related differences in appraising a difficult social interaction. Young and old similarly perceived this stressor in terms of the range of threat, controllability, the importance of resolving it, and stressfulness. Moreover, age was unrelated to all but one of the four coping strategies, such that, no differences were found in the endorsement of problem-focused, emotion-focused, and avoidance-focused strategies. The only exception was that reliance on religion as a way of coping was more evident among older participants. However, it is difficult to determine whether the use of religion increased with age, or whether this reflected a cohort effect, in that, religion may have been more strongly inculcated in older generations than it has been in younger cohorts.

Thus, although in other studies older individuals reported using fewer strategies to cope (Meeks et al., 1989), on the whole there was no evidence of changes across the lifespan in the present study. However, it ought to be noted that the findings of this study were based on a retrospective self-reporting of a past event. Several respondents expressed some difficulty thinking of a recent difficult social interaction, and in some instances, prompts were needed to elicit an appropriate recent event. Thus, it is possible that no effects were found, in part, because the events reported may not have been particularly salient, and hence responses to them were

based on 'prototypical' response tendencies that may or may not represent how participants actually perceived the event at the time it occurred, or how they actually coped with it.

In addition, past research has suggested that older individuals experience different types of problems (Adwin et al., 1996). To the extent that difficult social interactions were not regarded as particularly problematic among our older participants (at least relative to other issues that develop with age, such as chronic health problems, loss of loved ones), this too may have contributed to a tendency to provide prototypical responses. Thus, although keeping the stressor constant may make empirical sense, given variations in the nature of stressors experienced across the lifespan, this may not be the best strategy for assessing changes in the stress process. Perhaps, researchers wanting to make lifespan comparisons need to take a step back to identify common stressors (e.g., physical health) that would have equivalent meaning and importance across the lifespan. This would serve to keep the stressor constant and may be more salient for younger and older samples alike. Alternately, asking about both episodic and chronic current stressor experiences (e.g., losing a friend or relative versus being diagnosed with arthritis, respectively) regardless of their life domain, might elicit a more salient non-prototypical response for all age groups.

Parenthetically, in addition to no differences in appraisals as a function of age, neither were there any sex differences. In addition, only marginal sex differences were found for coping with only problem-focused coping showing any significant differences, indicating that women showed a greater tendency to endorse problem-focused strategies than men. This finding was not consistent with past research showing that men tended to endorse more problem-focused coping strategies than women (Folkman & Lazarus, 1980). However the use of problem-focused strategies may be domain-specific for each gender given that the current study found that women are more likely to take a problem-oriented focus to dealing with social problems whereas

Folkman and Lazarus' (1980) study had shown the opposite pattern for a work setting. Indeed, there is some evidence to suggest that psychosocial stressors have more profound implications for the responses and well-being of females than in males, whereas those related to job strain/competition may have a greater impact on males (Kendler, Thornton, & Prescott, 2001).

The Role of Optimism

It was also the goal of this investigation to examine what role, if any, optimism might play in the relations between appraisals and coping across the lifespan. Research has shown that optimists' appraisals may differ from those of pessimists (Chang, 1998; Hamid, 1990), and that the coping strategies endorsed by optimists differ from those endorsed by pessimists (Scheier & Carver, 1985; Scheier, et al., 1989).

The relations of optimism and appraisals. On the whole, the present study found support for the relation between optimism and subjective appraisals. Specifically, greater optimism was associated with greater perceived control, placing greater importance on resolving the stressor, and lower self-reported stress (threat) in relation to the stressor. This pattern of relations makes some sense, given that optimism reflects greater expectations of positive outcomes and likely more perceived self-efficacy when steps are taken to achieve them. Alternatively, this relation may have reflected attempts on the part of pessimists to protect themselves from the perceived stressfulness of the event by diminishing its importance, particularly given their expectations that the outcome would likely be negative.

In either case, it is important to recall that this is a correlational design and therefore, does not allow us to infer causation. For example, a tendency to perceive a lack of control, or to be overly sensitive to the extent to which the stressor is threatening may attenuate feelings of optimism. Another possibility is that these relations reflected differences in the kinds of stressful events that were recalled by optimists versus pessimists. Given Hamid's (1990) research

suggesting that pessimists perceived a greater number of potential sources for their illness than did optimists, pessimists in the present study may have reported a wider array of potential sources for difficult social interactions including some that may have been trivial. Asking respondents to describe a recent stressful social interaction based on their own personal experiences may have afforded greater ecological validity to their responses. However, we might instead have used a common lab stressor (e.g., a video depicting a stressful situation such as an automobile accident) to ensure that response differences would be more clearly based on subjective construals rather than objective differences in the stressor participants were responding to. We chose not to do this, as it was thought that this might risk creating an artifactual difference that would not translate to real life. Thus, once again, it seems that a better understanding of the stress process may entail a more thorough examination of the implications of the stressor that is being responded to, both objectively and subjectively.

