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Self-Critical Perfectionism and Daily Affect: Dispositional and Situational Influences on Stress and Coping

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This study of university students (64 men and 99 women) examined both dispositional and situational influences of self-critical (SC) perfectionism on stress and coping, which explain its association with high negative affect and low positive affect. Participants completed questionnaires at the end of the day for 7 consecutive days. Structural equation modeling indicated that the relation between SC perfectionism and daily affect could be explained by several maladaptive tendencies associated with SC perfectionism (e.g., hassles, avoidant coping, low perceived social support). Multilevel modeling indicated that SC perfectionists were emotionally reactive to stressors that imply possible failure, loss of control, and criticism from others. As well, certain coping strategies (e.g., problem-focused coping) were ineffective for high-SC perfectionists relative to low-SC perfectionists.

In the past decade, numerous investigators have studied perfectionism as a multidimensional personality attribute and have made a distinction between perfectionism dimensions that have positive/adaptive aspects and perfectionism dimensions that are primarily negative/maladaptive (e.g., Adkins & Parker, 1996; Blankstein & Dunkley, 2002; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Rice, Ashby, & Slaney, 1998; Terry-Short, Owens, Slade, & Dewey, 1995). We refer to these two dimensions as personal standards (PS) perfectionism and self-critical (SC) perfectionism, respectively. PS perfectionism involves the setting of high standards and goals for oneself. On the other hand, SC perfectionism—reminiscent of Blatt's (1974; Blatt, D'Afflitti, & Quinlan, 1976) self-criticism construct—involves constant and harsh self-scrutiny, overly critical evaluations of one's own behavior, an inability to derive satisfaction from successful performance, and chronic concerns about others' criticism and expectations. Measures that reflect SC perfectionism, in contrast to measures that represent PS perfectionism, are consistently related to depressive symptoms (e.g., Dunkley & Blankstein, 2000; Enns & Cox, 1999; Flett, Hewitt, Garshowitz, & Martin, 1997; Stöber, 1998). Further, self-criticism has been associated with high daily negative affect and low daily positive affect over periods of 1 week or more (Mongrain, 1998; Mongrain & Zuroff, 1995; Zuroff, Moskowitz, & Coté, 1999; Zuroff, Stotland, Sweetman, Craig, & Koestner, 1995).

If one is interested in why SC perfectionists experience chronic dysphoria, one needs to understand how they typically respond to minor stressors that occur on a daily basis, as opposed to major life events that occur infrequently. Moreover, research has suggested that minor stressors or hassles account for greater variance in distress than do major life events (e.g., Pillow, Zautra, & Sandler, 1996). Both SC perfectionists and PS perfectionists are assumed to generate or instigate stress for themselves by engaging in stringent self-evaluations and focusing on the negative aspects of events such that even ordinary events can be interpreted as threatening stressors (see Hewitt & Flett, 1993). However, although individuals who are PS perfectionists may experience increased levels of stress, the negative impact of possessing this maladaptive characteristic might be offset by the tendency of these individuals to engage in active, problem-focused coping (see Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000).

In contrast, SC perfectionists are assumed to respond to stressful situations with a helplessness orientation (see Dweck & Sorich, 1999) that undermines efforts at problem-focused coping (see Flett, Hewitt, Blankstein, Solnik, & Van Brunschot, 1996). Specifically, SC perfectionists are theorized to quickly blame and condemn their abilities and personal qualities, which they view as fixed and deep-seated. SC perfectionists become preoccupied with their deficiencies and their inability to handle the stressful situation to the extent that they lack the motivation to engage in active coping with the situation, engaging instead in avoidance of threatening stimuli. SC perfectionists' self-blame and denigration also explain their perceptions of low efficacy and expectations of criticism from others in their dealing with the stressful situation,

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which also contribute to their use of avoidant coping. The tendency to engage in avoidant coping might serve both to impede adaptive coping, thereby preventing movement beyond the distress associated with stressful situations (Carver, Scheier, & Weintraub, 1989), and to increase the severity of the stressors that an SC perfectionist experiences (see Holahan, Moos, & Bonin, 1997). In addition, it is hypothesized that SC perfectionists believe they have less social support available to them in times of stress and "often are unable to turn to others, even the closest of confidants, for help to share their anguish" (Blatt, 1995, p. 1005). Thus, these individuals lack an important resource to encourage more adaptive coping strategies and make stressful situations seem less overwhelming (see Dunkley et al., 2000).

In summary, SC perfectionists are believed to experience chronic dysphoria because of their tendency to perceive that they have much at stake with several minor or daily stressors, to give up or disengage from stressful situations, and to perceive that others are unwilling or unavailable to help them in times of stress (see Dunkley et al., 2000). The present study focuses on how SC perfectionism affects the stressfulness of daily events, appraisals of those events, use of specific coping strategies, and perceptions of social support.

SC Perfectionism and Daily Affect: Dispositional and Situational Influences on Stress and Coping

According to the cognitive theory of psychological stress and coping developed by Lazarus and colleagues (e.g., Lazarus & Folkman, 1984), cognitive appraisals and coping are emphasized as critical mediators in the relation between stressful person–environment relations and outcomes. Although both dispositional and situational factors play a role in the stress and coping process, few studies have examined the extent to which there are consistent differences among individuals in the way they appraise events and social support and cope with everyday stressors (see Schwartz, Neale, Marco, Shiffman, & Stone, 1999; Watson, David, & Suls, 1999). The present study used a daily diary methodology to obtain multiple assessments of how each individual appraised and coped with a variety of stressful situations, allowing us to assess the extent to which variability in stress, appraisals, and coping reflects within-person (situational) and between-persons (dispositional) influences. We then examined both dispositional and situational influences of SC perfectionism, with the goal of explaining why it is related to high negative affect and low positive affect, a combination that has been linked to dysphoria.

Three sections follow. First, we propose a mediational model, building on Dunkley et al. (2000), in which stable, traitlike characteristics (e.g., use of avoidant coping, low perceived social support) of SC perfectionism mediate its association with chronic dysphoria. Second, we present a mediational model of the relation between SC perfectionism and avoidant coping. Self-blame, low perceived efficacy, and perceived criticism from others are proposed as dispositional mediators of that relation. We examined these between-persons questions using structural equation modeling (SEM). Third, we discuss why individuals high on SC perfectionism, relative to those low on SC perfectionism, might experience more negative affect or less positive affect on days when they experience specific types of daily stress, make certain appraisals, and use particular coping strategies. We examine these questions using multilevel modeling with both between-persons (e.g., SC perfectionism) and within-person (e.g., daily hassles) predictors. The next two sections present the empirical evidence locating SC perfectionism within the perfectionism research framework and the mediational models suggesting its dispositional influence on the stress and coping process.

SC Perfectionism and Positive and Negative Affect: Mediational Pathways

Factor analytic studies (e.g., Dunkley et al., 2000; Frost et al., 1993; Slaney, Ashby, & Trippi, 1995) of the Hewitt and Flett (1991) Multidimensional Perfectionism Scale (MPS) and the Frost, Marten, Lahart, and Rosenblate (1990) Multidimensional Perfectionism Scale (FMPS) have supported the existence of two dimensions of perfectionism. The latent factor of PS perfectionism is indicated by MPS self-oriented perfectionism and FMPS personal standards. On the other hand, the latent factor of SC perfectionism is indicated by FMPS concern over mistakes, FMPS doubts about actions, and MPS socially prescribed perfectionism. In addition, self-criticism, as measured by the Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976), is more closely related to the scales that tap SC perfectionism than to the scales that tap PS perfectionism (Dunkley & Blankstein, 2000; Enns & Cox, 1999; Frost et al., 1990).

