Daily Stress, Coping, and Negative and Positive Affect in Depression: Complex Trigger and Maintenance Patterns

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Major depressive disorder is characterized by emotional dysfunction, but mood states in daily life are not well understood. This study examined complex explanatory models of daily stress and coping mechanisms that trigger and maintain daily negative affect and (lower) positive affect in depression. Sixty-three depressed patients completed perfectionism measures, and then completed daily questionnaires of stress appraisals, coping, and affect for 7 consecutive days. Multilevel structural equation modeling (MSEM) demonstrated that, across many stressors, when the typical individual with depression perceives more criticism than usual, he/she uses more avoidant coping and experiences

higher event stress than usual, and this is connected to daily increases in negative affect as well as decreases in positive affect. In parallel, results showed that perceived control, less avoidant coping, and problem-focused coping commonly operate together when daily positive affect increases. MSEM also showed that avoidant coping tendencies and ongoing stress, in combination, explain why people with depression and higher self-critical perfectionism maintain daily negative affect and lower positive affect. These findings advance a richer and more detailed understanding of specific stress and coping patterns to target in order to more effectively accomplish the two predominant therapy goals of decreasing patients' distress and strengthening resilience.

Keywords: depression; stress; coping; affect; perfectionism

MAJOR DEPRESSIVE DISORDER (MDD) is a highly burdensome disorder that is characterized by high levels of negative affect and, more specifically, low levels of positive affect (Clark, Watson, & Mineka, 1994). Although MDD by definition features persistent affective disturbance, how these mood states change and are maintained in daily life in MDD is not well understood. In order to improve evidence-based practice, it is critical to address person-centered explanatory questions (e.g., "*Why do depressed patients keep having difficulties?*") that are essential to help achieve two overarching therapy goals of reducing patients' distress and bolstering resilience (see Kuyken, Padesky, & Dudley, 2009; Persons, 2012).

In cognitive-behavior therapy (CBT), therapists emphasize the present in gathering several records summarizing patients' thoughts, feelings, and behaviors for many situations of daily life (e.g., "*I worried when others noticed I made a mistake in my report I would get the blame, so I stopped working and did not finish the report on time, and I felt really sad and anxious*"; see Kuyken et al., 2009; Persons, 2012). Therapists then draw connections among specific thoughts, emotions, and behaviors across numerous situations in order to understand: (a) the triggers that are in play when a patient's mood worsens, (b) the maintaining mechanisms that perpetuate their mood problems, and (c) the triggering and maintaining mechanisms that bolster positive mood (see Kuyken et al., 2009; Persons, 2012). The present study aimed to gain a better understanding of mood states in depression by testing complex trigger and maintenance models of daily stress, coping, and negative and positive affect in depressed patients, which were based on Dunkley, Ma, Lee, Preacher, and Zuroff's (2014) work that did not use a clinical sample.

Complex Stress, Coping, and Affect Trigger and Maintenance Patterns

Although there are important differences between various cognitive (e.g., Beck, Rush, Shaw, & Emery, 1979), learning (e.g., Martell, Addis, & Jacobson, 2001), and emotion-focused (e.g., Gray, 1990) theories of depression, these theories recognize the importance of withdrawal and approach systems. All of these theories propose that effective treatment involves helping people with depression decrease inhibition and become more engaged with their environment, especially in ways that increase positive affect (see Persons, 2012; Trew, 2011). In keeping with this view, one of the most often used distinctions within the broad domain of coping is between disengagement coping action patterns, which are aimed at escaping the stressor and are emotionally negative, and engagement coping patterns, which are aimed at dealing with the stressor and are emotionally positive (see Carver & Connor-Smith, 2010; Skinner, Edge, Altman, & Sherwood, 2003). Based on an integration of various theoretical perspectives, Dunkley et al.'s (2014) model articulated disengagement and engagement patterns consisting of sets of stress appraisals, coping responses, and emotions that are organized around overarching concerns about competence central to many depressed patients' difficulties (Beck, 1983; Blatt, 2004; Blatt, D'Afflitti, & Quinlan, 1976). In a sample of 196 nondepressed community adults, Dunkley et al. used a daily diary method to examine in parallel disengagement and engagement coping patterns that differentially trigger and maintain daily negative and positive affect, as detailed below.

TRIGGERS OF DAILY AFFECT: DISENGAGEMENT, ENGAGEMENT, AND COUNTERACTION PATTERNS

According to CBT theory, changes in any one of or several cognitive appraisals and coping strategies might trigger changes in affect (see Beck et al., 1979; Kuyken et al., 2009; Persons, 2012). Further, it is quite likely that different appraisal and coping components may assume more or less significance, depending on the stressful situation and/or what is most salient to the individual. Previous research shows that changes in stress appraisals, coping, and affect do not strongly overlap and exhibit several unique effects across situations (Dunkley et al., 2014). Figure 1 illustrates Dunkley et al.'s theoretical model and findings that elucidate trigger patterns that are connected to within-person changes in daily negative and positive affect.
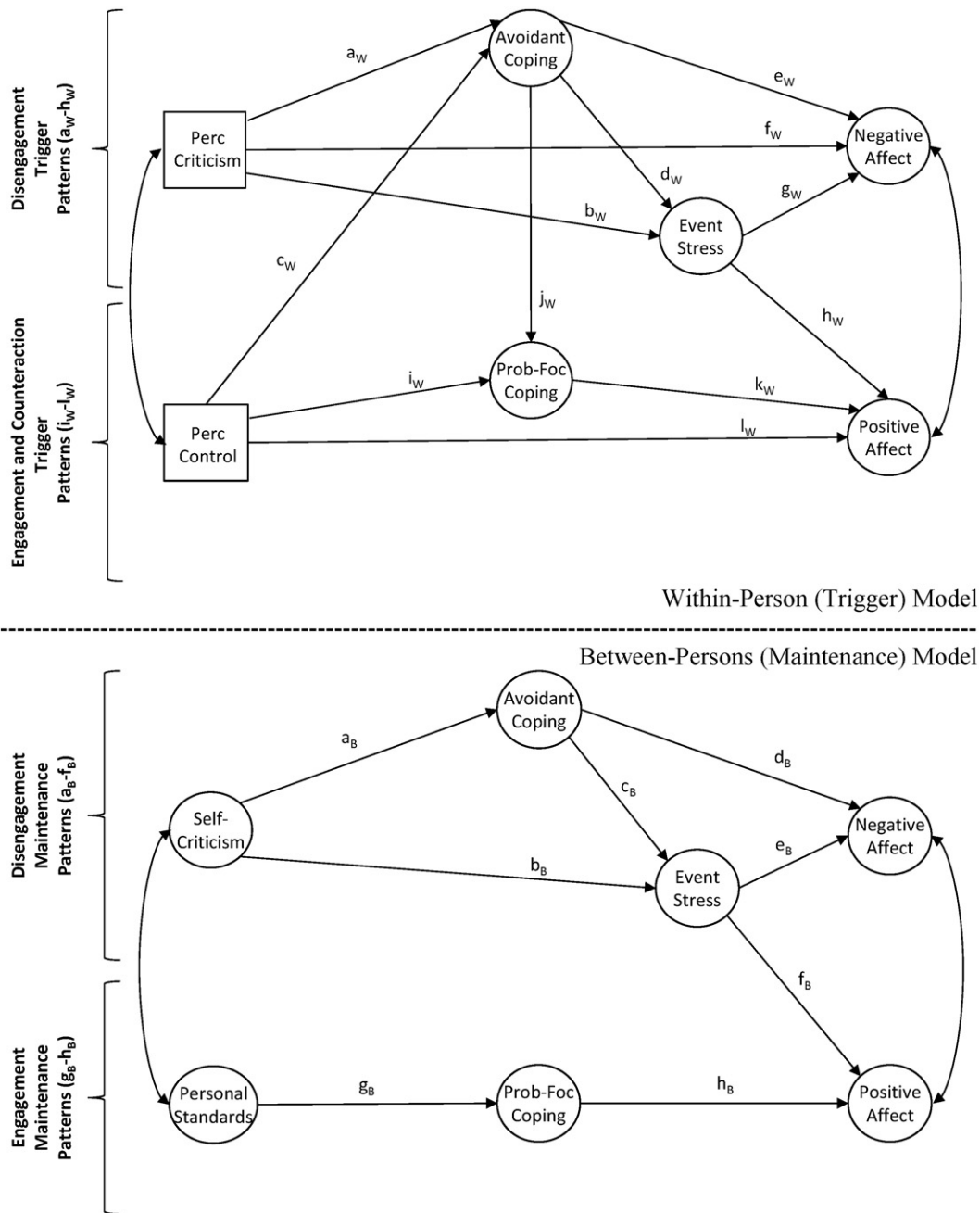
FIGURE 1   Hypothesized within-person (top) and between-persons (bottom) structural models, based on Dunkley et al.'s (2014) theoretical model and findings with nondepressed adults. Latent variables are represented by ovals, and measured variables are represented by rectangles. Perc = Perceived; Prob-Foc = Problem-focused.

