Distinguishing Optimism From Pessimism in Older Adults: Is It More Important to Be Optimistic or Not to Be Pessimistic?

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Confirmatory factor analysis revealed that the Life Orientation Test (LOT) consisted of separate Optimism and Pessimism factors among middle-aged and older adults. Although the two factors were significantly negatively correlated among individuals facing a profound life challenge (i.e., caregiving), they were only weakly correlated among noncaregivers. Caregivers also expressed less optimism than noncaregivers and showed a trend toward greater pessimism, suggesting that life stress may affect these dispositions. Pessimism, not optimism, uniquely predicted subsequent psychological and physical health; however, optimism and pessimism were equally predictive for stressed and nonstressed samples. By exploring optimism and pessimism separately, researchers may better determine whether the beneficial effects of optimism result from thinking optimistically, avoiding pessimistic thinking, or a combination of the two.

Research on dispositional optimism has increased rapidly in the past decade because of evidence linking an optimistic outlook to psychological and physical well-being (see review in Scheier & Carver, 1992). Dispositional optimism has been related to such diverse outcomes as success in an aftercare alcohol treatment program (Strack, Carver, & Blaney, 1987), adjustment to college (Aspinwall & Taylor, 1992), resistance to postpartum depression (Carver & Gaines, 1987), protection from distress following a failed attempt at in vitro fertilization (Litt, Tennen, Affleck, & Klock, 1992), and adjustment following surgery for breast cancer (Carver et al., 1993). In a striking demonstration of the benefits of optimism on health, Scheier et al. (1989) found that optimists recovered more quickly following coronary artery bypass surgery and returned to a normal life more rapidly than pessimists.

All of the studies cited used the Life Orientation Test (LOT; Scheier & Carver, 1985), the most widely used measure of dispositional optimism, as a unidimensional measure of optimism. Scheier and Carver initially identified two factors on the LOT (one containing positively worded items; the other containing negatively worded items). Despite the two-factor structure of the measure, Scheier and Carver have preferred to treat the LOT as a unidimensional measure, suggesting that the two factors probably reflect differences in item wording rather than content.

Although Scheier and Carver (1985) originally reported a strong negative correlation between the Optimism and Pessimism factors among their sample of undergraduates ($r = -.64$), Plomin et al. (1992) found that optimism and pessimism were uncorrelated in their sample of middle-aged and older Swedish adults ($r = -.02$). Mroczek, Spiro, Aldwin, Ozer, and Bosse (1993) reported a relatively modest correlation between the two subscales in their sample of older men ($r = -.28$). This correlation, which was lower than typically reported in the literature, led them to question whether optimism and pessimism may be more independent among older adults.

Scheier and Carver have only recently acknowledged that there may be value in examining the two factors separately (Scheier, Carver, & Bridges, 1994). However, they qualified this acknowledgment by adding that, although the negatively and positively worded scales might yield different results in some infrequent circumstances, explorations have generally failed to demonstrate differential effects. Marshall, Wortman, Kusulas, Hervig, and Vickers (1992) were the first to argue that the two factors on the LOT represented separate optimism and pessimism constructs and that they correlated differently with other measures. They reported that optimism was primarily associated with extraversion and positive affect, pessimism with neuroticism and negative affect.

Subsequent to this, other researchers have begun examining the two subscales separately and have begun reporting differences in their correlations with psychological and physical health outcome variables. Mroczek et al. (1993) found that optimism and pessimism each contributed unique variance to recent psychological well-being and physical illness among participants of the Normative Aging Study. Lai (1994), examining the relation between optimism and pessimism and self-reported physical symptoms among undergraduates in Hong Kong, reported that only the optimism items accounted for independent variance in symptom reports. In contrast, Schulz, Bookwala,
Knapp, Scheier, and Williamson (1996) recently reported that pessimism, not optimism, predicted mortality among middle-aged cancer patients. Thus, the debate about whether or not optimism represents one or two constructs has recently been replaced by a debate about the significance of optimism versus pessimism. Is it more important to be optimistic or to not be pessimistic, or is it necessary to be both?

It has been suggested that optimism and pessimism may be particularly important when an individual is facing stressful events (Adler & Matthews, 1994), threatening events (Taylor, 1983), situations in which there is little personal control (Marshall & Lang, 1990), or situations that unfold or develop slowly over time (Scheier, Weintraub, & Carver, 1986). Indeed, the samples most commonly studied in optimism research have been samples experiencing life-altering or life-threatening stressors (Carver et al., 1993; Curbow, Somerfield, Baker, Wingard, & Legro, 1993; Fitzgerald, Tennen, Affleck, & Pransky, 1993; Friedman et al., 1992; Scheier et al., 1989; Schulz et al., 1996; Stanton & Snider, 1993; Taylor et al., 1992; Zeidner & Benson, 1993). Despite the potential importance of the LOT for stressed populations, little research has examined whether individuals who are facing stressors and those who are not differ on optimism or pessimism. Likewise, research has not addressed the differential effect of optimism and pessimism on psychological or physical health outcomes among stressed and nonstressed populations.