Recently, a number of studies using path analyses and SEM have tested theoretical models with stress (Chang, 2000), both stress and perceived social support (Priel & Shahar, 2000), and both hassles (i.e., daily stress) and maladaptive coping (Dunkley & Blankstein, 2000), as explanatory variables in the association between SC perfectionism's indicators and maladjustment. Dunkley et al. (2000) used SEM to cross-validate a theoretical model in which avoidant coping, low perceived social support, and hassles fully mediated the relation between SC perfectionism (referred to as *evaluative concerns perfectionism* in that article) and distress, as indicated by depressive and anxious symptoms. Avoidant coping also explained the relation between SC perfectionism and daily stress. PS perfectionism was unrelated to distress and uniquely related to active coping (referred to as *problem-focused coping* in this article) only, which is consistent with other findings (e.g., Dunkley & Blankstein, 2000).

The present study is based on the final model of Dunkley et al. (2000) and uses many of the same measures but (a) incorporates major methodological improvements, (b) uses stressfulness of the most bothersome event of the day in addition to daily hassles as stress variables, and (c) uses negative affect and positive affect as outcome variables rather than depression and anxiety. Dunkley et al. (2000) conceptualized these mediators as stable, traitlike characteristics of perfectionism and assessed them using retrospective, dispositional self-report measures that required participants to summarize their stress, coping, and perceived social support over time and across situations. The present study used a daily diary methodology to obtain situational measures of stress, coping, and perceived social support. We then aggregated each person's responses across situations (i.e., days), thereby empirically deriving trait measures of stress, coping, and perceived social support. This enabled us to examine whether SC and PS perfectionism are related to whatever individual differences exist in aggregated, situation-specific assessments of stress, cognitive appraisals, and

coping and, further, whether the relations are comparable to those reported with retrospective trait measures.

In addition, the present study uses SEM to illuminate which mediators might be specific to negative affect and which elements might be specific to low positive affect in SC perfectionists. Diary studies that have differentiated between negative and positive affect indicate that hassles, event stress, and avoidant coping—but not perceived social support—might mediate the relation between SC perfectionism and negative affect, whereas perceived social support—but not hassles, event stress, or avoidant coping—might mediate the relation between SC perfectionism and positive affect (e.g., L. A. Clark & Watson, 1988; David, Green, Martin, & Suls, 1997; Gunthert, Cohen, & Armeli, 1999; Kanner, Coyne, Schaefer, & Lazarus, 1981; Watson, 1988). Figure 1 depicts the tested relations, expanding on the model of Dunkley et al. (2000), for the mediation of negative affect and positive affect. We specified that (a) SC perfectionism would be linked to hassles, daily event stress, avoidant coping, and perceived social support; (b) avoidant coping would be linked to hassles and event stress; and (c) hassles, event stress, avoidant coping, and perceived social support would each be linked to both negative affect and positive affect. We also hypothesized that PS perfectionism and perceived social support would both be linked to problem-focused coping.

In addition, it is possible that SC perfectionists experience less positive affect because they fail to choose coping strategies that are adaptive (see Bolger & Zuckerman, 1995). Folkman and Moskowitz (2000) identified problem-focused coping and positive reappraisal as coping strategies that can generate positive affect during stressful circumstances. Indeed, Carver and Scheier (1994) found positive correlations between both problem-focused coping and positive reframing and one type of positive mood, namely, perceived challenge (e.g., confident, hopeful, eager). Thus, we added positive reinterpretation and growth to the model and specified paths from positive reinterpretation and growth to positive affect and from problem-focused coping to positive affect. A link from positive reinterpretation to problem-focused coping was also specified, because construing a stressful situation in positive terms should lead one to use problem-focused coping actions (Carver et al., 1989).

SC Perfectionism and Avoidant Coping: Self-Blame, Low Perceived Efficacy, and Perceived Criticism as Potential Mediators

It is important to understand SC perfectionism's association with avoidant coping, given the mediating role that avoidant coping plays in the relation between SC perfectionism and distress. On the basis of our conceptual model outlined above, the present study examines self-blame, lower perceived self-efficacy, and the perceived potential for criticism from others as potential mediators of

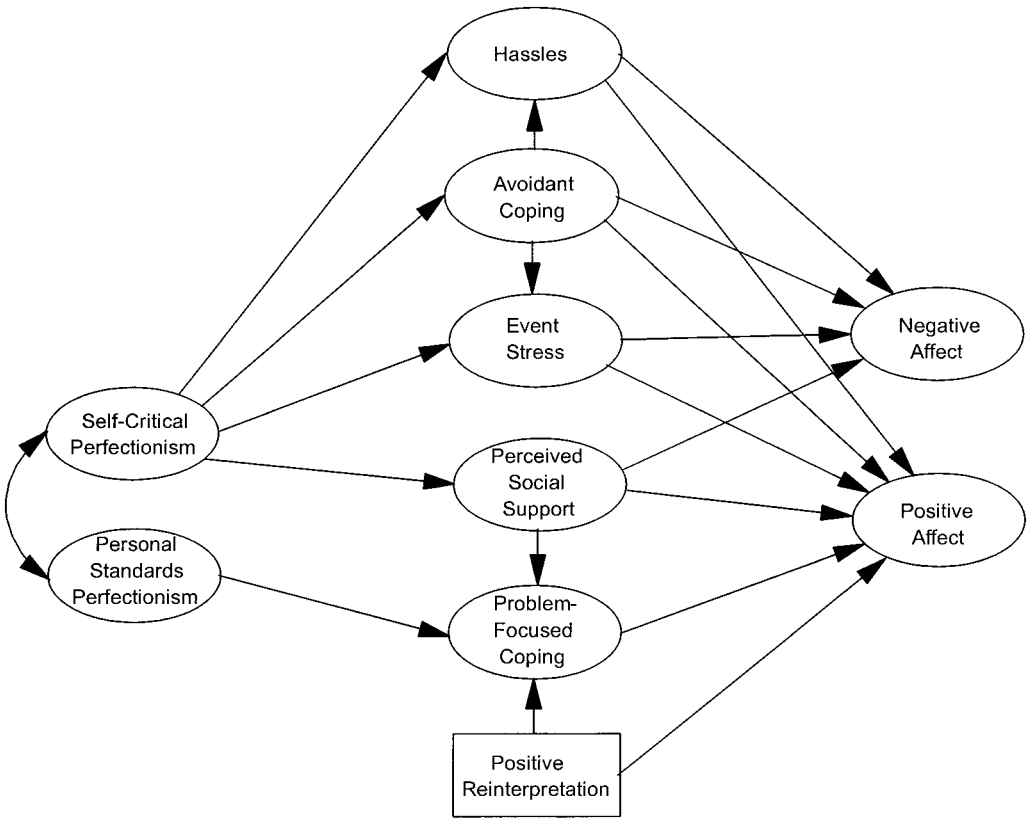

Figure 1. Hypothesized structural model, expanding on Dunkley et al. (2000), relating self-critical perfectionism, personal standards perfectionism, hassles, event stress, avoidant coping, perceived social support, problem-focused coping, positive reinterpretation and growth coping, negative affect, and positive affect. Latent variables are represented by ovals, and measured variables are represented by rectangles.

the relation between SC perfectionism and avoidant coping. Studies have supported a link between SC perfectionism and self-blame (Hewitt & Flett, 1991), self-deprecation (Vettese & Mongrain, 2000), and self-reproach (Frost et al., 1997). As well, SC perfectionists are more worried about the negative reactions of others to their mistakes (Frost et al., 1995, 1997). SC perfectionism has been related to low self-efficacy (Martin, Flett, Hewitt, Krames, & Szanto, 1996) and negative beliefs about the ability to solve problems (Flett et al., 1996), which are associated with avoidant coping (see Moos & Schaefer, 1993). Figure 2 displays the complete set of tested relations as follows: (a) SC perfectionism will be linked to self-blame, perceived efficacy, perceived criticism, and avoidant coping; (b) self-blame, perceived efficacy, and perceived criticism will each be linked to avoidant coping; and (c) self-blame will be linked to perceived efficacy and perceived criticism.