In the present study, optimism was not found to be related to perceptions of how widely spread the effects of the stressor were to other aspects of participants' lives. Much like the appraisals of those with depressive symptomatology, one might have expected that optimists would have been more likely to perceive the stressor effects as more localized (Abramson, Seligman, & Teasdale, 1978). Individuals who appraise the causes of negative events as more stable, global, severe, and uncontrollable are more likely to be depressed relative to those who appraise the causes of those events as more unstable, specific, trivial, and controllable (Abramson et al., 1978; Seligman, Abramson, Semmel, & von Baeyer, 1979). Thus, given these findings, it is likely that optimism may be unrelated to how widely spread the effects of the stressor were but rather that the presence and level of depressive symptoms may have been a better predictor of the perceived range of threat, much as in the individuals in the Seligman et al. (1979) study.

The relations of optimism and coping. Consistent with past research (e.g. Scheier et al., 1985, 1994), greater optimism was associated with higher endorsement of problem-focused coping strategies, and reduced likelihood of endorsing emotion-focused strategies. This pattern of relations was certainly consistent with stressor appraisals reported by optimists. Specifically, problem-focused strategies typically prevail when a stressor is perceived as controllable, whereas emotion-focused coping strategies are more evident when the stressor must be endured because a solution is not perceived as possible (Billings & Moos, 1981; Folkman & Lazarus, 1980). However, contrary to Chang's (1998) research showing that, in an exam situation, optimists showed a greater tendency to use approach-coping and pessimists a greater tendency to use avoidance-coping strategies, no relation was found between optimism and the endorsement of avoidance-coping strategies. It is possible that this lack of consistency across studies reflects differences in the nature of the stressor participants were responding to, that is, avoiding a difficult social interaction versus an upcoming exam.

The Moderating Effects of Age and Optimism on the Coping Process.

Although age was expected to moderate the effects of optimism on the appraisal and coping process, no evidence was found to support this expectation. An examination of the interactions between optimism and age for each elicited stressor appraisal and coping strategy shows that age did not temper the effects of optimism on either the appraisals or on the endorsement of specific coping strategies in response to a stressful event. This lack of significance was not likely due to a statistical artifact, given that none of the effect sizes for the interactions exceeded 5% of the variance explained. Thus, it would seem that the patterns of relations between optimism and stress processes are fairly stable across the lifespan.

Predictors of Well-being

In the present investigation, we argued that age and optimism would moderate appraisals and coping and in turn, it was expected that these processes might differentially mediate the relations between optimism and well-being. Although a strong relation was found between optimism and reduced symptoms of depression, this relation did not vary with age. Indeed, age was unrelated to depressive symptomatology. This is consistent with past research indicating that while age may alter the stress experience from episodic to more chronic, when type of problem is controlled for, no age differences were found in individuals' perceived stressfulness or coping efficacy (Aldwin et al., 1996). As with depressive affect, but contrary to expectations of a moderating effect, age did not significantly alter the relations between optimism and perceptions of quality of life in any of the domains. The only area that was affected by age at all was quality of professional life; satisfaction with all the remaining life domains was found to be unrelated to age. However, dispositional optimism significantly predicted greater satisfaction with the self-rated quality of physical health, professional, social, home, and recreational life, as well as their overall emotional state and general quality of life. Thus, on the whole, consistent with the preponderance of past research, optimism was a consistent predictor of psychological well-being (Epping-Jordan et al., 1999; Plomin et al., 1992; Scheier et al., 1989, 1994).

The Mediated Relations in the Stress and Coping Process

Given that optimism, to a certain extent, reflects the ability to see the positive side of life, it should come as no surprise that those high in this characteristic were more likely to perceive their quality of life in general as more satisfying and to report fewer depressive symptoms. However, it was possible that the effects of optimism on well-being were mediated by their relations with subjective appraisals of the stressor and the coping styles they were more likely to endorse. Indeed, subjective appraisals of the stressor were associated with depressive symptoms,

as well as with all of the quality of life indices. While there was some variation in terms of which appraisal dimension was related to which indicator of well-being, placing greater importance on finding a resolution to the situation as well as perceived stress were most consistently associated with greater well-being overall. Importantly, however, the relations between optimism and well-being were not rendered nonsignificant when the mediating effects of stressor appraisals were examined. While stressor appraisals appeared to partially mediate the relations between optimism on general well-being, in that the variance explained in the direct relations dropped by more than 10% on 5 of the 8 indices, optimism was still shown to have a unique direct effect on overall well-being independent of stressor appraisals. Thus, although some of the effects of optimism on well-being occur because of their impacts on appraisals, clearly there is something unique to optimism that promotes psychological well-being. Once again, however, given the correlational nature of these data, caution must be taken in interpreting a causal relation between these relations. Specifically, the relations between subjective appraisals and well-being may be due to some other variable that was not measured in this investigation, such as neuroticism or social competence, and therefore may reflect a spurious finding. Replication using prospective designs may be helpful in establishing causal relations, particularly if stressors that evoke different appraisals and coping strategies are assessed.