Bromberger and Matthews (1996) recently examined the differential impact of optimism (unidimensional construct) on depressive symptoms among a sample of middle-aged women. They reported that optimism was a better predictor of depressive symptomatology among women who reported experiencing recent negative life events and ongoing problems than those who did not. To examine this issue further, they conceptualized change in menopause status as a stressor and compared the influence of unidimensional optimism on depressive symptoms among individuals who were and those who were not experiencing a change in menopausal status. They later concluded that this was not an ideal test of the differential impact of optimism on stressed versus nonstressed individuals because menopause did not, in fact, appear to increase women's vulnerability to stress.

In our study we had two samples differing greatly in life stress (i.e., caregivers and noncaregivers), allowing us to explore whether optimism and pessimism are more important predictors of health and well-being among those experiencing a severe, chronic stressor and those who are not. Caring for a family member with a progressive dementia such as Alzheimer's disease (AD) is an extraordinarily long-term, unpredictable, and uncontrollable stressor (Light & Lebowitz, 1989). Optimism has been significantly related to mental health among caregivers for stroke patients (Tomkins, Schulz, & Rau, 1988) and cancer patients (Given et al., 1993) as well as AD patients (Hooker, Monahan, & Frazier, 1994; Hooker, Monahan, Shiffren, & Hutchinson, 1992). Although providing evidence for the utility of the LOT in predicting caregivers' psychological well-being, they did not compare the predictive ability of the LOT in caregivers versus noncaregivers. These studies also used the LOT as a unidimensional measure of dispositional optimism, making it unclear whether caregivers' psychological well-being benefits from expecting good things to happen in the future or from not expecting bad things.

Finally, Scheier and Carver (1993) have proposed that the LOT taps an enduring personality characteristic that "changes little with the vagaries of life" (p. 27). In this study we were able to explore how a profound life stressor affects responses to the LOT by comparing the factor means and factor structure of the LOT among a sample of individuals caring for a demented family member with that of a sample of noncaregivers. We also examined the effect of recent negative life events on subsequent optimism and pessimism in both samples.

To summarize, there were four primary goals of this study. First, the factor structure of the LOT was examined among middle-aged and older adults. Second, the influence of life stress on the LOT factor structure and factor means was examined. This was accomplished by comparing family caregivers' responses to the LOT with those of noncaring control participants and also by examining the effect of recent negative life events on subsequent optimism and pessimism. Third, the ability of optimism and pessimism to predict subsequent psychological distress and self-reported physical health was examined. Finally, the ability of optimism and pessimism to predict psychological and physical health outcomes was compared across a sample of chronically stressed individuals (i.e., caregivers) and a similar sample of noncaring control participants.

Method

Participants

Participants were enlisted for a longitudinal study of caregiving stress and health. Approximately half were providing care for a family member with a progressive, dementing illness; the other half were noncaring community-residing adults. To be included in the caregiver sample, individuals had to be providing a minimum of 5 hr of care per week for a cognitively impaired relative. Caregiving participants were recruited through local diagnostic clinics, neurologists' referrals, local caregiver support programs, and the Alzheimer's Association newsletter. Noncaregiving participants were recruited through local newspapers, senior citizens' organizations, church groups, and university publications. Potential comparison participants who reported any recent caregiving activities were excluded from the study.

Each year, participants in the longitudinal study received a series of interviews and completed a battery of self-report measures. Only subjects who completed the LOT during Years 1 and 3 of the longitudinal project were included in these analyses. The larger project includes bereaved caregivers whose caregiving activities have ceased; however, caregivers in this study were limited to those providing care for a relative both in Years 1 and 3. With these restrictions, the sample included 224 middle-aged and older adults (113 caregivers and 111 noncaregivers).

A majority of the caregivers (n = 80, 71%) and noncaregivers (n = 87, 78%) were women. Most were Caucasian (95%, caregivers; 92%, noncaregivers), and 68% had at least some college education. The mean annual family income was between $20,000 and $30,000. There were no significant differences between caregivers and noncaregivers in level of education (t = 0.44) or income (t = 1.19), but the two groups differed significantly in age (M = 56.00, SD = 13.84, caregivers; M = 61.53, SD = 13.22, noncaregivers; t = -3.06).

Caregivers were providing care for a spouse (n = 52), a parent (n = 52), or some other relative (n = 9; e.g., mother-in-law). On average, caregivers had been providing care for their relative for 33.33 months (SD = 48.53) before joining the study. Caregivers were providing a...
mean of 5.54 hr of care per day ($SD = 3.56$) for their impaired relative at Time 1 and 3.85 hr of care per day ($SD = 4.35$) at Time 3. The caregiver sample included individuals caring for a relative in their own home (Year 1, $n = 62$, 54.9%; Year 3, $n = 38$, 33.9%) as well as those caring for relatives residing in nursing homes. Previous research has not found a relationship between caregiver well-being and patient residence (Dura, Stukenberg, & Kiecolt-Glaser, 1990; Kiecolt-Glaser, Dura, Speicher, Trask, & Glaser, 1991).