Situational Influences of SC Perfectionism in Relation to Negative and Positive Affect: Reactivity to Event Type, Stress and Event Appraisals, and Coping Effectiveness

The above discussion suggests that SC perfectionism is related to several maladaptive dispositional traits that mediate its relation with chronic dysphoria. However, situational variables play a role in the stress and coping process, and SC perfectionism likely moderates the impact on maladjustment of certain types of stressors, appraisals, and coping strategies. Thus, we examined whether high negative affect and low positive affect in SC perfectionists might be explained by these individuals' heightened reactivity to certain types of daily events, their stress and event appraisals, and their ineffective use of coping strategies (see Bolger & Zuckerman, 1995; Gunthert et al., 1999).

SC perfectionism and reactivity to event type and to stress and event appraisals. Several studies have supported a diathesis-stress model that maintains that SC perfectionists who are experiencing high levels of stress are especially vulnerable to depressive symptoms and maladjustment (e.g., Chang & Rand, 2000; Cheng, 2001; Dunkley et al., 2000; Flett, Hewitt, Blankstein, & Mosher, 1995; Lynd-Stevenson & Hearne, 1999). Further, drawing from the theoretical models of personality and depression developed by Blatt (1974) and Beck (1983), a large body of research has examined what has been termed the congruency hypothesis: Individuals experience increased distress in response to stressors that match their personality vulnerability. That is, SC perfectionists, who are preoccupied with self-definition, self-worth, and self-control, are theorized to be specifically vulnerable to achievement-related events that highlight personal failure and loss of control (see Blatt, 1995; Zuroff & Mongrain, 1987). Further, because SC perfectionism entails a fear of negative evaluation, these individuals might experience more distress in response to social stressors that impinge on their ability to meet others' expectations (see Hewitt & Flett, 1993). In contrast, dependent individuals, who have a preoccupation with issues of relatedness, are assumed to be specifically vulnerable to social events and appraisals concerning "disruptions of feeling cared for and maintaining satisfying interpersonal relationships" (Blatt & Zuroff, 1992, p. 531).

The hypothesis that SC perfectionistic (or autonomous; see Dunkley & Blankstein, 2000) individuals are vulnerable to depression in response to achievement-related stress has been supported in some studies (e.g., Blaney, 2000; Gruen, Silva, Ehrlich, Schweitzer, & Friedhoff, 1997; Hammen, Ellicott, Gitlin, & Jamison, 1989; Segal, Shaw, Vella, & Katz, 1992) but not others (e.g., D. A. Clark, Beck, & Brown, 1992; Hewitt, Flett, & Ediger, 1996; Mongrain & Zuroff, 1994; Rude & Burnham, 1993). Further, other studies have found SC perfectionism to be associated with increased levels of depression in the context of both achievement and social stressors (e.g., Hewitt & Flett, 1993; Lakey & Ross, 1994; Zuroff & Mongrain, 1987). Although the empirical evidence is mixed, we tested the hypothesis that SC perfectionists are emotionally reactive to stressful events and cognitive appraisals that match their vulnerability.

SC perfectionism and coping effectiveness. High-SC perfectionists might also experience chronic dysphoria because, even when they choose the same coping strategies as do low-SC per-

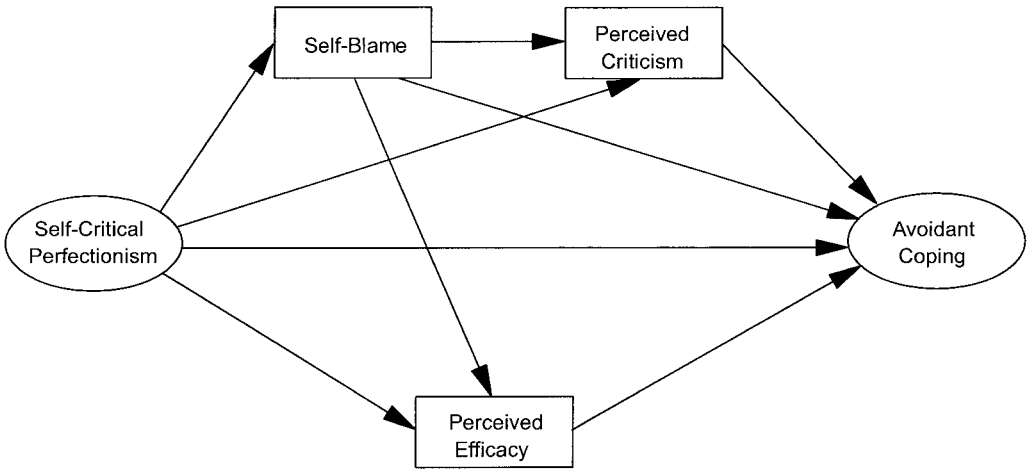

Figure 2. Hypothesized structural model relating self-critical perfectionism, self-blame, perceived efficacy, perceived criticism, and avoidant coping. Latent variables are represented by ovals, and measured variables are represented by rectangles.

fectionists, the strategies are less effective in reducing distress for them (see Bolger & Zuckerman, 1995). For example, problem-focused coping might be less effective for high-SC perfectionists, relative to low-SC perfectionists, because SC perfectionists are assumed to have unrealistic standards, which implies that instrumental behaviors often do not move them closer to attaining their goals (see Flett, Hewitt, Blankstein, & Gray, 1998). Another possibility is that, although self-blame coping is associated with negative affect (e.g., Gunthert et al., 1999), this coping strategy might be particularly detrimental to SC perfectionists because they are theorized to be "profoundly vulnerable . . . to their own self-scrutiny and judgment" (Blatt, 1995, p. 1005).

To date, there have been two major shortcomings in research examining the congruency hypothesis. First, research examining the moderating effects of specific vulnerability styles has concentrated on how these individuals respond to acute life stress rather than stable, social–contextual factors such as chronic or daily stressors and unsupportive relationships. Second, research thus far has used primarily between-persons designs and analyses, which address whether SC perfectionism in conjunction with individual differences in certain variables (e.g., stress) predict individual differences in maladjustment. However, between-persons analyses address questions that are different from those addressed by within-person analyses, which assess the conceptually important question of whether fluctuations in daily affect covary with fluctuations in stress, cognitive appraisals, and coping within individuals (see Tennen, Affleck, Armeli, & Carney, 2000).

To our knowledge, the present study is the first to conduct multilevel modeling to address three questions: (a) Are SC perfectionists more emotionally reactive (i.e., do they experience greater increases in negative affect and greater decreases in positive affect) to stressful events that match their vulnerability (e.g., academic)? (b) are SC perfectionists more emotionally reactive to specific cognitive appraisals of stress and events? and (c) when both high-SC and low-SC perfectionists choose the same coping strategies, are certain strategies less effective in reducing distress in high-SC perfectionists?

Method

Participants

Participants were full-time students at McGill University recruited in October and November of 1999 through student newspaper advertisements and classroom announcements for an 8-day diary study on personality and daily events. Participants were compensated $25 for their participation in the study. One hundred seventy-nine students agreed to participate and completed initial measures. Of the initial sample, 16 participants were excluded because of failure to complete all 7 days of diary entries. The final sample included 163 participants (64 men and 99 women). Their mean age was 20.02 years ($SD = 2.28$). The majority of participants were of European descent (68%, $n = 111$), with 17% Asian ($n = 28$), 8% East Indian ($n = 13$), 3% South American ($n = 5$), 2% African ($n = 4$), and 1% Caribbean ($n = 2$).