As noted earlier, not all of the dimensions of appraisal were consistently related to the indices of well-being. Specifically, appraising an event as highly stressful was only related to depressive symptoms, quality of home life, emotional state, and life as whole; in none of these instances did it predict unique variance, once the other appraisal dimensions were controlled for. Although perceived stress was included as an indicator of the extent to which participants evaluated the stressor as a threat, this measure may have reflected more of an outcome measure (based on the other appraisals) than a unique appraisal dimension. This possible measurement

problem is one of the dangers of using single item indices. It was employed to avoid the confounding of threat appraisals with emotional reactions that are typical of most threat appraisal measures (e.g., Carver & Scheier, 1994). Clearly there is a need for the development of more psychometrically sound measures of subjective stressor appraisals.

In a like fashion, appraising an event as controllable was related to quality of emotional life, perceived quality of home life, and life as a whole, and was only uniquely predictive of perceived quality of recreational life. As we have no theoretical basis for predicting these differential relations, it is possible that this reflects an artifact of the single item measurement problem, or it may be that different dimensions of appraisal are in fact uniquely predictive of our well-being in different life domains. This possibility certainly merits further consideration.

The mediating role of coping responses. Overall, optimism was both associated with coping responses and with well-being. Moreover, when the relations between optimism and well-being were examined to assess the mediating effects of coping responses, as with appraisal processes, it was found that optimism continued to have a unique direct effect on well-being, independent of the associated coping strategies. Thus, while lower depressive symptoms were related to using more problem-focused coping strategies and fewer emotion-focused strategies, these only partially mediated the effects of optimism on depressive symptomatology.

Dispositional optimism continued to predict unique variance in depressive symptoms, even after controlling for coping strategies, indicating that having positive outcome expectancies may not only lead to active responses to stressors but may also be an important precursor to avoiding depressive symptoms. Similarly, controlling for coping endorsements resulted in notable reductions in the shared variability between well-being and optimism on five of the seven quality of life indices, although it continued to have a significant direct effect. Of particular interest was the finding that these reductions were consistently greater than those demonstrated when

controlling for appraisal processes, and were particularly marked in relation to depressive symptoms, emotional quality of life, and quality of life as a whole. Thus, it appears that optimism may predominantly influence the coping responses that are activated to achieve well-being.

Although on the whole optimism continued to be uniquely related to well-being, independent of coping styles, this was not the case with respect to reports of participants quality of professional life. In this instance, the use of problem-focused strategies was found to fully mediate the effect of optimism. It is important to note, however, that only a subset of individuals reported on this domain as many were retired individuals. Thus, there may be a sampling bias affecting responses to this domain.

Although typically assessed as an outcome variable, as it was in this investigation, depression is one aspect of psychological well-being that is also examined in terms of its impact and effect on the stress response, including appraisals (Chang & Strunk, 1999), and coping processes (Coyne, Aldwin, & Lazarus, 1981; Nolen-Hoeksema & Ahrens, 2002). When appraising a stressful event, depressed individuals report the need for more information before they can act, but to perceive fewer situations as requiring them to accept or get used to a situation rather than act (Coyne et al., 1981). These researchers suggest that depressed persons may respond by inaction more because they are uncertain about how to act, than because they feel helpless to affect the situation. Thus, while depression is often evaluated as the outcome of poor coping responses (e.g., Barnett & Gotlieb, 1988; Vickers & Vogeltanz, 2000), it is also possible that it feeds into the coping process through altered appraisals and the adoption of less effective coping strategies. Thus, once again, caution must be taken in interpreting the causal directions of the relations demonstrated in the present study.

The Measurement of Dispositional Optimism

One of the goals of the present investigation was to examine whether dispositional optimism would be better examined as two independent constructs. It has been suggested that dispositional optimism is unidimensional (Scheier & Carver, 1985; Scheier et al., 1994), but that optimism and pessimism may reflect two separate dimensions in older individuals (Mroczek et al., 1993; Plomin et al., 1992), and that these may serve to better explain the relation between health and stress (Robinson-Whelen et al., 1997). However, while some other research supports a two-dimensional model of dispositional optimism in older samples (e.g. Mroczek et al., 1993; Plomin et al., 1992; Robinson-Whelen et al., 1997), in the present study, these two dimensions were highly correlated, and the relation between optimism and pessimism was not found to decrease with age. Therefore, more consistent with Scheier and Carver's (1985) research, dispositional optimism appeared to reflect a global dimension representing the extent to which an individual expects to experience positive outcomes. That said, although substantial conceptual and empirical efforts have gone into the development of a psychometrically strong measure of optimism that balances positive and negative items and expectancies, this balance is difficult to achieve operationally. In particular, several participants indicated some difficulty with the doubly negative wording of some of the negative expectancy items. In fact, negative expectancies were assessed in terms of not having positive expectations (e.g., I rarely count on good things happening to me.). Given this, the unidimensional nature of optimism typically found may be an artifact of this measurement approach. To assess whether optimism and pessimism are indeed two separate constructs, it would be beneficial to identify truly negative expectancy items.