The previously described sample of 113 caregivers and 111 noncaregivers was used to assess the LOT’s factor structure and the influence of negative life events on subsequent levels of optimism and pessimism. Data from 81 of the caregivers and 102 of the controls were used to explore the relation between Year 3 optimism, Year 3 pessimism, and Year 4 measures of psychological distress and self-rated physical health. The sample size was reduced to 183 because of attrition between Year 3 and Year 4 ($n = 24$), missing outcome data at Time 4 ($n = 3$), and the cessation of caregiving between Years 3 and 4 ($n = 14$) due to patient death. These two samples did not differ significantly in age, education, or income.

**Measures**

**Optimism.** The Life Orientation Test (LOT; Scheier & Carver, 1985) was administered to participants in Years 1 and 3 of the longitudinal study. The measure was not administered in Year 2. It includes four positively worded items, four negatively worded items, and four filler items. Participants indicate the extent to which they agreed with each statement, using a 5-point rating scale ranging from 0 (strongly disagree) to 4 (strongly agree). Cronbach’s coefficient alpha for the optimism subscale was .80 and .74 for Years 1 and 3, respectively; internal consistency for the pessimism subscale was .82 and .81 for Years 1 and 3, respectively. Mean optimism scores were 10.29 ($SD = 3.29$) and 10.47 ($SD = 3.17$) for caregivers in Years 1 and 3, respectively; for controls, mean optimism scores were 11.50 ($SD = 2.79$) and 5.28 ($SD = 3.28$) in Years 1 and 3, respectively; for controls, they were 4.68 ($SD = 3.04$) and 4.46 ($SD = 3.04$).

**Negative life events.** Negative life events, assessed every 3 months by means of phone interviews, were summed across the 12-month period preceding the Year 3 annual interview. The life event checklist used in the study was a 28-item version of the Geriatric Social Readjustment Rating Scale (GSRRS; Amster & Krauss, 1974). The shortened version of the scale used in this study excluded items that might reflect changes in mental or physical health (e.g., changes in sleeping or eating habits).

**Depression.** The Hamilton Depression Rating Scale (HDRS; Hamilton, 1967) provides a 24-item interviewer-rated measure of depressive symptoms experienced in the previous week. The HDRS was administered by advanced clinical psychology graduate students or clinical psychology postdoctoral fellows as part of participants’ annual assessments. Interrater reliability, calculated on 10% of all interviews in Year 4 by using audiotapes, was .83. Cronbach’s coefficient alpha was .82 and .85 for Year 3 and Year 4, respectively. Caregivers reported more depression than controls both at Year 3: caregivers, $M = 6.41$, $SD = 5.38$; controls, $M = 3.22$, $SD = 3.57$; $t(181) = 10.26$, $p < .001$; and at Year 4: caregivers, $M = 6.23$, $SD = 5.57$; controls, $M = 2.55$, $SD = 3.52$; $t(181) = 11.77$, $p < .001$.

**Perceived stress.** Beginning in Year 3, the 10-item Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) was used to measure the extent to which individuals perceived recent life circumstances as stressful (i.e., unpredictable, uncontrollable, and overloading). Participants rated each of 10 statements on a 5-point scale (0 = never to 4 = very often). The coefficient alpha was .91 for both Years 3 and 4. Caregivers reported higher levels of stress both in Year 3: caregivers, $M = 16.96$, $SD = 6.45$; controls, $M = 12.28$, $SD = 6.96$; $t(181) = 12.14$, $p < .001$; and in Year 4: caregivers, $M = 17.12$, $SD = 7.17$; controls, $M = 12.30$, $SD = 6.19$; $t(181) = 12.59$, $p < .001$.

**State anxiety.** The State–Trait Anxiety Inventory (Form Y-1) (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) was used to assess state anxiety. This 20-item scale uses a 4-point response format (1 = not at all to 4 = very much so) to assess how individuals feel at the present time. Possible scores range from 20 to 80. Mean scores were 37.77 ($SD = 12.79$) and 29.52 ($SD = 8.50$) for caregivers and controls, respectively, in Year 3, $t(181) = 17.18$, $p < .001$, and were 35.17 ($SD = 10.80$) and 30.54 ($SD = 8.87$) for caregivers and controls, respectively, in Year 4, $t(181) = 9.98$, $p < .001$. The internal consistency of the measure was .94 and .93 for Year 3 and Year 4, respectively.