Disengagement Trigger Patterns

As depicted in Figure 1, the helplessness appraisal of expecting criticism by others (i.e., perceived criticism) has been theorized to often trigger an avoidant coping response to disengage even from minor stressors (e.g., Dunkley, Zuroff, & Blankstein, 2003; see Skinner et al., 2003). Perceived criticism, as a threat appraisal that blames the self, also often signals higher event stress and escalating negative

affect (see Holahan, Moos, & Bonin, 1997; Skinner et al., 2003). Avoidant coping is increasingly being recognized as a maladaptive response to a variety of stressors (see Aldao, Nolen-Hoeksema, & Schweizer, 2010). For many stressful situations, engaging in avoidant coping might serve to increase the severity, duration, or both of the stressor, as well as exacerbate distress (e.g., Carver & Connor-Smith, 2010; Holahan et al., 1997). Dunkley and colleagues (2014)

found that, across many daily stressors, when the typical individual perceives more criticism from others than usual, he/she uses more avoidant coping and perceives higher event stress than usual, and this is connected to daily increases in negative affect and decreases in positive affect (see Figure 1; a_W, b_W, d_W-h_W).

Coping efforts are believed to also be partly determined by expectancies of succeeding or failing (e.g., Bandura, 1986; see Carver & Connor-Smith, 2010; Skinner et al., 2003). Lower perceived control over the ability to successfully handle stressors has been conceptualized as a common trigger of avoidant coping (e.g., Carver, Scheier, & Weintraub, 1989; Dunkley et al., 2003). Dunkley et al. (2014) found that lower perceived control than usual was related to more avoidant coping than usual, which, in turn, was *indirectly* related to daily increases in negative affect and decreases in positive affect through event stress (see Figure 1; $c_W d_W g_W$, $c_W d_W h_W$).

Engagement Trigger Patterns
As shown in Figure 1, perceived controllability is a challenge appraisal that is directly related to positive affect and facilitates the identification of instrumental actions for many stressors, which should lead an individual to engage in problem-focused coping (see Carver et al., 1989; Skinner et al., 2003). Problem-focused coping, in turn, makes it possible for an individual to experience positive feelings of efficacy, mastery, and control for many stressors, even in situations that appear uncontrollable (see Folkman & Moskowitz, 2000). Dunkley et al. (2014) found that, across several daily stressors, when the typical individual perceives more control than usual, he/she engages in more problem-focused coping than usual, and this is linked to daily increases in positive affect (see Figure 1; $i_W k_W$, l_W).

Counteraction Trigger Patterns
Theory and research suggest that disengagement coping and engagement coping responses each have the ability to suppress or inhibit the other (see Corr, 2002; Martell et al., 2001; Trew, 2011). Dunkley et al. (2014) found that within-person decreases in avoidant coping were significantly correlated ($r = -.20$) with increases in problem-focused coping in community adults, but this link was not hypothesized in their within-person mediation model. In the present study, we evaluated *counteraction trigger patterns* in which the suppression of avoidant coping is hypothesized to facilitate problem-focused coping, which, in turn, is connected to daily increases in positive affect (see Figure 1, $j_W k_W$).

MAINTENANCE OF DAILY AFFECT: PERFECTIONISM AND DISENGAGEMENT AND ENGAGEMENT PATTERNS
Over the past two decades, perfectionism has received increasing empirical attention as a cognitive-personality factor that plays an important role in driving the maintenance of depression (see Blatt, 2004; Egan, Wade, & Shafran, 2011). Two higher-order dimensions of perfectionism, referred to as *personal standards* (PS) and *self-criticism* (SC), have been consistently identified that underlie many different perfectionism conceptualizations and measures (e.g., Dunkley et al., 2003; see Stoeber & Otto, 2006). PS involves the setting of and striving for high standards and goals for oneself. On the other hand, SC involves constant and harsh self-scrutiny, overly critical self-evaluation tendencies, and chronic concerns about others' criticism (e.g., Dunkley et al., 2003). Figure 1 depicts Dunkley et al.'s (2014, 2003) between-persons maintenance model and findings of the relations of SC and PS with average daily appraisals, coping, and affect.

Disengagement and Engagement Maintenance Patterns
Relative to PS, SC is more closely related to disengagement maintenance patterns that contribute to intense, prolonged negative affect. Individuals with higher SC have a tendency to: (a) generate daily stress for themselves by magnifying the negative aspects of events such that mundane difficulties can be interpreted as threatening stressors; and (b) engage in avoidant coping, which stems from helplessness thinking that they are unable to cope with stressors to their own and others' satisfaction (Dunkley et al., 2003). In two previous daily diary studies of university students (Dunkley et al., 2003) and community adults (Dunkley et al., 2014), the relation between SC and average daily negative affect and lower positive affect was found to be mediated by avoidant coping tendencies and ongoing stress (see Figure 1, a_B-f_B). Dunkley et al. (2014) also found SC to be indirectly related to negative affect and lower positive affect through event stress as a single mediator, although this finding was not found by Dunkley et al. (2003). In contrast to SC, individuals with higher PS often exhibit a mastery orientation, specifically, an adaptive tendency to engage in problem-focused coping in response to stressful situations (see Dunkley et al., 2003). Dunkley et al. (2014) found that PS was indirectly related to daily positive affect through problem-focused coping tendencies (see Figure 1, $g_B h_B$). Perceived criticism and perceived control were not found to be primary maintenance factors in the relation between perfectionism dimensions and affect

maintenance (e.g., Dunkley et al., 2014; Dunkley et al., 2003).

The Present Study

As Dunkley et al. (2014) demonstrated their multilevel explanatory model in a sample of non-depressed adults, the generalizability of the complex trigger and maintenance patterns to depressed patients is unknown. In terms of within-person emotion dynamics, findings from experience sampling studies have suggested that affective reactivity to daily negative events may be either blunted (Peeters, Nicolson, Berkhof, Delespaul, & De Vries, 2003), comparable (Thompson et al., 2012), or intensified (Bylsma, Taylor-Clift, & Rottenberg, 2011) in depressed patients compared to healthy controls. There is also emerging evidence that people with depression experience an enhanced-mood response to positive daily events compared to healthy controls (i.e., "mood-brightening" effect; Bylsma et al., 2011; Peeters et al., 2003; Thompson et al., 2012). In terms of between-persons differences, the characteristically higher negative affect and lower positive affect that depressed patients exhibit compared to healthy individuals (e.g., Bylsma et al., 2011) might result in ceiling and floor effects that could potentially diminish the role of SC perfectionism, stress, and coping in greater maintenance of depressive mood. In addition, theory suggests that the adaptive tendency of individuals with higher PS to engage in problem-focused coping might not be present when they are depressed (see Beck, 1983; Blatt, 2004). Therefore, a direct test of Dunkley et al.'s model in patients with major depression is needed as a check on the "fit" of the conceptualization to this population of interest.