Limitations

It is important to note that because participants were recruited from the community, a certain amount of self-selection bias may exist, in that, individuals who felt themselves to be

particularly stressed or who had prior experience with highly stressful events (i.e., downsizing, caregiving) may have volunteered to take part in the hope of learning more about coping with stress. Several of the individuals who called to inquire regarding the study, and asked specifically if they would gain any stress management knowledge from the exercise, chose not to participate when they were told that they would not. Likewise, when told that no payment would be issued for participation, several callers chose not to participate. Thus, there is no way to determine whether stress levels were the same for those who opted to participate or not, or whether these groups differed in any other significant way. One thing for certain was that the sample was almost entirely Caucasian, which is clearly not representative of the community itself. Indeed, research suggests that some stressors are associated with different outcomes as a function of ethnicity. For example, caregiving was related to increased depression and decreased life satisfaction in white American families but not black American families (Haley et al., 1994). Thus, given that the majority of those who chose to participate were Canadian Caucasian, results reported here might not be generalizable to other racial groups.

Conclusion

The present investigation found little evidence for age-related differences in responses to stressors. Despite this, consistent evidence was found for an association between dispositional optimism and both the subjective appraisals and coping strategies endorsed to deal with a stressful event involving a difficult social interaction. Moreover, optimism predicted well-being, even when controlling for stressor appraisals and coping strategies endorsed. These findings suggest that optimism plays an important role in the stress process, in that having generalized positive outcome expectancies may represent a resilience factor promoting health benefits. Based on these findings, it is suggested that encouraging positive appraisals and coping skills may

enhance well-being, but dispositional optimism appears to provide a further buffer that merits further research.

Given the additive effects of dispositional optimism, understanding the effects of an optimistic versus pessimistic disposition might help inform practitioners in therapeutic settings concerning how to tailor their treatment to meet the needs of both optimists and pessimists alike. By understanding pessimists' tendencies to deal with emotional aspects of a stressful situation therapists might be able to help such individuals find emotional outlets. In contrast, understanding optimists' tendency try to solve the problems that they face might mean that therapists could consider having very concrete steps for their client to work with, as opposed to working through emotional needs. While it might seem counterintuitive to make recommendations with respect to the therapeutic treatment of optimists, given optimism's buffering effects, pessimists are not generally the only clientele of therapeutic treatment. Thus, differences in treatment needs should be equally met. However, the fact that coping partially mediated the effect of optimism (or conversely, pessimism) on well-being provides hope to those for whom the bright side of life is often overshadowed by expectancies of dark clouds just off in the distance.

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Appendix A

Recruitment Notices

Poster

Stressed? 55 years old or older?

The Centre for Research on Stress, Coping and Well-Being at Carleton University is conducting research to assess how people cope with stress. We are particularly interested in the experiences of those older than 55. Our aim is to be able to find ways to help people cope better with the situations that arise during the course of aging. If you would like further information or would like to enroll as a participant, please contact us at 520-2600 ext. 2683 or visit our website at <http://www.carleton.ca/copewell/>.

Newspaper

CarletonUniversity

Stress and Experiences of Aging

The Centre for Research on Stress, Coping, and Well-Being is conducting research to assess how people cope with stress. We are particularly interested in the experiences of those older than 55. Our aim is to be able to find ways to help people cope better with the situations that arise during the course of aging. If you would like further information or would like to enroll as a participant, please contact us at (613) 520-2600 ext. 2683 or visit our Web site.

www.carleton.ca/copewell/

Appendix B
Questionnaires

BECK INVENTORY

On this questionnaire are groups of statements. Please read the entire group of statements in each category. Then pick out ONE statement in that group which best describes the way you feel. Check off the number beside the statement you have chosen.