Procedure

Participants provided demographic information and completed a package of questionnaires, including measures of perfectionism, in a 1-hr lab session. During the lab visit, participants were instructed to complete one diary at bedtime, starting that night, for the next 8 nights. The diary consisted of a package of questionnaires, including the measures of daily affect, hassles, event stress, appraisals, coping, and social support. The diary for the 8th night asked participants to recall their affect, hassles, event stress, appraisals, coping, and social support over the previous 7 days and was not included in the present analyses. To minimize misunderstandings, the experimenter explained each part of the diary to the participant. Participants were given eight stamped envelopes, each containing a diary inside and the diary day written on the address label, and were asked to fill out the diary inside the envelope at bedtime and mail the envelope 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.

Measures

The latent constructs (i.e., SC perfectionism, PS perfectionism, negative affect, positive affect, hassles, event stress, avoidant coping, problem-focused coping, and perceived social support) were each assessed by multiple indicators, which we describe below.

Perfectionism. The measures of SC perfectionism and PS perfectionism were obtained from the MPS (Hewitt & Flett, 1991), FMPS (Frost et al., 1990), and DEQ (Blatt et al., 1976). SC perfectionism was assessed by MPS socially prescribed perfectionism (15 items; e.g., "People expect nothing less than perfection from me"), FMPS concern over mistakes (9 items; e.g., "People will think less of me if I make a mistake"), FMPS doubts about actions (4 items; e.g., "It takes me a long time to do something right"), and DEQ self-criticism (e.g., "There is a considerable difference between how I am now and how I would like to be"). The first three measures were the indicators of SC perfectionism in Dunkley et al. (2000). PS perfectionism was indicated by MPS self-oriented perfectionism (15 items; e.g., "I set very high standards for myself") and FMPS personal standards (7 items; e.g., "If I do not set the highest standards for myself, I am likely to end up a second-rate person"), as in Dunkley et al. (2000). DEQ dependency (e.g., "I often think about the danger of losing someone who is close to me") was included in supplementary multilevel analyses. The reliability and validity of the DEQ (Blaney & Kutcher, 1991; Zuroff, Quinlan, & Blatt, 1990), MPS (Hewitt & Flett, 1991), and FMPS (Frost et al., 1990) have been well established. Coefficient alphas in the present study for socially prescribed perfectionism, concern over mistakes, doubts about actions, self-oriented perfectionism, and personal standards were .84, .90, .72, .90, and .78, respectively. Coefficient alpha was not computed for DEQ self-criticism and dependency because, as recommended by Zuroff et al. (1990), we scored these scales using the factor weights derived from the initial female sample (Blatt et al., 1976) rather than by summing a series of items.

Daily affect. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is a 20-item scale that was used to measure daily positive and negative affect. The Positive and Negative Affect scales each consist of 10 adjectives, and the daily ratings have been found to be reliable and valid measures of these two distinct dimensions of affect. Reliabilities (coefficient alphas) were computed for each of the 7 days for the present study, and the average reliabilities over 7 days were .89 for Positive Affect and .83 for Negative Affect. For the measurement and structural models, negative affect was indicated by the five content categories identified by Watson et al. (1988; *distressed*, *angry*, *fearful*, *guilty*, *jittery*), which consist of two adjectives each. To improve the reliability (see Kishton & Widaman, 1994) and identifiability (see Kano, 1997) of the positive affect factor solution, we parceled the Positive Affect scale into three subscales by selecting every third item, yielding 1 four-item subscale and 2 three-item subscales.

Hassles. Participants completed a 30-item, abbreviated version of the General, Academic, Social Hassles Scale for Students (GASHSS; Blankstein & Flett, 1993). The scale assessed general hassles (8 items; e.g., "money for necessary expenses"), academic hassles (10 items; e.g.,

"grades"), and social hassles (12 items; e.g., "relationship with boyfriend/girlfriend") experienced by college students that specific day. Participants rated each item in terms of how "persistent" the hassle was—that is, how frequent and enduring it was during the day (0 = *no hassle; not at all persistent* to 6 = *extremely persistent hassle; high frequency and/or duration*). For the measurement and structural models, we used all three subscales to indicate a hassles latent construct, as did Dunkley et al. (2000). Reliability coefficients for the GASHSS subscales typically exceed .90, and support for construct validity in university students has been obtained (Dunkley & Blankstein, 2000; Flett, Blankstein, & Martin, 1995). The average reliabilities over 7 days for the present study were .70 for general hassles, .90 for academic hassles, and .81 for social hassles.

Event appraisals. Consistent with Stone and Neale's (1984) measure of daily coping, we first asked participants to provide a brief description of the most bothersome event or issue of the day, indicating what happened, where the event took place, who was involved, and what made the event important. After describing the event, participants answered the following questions about the event or issue: "How unpleasant was the event or issue to you?" (1 = *not at all* to 11 = *exceptionally*), "For how long were you bothered by the event or issue?" (1 = *a very brief amount of time* to 7 = *a very large amount of time*), "How much control did you feel you had over handling the event or issue to your satisfaction?" (1 = *none* to 7 = *very much*), "To what extent did you think your handling of the event or issue would result in criticism from another significant person(s)?" (1 = *not at all* to 7 = *very much*), and "How stressful was the event or issue for you?" (1 = *not at all* to 11 = *exceptionally*). For the measurement and structural models, the global appraisal items (i.e., unpleasantness, duration, stressfulness) reflecting the severity of the event, the duration of the event, or both were used as indicators of the latent construct, daily event stress.

We coded the events into academic, social, and general categories, using the items of the respective subscales of the GASHSS (Blankstein & Flett, 1993) as reference points. The three context categories were not coded mutually exclusively. Examples of how reported events were coded into the variables academic, social, and general, respectively, are "received bad grade on mid-term exam" (1, 0, 0), "argument with boyfriend/girlfriend" (0, 1, 0), and "household chores" (0, 0, 1). David M. Dunkley and a research assistant independently coded the events of a random sample of 10 participants (70 events) and agreed on the classification of 66 of the 70 events (94%), with all the disagreements concerning the categorization of general events. Having established reliability, David M. Dunkley coded the remainder of the events.

Coping. After the appraisal section, participants were asked to indicate how they reacted to the stressful event that specific day. Participants completed selected four-item scales from the situational version of the COPE (Carver et al., 1989). Consistent with Dunkley et al. (2000), for the measurement and structural models, we formed two groups of coping strategies that were derived from a second-order factor analysis (Carver et al., 1989). These two groups were avoidant coping (i.e., the Denial, Behavioral Disengagement, and Mental Disengagement scales of the COPE) and problem-focused coping (i.e., the Active Coping, Planning, and Suppression of Competing Activities scales). The Positive Reinterpretation and Growth scale of the COPE assessed a separate coping category (Carver et al., 1989). To assess self-blame, we used four items from the Emotion-Focused Coping scale of the Coping Inventory for Stressful Situations (CISS; Endler & Parker, 1990); these items were situationally framed (i.e., "I blamed myself for procrastinating," "I blamed myself for having gotten into this situation," "I blamed myself for not knowing what to do," "I focused on my general inadequacies"). Response choices ranged from *I didn't do this at all* (1) to *I did this a lot* (4). The selected situation-specific COPE scales have demonstrated moderate internal consistencies (with only Mental Disengagement having a low coefficient alpha) and convergent and discriminant validity (Carver et al., 1989). The average reliabilities over 7 days for the present study were moderate to large for Behavioral Disengagement (.79), Denial (.81), Active Coping (.85), Planning (.87), Suppression of Competing Activities (.81), Positive Reinterpretation and Growth (.74), and Self-Blame (.68) and low for the Mental Disengagement scale (.52).