Building on Dunkley et al.'s (2014) study of nonclinical adults, the present study used a daily diary method and multilevel structural equation modeling (MSEM) to simultaneously evaluate complex explanatory models of daily stress and coping mechanisms that trigger and maintain negative affect and (lower) positive affect in depressed patients. Previous daily diary studies have tested stress and coping variables as stand-alone predictors of daily affect in depression (e.g., Gunthert, Cohen, Butler, & Beck, 2005). However, research has not explicated how cognitive (e.g., stress appraisals) and behavioral (e.g., coping) processes commonly operate together to trigger and maintain negative affect and (lower) positive affect in depression. To our knowledge, our study was the first to integrate several interpersonal, cognitive, and behavioral processes that appear to often work in combination and link to variations in daily negative and positive affect. The use of MSEM in the present study allowed us to capitalize on the strengths of the single-level SEM approach (e.g., latent variables that control for measurement error, measures of model fit, complex models with multiple mediators) with the strengths of the multilevel modeling approach (handles clustering in nested data; see Preacher, Zyphur, & Zhang, 2010). A richer and more detailed understanding of stress appraisal and coping mechanisms that are connected to symptom change and maintenance should lead to more focused and effective interventions for alleviating depressed patients' distress and promoting resilience.

Figure 1 shows the hypothesized within-person and between-persons explanatory models based on Dunkley et al.'s (2014, 2003) theoretical model and findings described above. First, we examined a within-person trigger model (see Figure 1, a_W-l_W) of disengagement appraisal (e.g., perceived criticism, event stress) and avoidant coping processes that might commonly operate together when the typical person with depression experiences daily increases in negative affect and drops in positive affect. We also examined, in parallel, engagement and counteraction appraisal (e.g., perceived control) and problem-focused coping processes that might be in play when the typical person with depression experiences daily increases in positive affect. Second, we examined a between-persons maintenance model (see Figure 1, a_B-h_B) to evaluate whether people with depression and higher self-critical perfectionism experience persistent daily negative affect and lower positive affect because of disengagement maintenance tendencies (i.e., stress, avoidant coping). We also examined, in parallel, problem-focused coping tendencies that might contribute to compensatory experiences of positive affect for people with depression and higher personal standards. In addition, an important issue is the potential confounding of perfectionism with concurrent depressive severity (see Zuroff, Mongrain, & Santor, 2004). Accordingly, in a supplementary between-persons model, we examined perfectionism dimensions in the maintenance of daily negative and positive affect while controlling for depressive symptoms.

Method

PARTICIPANTS

Participants were outpatient adults (between the ages of 18–65) who had a primary diagnosis of current unipolar MDD according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th edition; DSM-IV; American Psychiatric Association, 1994), and were referred for treatment based on clinical interview(s) at one of two teaching hospitals in a North American city from October 2007 to

November 2010. In order to be eligible, participants did not have any changes in medications for at least 4 weeks prior to the study. To obtain a set of DSM-IV Axis I diagnoses, the Structured Clinical Interview for DSM-IV, Axis I Disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 1996) was administered. Exclusion criteria included a number of concurrent psychiatric disorders (bipolar or psychotic depression, alcohol/substance abuse, schizophrenia or schizophreniform disorder, organic brain syndrome, mental retardation). Also excluded were participants who needed hospitalization because of imminent suicide potential.

A master's-level research assistant recorded how each participant's diaries were received and noted any anomalies. Out of 68 patients who met inclusion/exclusion criteria, 61 completed five or more daily diaries and their data was mailed daily and received on consecutive days. Of the 7 other patients, 3 patients reported completing their diaries on consecutive days, but mailed or brought them together to the hospital. Two of these 3 participants were included because they were 100% compliant with an additional component of the protocol that involved providing saliva samples at five times during the day on two diary days. The electronic Medication Event Monitoring System (MEMS®) was used to analyze and monitor participants' compliance with the prescribed time of saliva sampling, which increased confidence about their compliance with the daily completion of the diaries (the third participant was 20% compliant, so was excluded). The saliva test results are not reported in the present study. Four other participants were excluded because they completed fewer than five diaries on consecutive days.

In total, 63 participants completed the study (20 men, 43 women), with 56 completing seven diaries, 3 completing the first six diaries, 1 completing six diaries with 1 day of nonresponse, and 3 completing five diaries. The 63 participants included 5 who had completed 2–6 therapy sessions because the present sample represents a heterogeneous sample that included patients regardless of medication status and/or prior treatment history. The results were essentially identical regardless of whether these 5 participants were included or excluded from analyses. Fifty-three participants (18 men, 35 women) completed the English version of the questionnaires and 10 participants (2 men, 8 women) completed the French translation.

PROCEDURE

Participants participated voluntarily after a human investigation committee approved the study and informed consent was obtained. Prior to their hospital visit, participants completed questionnaires at home for 60–90 minutes, including the Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990), Hewitt Multidimensional Perfectionism Scale (HMPS; Hewitt & Flett, 1991), Almost Perfect Scale-Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001), Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976), and Dysfunctional Attitude Scale (DAS; Weissman & Beck, 1978). During their 2–3 hour hospital visit, participants completed the SCID-I, the Beck Depression Inventory (BDI; Beck & Steer, 1987), and the interviewer-rated 17-item Hamilton Rating Scale for Depression (HAM-D; Hamilton, 1967). The SCID-I and the HAM-D were administered by licensed clinical psychologists with doctoral degrees that involved extensive training in diagnostic interviewing. Participants were then instructed to complete one diary at bedtime for 7 consecutive nights. The daily diary consisted of the same questionnaires used in the Dunkley et al. (2014, 2003) diary, including the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), event appraisals (Dunkley et al., 2003), and COPE scales (Carver et al., 1989). Participants were given seven stamped envelopes, and were asked to mail the envelope with the completed diary the next morning. Participants were encouraged to complete their diaries every evening but were advised to complete them as soon as possible the next morning, if they failed to complete their diary the previous night. To maximize compliance for the daily diary assessments, a research assistant phoned each participant on Days 3 and 5 to remind him/her to complete the daily measures, consistent with previous studies (Gunthert et al., 2005). Participants were compensated $50 for completing the study.

MEASURES

Perfectionism

The measures of PS and SC were obtained from the 35-item FMPS (Frost et al., 1990), 45-item HMPS (Hewitt & Flett, 1991), 23-item APS-R (Slaney et al., 2001), 66-item DEQ (Blatt et al., 1976), and 40-item DAS (Weissman & Beck, 1978). Based on previous factor analytic findings (e.g., Dunkley et al., 2014; see Stoeber & Otto, 2006), PS was measured by FMPS personal standards, HMPS self-oriented perfectionism, and APS-R high standards, whereas SC was indicated by FMPS concern over mistakes, HMPS socially prescribed perfectionism, APS-R Discrepancy, DEQ self-criticism, and DAS self-criticism. Coefficient alphas for FMPS personal standards, HMPS self-oriented perfectionism, APS-R high standards, FMPS concern over mistakes, HMPS socially prescribed perfectionism,

APS-R discrepancy, DEQ self-criticism, and DAS self-criticism have ranged from .75 to .94 in previous studies (e.g., Blatt, 2004; Dunkley, Blankstein, & Berg, 2012; Dunkley & Kyparissis, 2008; Frost et al., 1990; Hewitt & Flett, 1991; Slaney et al., 2001), and in the present study were 0.81, 0.89, 0.86, 0.87, 0.87, 0.94, 0.66, and 0.88, respectively. Standardized factor loadings were previously reported as ranging from .83 to .88 for the PS indicators and .66 to .90 for the SC indicators (Dunkley et al., 2014). Studies have supported the validity of higher-order perfectionism dimensions in hypothesized relations with other personality measures and psychological (mal)adjustment (e.g., Clara, Cox, & Enns, 2007; Dunkley et al., 2014; see Stoeber & Otto, 2006).