1. ☐ 0 = I do not feel sad
☐ 1 = I feel sad or blue
☐ 2a = I am blue or sad all of the time and I can't snap out of it
☐ 2b = I am so sad or unhappy that it is very painful
☐ 3 = I am so sad or unhappy that I can't stand it

2. ☐ 0 = I am not particularly pessimistic or discouraged about the future
☐ 1 = I feel discouraged about the future
☐ 2a = I feel I have nothing to look forward to
☐ 2b = I feel I won't ever get over my troubles
☐ 3 = I feel that the future is hopeless and things cannot improve

3. ☐ 0 = I do not feel like a failure
☐ 1 = I feel I have failed more than the average person
☐ 2a = I feel I have accomplished very little that is worthwhile or that means anything
☐ 2b = As I look back on my life, all I can see is a lot of failures
☐ 3 = I feel I am a complete failure as a person

4. ☐ 0 = I am not particularly dissatisfied
☐ 1a = I feel bored most of the time
☐ 1b = I don't enjoy things the way I used to
☐ 2 = I don't get satisfaction out of anything anymore
☐ 3 = I am dissatisfied with everything

5. ☐ 0 = I don't feel particularly guilty
☐ 1 = I feel bad or unworthy a good part of the time
☐ 2a = I feel quite guilty
☐ 2b = I feel bad or unworthy practically of the time now
☐ 3 = I feel as though I am very bad or worthless

6. ☐ 0 = I don't feel I am being punished
☐ 1 = I have a feeling that something bad may happen to me
☐ 2 = I feel I am being punished or will be punished
☐ 3a = I feel I deserve to be punished
☐ 3b = I want to be punished

7. ☐ 0 = I don't feel disappointed in myself
☐ 1a = I am disappointed in myself
☐ 1b = I don't like myself
☐ 2 = I am disgusted with myself
☐ 3 = I hate myself
8. ☐ 0 = I do not feel I am any worse than anybody else
☐ 1 = I am very critical of myself for my weaknesses or mistakes
☐ 2a = I blame myself for everything that goes wrong
☐ 2b = I feel I have many bad faults
9. ☐ 0 = I don't have thoughts of harming myself
☐ 1 = I have thoughts of harming myself but I would not carry them out
☐ 2a = I feel I would be better off dead
☐ 2b = I have definite plans about committing suicide
☐ 2c = I feel my family would be better off if I were dead
☐ 3 = I would kill myself if I could
10. ☐ 0 = I don't cry anymore than usual
☐ 1 = I cry more now than I used to
☐ 2 = I cry all the time now. I can't stop it
☐ 3 = I used to be able to cry but now I can't cry at all even though I want to
12. ☐ 0 = I am no more irritated now than I ever am
☐ 1 = I get annoyed or irritated more easily than I used to
☐ 2 = I get irritated all the time
☐ 3 = I don't get irritated at all the things that used to irritate me.
12. ☐ 0 = I have not lost interest in other people
☐ 1 = I am less interested in other people than I used to be
☐ 2 = I have lost most of my interest in other people and I have little feeling for them
☐ 3 = I have lost all my interest in other people and don't care about them at all
13. ☐ 0 = I make decisions about as well as ever
☐ 1 = I am less sure of myself now and try to put off making decisions
☐ 2 = I can't make decisions anymore without help
☐ 3 = I can't make decisions at all anymore
14. ☐ 0 = I don't feel I look any worse than I used to
☐ 1 = I am worried that I am looking old or unattractive
☐ 2 = I feel that there permanent changes in my appearance and they make me look unattractive
☐ 3 = I feel that I am ugly or repulsive looking

15. ___ 0 = I can work about as well as before
___ 1a = It takes extra effort to get started at doing something
___ 1b = I don't work as well as I used to
___ 2 = I have to push myself very hard to do anything
___ 3 = I can't do any work at all
16. ___ 0 = I can sleep as well as usual
___ 1 = I wake up more tired in the morning than I used to
___ 2 = I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
___ 3 = I wake up early every day and can't get more than 5 hours sleep
17. ___ 0 = I don't get anymore tired than usual
___ 1 = I get tired more easily than I used to
___ 2 = I get tired from doing anything
___ 3 = I get too tired to do anything
18. ___ 0 = My appetite is no worse than usual
___ 1 = My appetite is not as good as it used to be
___ 2 = My appetite is much worse now
___ 3 = I have no appetite at all any more
19. ___ 0 = I haven't lost much weight, if any, lately
___ 1 = I have lost more than 5 pounds
___ 2 = I have lost more than 10 pounds
___ 3 = I have lost more than 15 pounds
20. ___ 0 = I am no more concerned about my health than usual
___ 1 = I am concerned about aches and pains or upset stomach or constipation or other unpleasant feelings in my body
___ 2 = I am so concerned with how I feel or what I feel that it's hard to think of much else
___ 3 = I am completely absorbed in what I feel
21. ___ 0 = I have not noticed any recent change in my interest in sex
___ 1 = I am less interested in sex than I used to be
___ 2 = I am much less interested in sex now
___ 3 = I have lost interest in sex completely

OPTIMISM / PESSIMISM

For each of the following statements, please indicate the extent to which the statement applies to you. Please respond as you really do feel, rather than how you think 'most people' feel. Use the rating scale indicated.