**Self-rated health.** Self-reported health was assessed by using an item from the OARS (Older Americans’ Resources and Services) Multidimensional Functional Assessment Questionnaire (Fillenbaum & Smyer, 1981). Participants rated their health at each annual interview by using the following response options: excellent (3), good (2), fair (1), or poor (0). Both caregivers and controls rated their health as good in Year 3: caregivers, $M = 1.96$, $SD = 0.52$; controls, $M = 2.30$, $SD = 0.61$; $t(181) = -3.14$, $p < .01$ and Year 4: caregivers, $M = 1.99$, $SD = 0.67$; controls, $M = 2.27$, $SD = 0.66$; $t(181) = -2.29$, $p < .05$.

**Negative affectivity.** The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), a 20-item scale designed to measure these two dimensions of emotional experience, was administered to participants as part of their annual interview beginning in Year 2. Participants were asked to rate the extent to which they experienced each of the 20 mood states in the past week, using a 5-point scale. The Negative Affect subscale had adequate internal consistency (Cronbach’s coefficient alpha = .85 in Year 2 and .87 in Year 3) among the combined caregiver and control sample.

The Negative Affect subscale was used as a covariate in analyses predicting self-reported psychological and physical health to address recent criticism that optimism is indistinguishable from other measures of neuroticism or negative affectivity (Smith, Pope, Rhodewalt, & Poulton, 1989). Because the version of the PANAS administered in this study is a measure of negative affect state rather than a trait measure of negative affectivity, we decided to create a more traitlike measure by allowing Year 2 and Year 3 negative affect to load on a single latent variable. By extracting that which is consistent and stable in the measure across 2 years of study, we were able to create a more suitable measure of negative affectivity.

For a summary of the measures used in the analyses and the year those measures were administered, see Table 1.

**Results**

**Factor Structure of the LOT Among Older Adults**

Multigroup confirmatory factor analysis (CFA) using LISREL 8 (Jöreskog & Sörbom, 1994) was conducted on the

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOT</td>
<td>81</td>
<td>102</td>
<td>81</td>
</tr>
<tr>
<td>Negative Life Events</td>
<td>LOT</td>
<td>PANAS</td>
<td>Anxiety</td>
</tr>
<tr>
<td>Depression</td>
<td>Depression</td>
<td>Anxiety</td>
<td>Stress</td>
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</tbody>
</table>

**Note.** LOT = Life Orientation Test; PANAS = Positive and Negative Affect Schedule.
The adequacy of fit of the one- and two-factor models was assessed by using the following goodness-of-fit indexes: the nonnormed fit index (NNFI; Bentler & Bonett, 1980); the comparative fit index (CFI; Bentler, 1988); and the root-mean-squared error of approximation (RMSEA), which was proposed by Steiger and Lind (1980) and has been further discussed by Browne and Cudeck (1993). Values of .90 or higher on the NNFI and CFI indicate good fit. In contrast, the RMSEA becomes smaller as fit improves. Values of less than .05 on the RMSEA indicate very good fit, values less than .08 indicate reasonable fit, and values greater than .10 indicate poor fit (Browne & Cudeck, 1993). Results of the conventional chi-square test of the hypothesis that a model holds exactly in the population will also be reported. Less attention should be given to this test of fit because models of this type are, at best, a close approximation of the real world.

In the two-factor model tested, positively and negatively worded items loaded on different factors, and the correlation between the two factors was freely estimated. Specifying a model in which factor loadings were constrained to be equal between groups but factor intercorrelations were allowed to differ by group provided a good fit for the data from Year 1, \( \chi^2(46, N = 224) = 64.82, p < .05 \); RMSEA = .04; NNFI = .96; CFI = .97. Analysis of Year 3 data produced a fairly similar pattern of results, \( \chi^2(46, N = 224) = 99.24, p < .01 \); RMSEA = .07; NNFI = .89; CFI = .91.

A one-factor model was found to fit poorly at both Years 1 and 3 (see Table 2). Comparison of the one- and two-factor models by chi-square using difference tests showed the latter to fit significantly better at both Years 1 and 3: Year 1, \( \chi^2_{df}(2, N = 224) = 196.09, p < .001 \); Year 3, \( \chi^2_{df}(2, N = 224) = 130.47, p < .001 \). Thus, a two-factor solution provided a significantly better fit to the data than a one-factor solution. The factor loadings for the two-factor model are presented in Table 3.

Although optimism and pessimism represent separate factors among both groups, the correlation between optimism and pessimism differed for caregivers and noncaregivers. Because of this difference, the fit of the two-factor model was significantly worsened when the association between the factors was constrained to be equivalent across groups: Year 1, \( \chi^2_{df}(1, N = 224) = 11.31, p < .01 \); Year 3, \( \chi^2_{df}(1, N = 224) = 9.98, p < .01 \). Optimism and pessimism were more strongly correlated among caregivers than noncaregivers both at Year 1 and Year 3. A fairly weak correlation was observed between optimism and pessimism among the noncaregiver sample in Years 1 and 3 (Year 1, \( r = -.23, z = -2.14 \); Year 3, \( r = -.26, z = -2.31 \)). In contrast, a strong negative correlation between the two factors was found among family caregivers (Year 1, \( r = -.61, z = -7.97 \); Year 3, \( r = -.63, z = -8.14 \)).