Social support. After the coping section, participants answered questions about people in their environment who provided them with various kinds of help or support that particular day in helping them handle the stressor. One item was included for each of five social provisions identified by Cutrona and Russell (1987): reliable alliance, attachment, guidance, social integration, and reassurance of worth. To enhance the distinction between various aspects of social support (see Dunkel-Schetter & Bennett, 1990), each social provision question consisted of three parts corresponding to perceived, wanted, and received support. The first part asked the extent to which each social provision was potentially available in helping to handle the stressor today if the participant were to need it, from 1 (*strongly disagree*) to 7 (*strongly agree*). For the second part, participants circled *yes* or *no* as to whether they wanted to receive that social provision in helping them handle the stressor today. For the third part, participants rated the extent to which they actually received the social provision today with regard to the stressor, from 1 (*not at all*) to 7 (*very much*).[1]

Consistent with Cutrona (1989), we used the reliable alliance, attachment, and guidance items as indicators of perceived social support, as did Dunkley et al. (2000). Together, these three items assess a sense of security and the perception that others are available to provide assistance with stressors (i.e., emotional, informational, instrumental). The perceived and received aspects of these provisions were moderately correlated (.31 to .44). The social integration and reassurance of worth provisions were used in the analyses assessing the trait versus situational components of perceived and received social support.

Results

Descriptive Statistics

For descriptive purposes, we averaged hassles, appraisals, coping, perceived social support, negative affect, and positive affect across the 7 days. The means for the perfectionism and aggregated diary measures were generally comparable to those reported previously, except for the COPE scales, which were approximately one standard deviation lower than college student norms for the self-report dispositional version of the COPE (Carver et al., 1989). Totaled across days, participants reported academic (48%) and social events (45%) equally and more frequently than general events (28%). Participants reported events of each multiple category (i.e., some combination of academic, social, or general) with low frequency (8% or less).

The results are presented in five sections. First, we report the between- and within-person variability in the measures of event appraisals, coping, and perceived social support to assess the extent of dispositional versus situational influences. Second, we assess the construct validity of the measurement model with the perfectionism and aggregated, situation-specific measures. We then present the results testing the structural model examining hassles, daily event stress, coping, and perceived social support as dispositional mediators of the relation between perfectionism and both negative affect and positive affect. This is followed by a report of the structural model examining self-blame, perceived efficacy, and perceived criticism as mediators of the relation between SC perfectionism and avoidant coping. Finally, in a series of multilevel analyses, we examine within-person relations be-

[1] A list of the items of the situation-specific social support measure is available from David M. Dunkley.

tween events, appraisals, and coping strategies, respectively, and end-of-day negative affect and positive affect. Further, we test whether reactivity to these factors varies as a function of SC perfectionism.

Nested Analysis of Variance

For this multilevel design, in which daily assessments were nested within individuals, we used a nested analysis of variance (N-ANOVA; Winer, 1972) to assess the extent to which the variance in appraisals, coping, and social support was due to between-persons and within-person influences. According to Schwartz et al.'s (1999) rule of thumb, a strong trait or individual-differences influence should be reflected in approximately 50% of the variability in a kind of stress, appraisal, and coping being due to between-persons influences; a strong situational influence should be reflected in approximately 10% of the variability being due to between-persons influences; and modest to moderate trait influences should be reflected in an amount of variance due to between-persons influences between these two extremes. Maximum likelihood (ML) estimation, which allows for autocorrelated within-person residuals, was used to provide a more accurate estimate of the between-persons and within-person variability (see Schwartz & Stone, 1998). Specifically, the PROC MIXED procedure in SAS (Littell, Milliken, Stroup, & Wolfinger, 1996; SAS Institute, 1996) was used to perform the N-ANOVAs, which allowed specification of a spatial power (i.e., first-order, autoregressive) structured covariance matrix (see Schwartz et al., 1999).

The 163 participants provided a total of 1,141 daily reports of appraisals, coping, and social support. Table 1 presents the percentages of the variability in the stress, appraisal, coping, social support, and affect variables attributable to between- and within-person influences. The results show that there were modest to moderate individual differences or trait influences in the stress and event appraisals (14–23%) but large individual differences in hassles (65–69%) and moderate trait influences in the coping scales (19–40%). Moderate to large trait influences were demonstrated for the perceived social support items (37–60%), and, in contrast, modest to moderate trait influences were demonstrated for the received social support items (14–28%).

Measurement Model

Using Amos (Arbuckle, 1997), we used confirmatory factor analysis to test the measurement model. There were four measured variables (i.e., positive reinterpretation and growth, self-blame, perceived efficacy, perceived criticism) and nine latent factors, each with two or more indicators: SC perfectionism, PS perfectionism, avoidant coping, problem-focused coping, perceived social support, event stress, hassles, positive affect, and negative affect. This model resulted in the following acceptable indices of fit: $\chi^2(421, N = 163) = 726.41$, $p < .001$; $\chi^2 / df = 1.73$; goodness-of-fit index (GFI) = .80; incremental fit index (IFI) = .91; comparative fit index (CFI) = .91. Generally, GFI, IFI, and CFI values over .90 (see Hoyle & Panter, 1995) and χ^2 / df of less than 2 (Carmines & McIver, 1981) suggest acceptable fit. Although GFI was below the nominal criterion of .90, it was not so low as to indicate a poorly fitting model. Moreover, because GFI is moderately associated with sample size (Marsh, Balla, & McDonald, 1988), .90 may be an unduly stringent criterion in the present study, given the sample size of less than 200 (see Hoyle & Panter, 1995). Furthermore, the factor loadings, which are provided in Table 2, were all significant ($p < .001$).[2] The correlations between the measured and latent variables are presented in Table 3.[3]

Structural Model of the Relation Between SC Perfectionism and Negative and Positive Affect

The hypothesized structural model predicting negative affect and positive affect (see Figure 1) resulted in the following acceptable fit indices: $\chi^2(386, N = 163) = 686.24$, $p < .001$; $\chi^2 / df = 1.78$; GFI = .79; IFI = .90; CFI = .90. Next, on the basis of Wald tests, paths that did not contribute significantly to the model were removed one at a time, and the model was reestimated each time. The nonsignificant paths from avoidant coping to negative affect, avoidant coping to positive affect, perceived social support to negative affect, perceived social support to problem-focused coping, hassles to positive affect, PS perfectionism to problem-focused coping, and SC perfectionism to event stress were deleted one at a time. Because PS perfectionism was not related to any variable in the model, this variable was deleted.[4] The final model had these acceptable fit indices: $\chi^2(339, N = 163) = 592.75$, $p < .001$; $\chi^2 / df = 1.75$; GFI = .80; IFI = .91; CFI = .91.

To test whether SC perfectionism had a unique relation with negative affect when the relations of hassles and event stress with negative affect were controlled for, a partially mediated model, which included a path from SC perfectionism to negative affect, was also estimated and compared with the fully mediated model

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[2] Given that previous studies examining the two different dimensions of perfectionism have not included DEQ self-criticism as an indicator of SC perfectionism, it was informative to compare the operationalization of SC perfectionism with versus without DEQ self-criticism as an indicator. As such, the measurement model was tested without DEQ self-criticism as an indicator of SC perfectionism. The factor loadings of FMPS concern over mistakes (.86), MPS socially prescribed perfectionism (.69), and FMPS doubts about actions (.59) on SC perfectionism essentially remained the same. Thus, because the magnitude of factor loadings are assumed to reflect whatever trait or construct underlies them (see Newcomb, 1990), the interpretation of the SC perfectionism latent construct was identical with or without DEQ self-criticism as an indicator.

[3] We examined the relation between SC perfectionism and PS perfectionism and the frequency of types of most bothersome daily events reported. Thus, each participant had total scores (0–7) for academic, social, and general stressors that were examined in correlational analyses with SC perfectionism and PS perfectionism. The indicator variables of each perfectionism factor were standardized, and the factor scores were used to form the SC perfectionism and PS perfectionism variables for these analyses. SC perfectionism was not associated with any event type, but PS perfectionism had a small association with the frequency of academic events ($r = .17$, $p < .05$).