	Never	Seldom	Sometimes	Often	Almost always
1. In uncertain times, I usually expect the best.	0	1	2	3	4
2. It's easy for me to relax.	0	1	2	3	4
3. If something can go wrong for me, it will.	0	1	2	3	4
4. I'm always optimistic about my future.	0	1	2	3	4
5. I enjoy my friends a lot.	0	1	2	3	4
6. It's important for me to keep busy.	0	1	2	3	4
7. I hardly ever expect things to go my way.	0	1	2	3	4
8. I don't get upset too easily.	0	1	2	3	4
9. I rarely count on good things happening to me.	0	1	2	3	4
10. Overall, I expect more good things to happen to me than bad.	0	1	2	3	4

COPING STRATEGIES SCALE

We are interested in how you cope with various situations. In particular, we are interested in how you cope with difficult social interactions. Please try to think of such a difficulty that has occurred in the past month. Please describe:

The following are activities that you may have done in response to that event. After each activity, please indicate the extent to which you would use this as a way of dealing with problems or stresses in recent weeks.

How much control do you feel in the situation described above?

1	2	3	4	5	6	7
						Total control

How important was achieving a good resolution to you?

1	2	3	4	5	6	7
						Extremely important

Did this event only affect you in a minor way, or do you feel that it affected almost everything you did?

1	2	3	4	5	6	7
						Almost Everything

How stressed do you feel about this event?

1	2	3	4	5	6	7
						Extremely Stressed

In relation to the event described above, which of the following activities do you find yourself doing?

	Never	Sometimes	Often	Frequently
1. accepted that there was nothing you could do to change your situation?	0	1	2	3
2. tried to just take whatever came your way?	0	1	2	3
3. talked with friends or relatives about your problem?	0	1	2	3
4. tried to do things which you typically enjoy?	0	1	2	3
5. sought out information that would help you resolve your problems?	0	1	2	3
6. blamed others for creating your problems or making them worse?	0	1	2	3

In relation to event described, which of the following activities do you find yourself doing?

	Never	Sometimes	Often	Frequently
7. sought the advice of others to resolve your problems?	0	1	2	3
8. blamed yourself for your problems?	0	1	2	3
9. exercised?	0	1	2	3
10. tried to live a better life according to your religious beliefs?	0	1	2	3
11. been very emotional compared to your usual self?	0	1	2	3
12. gone over your problems in your mind over and over again?	0	1	2	3
13. asked others for help?	0	1	2	3
14. thought about your problems a lot?	0	1	2	3
15. became involved in recreation or pleasure activities?	0	1	2	3
16. worried about your problems a lot?	0	1	2	3
17. tried to keep your mind off things that are upsetting you?	0	1	2	3
18. tried to distract yourself from your troubles?	0	1	2	3
19. avoided thinking about your problems?	0	1	2	3
20. made plans to overcome your problems?	0	1	2	3
21. told jokes about your situation?	0	1	2	3
22. thought a lot about who is responsible for your problems (besides yourself)?	0	1	2	3
23. shared humorous stories etc. to cheer yourself and others up?	0	1	2	3
24. told yourself that other people have dealt with problems such as yours?	0	1	2	3
25. thought a lot about how you have brought your problems on yourself?	0	1	2	3
26. decided to wait and see how things turn out?	0	1	2	3
27. showed how you were feeling to others?	0	1	2	3
28. decided that your current problems are a result of your own past actions?	0	1	2	3
29. gone shopping?	0	1	2	3
30. asserted yourself and taken positive action on problems that are getting you down?	0	1	2	3
31. sought reassurance and moral support from others?	0	1	2	3
32. resigned yourself to your problems?	0	1	2	3
33. thought about how your problems have been caused by other people?	0	1	2	3
34. been very emotional in how you react, even to little things?	0	1	2	3

In relation to event described, which of the following activities do you find yourself doing?

	Never	Sometimes	Often	Frequently
35. decided that you can grow and learn through your problems?	0	1	2	3
36. told yourself that other people have problems like your own?	0	1	2	3
37. looked for how you can learn something out of your bad situation?	0	1	2	3
38. asked for God's guidance?	0	1	2	3
39. kept your feelings bottled up inside?	0	1	2	3
40. found yourself crying more than usual?	0	1	2	3
41. tried to act as if you were not upset?	0	1	2	3
42. prayed for help?	0	1	2	3
43. gone out?	0	1	2	3
44. held in your feelings?	0	1	2	3
45. tried to act as if you weren't feeling bad?	0	1	2	3
46. taken steps to overcome your problems?	0	1	2	3
47. made humorous comments or wise cracks?	0	1	2	3
48. told others that you were depressed or emotionally upset?	0	1	2	3

QUALITY OF LIFE QUESTIONNAIRE

6. (a) In general, how satisfied or dissatisfied are you with your physical health as it is right now?