Beck Depression Inventory (BDI; Beck & Steer, 1987)
The BDI is a 21-item measure of depression symptoms. For each item, participants are asked to rate how they felt during the past week with higher scores indicating greater depressive severity. Internal consistency estimates have ranged from .76 to .95, and the validity has been supported by strong associations with clinical ratings and the HAM-D (Beck, Steer, & Garbin, 1988) as well as the BDI-II (Dozois, Dobson, & Ahnberg, 1998). To control for measurement error in the assessment of depressive symptoms (see MacCallum & Austin, 2000), we constructed three distinct 7-item parcels by selecting every third item. The parcels then served as three indicators of the depressive symptoms latent factor in the between-persons correlational and supplementary structural model analyses. Standardized factor loadings for the three parcels previously ranged from .82 to .85 (Dunkley & Grilo, 2007). The alpha coefficients for the first, second, and third parcels were .70, .76, and .69, respectively, in the present study.

Daily Affect
The 20-item Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) was used to measure positive and negative affect for *today*. The scales each consist of 10 adjectives. The negative and positive affect scales have been related in predicted directions to other mood measures (e.g., Watson et al., 1988). Within-person and between-persons reliabilities computed using Geldhof, Preacher, and Zyphur's (2014) procedure have ranged from .80 to .90 and .93 to .99 for negative affect, and from .83 to .94 and .94 to .99 for positive affect (Dunkley et al., 2014; Rush & Hofer, 2014); and in the present study were .88 and .94 for negative affect, and .96 and .99 for positive affect, respectively. The within-person reliabilities demonstrate the ability to detect systematic changes of persons over days, whereas the between-persons reliabilities show the

ability to differentiate persons at the average daily level.

As using single measured variables can result in biased estimates of effects due to measurement error, we constructed parcels to obtain multiple indicators of affect latent constructs in order to control for error in the estimates of relations among constructs (see MacCallum & Austin, 2000). Each of the negative affect and positive affect scales were parceled into three subscales by selecting every third item, yielding 1 four-item subscale and 2 three-item subscales. The parcels were then used as three indicators of the negative affect and positive affect latent constructs. Standardized factor loadings of the parcels previously ranged from .70 to .89 for the within-person negative and positive affect latent factors, and from .81 to .96 for the between-persons latent factors (Dunkley et al., 2014). Support for the validity of negative affect and positive affect latent factors has been previously demonstrated through expected relations with stress- and coping-related constructs at both within- and between-persons levels, using the present study's allocation of PANAS items to parcels (Dunkley et al., 2014) as well as other allocations (Rush & Hofer, 2014). Because the PANAS scales have demonstrated strong psychometric properties at both within-person and between-persons levels, it is unlikely that results would appreciably differ under alternative allocations (Sterba & MacCallum, 2010).

Event Appraisals
Consistent with previous studies (e.g., Dunkley et al., 2014; Dunkley et al., 2003), participants were asked to provide a brief description of the most bothersome event or issue of the day and rate the following items: "How unpleasant was the event or issue to you?" "For how long were you bothered by the event or issue?" and "How stressful was the event or issue for you?" For the measurement and structural models, these global appraisal items (i.e., unpleasantness, duration, stressfulness) reflecting the severity, duration, or both of the event were used as indicators of the event stress latent construct. Standardized factor loadings of the global appraisal items were previously reported as ranging from .74 to .88 for the within-person and .92 to .95 for the between-persons event stress latent factors, respectively (Dunkley et al., 2014). Two additional items assessed perceived control, "How much control did you feel you had over handling the event or issue to your satisfaction?" and perceived criticism, "To what extent did you think your handling of the event or issue would result in criticism from another significant person(s)?" Dunkley et al. (2014, 2003) found support for the validity of the

event appraisal items in hypothesized relations with measures of stress, coping, and (mal)adjustment.

Coping

After the appraisals, participants were asked to indicate what they did *today* when they experienced the stressful event or issue. Participants completed five four-item scales from the situational version of the COPE (Carver et al., 1989). For the measurement and structural models, we formed two groups of coping strategies to assess avoidant coping (behavioral disengagement, mental disengagement, denial) and problem-focused coping (active coping, planning). Within-person and between-persons reliabilities computed using Geldhof et al.'s (2014) procedure were previously reported as .85 and .99 for behavioral disengagement, .70 and .97 for mental disengagement, .85 and .99 for denial, .73 and .94 for active coping, and .92 and .99 for planning (Dunkley et al., 2014); and in the present study were .87 and .98 for behavioral disengagement, .64 and .89 for mental disengagement, .85 and .99 for denial, .88 and .99 for active coping, and .92 and .99 for planning, respectively. Standardized factor loadings were reported as ranging from .44 to .67 for the avoidant coping latent factor and .80 to .81 for the problem-focused coping latent factor at the within-person level, and ranging from .75 to .78 and .92 to .96 at the between-persons level (Dunkley et al., 2014). Convergent and discriminant validity has been indicated in predicted relations with measures of coping-related constructs and adaptational outcomes (e.g., Carver et al., 1989; Dunkley et al., 2014; Dunkley et al., 2003).

Given a bilingual population, available French versions of the perfectionism, depression (see Dunkley et al., 2012; Dunkley & Kyparissis, 2008), and daily appraisal, coping, and affect measures (see Dunkley et al., 2014) were administered to the 10 participants completing the study in French. The specific coefficients for reliability and validity provided above for the measures, as well as their convergent and divergent validity shown in Figure 1, were previously supported in a combined sample of 109 English-speaking and 114 French-speaking nonclinical adults, in which the psychometric properties of the French versions were comparable to those of the English versions (Dunkley et al., 2012; Dunkley & Kyparissis, 2008; Dunkley et al., 2014).

MULTILEVEL STRUCTURAL EQUATION MODELING

Mplus 7.0 (Muthén & Muthén, 2012) was used to simultaneously test the hypothesized within-person and between-persons explanatory structural models, with the cross-sectional relations among situational and dispositional factors (see Figure 1). Mplus permits the use of a maximum likelihood procedure that is robust to nonnormality of data and nonindependence of observations. Although the χ^2 statistic, by convention, is always reported, decisions regarding adequacy of model fit are widely based on three alternate fit indices that are included in Mplus output and describe fit from different perspectives: Comparative Fit Index (CFI), an incremental fit index; Root Mean Square Error of Approximation (RMSEA), a parsimony-corrected index; and Standardized Root Mean Square Residual (SRMR), a statistic related to the correlation residuals (see Kline, 2011, for a review). Hu and Bentler (1999) proposed a criterion of over .95 for CFI, less than .06 for RMSEA, and less than .08 for SRMR to suggest overall acceptable fit of the model. However, methodologists have cautioned that these suggested thresholds should be treated as rough guidelines rather than universal golden rules (see Kline, 2011).