[4] Before deleting the PS perfectionism latent variable from the model, we estimated paths between PS perfectionism and both perceived social support and negative affect, with which it had significant zero-order correlations (Table 2). The relation between PS perfectionism and perceived social support was of opposite sign from the zero-order correlation because of suppressor effects (see Cohen & Cohen, 1983, pp. 94–95), and the path from PS perfectionism to negative affect was not significant when we controlled for the influence of the other variables in the model. Thus, the PS perfectionism latent variable was deleted from the model.

Table 1
Percentages of Between- and Within-Person Variability in the Daily Measures of Hassles, Event Stress, Appraisals, Coping, Social Support, Negative Affect, and Positive Affect

Measure	% variance	
	Between persons	Within person
Hassles		
General	68.9	31.1
Academic	64.9	35.1
Social	68.1	31.9
Event stress		
Unpleasantness	17.6	82.4
Stressfulness	22.5	77.5
Duration	16.5	83.5
Event appraisals		
Perceived efficacy	13.7	86.3
Perceived criticism	20.3	79.7
Avoidant coping		
Mental disengagement	29.6	70.4
Behavioral disengagement	18.6	81.4
Denial	18.6	81.4
Problem-focused coping		
Active coping	23.9	76.1
Planning	29.8	70.2
Suppression of cmp act	22.1	77.9
Other coping		
Self-blame	36.4	63.6
Positive reint and growth	39.5	60.5
Perceived social support		
Reliable alliance	36.6	63.4
Attachment	54.7	45.3
Guidance	48.2	51.8
Other perceived social support		
Social integration	59.9	40.1
Reassurance of worth	51.7	48.3
Received social support		
Reliable alliance	13.7	86.3
Attachment	21.7	78.3
Guidance	18.1	81.9
Other received social support		
Social integration	19.6	80.4
Reassurance of worth	28.4	71.6
Negative affect	28.6	71.4
Positive affect	34.3	65.7

Note. "Other" categories represent measures that were not used to indicate latent constructs in the measurement and structural models. cmp act = competing activities, reint and growth = reinterpretation and growth.

(i.e., no direct relation between SC perfectionism and negative affect). The partially mediated model had these fit indices: $\chi^2(338, N = 163) = 588.72$, $p < .001$; $\chi^2 / df = 1.74$; GFI = .80; IFI = .91; CFI = .91; Akaike information criterion (AIC) = 724.72; Bayes information criterion (BIC) = 1,161.68. We followed Hoyle and Panter's (1995) recommendation that competing models be compared using fit indices that account for model complexity. Parsimony-adjusted indices of fit compared between models were the AIC (Akaike, 1987) and the BIC (Schwarz, 1978), with smaller values preferred and the BIC tending more strongly to favor more parsimonious models (see Arbuckle, 1997). The chi-square difference test, $\Delta\chi^2(1, N = 163) = 4.03$, $p < .05$, and AIC values (726.75 for the fully mediated model) but not the BIC values (1,157.28 for the fully mediated model) favored the partially mediated model. Thus, the partially mediated model was adopted. However, there was little difference in predictive power between the fully mediated model and the partially mediated model, which accounted for only 1% additional variance in negative affect.

Next, to see whether the relation between SC perfectionism and positive affect was fully explained by perceived social support, we compared a partially mediated model, which included a direct path from SC perfectionism to positive affect, with the model including a path from SC perfectionism to negative affect. The partially mediated model resulted in these fit indices: $\chi^2(337, N = 163) = 584.88$, $p < .001$; $\chi^2 / df = 1.74$; GFI = .81; IFI = .91; CFI = .91; AIC = 722.88; BIC = 1,166.27. The chi-square difference test, $\Delta\chi^2(1, N = 163) = 3.84$, $p < .05$, and AIC values but not the BIC values slightly favored the partially mediated model. The partially mediated model (.335) and fully mediated model (.327) accounted for equivalent amounts of variance in positive affect. Furthermore, the perceived social support–positive affect relation became nonsignificant in the partially mediated model. The partially mediated model did not improve the prediction of positive affect, nor was it theoretically informative in explaining why SC perfectionism was

Table 2
Factor Loadings for the Measurement Model

Latent factor and indicators	Unstandardized	Standardized
Self-critical perfectionism		
DEQ self-criticism	0.10	.86
FMPS concern over mistakes	0.70	.81
FMPS doubts about actions	0.24	.62
MPS socially prescribed perfectionism	1.00[a]	.68
Personal standards perfectionism		
FMPS personal standards	0.25	.68
MPS self-oriented perfectionism	1.00[a]	.89
Hassles		
General	0.61	.78
Academic	1.00[a]	.72
Social	1.06	.90
Event stress		
Stressfulness	1.17	.93
Unpleasantness	1.00[a]	.88
Duration	0.57	.79
Perceived social support		
Reliable alliance	0.96	.85
Attachment	1.00[a]	.91
Guidance	0.99	.95
Avoidant coping		
Behavioral disengagement	1.00	.70
Mental disengagement	1.00[a]	.65
Denial	0.70	.64
Problem-focused coping		
Active coping	0.98	.91
Planning	1.00[a]	.87
Suppression of competing activities	0.77	.77
Negative affect		
Distressed	1.00[a]	.86
Angry	0.67	.66
Fearful	0.77	.75
Guilty	0.50	.58
Jittery	0.72	.60
Positive affect		
Positive Affect 1	1.00[a]	.89
Positive Affect 2	0.87	.94
Positive Affect 3	0.81	.85

[a] Unstandardized factor loading is fixed at 1.00 to achieve identifiability.

Table 3
Measurement Model Correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Self-critical pft	—												
2. Personal standards pft	.61***	—											
3. Hassles	.56***	.14	—										
4. Event stress	.31**	.16	.42***	—									
5. Perceived criticism	.34***	−.02	.35***	.33***	—								
6. Perceived efficacy	−.27**	−.15	−.06	−.38***	−.14	—							
7. Perceived social support	−.57***	−.20*	−.36***	−.14	−.06	.25**	—						
8. Self-blame	.56***	.18*	.60***	.40***	.45***	−.14	−.23**	—					
9. Avoidant cop.	.53***	.11	.68***	.39***	.51***	−.32**	−.33**	.70***	—				
10. Problem-focused cop.	−.12	.11	.21*	.17	.05	.33***	.09	.20*	.06	—			
11. Positive reinterpret.	−.12	−.02	.25**	−.02	−.03	.27***	.09	.10	.23*	.54***	—		
12. Negative affect	.52***	.22*	.62***	.68***	.33***	−.25**	−.26**	.56***	.48***	.16	−.00	—	
13. Positive affect	−.34***	−.12	−.07	−.18*	−.07	.27**	.25**	−.21**	−.11	.44***	.42***	−.25**	—

Note. pft = perfectionism; cop. = coping; reinterpret. = reinterpretation and growth.
* $p < .05$. ** $p < .01$. *** $p < .001$.

linked to positive affect. Consequently, we adopted the fully mediated model, which had essentially equal predictive power and greater explanatory power.