Completely Dissatisfied	0	1	2	3	4	5	6	7	8	9	10	Completely Satisfied
Neutral												

(b) In general, how satisfied or dissatisfied are you with your professional life as it is right now?

Completely Dissatisfied	0	1	2	3	4	5	6	7	8	9	10	Completely Satisfied
Neutral												

(c) In general, how satisfied or dissatisfied are you with your social life as it is right now?

Completely Dissatisfied	0	1	2	3	4	5	6	7	8	9	10	Completely Satisfied
						Neutral						

(d) In general, how satisfied or dissatisfied are you with your home life as it is right now?

Completely Dissatisfied	0	1	2	3	4	5	6	7	8	9	10	Completely Satisfied
Neutral												

(e) In general, how satisfied or dissatisfied are you with your emotional state as it is right now?

Completely Dissatisfied	0	1	2	3	4	5	6	7	8	9	10	Completely Satisfied
Neutral												

(f) In general, how satisfied or dissatisfied are you with your recreational life as it is right now?

Completely Dissatisfied	0	1	2	3	4	5	6	7	8	9	10	Completely Satisfied
Neutral												

(g) In general, how satisfied or dissatisfied are you with your life as a whole right now? Circle the number on the scale below that comes closest to how you feel.

Completely Dissatisfied 0 1 2 3 4 5 6 7 8 9 10 Completely Satisfied

Background information

Sex: Female / Male (please circle one)

Age: _____

What is your relationship to the person you're caring for? _____

How long have you and your spouse been married? _____ years

Do you have children? No _____ Yes _____

If yes, please complete the following for each child:

	Sex	Age	City resides in	Frequency of contact/week
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

FINANCIAL STATUS & EDUCATIONAL BACKGROUND

1. What is your primary source of income? _____

2. What other sources of income do you have? _____

3. What is your total income per month? _____

4. Does the caregiving recipient have a source of income? _____

5. Do you consider yourself to be financially secure?

1	2	3	4	5	6	7
Not at all						Completely

6. To what extent has caregiving strained your financial resources?

1	2	3	4	5	6	7
Not at all						Completely

What is the highest level of education completed by you? (CHECK ONE)

_____ 8 years or less of elementary school

_____ some high school but no diploma

_____ a high school diploma or equivalent

_____ 1 to 3 years of college/university (including study at a technical college or CEGEP)

_____ an undergraduate university degree

_____ a master's degree

_____ a doctoral degree

_____ a professional degree [medicine (M.D.), dentistry (D.D.S.), law, or other similar degrees]

Appendix C
Forms

Phase 1
Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

If you have any ethical concerns about how this study was conducted, please contact Dr. M. Gick (Chair of the Carleton University Research Ethics Committee for Psychological Research , 520-2600, ext. 2664)

Study Title: Stress reactions and experiences of aging.

Study Personnel: Dr. Hymie Anisman (Faculty Investigator, 520-2699)
Dr. Kim Matheson (Faculty Investigator, 520-2648)
Owen Kelly (Researcher, 520-2600 ext. 2683)
Christine Walter (Researcher, 520-2600 ext. 2683)
Dr. Zul Merali (Hospital Investigator, 722-6521 ext 6551)
Dr. A Wiens (Hospital Investigator, 722-6521 ext 6526)

Purpose and Task Requirements: The general purpose of this study is to determine the impact of various experiences associated with aging, and in particular we will be evaluating the experience of caregiving on relative psychological and physiological well-being. In the first phase of the study, we will be asking you to complete a series of questionnaires regarding some of your day-to-day experiences, as well as your overall mood. In addition, we will be asking you to complete a series of questions which ask you about some potentially traumatic events you may have experienced such as assault, war, or loss of a loved one, that may have affected how you deal with other events in your life.

After completing an initial survey of about 1 – 1.5 hours, we will be giving you 4 salivettes in order to collect saliva samples at home to look for physical indications of stress and potential health risks (in particular we will be examining cortisol, a stress hormone). In brief, on a date to be determined by both yourself and the interviewer, you will be asked to provide saliva samples upon awakening, 30 minutes later, and at two 30 min intervals thereafter for a total of 4 samples. Collecting a saliva sample involves placing a piece of dental cotton in your cheek for a 2 min period. Once the cotton is thoroughly wet, it is placed in a test tube, and kept in your fridge until the samples are collected and brought to the lab by the interviewer for analysis. As well, we will be asking you write a brief account of the events that occurred the day prior to, and the morning of the day on which the saliva samples are obtained.

Finally, we will be asking you to take part in further research sessions, in about 2 weeks and again in 3 and in 6 months. Your participation in these subsequent sessions will again be entirely voluntary. We'll provide you with further information about these sessions at the end of today's interview so that you can decide whether you wish to participate further.