### The Effect of Life Stressors on the LOT

In addition to testing for significant differences between caregivers and controls on factor loadings and factor intercorrelations, we were also able to test group differences in mean levels of latent optimism and pessimism. The two groups had significantly different factor means, as evidenced by the decrease in fit when factor means were constrained to be equivalent across groups: Year 1, \( \chi^2_{df}(2, N = 224) = 7.37, p < .05 \); Year 3, \( \chi^2_{df}(2, N = 224) = 7.00, p < .05 \). Family caregivers were significantly less optimistic than noncaregivers in Year 1 (\( z = 2.65 \)) ; in Year 3, they continued to be less optimistic (\( z = 2.56 \)) and also tended to be more pessimistic (\( z = -1.91 \)). These data suggest that extreme negative life events, such as caring for a relative with a progressive dementia, may affect dispositional optimism and pessimism.

To examine further the idea that negative life events may affect optimism and pessimism, multigroup structural equation modeling (SEM) was used to assess the stability of optimism and pessimism over the 2-year period and to examine the contrib-

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Table 2
Comparison of One- and Two-Factor Multigroup Confirmatory Factor Analyses of the Life Orientation Test

<table>
<thead>
<tr>
<th>Fit indexes</th>
<th>1 factor</th>
<th>2 factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \chi^2 )</td>
<td>260.91</td>
<td>64.82</td>
</tr>
<tr>
<td>( df )</td>
<td>48</td>
<td>46</td>
</tr>
<tr>
<td>( p )</td>
<td>.00</td>
<td>.04</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.14</td>
<td>.04</td>
</tr>
<tr>
<td>NNFI</td>
<td>.61</td>
<td>.96</td>
</tr>
<tr>
<td>CFI</td>
<td>.67</td>
<td>.97</td>
</tr>
<tr>
<td>Year 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \chi^2 )</td>
<td>229.71</td>
<td>99.24</td>
</tr>
<tr>
<td>( df )</td>
<td>48</td>
<td>46</td>
</tr>
<tr>
<td>( p )</td>
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<td>.00</td>
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</tr>
<tr>
<td>CFI</td>
<td>.68</td>
<td>.91</td>
</tr>
</tbody>
</table>

Note. For Year 1, \( \chi^2_{df}(2, N = 224) = 196.09, p < .001 \). For Year 3, \( \chi^2_{df}(2, N = 224) = 130.47, p < .001 \). RMSEA = root-mean-squared error of approximation; NNFI = nonnormed fit index; CFI = comparative fit index.

Table 3
Factor Loadings From the Multigroup Confirmatory Factor Analyses for the Two-Factor Model of the Life Orientation Test (N = 224)

<table>
<thead>
<tr>
<th>Item</th>
<th>Optimism</th>
<th>Pessimism</th>
<th>Optimism</th>
<th>Pessimism</th>
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<tr>
<td>1</td>
<td>.55</td>
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<td>.52</td>
<td>.53</td>
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<td>3</td>
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<td>12*</td>
<td>.52</td>
<td>.53</td>
<td>.55</td>
<td>.63</td>
</tr>
</tbody>
</table>

Note. All factor loadings are significant at the \( p < .05 \) level.
distribution of negative life events on subsequent optimism and pessimism among caregivers and controls. A model was specified in which Year 1 latent optimism influenced Year 3 optimism and Year 1 latent pessimism influenced Year 3 pessimism. Factor means were included in the model so that differences between Year 1 and Year 3 latent optimism and pessimism could be tested. The influence of negative life events occurring between Years 2 and 3 on subsequent Year 3 optimism and pessimism was also estimated in this model. Factor loadings were constrained to be equal across groups, but the intercorrelations among optimism, pessimism, and negative life events and the path coefficients were free to vary for caregivers and noncaregivers. This model provided a good fit to the data, $\chi^2(236, N = 224) = 371.54, p < .01$; RMSEA = .05; NNFI = .90; CFI = .91.

In this model, Year 1 optimism accounted for 69% and 62% of the variance in Year 3 optimism for caregivers and noncaregivers, respectively. In a similar vein, Year 1 pessimism accounted for 70% and 79% of the variance in Year 3 pessimism for caregivers and noncaregivers, respectively. Thus, optimism and pessimism appear to be fairly stable over a 2-year period in both samples. Stability was further supported by the similarity in factor means across the 2 years of study. Chi-square difference tests revealed that models constraining factor means to be equivalent across Years 1 and 3 did not result in a significant reduction in fit: optimism, $\chi^2(2, N = 224) = 4.53, p > .05$; pessimism, $\chi^2(2, N = 224) = 5.53, p > .05$.