Figure 3 presents the significant standardized parameter estimates of the final structural model. The residual arrows indicate the proportion of variance in each endogenous latent variable unaccounted for by other variables in the model. One can grasp the results by referring to Figure 3 and considering first the paths leading from SC perfectionism to negative affect and then the paths leading to positive affect. The relation between SC perfectionism and negative affect was partially mediated by hassles and avoidant coping, with the latter related to negative affect indirectly through both event stress and hassles. Further, SC perfectionism had a small yet significant relation with negative affect when we controlled for the effects of event stress and hassles on negative affect. Perceived social support was the primary mediator in the fully mediated relation between SC perfectionism and positive affect. That is, SC perfectionism was negatively related to perceived social support, which, in turn, was positively related to positive affect. In addition, event stress, problem-focused coping, and positive reinterpretation and growth coping had unique relations with positive affect.[5]

Structural Model With Self-Blame Coping, Perceived Efficacy, and Perceived Criticism as Mediators Between SC Perfectionism and Avoidant Coping

In the test of whether the relation between SC perfectionism and avoidant coping was partially or fully mediated by self-blame, perceived efficacy, perceived criticism, or some combination of these, the partially mediated model, as shown in Figure 2, was tested and resulted in these excellent fit indices: $\chi^2(29, N = 163) = 29.01$, *ns*, $\chi^2 / df = 1.00$; GFI = .96, IFI = 1.00, CFI = 1.00, AIC = 81.01, BIC = 221.32. This model was not significantly different from the fully mediated model, $\Delta\chi^2(1, N = 163) = 1.93$, *ns*, and the AIC (80.94) and BIC (215.85) of the fully mediated model were not larger; thus, following Anderson and Gerbing's (1988) recommendation, we accepted the more parsimonious, fully mediated model. Next, the nonsignificant regression paths from self-blame to perceived efficacy and from SC perfectionism to perceived criticism were removed from the model one at a time. The fully mediated model was reestimated with these paths deleted, and this resulted in the following excellent fit indices: $\chi^2(32, N = 163) = 32.84$, *ns*, $\chi^2 / df = 1.03$; GFI = .96, IFI = 1.00, CFI = 1.00, AIC = 78.84, BIC = 202.95. The results provide clear support for a fully mediated model to explain the

[5] An alternative model was fit to the data to test whether the relation between SC perfectionism and avoidant coping was mediated by hassles and event stress. That is, the paths in the initial hypothesized model from avoidant coping to hassles and event stress, respectively, were reversed in direction. The final model after deletion of nonsignificant paths was more parsimonious than the final model derived from the originally hypothesized model; however, it was a significantly worse fit to the data, according to the chi-square difference test, $\Delta\chi^2(1, N = 163) = 10.97$, $p < .001$, and AIC (733.69) and BIC (1164.23).

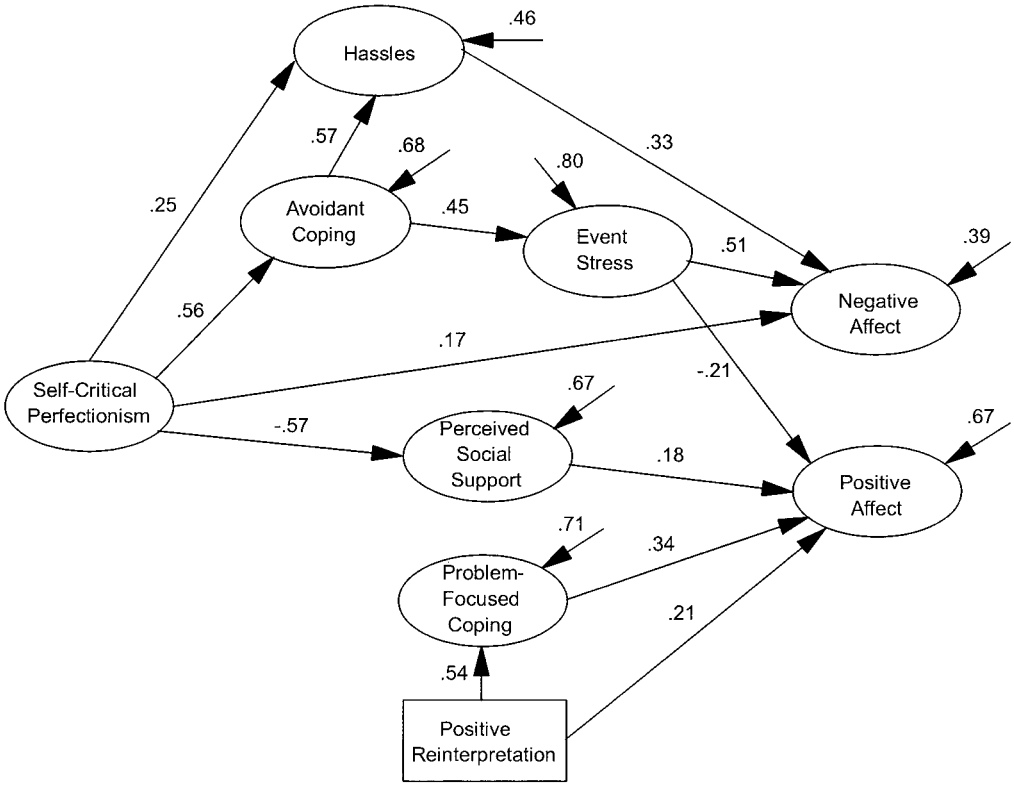

Figure 3. Standardized parameter estimates of the final structural model relating self-critical perfectionism, avoidant coping, hassles, event stress, perceived social support, problem-focused coping, positive reinterpretation and growth coping, negative affect, and positive affect. Latent variables are represented by ovals, and measured variables are represented by rectangles. The residual arrows denote the proportion of variance in the endogenous latent variable that was unaccounted for by other variables in the model.

relation between SC perfectionism and both avoidant coping and perceived criticism.[6]

Figure 4 presents the significant standardized parameter estimates of the final structural model of the relation between SC perfectionism and avoidant coping. The largest and most important of the mediational pathways was from SC perfectionism to self-blame. SC perfectionism was associated with self-blame, which, in turn, was associated with avoidant coping both directly and indirectly through perceived criticism. As well, SC perfectionism was related to low levels of perceived efficacy, which had a unique relation with avoidant coping.[7]

Reactivity to Stress: SC Perfectionism as a Moderator of the Within-Person Relations Among Daily Affect and Stressful Events, Stress and Event Appraisals, and Coping

The next analyses focus on the influence of SC perfectionism on reactivity to stress. In analyzing reactivity, we examined the relation between negative and positive affect and specific events, stress and event appraisals, and coping. The indicator variables of each latent construct were standardized where appropriate (i.e., for SC perfectionism, PS perfectionism, event stress) and added together to form the predictor and outcome variables in these analyses. For this set of analyses, we conducted multilevel modeling with the PROC MIXED procedure in SAS (Littell et al., 1996; SAS Institute, 1996). Although each participant provided 7 days of data, the previous day's affect was controlled for in our model. Consequently, our model had six observations nested within individuals. Therefore, there was a two-level structure in the data: the

[6] An alternative model was fit to the data to test whether the relation between SC perfectionism and self-blame was mediated by perceived criticism and perceived efficacy. That is, the paths in the initial hypothesized model from self-blame to perceived criticism and perceived efficacy were reversed in direction. The final model after deletion of nonsignificant paths was not as parsimonious as the final model derived from the originally hypothesized model, nor was it a better fit to the data, according to the chi-square difference test, $\Delta\chi^2(1, N = 163) = 1.89$, *ns*, and AIC (78.95) and BIC (208.46).

[7] We used hierarchical multiple regression analyses to examine whether various moderator hypotheses could account for unique variance in negative affect and positive affect above the variance predicted by the main effect variables. The indicator variables of each latent factor were standardized, and the factor scores were used to form the variables for these analyses. We tested a series of two-way interactions between SC perfectionism or PS perfectionism and academic hassles, social hassles, event stress, avoidant coping, problem-focused coping, positive reinterpretation and growth coping, perceived social support, perceived efficacy, perceived criticism, and self-blame, respectively, predicting negative affect or positive affect. In all, two significant interactions were detected, but the nature of the effects were not predicted and were not interpretable.