Potential Risk and Discomfort: There are no physical risks in this study. Some individuals may experience discomfort when asked to respond to personal, sensitive questions that require focusing on the stress associated with the recent events.

Anonymity/Confidentiality: The data collected in this study will be kept confidential. Your informed consent form will be separated from your questionnaire and kept in a separate and secured file by one of the research investigators who will keep this information confidential. It

will be associated with a code, and only this code will identify your questionnaire so that we can match up your responses in each of the three sessions. None of the information provided in this questionnaire will be shared with anyone participating in this study.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not answer particular questions, or to withdraw entirely.

I have read the description of the study concerning stress reactions associated with experiences of aging. The data collected will be used in research publications and/or for teaching purposes. My signature indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

Full Name (please print): _____

Participant Signature: _____

Date: _____

Researcher Signature: _____

Date: _____

Informed consent at phase 3

Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

If you have any ethical concerns about how this study was conducted, please contact Dr. M. Gick (Chair of the Carleton University Research Ethics Committee for Psychological Research , 520-2600, ext. 2664)

Study Title: Stress reactions and experiences of aging.

Study Personnel: Dr. Hymie Anisman (Faculty Investigator, 520-2699)
Dr. Kim Matheson (Faculty Investigator, 520-2648)
Owen Kelly (Researcher, 520-2600 ext. 2683)
Christine Walter (Researcher, 520-2600 ext. 2683)
Dr. Zul Merali (Hospital Investigator, 722-6521 ext 6551)
Dr. A Wiens (Hospital Investigator, 722-6521 ext 6526)

Purpose and Task Requirements: The general purpose of this study is to determine the impact of various experiences associated with aging, and in particular we will be evaluating the experience of caregiving on relative psychological and physiological well-being. First we will be asking you to view, as well as comment on and/or rate a series of photographs of various content (including negative/graphic images such as victims of car accidents, war scenes, etc.)

Briefly, using a laptop monitor, you will see a series of 24 images for a short period of time (50 seconds for each image). In between and following the pictures, we will be asking you to fill out questionnaires regarding your reaction to the picture.

In addition, at specific time points during the session we will be asking you for saliva samples. Again, collecting a saliva sample involves placing a piece of dental cotton in your cheek for a 2 min period. Once the cotton is thoroughly wet, it is placed in a test tube and will be collected by the interviewer that same day for analysis.

Finally, we will be asking you to complete a series of questionnaires again about your own well-being and factors in your life and your perspective on life..

Potential Risk and Discomfort: There are no physical risks in this study. Some individuals may experience discomfort when asked to respond to personal, sensitive questions that require focusing on the stress associated with the recent events.

Anonymity/Confidentiality: The data collected in this study will be kept confidential. Your informed consent form will be separated from your questionnaire and kept in a separate and secured file by one of the research investigators who will keep this information confidential. It will be associated with a code, and only this code will identify your questionnaire so that we can match up your responses in each of the three sessions. None of the information provided in this questionnaire will be shared with anyone participating in this study.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not answer particular questions, or to withdraw entirely.

I have read the description of the study concerning stress reactions among associated with experiences of aging. The data collected will be used in research publications and/or for teaching purposes. My signature indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

Full Name (please print): _____

Participant Signature: _____

Date: _____

Researcher Signature: _____

Date: _____

Debriefing at Phase 1 and 3

Debriefing

Stressful events may result in a wide range of mood disturbances, including depression and anxiety, as well as physical illness. Not unexpectedly, however, individuals can vary a great deal in the extent to which they are affected by stressors. Factors which influence the impact of stressors include the characteristics of the stressor experienced, an individual's prior experience, genetic factors and coping styles (ways of dealing with problems). In particular, chronic stress may cause certain individuals to become more vulnerable to illness and/or psychological problems.

The general purpose of this study is to look at the effect of providing care for an Alzheimer's Disease patient on psychological and physiological well-being, with a particular focus on mood and quality of life. Caregiving for a spouse is a common experience among seniors. As caregiving is associated with increased risk for depressive illness, we wish to examine those factors which may predict the development of long term reduced well-being among caregivers. Specifically, we wish to determine whether well-being is related to certain characteristics of their personality (e.g. coping strategies), as well as characteristics of their particular caregiving situation (e.g. severity of the affected individual's illness, duration of illness, quality of the relationship between the caretaker and individual). Finally, we also wish to examine the physiological reactions of caretakers to stressors by looking at levels of stress hormones, namely cortisol, in saliva. While stress hormones normally aid the body to deal with stress, having high levels of stress hormones for extended periods of time can have harmful effects on the body.

We are also interested in the experiences of seniors who are not currently caring for an Alzheimer's patient. There are many events in our lives that come with the aging process, and so we want to be able to identify those experiences and their unique effects separate from caregiving. We believe it is important to understand the types of events that occur in the lives of seniors that may be stressful, and to identify effective strategies for coping with them.