Negative life events during the 12 months preceding the Year 3 assessment did, however, affect Year 3 optimism and pessimism after parcelling out the influence of Year 1 optimism and pessimism. Life events had a positive influence on subsequent pessimism (gamma = .27, z = 3.04) and had a tendency to negatively influence subsequent optimism (gamma = -.16, z = -1.71) among noncaregivers. Negative life events did not significantly predict Year 3 pessimism (gamma = .01, z = 0.09) or optimism (gamma = -.05, z = -0.72) among caregivers. These data suggest that negative life events can, at times, influence the otherwise stable dispositions of optimism and pessimism.

Although caregivers and noncaregivers appear to differ in the extent to which recent negative life events influence their levels of optimism and pessimism, placing equality constraints on these paths across groups did not result in a significant decrease in fit. Thus, the differences between these groups are not statistically significant. In addition, when equality constraints were imposed across groups, the influence of negative life events on subsequent optimism and pessimism was no longer significant (optimism, gamma = -.06, z = -0.91; pessimism, gamma = .01, z = 0.10).

**Optimism and Pessimism as Prospective Predictors of Outcome**

SEM was used to examine the influence of Year 3 optimism and pessimism on Year 4 psychological and physical health among caregivers and noncaregivers. Year 3 psychological and physical health variables were included in the model to better assess the ability of optimism and pessimism to prospectively predict subsequent outcomes independent of initial levels of these variables. Because of criticism that the LOT is merely another measure of neuroticism (Smith et al., 1989), negative affectivity was included in the models so that the contribution of Year 3 optimism and pessimism, independent of negative affectivity, could be assessed. This was judged to be particularly important, given our evaluation of pessimism as a separate construct.

For each of the measured outcome variables (i.e., anxiety, depression, perceived stress, and self-reported health), a series of multisample analyses were conducted to assess the similarity between caregivers and noncaregivers in these models (see Figures 1–4). On the basis of results of our multisample confirmatory factor analyses, models were specified with equivalent optimism and pessimism factor loadings across groups. The relationships among predictor variables (e.g., latent optimism, latent pessimism, negative affectivity, and Year 3 measured variables) were each tested to determine whether they differed for caregivers versus controls. Separate estimates for caregivers and controls were retained only when the chi-square difference test indicated a significant decrease in fit when equivalence constraints were imposed. There were no group differences in the factor variances of Year 3 optimism, Year 3 pessimism, and negative affectivity; however, the variances of Year 3 anxiety, depression, and perceived stress were different between groups. The correlations in Figures 1–3 are based on the common metric standardized solution.

Models were initially specified with path coefficients estimated separately for caregivers and controls. When path coefficients were constrained to be equivalent across groups, there was no significant reduction in the fit of the four outcome models. Chi-square difference tests comparing constrained models with models in which path coefficients were estimated independently for the two samples were all nonsignificant: anxiety, $\chi^2(4, N = 183) = 2.06, p > .05$; depression, $\chi^2(4, N = 183) = 4.17, p > .05$; perceived stress, $\chi^2(4, N = 183) = 2.61, p > .05$; and self-rated health, $\chi^2(4, N = 183) = 1.01, p > .05$. The models with path coefficients constrained are preferred because they result in a more parsimonious solution without a significant loss of fit. The fit of the models with constrained path coefficients were generally adequate, with fit indices ranging from .05 to .06 on the RMSEA, .88 to .91 on the NNFI, and .90 to .93 on the CFI (see Table 4).

Although these models included relatively few potential predictors of outcome, they accounted for a substantial proportion of the variance in Year 4 outcome variables. The variance accounted for by the models ranged from .28 for anxiety among noncaregivers to .56 for perceived stress among caregivers. The amount of variance in Year 4 outcome accounted for by these models was similar for caregivers and noncaregivers (see Figures 1–4). This similarity, combined with the equivalence of path coefficients across the two groups, suggests that the pre-

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1 We attempted to analyze our data using one latent outcome variable consisting of all of our measures of well-being (i.e., depression, perceived stress, anxiety, and self-reported health), but these variables were not sufficiently correlated ($r$s ranged from .21 to .62). As a result, the single latent variable model provided an inadequate fit to the data, $\chi^2(344, N = 183) = 728.34, \text{RMSEA} = .08, \text{NNFI} = .74, \text{CFI} = .77$. 

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**DISTINGUISHING OPTIMISM FROM PESSIMISM**
Year 3 Year 4

Optimism

Pessimism

Anxiety

Depression

Negative Affectivity

Figure 1. Multisample structural equation model: Influence of Year 3 optimism, pessimism, anxiety, and negative affectivity on Year 4 anxiety. Two parameter estimates are presented when caregivers and controls differed significantly. When two estimates are presented, values on the left represent estimates for controls; values on the right, caregivers. Factor variances for Year 3 anxiety, which are standardized by a common metric, are 1.36 and 0.72 for caregivers and controls, respectively. Values in parentheses are nonsignificant; all other values are significant at or beyond the p < .05 level. Circles represent latent variables with multiple indicators; rectangles represent measured variables.