The Monte Carlo method (see Preacher & Selig, 2012) was used to test the significance of indirect effects. We used Selig and Preacher's (2008) web-based utility to generate and run R code for simulating the sampling distribution of an indirect effect. For each indirect effect, unstandardized path estimates, asymptotic covariance estimates, a 95% confidence level, and 50,000 values to simulate were entered for computing confidence intervals (CIs). If the 95% CI for an indirect effect does not include zero, this indicates significance at $\alpha = .05$.

Results

PARTICIPANT CHARACTERISTICS

The 63 participants ranged from 20 to 61 years of age ($M = 40.94$ years, $SD = 11.54$). Of the 56 participants who reported their ethnicity, 80% ($n = 45$) self-identified as of European descent, 5% ($n = 3$) as African, 5% ($n = 3$) as West Indian, 4% ($n = 2$) as South American, 2% ($n = 1$) as Middle Eastern, 2% ($n = 1$) as East Indian, and 2% ($n = 1$) as Aboriginal. Eighty-three percent ($n = 52$) of participants reported taking psychiatric medication. The participants had a mean BDI score of 30.40 ($SD = 8.02$) and a mean HAM-D score of 20.83 ($SD = 4.46$), which indicates moderate to severe depression on average. Ninety-two percent ($n = 58$) of participants met SCID-I criteria for moderate to severe depression episode severity and 84% ($n = 53$) had a previous history of depression. In addition, 14% ($n = 9$) of the sample met criteria for dysthymia. Sixty-five percent ($n = 41$) met criteria for a comorbid anxiety disorder, of which 39% ($n = 16$) met criteria for panic disorder, 29% ($n = 12$)

for social phobia, 39% (n = 16) for posttraumatic stress disorder, 20% (n = 8) for generalized anxiety disorder, 15% (n = 6) for agoraphobia, and 2% (n = 1) for obsessive-compulsive disorder.

DESCRIPTIVE STATISTICS

The 63 participants provided a total of 431 out of a possible 441 daily reports of stress, appraisals, coping, and affect, with 9 reports considered missing due to attrition and 1 report considered missing due to nonresponse (see Participants section above). Item nonresponse percentages for the perfectionism, BDI depressive symptoms, and daily measures were tiny, ranging from 0.0% for the BDI and DAS self-criticism items to 1.4% for the perceived criticism and stressfulness items. We used the full information maximum likelihood robust estimator in Mplus 7.0 to handle missing diary data, as this method provides less biased estimates relative to other methods (see Schlomer, Bauman, & Card, 2010). Participants reported many different kinds of most bothersome events, which were coded into non–mutually exclusive categories, as in Dunkley et al. (2014, 2003). Participants reported achievement (39%) and interpersonal events (55%) more frequently than general events (5%), somatic events (4%), and emotional-cognitive events (8%), in keeping with Gunthert et al. (2005). Consistent with previous studies (e.g., Dunkley et al., 2014; Dunkley et al., 2003), the intraclass correlation coefficients (ICCs) ranged from .21 to .38 for the daily event appraisal items, .31 to .42 for the coping scales, and .45 to .62 for the affect measures, suggesting small to large amounts of between-persons relative to within-person variation for the daily measures.

The means for event unpleasantness (M = 8.14, SD = 2.54), event duration (M = 5.14, SD = 1.82), event stressfulness (M = 7.81, SD = 2.63), perceived criticism (M = 3.81, SD = 2.25), behavioral dis-

engagement (M = 7.61, SD = 2.40), negative affect (M = 24.99, SD = 9.07), and positive affect (M = 18.58, SD = 7.52) in the present sample of depressed patients ranged from 0.6 to 1.3 of one standard deviation above (or below for positive affect) the means reported by Dunkley et al. (2014) for a community sample. The results of t tests found that the means of the 12 daily scales/items did not differ as a function of gender, presence/absence of a previous history of depression, presence/absence of a comorbid Axis I disorder, and taking/not taking psychiatric medication. There was only one significant ($p < .05$) difference out of 48 comparisons, which is less than could be expected by chance. Further, results of Cohen's d tests for mean-differences suggested 26 very small (< .2) effect sizes, 18 small (.2 to < .5) effect sizes, only three moderate (.5 to < .6) effect sizes, and only one large (> .8) effect size (Cohen, 1988).

Mplus 7.0 was used to simultaneously estimate within-person and between-persons intercorrelations among five latent factors (avoidant coping, problem-focused coping, event stress, negative affect, positive affect) and two measured variables (perceived control, perceived criticism). Between-persons correlations of the three between-persons latent factors (SC, PS, depression) with the five latent factors and two measured variables were also simultaneously estimated. The within-person and between-persons correlations are presented in Table 1.

MULTILEVEL STRUCTURAL EQUATION MODELING

The hypothesized within-person and between-persons structural models (see Figure 1) were simultaneously estimated. As in Dunkley et al. (2014), the two measured variables (perceived criticism, perceived control) were omitted from the between-persons model because they were not

Table 1
Within-Person and Between-Persons Correlations

Variables	1	2	3	4	5	6	7	8	9	10
1. Personal Standards	-									
2. Self-Criticism	.76***	-								
3. BDI depressive symptoms	.18	.49***	-							
4. Event Stress	.07	.37*	.42**	-	.27***	-.16	.31***	-.00	.45***	-.32***
5. Perceived Criticism	.02	.36*	.19	.37*	-	-.01	.26***	-.04	.15*	-.09
6. Perceived Control	-.19	-.49***	-.12	-.48**	-.32	-	-.27***	.32***	-.11	.19**
7. Avoidant Coping	.32	.65***	.42	.52**	.37	-.27	-	-.47***	.19*	-.32***
8. Problem-Focused Coping	-.01	-.13	-.04	.18	.10	.55***	-.17	-	.00	.37***
9. Negative Affect	.08	.44***	.64***	.69***	.52***	-.24	.65***	.05	-	-.29***
10. Positive Affect	-.03	-.19	-.26	-.20	.12	.46*	-.17	.57***	-.08	-

Note. Between-persons model correlations are below the diagonal; within-person model correlations are above the diagonal.
BDI = Beck Depression Inventory.
* $p < .05$. ** $p < .01$. *** $p < .001$.

previously found to be primary factors in the relation between perfectionism dimensions and affect maintenance (e.g., Dunkley et al., 2014; Dunkley et al., 2003). This structural model resulted in the following acceptable overall fit indices: χ^2 (df = 293) = 409.50, $p < .001$; CFI = .960; RMSEA = .030; and SRMR (Within/Between) = .054/.092. Inspection of path estimates and standard errors revealed that estimating the nonsignificant SC ➜ event stress path (β = -.02) in the between-persons model resulted in a twofold increase in the standard error of the avoidant coping ➜ event stress path estimate (from .137 to .275), while the magnitude of the avoidant coping ➜ event stress estimate remained large with (β = .59, $p < .05$) or without (β = .57, $p < .001$) the estimation of the nonsignificant SC ➜ event stress path. From a case conceptualization perspective (see Kuyken et al., 2009; Persons, 2012), retaining the nonsignificant SC ➜ event stress path in the maintenance model had the dual disadvantage of not suggesting a more effective intervention plan while also undermining the tests of the theory-driven SC ➜ avoidant coping ➜ event stress ➜ negative and positive affect pathways that were previously replicated (Dunkley et al., 2014; Dunkley et al., 2003). Thus, the nonsignificant SC ➜ event stress path was removed in order to increase the focus, explanatory value, and clinical utility of the between-persons maintenance model, and the model was reestimated.

The final model resulted in the following acceptable overall fit indices: χ^2 (df = 294) = 408.99, $p < .001$; CFI = .961; RMSEA = .030; and SRMR (Within/Between) = .054/.092. Level-specific fit was evaluated at the within-person level and between-persons level by saturating the model at the between-persons level and within-person level, respectively. The within-person level-specific fit was good: χ^2 (df = 93) = 174.28, $p < .001$; CFI = .972; RMSEA = .045; and SRMR = .054. The between-persons level-specific fit was excellent according to two out of three indices: χ^2 (df = 201) = 231.49, $p < .10$; CFI = .990; RMSEA = .019, with SRMR = .092 near the nominal criterion of .08. Inspection of the standardized covariance residuals suggested that the three event stress and three negative affect indicators had a total of 10 relatively high standardized covariance residuals with other variables (ranging from |.20| to |.29|) in the between-persons model, which contributed to the somewhat high but still acceptable SRMR.

For the within-person model, standardized factor loadings ranged from .73 to .90 for event stress, .34 (denial) to .84 (behavioral disengagement) for avoidant coping, .83 to .85 for problem-focused coping, .67 to .79 for negative affect, and .80 to .94 for positive affect. For the between-persons model, standardized factor loadings ranged from .91 to .98 for event stress, .41 (denial) to .82 (behavioral disengagement) for avoidant coping, .89 to .98 for problem-focused coping, .83 to .93 for negative affect, and .90 to .96 for positive affect. Standardized factor loadings for the perfectionism measures ranged from .86 to .91 for the PS indicators and .70 to .92 for the SC indicators. All factor loadings were significant at the α = .01 level.

Figure 2 presents the standardized path estimates of the final MSEM model. For the within-person model, significant proportions of variance in avoidant coping (R^2 = .11, $p < .01$), event stress (R^2 = .11, $p < .01$), problem-focused coping (R^2 = .22, $p < .01$), negative affect (R^2 = .20, $p < .001$), and positive affect (R^2 = .25, $p < .001$) were explained. For the between-persons model, significant proportions of variance in avoidant coping (R^2 = .39, $p < .01$), event stress (R^2 = .33, $p < .05$), negative affect (R^2 = .60, $p < .001$), and positive affect (R^2 = .51, $p < .001$), and nonsignificant variance in problem-focused coping (R^2 = .00, $p = .96$) were explained. To examine whether the model fully explained the relation between SC and average negative affect, we tested the relation between SC and negative affect, controlling for event stress and avoidant coping, and found the path from SC to negative affect to be nonsignificant (β = -.00, $p = .99$).

Table 2 shows the within-person indirect effects and their 95% CIs of the three-variable (predictor → mediator → affect) and four-variable (predictor → mediator 1 → mediator 2 → affect) trigger patterns. First, Table 2 and Figure 2 show eight significant indirect effects of disengagement triggers (i.e., perceived criticism, lower perceived control, avoidant coping) on within-person variations in daily negative affect and positive affect through event stress as a mediator (a_W-d_W, g_W, h_W). Second, Table 2 and Figure 2 shows the significant indirect effect of the engagement appraisal of perceived control on within-person increases in daily positive affect through problem-focused coping as a mediator ($i_W k_W$). Third, Table 2 and Figure 2 show three significant indirect effects of avoidant coping counteracting or inhibiting problem-focused coping that were linked to within-person variations in positive affect (a_W, c_W, $j_W k_W$). Finally, Table 2 also shows the between-persons indirect effects and their 95% CIs of the three-variable and four-variable maintenance patterns. As shown in the set of disengagement maintenance patterns (a_B-f_B) of the between-persons model (see Table 2 and Figure 2), SC was indirectly related to both average daily negative affect ($a_B c_B e_B$) and lower positive affect ($a_B c_B f_B$) through
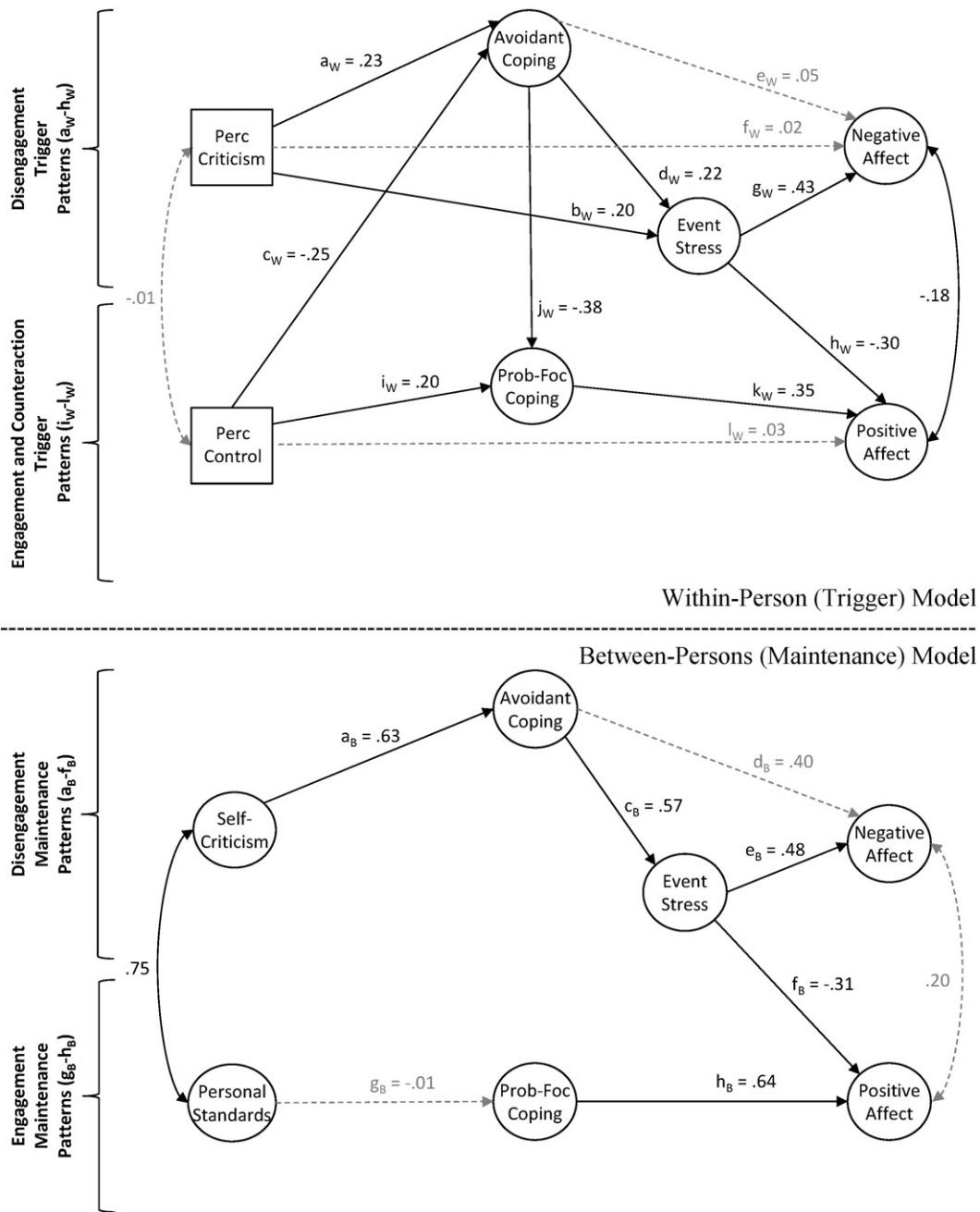
FIGURE 2 Standardized parameter estimates for the final within-person (top) and between-persons (bottom) structural models for the present sample of depressed patients ($N = 63$). Latent variables are represented by ovals, and measured variables are represented by rectangles. Significant estimates are shown in solid black and nonsignificant estimates ($p > .05$) are in dashed gray. Perc = Perceived; Prob-Foc = Problem-focused.

avoidant coping and event stress as two sequential mediators.