Year 3 Year 4

Optimism

Pessimism

Perceived Stress

Negative Affectivity

Figure 2. Multisample structural equation model: Influence of Year 3 optimism, pessimism, depression, and negative affectivity on Year 4 depression. Two parameter estimates are presented when caregivers and controls differed significantly. When two estimates are presented, values on the left represent estimates for controls; values on the right, caregivers. Factor variances for Year 3 depression, which are standardized by a common metric, are 0.74 and 1.32 for caregivers and controls, respectively. Values in parentheses are nonsignificant; all other values are significant at or beyond the p < .05 level. Circles represent latent variables with multiple indicators; rectangles represent measured variables.

dictive utility of optimism and pessimism does not differ substantially for caregivers and noncaregivers.

Of primary interest in the models was the contribution of latent optimism and pessimism on Year 4 outcome measures. Year 3 pessimism significantly influenced Year 4 anxiety (gamma = .17, z = 2.05), perceived stress (gamma = .20, z = 2.57), and self-rated health (gamma = -.16, z = -2.10) independent of the other variables in the model. The only Year 4 outcome variable that pessimism failed to significantly predict was depression (gamma = .05, z = 0.68). In contrast, Year 3 latent optimism did not make an independent contribution to any of the Year 4 outcome measures (absolute gammas ranged from .04 to .10). The pessimism path coefficients were not, however, significantly stronger than the optimism path coefficients. When equality constraints were imposed on these path coefficients, there was not a statistically significant reduction in fit in any of the models, $\chi^2_{diff}(1, N = 183) = 2.46, 0.45, 0.16,$ and 0.04, all $p$s > .05, for anxiety, depression, perceived stress, and health, respectively.

When we examined the relationship between Year 3 optimism

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2 When Year 3 optimism was the sole predictor in the model, optimism significantly predicted Year 4 depression, perceived stress, anxiety, and self-reported health. Optimism remained a significant predictor of Year 4 perceived stress (z = -2.13) and health (z = 2.05) (but not depression and anxiety) after negative affectivity and Year 3 premeasures were added to the model. Optimism's ability to predict subsequent perceived stress and self-reported health dropped out only after pessimism was added to the model.
and pessimism and Year 3 measures of psychological and physical health (see Figures 1-4), optimism and pessimism were both correlated with these measures in Year 3. These relationships were based on simple correlations; the relationships between optimism and pessimism and subsequent outcomes in our SEM analyses were based on regression weights that partial out the effects of other predictors in the model. Although we did not find group differences in the influence of optimism and pessimism on subsequent psychological and physical health in our SEM analyses, differences between caregivers and noncaregivers in the relationship between optimism and outcome variables did emerge when simple correlations were examined. Specifically, Year 3 optimism was more highly correlated with Year 3 anxiety, Year 3 depression, and negative affectivity among caregivers than noncaregivers.

### Discussion

Among caregiving as well as noncaregiving middle-aged and older adults, the LOT consisted of two separate Optimism and Pessimism factors. Results of multigroup confirmatory factor analyses revealed that a two-factor model provided a significantly better fit than a single-factor model. In fact, the two factors were only weakly correlated among noncaregiving middle-aged and older adults. This is consistent with the results of Plomin et al. (1992) and Mroczek et al. (1993), who suggested that optimism and pessimism may be more independent among older adults. It is also consistent with literature on adult cognitive development that suggests that youthful thinkers often approach problems more dualistically and accept a more black-versus-white view of reality than older adults (Labouvie-Vief, 1992).

![Figure 4](image-url)  
**Figure 4.** Multisample structural equation model: Influence of Year 3 optimism, pessimism, self-rated health, and negative affectivity on Year 4 self-rated health. Two parameter estimates are presented when caregivers and controls differed significantly. When two estimates are presented, values on the left represent estimates for controls; values on the right, caregivers. Values in parentheses are nonsignificant; all other values are significant at or beyond the $p < .05$ level. Circles represent latent variables with multiple indicators; rectangles represent measured variables.

Concerns about the bidimensionality of the LOT apply to the newly developed LOT-R as well. Although Scheier et al. (1994) reported a cleaner one-factor solution on the LOT-R, their confirmatory factor analysis on data from young college students still revealed that a two-factor solution provided a better fit to their data than a one-factor model.

Caregiving and noncaregiving participants did not differ in factor structure on the LOT; however, other important differences did emerge. Although optimism and pessimism were largely independent among control participants, optimism was significantly negatively correlated with pessimism among individuals experiencing a profound life stressor. Mirroring the relationship with pessimism, optimism also correlated more strongly with negative affectivity and concurrent levels of anxiety and depression among caregivers than among controls.

These differences suggest that optimism may not be as pure and independent a measure of positive expectations about the future among stressed individuals. Individuals experiencing an extreme life stressor appear to be less able to perceive that both good and bad things can be expected for the future. Individuals experiencing a severe stressor may respond to the LOT to some extent with their specific stressor in mind. Thus, even though optimism and pessimism may generally be independent, these individuals may be more likely to report either positive or negative expectations for the future (i.e., they may be more likely to expect that their current circumstances will either improve or decline).