Considering the Type I error rate, a joint false-positive rate can be computed for the present study that attempted to directly replicate Dunkley et al.'s (2014) results with a shared procedure (see Murayama, Pekrun, & Fiedler, 2014). The overall false-positive value across the two studies is $0.05 \times 0.05 = 0.0025$, which is considerably smaller than the 5% Type I error rate. Out of a total of 17 replication attempts, a respectable 13 indirect effects (9 within-person, 4 between-persons) were directly replicated, none of which could be expected by chance. All 13 of these significant indirect effects were in the theorized direction, which further reduces concern about these effects being false-positives (see Murayama et al., 2014).

Table 2
Significant Indirect Effects Using Monte Carlo Confidence Intervals

Indirect Effect	Stnd. Estimate (β)	Unstnd. Estimate (b)	95% CI for Mean Estimate [a]
Within-Person (Trigger) Model			
Disengagement Trigger Patterns			
$a_w d_w g_w$: PCriticism → AvCope → EvStress → NA	.022	.009	[.003, .018 *]
$a_w d_w h_w$: PCriticism → AvCope → EvStress → PA	-.015	-.018	[-.037, -.004 *]
$a_w e_w$: PCriticism → AvCope → NA	.011	.005	[-.015, .025]
$b_w g_w$: PCriticism → EvStress → NA	.085	.037	[.015, .062 *]
$b_w h_w$: PCriticism → EvStress → PA	-.060	-.069	[-.107, -.033 *]
$c_w d_w g_w$: PControl → AvCope → EvStress → NA	-.023	-.010	[-.021, -.002 *]
$c_w d_w h_w$: PControl → AvCope → EvStress → PA	.017	.019	[.004, .039 *]
$c_w d_w e_w$: PControl → AvCope → NA	-.012	-.005	[-.024, .020]
$d_w g_w$: AvCope → EvStress → NA	.095	.180	[.058, .312 *]
$d_w h_w$: AvCope → EvStress → PA	-.067	-.336	[-.619, -.098 *]
Engagement and Counteraction Trigger Patterns			
$a_w j_w k_w$: PCriticism →AvCope →PFCope →PA	-.030	-.035	[-.081, -.008 *]
$c_w j_w k_w$: PControl → AvCope → PFCope → PA	.032	.038	[.007, .085 *]
$i_w k_w$: PControl → PFCope → PA	.072	.083	[.030, .137 *]
$j_w k_w$: AvCope → PFCope → PA	-.133	-.665	[-1.327, -.204 *]
Between-Persons (Maintenance) Model			
Disengagement Maintenance Patterns			
$a_B c_B e_B$: SlfCriticism → AvCope → EvStress → NA	.171	.127	[.009, .264 *]
$a_B c_B f_B$: SlfCriticism → AvCope → EvStress → PA	-.110	-.159	[-.331, -.011 *]
$a_B d_B$: SlfCriticism → AvCope → NA	.247	.184	[-.039, .415]
$c_B e_B$: AvCope → EvStress → NA	.274	.784	[.069, 1.66 *]
$c_B f_B$: AvCope → EvStress → PA	-.177	-.982	[-2.187, -.066 *]
Engagement Maintenance Patterns			
$g_B h_B$: Personal Standards → PFCope → PA	.009	-.012	[-.296, .261]

Note. Stnd. = Standardized. Unstnd. = Unstandardized. PCriticism = Perceived criticism. AvCope = Avoidant coping. EvStress = Event stress. NA = Negative Affect. PA = Positive Affect. PControl = Perceived control. PFCope = Problem-focused coping. SlfCriticism = Self-criticism.
[a] These values are based on the unstandardized path coefficients.
* 95% confidence intervals exclude zero.

SUPPLEMENTARY BETWEEN-PERSONS MODEL CONTROLLING FOR DEPRESSIVE SEVERITY

We tested a supplementary between-persons model with depressive symptoms added as a covariate of perfectionism and its effect estimated on each of the five average daily variables. Standardized factor loadings for the three BDI parcels ranged from .68 to .89. Depressive severity was uniquely related to negative affect only, while all significant paths among SC, avoidant coping, problem-focused coping, event stress, and negative and positive affect (see Figure 2) remained significant when controlling for the effects of depressive symptoms.

Discussion

The present study was the first to use a daily diary method and MSEM to elucidate how specific stress appraisal and coping mechanisms work in combination to change and maintain daily negative affect and (lower) positive affect in depressed patients. Trigger patterns can be understood as time-proximal state-level (within-person) effects, whereas maintenance patterns are better understood as trait-level (between-persons) effects. Together with previous results (Thompson et al., 2012), our findings underscore the importance of examining trigger and maintenance patterns independently for negative and positive affect.

TRIGGERS OF DAILY AFFECT: DISENGAGEMENT, ENGAGEMENT, AND COUNTERACTION PATTERNS

Our study built substantively on previous research studying negative daily events as stand-alone predictors of emotional dynamics in depression (e.g., Bylsma et al., 2011; Gunthert et al., 2005; Thompson et al., 2012) by explicating connections among stress appraisal and coping triggers

to explain changes in daily negative and positive affect for the typical individual with depression. Although Figure 2 represents one plausible representation of the links among appraisals, coping, and affect, it is important to acknowledge that often causal relations go in both directions. Indeed, changes in any one of the elements is expected to influence changes in the others (e.g., Beck et al., 1979). Rather than searching for the unique causal order among the confluence of components, case formulation often strives to establish which components are necessary to understand patient experiences and map out how all the patient's presenting issues and key mechanisms are tied together (see Kuyken et al., 2009; Persons, 2012).

Disengagement Trigger Patterns
We found that within-person changes in appraisals, coping, and affect did not strongly overlap (see Table 1) and exhibited several unique effects (see Figure 2). This is consistent with theory (see Beck et al., 1979; Kuyken et al., 2009; Persons, 2012) and previous findings (Dunkley et al., 2014) suggesting that specific appraisal and coping components can assume more or less significance depending on the stressor and/or individual. The MSEM within-person model replicated eight complex disengagement trigger patterns found in Dunkley et al.'s (2014) sample of nondepressed adults that independently accounted for increases in daily negative affect and decreases in positive affect for the typical individual with depression (see Table 2). In general, across many stressors, when the typical person with depression perceives more criticism or less control than usual, he/she uses more avoidant coping and experiences higher event stress than usual, and this is connected to daily increases in negative affect as well as decreases in positive affect (see Figure 2 and Table 2, a_W-h_W). These findings substantively elaborate on the withdrawal and approach systems view of depression (see Persons, 2012; Trew, 2011) by demonstrating the ways in which helplessness appraisals (i.e., perceived criticism, lower perceived control), avoidant coping, and stress combine together to account for increases in negative affect as well as decreases in positive affect.

Engagement Trigger Patterns
As shown in Figure 2, within-person increases in problem-focused coping were linked to daily increases in positive affect (k_W), even when controlling for event stress (h_W). While this finding replicated Dunkley et al.'s (2014) finding with community adults, the within-person model in the present sample of depressed patients accounted for almost twice as much variance (25%) in daily changes in positive

affect. This suggests that more use of problem-focused coping has a greater benefit for depressed patients on a daily basis, and is in keeping with emerging evidence for an enhanced-mood response to positive daily events for people with depression compared to healthy controls (e.g., Bylsma et al., 2011; Peeters et al., 2003; Thompson et al., 2012). Further, our MSEM results elaborated that when the typical person with depression perceives more control than usual, he/she engages in more problem-focused coping, and this is connected to daily increases in positive affect (see Figure 2 and Table 2, $i_W k_W$), which replicated Dunkley et al.'s finding for nondepressed adults. The mood-brightening effect observed in the present study can be explained by an *opponent process* model (see Bylsma et al., 2011; Peeters et al., 2003). In this context, the ongoing higher negative affect and lower positive affect becomes habituated in depression, allowing opposing positive emotions to become more intense when problem-focused coping behaviors are activated.