Caregivers and noncaregivers also differed in mean levels of optimism and pessimism. Chronically stressed participants were less optimistic than controls and showed trends toward greater pessimism. Although optimism and pessimism were quite stable over 2 years among caregivers and noncaregivers, optimism and pessimism appeared to be influenced by environmental circumstances and life experiences. This was evidenced not only by the differences in factor means among caregivers and noncaregivers but also by the finding that negative life events significantly affected subsequent optimism and pessimism among noncaregiving participants. Negative life events did not, however, influence subsequent levels of optimism and pessimism among caregivers. It may be that caregivers' outlook for the future had already been altered by the challenge of caring for a demented family member. Thus, additional life events, many relatively minor in comparison to the ongoing stress of caregiving, did not modify their expectations for the future. The differences

### Table 4

<table>
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<th>Fit index</th>
<th>Anxiety</th>
<th>Depression</th>
<th>Stress</th>
<th>Health</th>
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<td>110</td>
<td>111</td>
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<td>.05</td>
<td>.06</td>
</tr>
<tr>
<td>NNFI</td>
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<td>.89</td>
<td>.91</td>
<td>.88</td>
</tr>
<tr>
<td>CFI</td>
<td>.93</td>
<td>.91</td>
<td>.93</td>
<td>.90</td>
</tr>
</tbody>
</table>

Note. RMSEA = root-mean-squared error of approximation; NNFI = nonnormed fit index; CFI = comparative fit index.
between caregivers and controls in the influence of negative life events on optimism and pessimism were not statistically significant, but this may have been the result of our less than optimal sample size.

Examining group differences in the ability of optimism and pessimism to predict subsequent outcomes, we did not find evidence that optimism and pessimism were stronger predictors among stressed than nonstressed samples. There were no differences between the two groups in the ability of optimism and pessimism to prospectively predict anxiety, depression, perceived stress, or self-reported health over a 1-year period. Among caregivers as well as controls, pessimism significantly predicted anxiety, perceived stress, and self-rated health a year later. The influence of pessimism was independent of initial anxiety, stress, and health and was independent of the influence of negative affectivity.

In contrast to pessimism, optimism failed to predict any outcome variable a year later. Although we found that only pessimism predicted outcome above and beyond the influence of the other variables in the model, the differences between path coefficients for optimism and pessimism were not statistically significant. This may have been the result of our less than optimal sample size, given the multigroup analyses conducted. With larger samples, pessimism may prove to be a more salient prospective predictor of psychological and physical health outcomes than optimism. This speculation is consistent with the recent results of Schulz et al. (1996), who found that pessimism, not optimism, predicted mortality among middle-aged cancer patients. The beneficial effects of optimism found in the past may have been a function of pessimism rather than optimism, and the widespread use of the LOT as a unidimensional measure might have camouflaged such effects.

It is possible that optimism was not a significant predictor of subsequent outcomes in our study because of our choice of outcome measures. Marshall et al. (1992), who reported that pessimism correlated highly with neuroticism and negative affect, also reported that optimism correlated highly with extraversion and positive affect. We did not have measures of extraversion in our study, nor did we have positively laden outcome measures that could be used in our models. Thus, we cannot be certain that optimism might not have been a more significant predictor, had we examined positive outcomes.

It is also possible that the LOT Optimism scale is less conceptually cohesive than the Pessimism scale. Scheier et al. (1994) recently indicated that the LOT Optimism scale contains two items that reflect coping strategies rather than expectations. They offered a revised measure that replaces these items with more expectancy-based items. Although a scale with less consistent item content might explain the differences in predictive ability of the two factors, this does not seem likely in light of the fact that optimism and pessimism were both related to psychological and physical health when simple correlations were examined. It is also inconsistent with our examination of the internal consistency of the subscales.

To summarize, results of this study suggest that optimism and pessimism are separate constructs that are largely independent among nonstressed middle-aged and older adults. Although optimism and pessimism are separate factors among stressed adults as well, they are less independent among stressed than nonstressed individuals. Optimism among stressed adults is also more highly correlated with negative affectivity, anxiety, and depression, variables that Marshall et al. (1992) reported to be more highly correlated with pessimism than optimism. Of greatest interest, we found that pessimism, not optimism, was a prospective predictor of psychological and physical health outcomes a year later. In addition, we found that optimism and pessimism were equally predictive among individuals experiencing an extreme stressor and those who were not.

These data suggest that there are benefits to exploring optimism and pessimism separately among middle-aged and older adults. The differentiation of optimism and pessimism is not purely academic and should no longer be relegated to footnotes in investigations of the LOT. We believe it would be valuable to know whether the beneficial effects of optimism are best attributed to thinking optimistically about the future, avoiding pessimistic expectations for the future, or a combination of the two. Results of this study tentatively suggest that pessimism may be the more crucial factor.

References


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