Counteraction Trigger Patterns
Avoidant coping exhibited inverse within-person correlations with problem-focused coping and positive affect (see Table 1) that were |.27| and |.18| greater in magnitude, respectively, than those reported by Dunkley et al. (2014) for nondepressed adults. These findings are consistent with the approach and withdrawal systems view of depression that posits that increases in avoidance suppress engagement, and vice versa (see Corr, 2002; Martell et al., 2001; Trew, 2011). Our MSEM within-person findings elaborate by demonstrating a more complex counteraction pattern: when the typical person with depression suppresses helplessness appraisals (lower perceived criticism or higher perceived control), he/she uses less avoidant coping (a_W, c_W) than usual, and engages in more problem-focused coping than usual, and this is connected to increases in positive affect (see Figure 2 and Table 2, $j_W k_W$).

Broad Clinical Implications for the Typical Person With Depression
Relative to past research, our complex explanatory results have richer and more detailed clinical implications that can help therapists and their patients more effectively reduce patients' distress and bolster resilience (Kuyken et al., 2009; Persons, 2012). Our within-person model findings strengthen confidence in selecting cognitive and behavioral interventions (e.g., Beck et al., 1979; Martell et al., 2001). To decrease daily negative affect and increase positive affect, cognitive techniques might be used to change stress appraisals (Beck et al., 1979).

The enhanced-mood response to problem-focused coping in the typical person with depression, relative to nondepressed individuals, underscores the use of behavioral activation methods to specifically target avoidant coping and promote problem-focused coping, which might decrease the time available for perseveration that exacerbates stressors (e.g., Martell et al., 2001). Our findings suggest that avoidant coping might also be suppressed by reducing helplessness appraisals (i.e., perceived criticism, lower perceived control; Dunkley et al., 2014). Further, problem-focused coping efforts might be improved not only by behavioral skills-building strategies (e.g., Martell et al., 2001), but also by boosting perceived control (see Dunkley et al., 2014).

MAINTENANCE OF DAILY AFFECT: PERFECTIONISM AND DISENGAGEMENT AND ENGAGEMENT PATTERNS

Consistent with previous findings (e.g., Bylsma et al., 2011), the present sample of depressed patients reported higher daily stress appraisals and negative affect, and lower daily positive affect on average than Dunkley et al.'s (2014) community sample of nondepressed adults. Our between-persons maintenance model findings explain what maintains or perpetuates daily negative affect and (lower) positive affect in depression.

Disengagement Maintenance Patterns

SC exhibited an even stronger correlation ($r = .65$; see Table 1) with avoidant coping tendencies, and there was stronger overlap ($r = .52$) between avoidant coping and event stress tendencies in the present sample of depressed patients compared to Dunkley et al.'s (2014) sample of nondepressed adults. As shown in Figure 2 and Table 2 (a_B-f_B), we found that avoidant coping and event stress maintenance factors, in combination, explained why individuals with depression and higher SC had persistent negative affect as well as lower positive affect. These findings are consistent with Dunkley et al.'s (2014, 2003) model, and demonstrate that people with depression and higher SC have a stronger tendency to avoid many different daily stressors (e.g., achievement, interpersonal), which keeps their problems going and perpetuates the co-existence of depressive and anxious mood. Whereas Dunkley et al. (2014) found SC to be indirectly related to negative affect and lower positive affect through greater event stress as a single mediator in nondepressed adults, we did not replicate this in the present sample of depressed patients. This suggests that the ongoing stress that people with depression and higher SC experience is attributable to their avoidant coping tendencies.

Together, these disengagement maintenance patterns demonstrate that the pervasive theme of defeat, helplessness, and withdrawal becomes even more accentuated for self-critical perfectionistic (or autonomous) individuals when they are depressed, which resonates with clinical observations of these kinds of depressed patients (see Beck, 1983; Blatt, 2004). Further, our findings demonstrate that these associations are not attributable to initial depressive severity, in keeping with previous studies (see Zuroff et al., 2004, for a review).

Engagement Maintenance Patterns

Our findings further demonstrated individual differences among depressed patients by showing that those with higher problem-focused coping tendencies had greater maintenance of daily positive affect (see Figure 2, h_B), in keeping with Dunkley et al.'s findings with nondepressed university students (2003) and adults (2014). However, whereas Dunkley et al. (2014) found that PS was indirectly related to positive affect through problem-focused coping in community adults, this was not found in the current sample of depressed patients. Together, these findings indicate that individuals with higher PS exhibit active coping tendencies when they are not depressed, but these individuals show a loss of self-control, self-direction, and self-discipline when they are depressed. "This complete turn-around in the person's behavior constitutes one of the paradoxes of depression" (Beck, 1983, p. 276).

Personalized Clinical Implications for Perfectionistic Individuals With Depression

The disengagement maintenance patterns suggest that interventions that aim to overcome avoidant coping tendencies that have been recommended for individuals with higher SC when they are not depressed (see Dunkley et al., 2014, 2003) might be even more critical for reducing constant negative affect and increasing positive affect when they are depressed. Clinicians might reduce self-critical patients' avoidant coping across many different stressors by changing their heightened tendency to engage in destructive self-blame and perceive criticism from others, and instead encouraging more compassionate ways of typically relating to themselves and more problem-focused coping. Further, the origins part of the conceptualization (see Kuyken et al., 2009; Persons, 2012) can be used to understand how key developmental experiences (e.g., harsh parental criticism) led to some patients developing pervasive SC and learning avoidant coping mechanisms, which can guide interventions to break up these dysfunctional patterns that are maintaining depression and anxiety. Finally, the

loss of adaptive problem-focused coping tendencies for individuals with higher PS when they are depressed suggests that interventions should aim to restore their sense of competence and goal-directed motivations, in keeping with previous clinical recommendations for these patients (see Beck, 1983).

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

There were limitations of the present study that warrant attention in future research. First, participants completed their daily records on paper instead of electronically. Although evidence suggests that the data yielded by electronic devices and paper are equivalent psychometrically and in patterns of findings (e.g., Green, Rafaeli, Bolger, Shrout, & Reis, 2006), the replicability of our findings using electronic devices should be examined. Second, as self-report measures were used, future studies might use informant reports or assessments of observable behaviors (e.g., coping) to supplement self-reports. Third, stress, appraisals, and coping were simultaneously assessed only once per day. Future studies assessing stress, appraisals, coping, and affect repeatedly during the day would be helpful to better examine causal directions among the variables, and determine whether the complex trigger patterns supported in the present study also apply to within-day changes in affect for the typical person with depression. Finally, the generalizability of our results to larger samples of depressed patients as well as other clinical populations needs to be examined. We cautiously speculate that the pattern of negative affect findings would be characteristic of people suffering from any form of depressive and anxiety disorder because the state of negative affect is common to both symptoms of depression and anxiety (see Persons, 2012; Trew, 2011). On the other hand, we expect that the pattern of positive affect results would be accentuated in depression because people with depression are specifically characterized by low levels of positive affect.

Conclusion

Our use of a daily diary methodology and MSEM explicated two complex explanatory models that can help clinicians and their patients make more sense of what commonly triggers and maintains negative affect and (low) positive affect in depression. Our results demonstrate complex trigger patterns that shed light on how daily changes in mood are precipitated for the typical person with depression. We also showed how depressive mood is maintained for people with depression and higher self-critical perfectionism.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

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