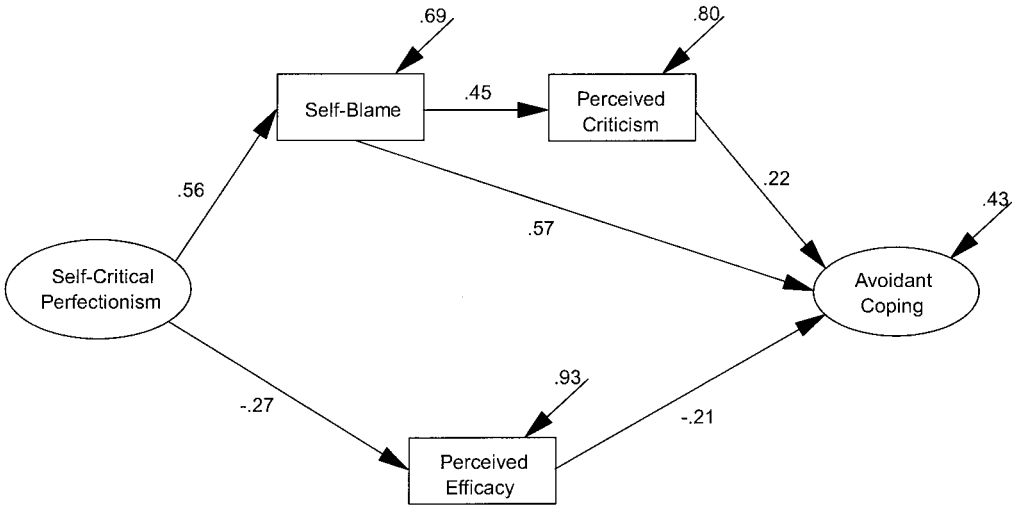

Figure 4. Standardized parameter estimates of the final structural model relating self-critical perfectionism, self-blame, perceived efficacy, perceived criticism, and avoidant coping. Latent variables are represented by ovals, and measured variables are represented by rectangles. The residual arrows denote the proportion of variance in the measured or latent variable that was unaccounted for by other variables in the model.

repeated daily assessment (within-person) level and the person (between-persons) level. ML estimation was used to model the data at both levels.

In a series of multilevel analyses, we predicted emotional reactivity (i.e., greater increases in negative affect and greater decreases in positive affect compared with the preceding day) to specific events, stress and event appraisals, and coping strategies, respectively. We removed between-persons variation from the Level 1 daily predictor variables (except for previous day's affect) by mean centering them within person. Furthermore, we modeled the within-person regression parameters as a function of SC perfectionism, a Level 2, between-persons variable. That is, we examined whether the slopes representing the relations between a daily variable and affect were different for individuals high versus low on SC perfectionism. In sum, end-of-day negative affect and positive affect were predicted in separate equations by event type, stress and event appraisals, and coping strategies, respectively. Further, we examined reactivity to these factors as a function of SC perfectionism using cross-level interactions between Level 2 SC perfectionism and the Level 1 daily predictor variables. Consistent with Bolger and Zuckerman (1995), after estimating each regression equation containing all respective predictor variables, we then reestimated the regression equation, eliminating all nonsignificant effects ($p > .1$) of SC perfectionism on the within-person relations.

As SC perfectionism was standardized, the between-persons (Level 2) parameter indicated how much average mood levels changed as a function of differences of one standard deviation in SC perfectionism. As expected, high-SC perfectionists reported higher overall negative affect and lower overall positive affect (see Table 4). In contrast to most studies, which have not found daily carryover effects of mood (see Stone, Neale, & Shiffman, 1993), individuals (on average) reported greater negative affect and positive affect after experiencing higher levels of previous day negative affect and positive affect, respectively (see Table 4).[8]

SC perfectionism, reactivity to event type, and affect. We examined reactivity to academic and social events and how stress reactivity in response to these events might vary as a function of SC perfectionism. In this multilevel model, we used the dummy-coded academic event (academic = 1; nonacademic = 0) and interpersonal event (interpersonal = 1; noninterpersonal = 0) variables as Level 1 predictors of negative affect and positive affect. We also used SC perfectionism as a Level 2 (between-persons) predictor to predict differences in both of these within-person relationships. In the analyses predicting negative affect (see Table 4), individuals, on average, were more reactive to interpersonal events than to noninterpersonal events. Academic events, compared with nonacademic events, did not significantly predict negative affect, nor were moderating effects of SC perfectionism obtained. In the analyses predicting positive affect, neither the academic nor the social nature of events was related to positive affect. However, there was a moderating effect of SC perfectionism on the relation between academic events and positive affect. We interpreted significant moderator effects by plotting values for each level of the predictor variables, using one standard deviation above or below the mean for high and low levels, respectively. Specifically, low-SC perfectionists reported greater increases in positive affect after experiencing an academic event; on the other hand, as hypothesized, high-SC perfectionists reported greater decreases in positive affect after experiencing an academic event (see Table 4).

SC perfectionism, reactivity to stress and event appraisals, and affect. The next analyses examined emotional reactivity to the various stress and event appraisals. We estimated a multilevel

[8] These results were produced in all multilevel analyses. As the results are virtually identical, the results concerning the second-level intercept, effect of SC perfectionism, and the effect of the previous day's affect are presented only in the first set of multilevel analyses.

Table 4
Multilevel Regressions: Event Type Variables Predicting Negative and Positive Affect and the Moderating Effect of Self-Critical Perfectionism

Variable	Negative affect	Positive affect
Level 2 parameters		
Intercept	14.006	20.575
SC perfectionism	1.437***	−1.524***
Level 1 parameters		
Previous day's affect	0.256***	0.224***
Academic event	0.683	0.258
Social event	1.133*	1.020
Cross-level interaction parameters		
SC Perfectionism × Academic Event		−1.524**
SC Perfectionism × Social Event		

Note. Regression coefficients are unstandardized. SC = self-critical.
* $p < .05$. ** $p < .01$. *** $p < .001$.

model with six appraisal variables (i.e., academic hassles, social hassles, event stress, perceived criticism, perceived efficacy, perceived social support) in the same Level 1 equation, allowing us to examine the unique effects of each appraisal. In addition, SC perfectionism was tested as a moderator of these within-person relations between appraisals and negative affect and positive affect.

In the analyses predicting negative affect, individuals, on average, were reactive to academic hassles, social hassles, and event stress (see Table 5). Furthermore, as shown in Figure 5, the positive relation between academic hassles and negative affect was stronger for high-SC perfectionists than for low-SC perfectionists, as predicted. In addition, as hypothesized, the relations between negative affect and both perceived criticism and perceived efficacy were moderated by SC perfectionism (see Table 5). Specifically, as shown in Figure 5, high-SC perfectionists, as compared with low-SC perfectionists, experienced more negative affect on days when they perceived criticism from others in handling their most bothersome event of the day and were less confident in their ability to cope. In the analyses predicting positive affect, event stress and academic hassles were negatively related to positive affect for individuals on average (see Table 5). Furthermore, perceived efficacy was related to increases in positive affect for low-SC perfectionists but not high-SC perfectionists.

Table 5
Multilevel Regressions: Effects of Stress and Appraisals on Negative Affect and Positive Affect and the Moderating Effect of Self-Critical Perfectionism

Stress/appraisals	Negative affect	Positive affect
Level 1 parameters		
Academic hassles	0.118***	−0.074*
Social hassles	0.156***	0.056
Event stress	0.335***	−0.227***
Perceived criticism	0.190	−0.166
Perceived efficacy	−0.198	0.223
Perceived social support	0.023	0.116
Cross-level interaction parameters		
SC Perfectionism × Academic Hassles	0.061*	
SC Perfectionism × Social Hassles		
SC Perfectionism × Event Stress		
SC Perfectionism × Perceived Criticism	0.249**	
SC Perfectionism × Perceived Efficacy	−0.202*	−0.302*
SC Perfectionism × Perceived Social Support		

Note. Regression coefficients are unstandardized.
* $p < .05$. ** $p < .01$. *** $p < .001$.

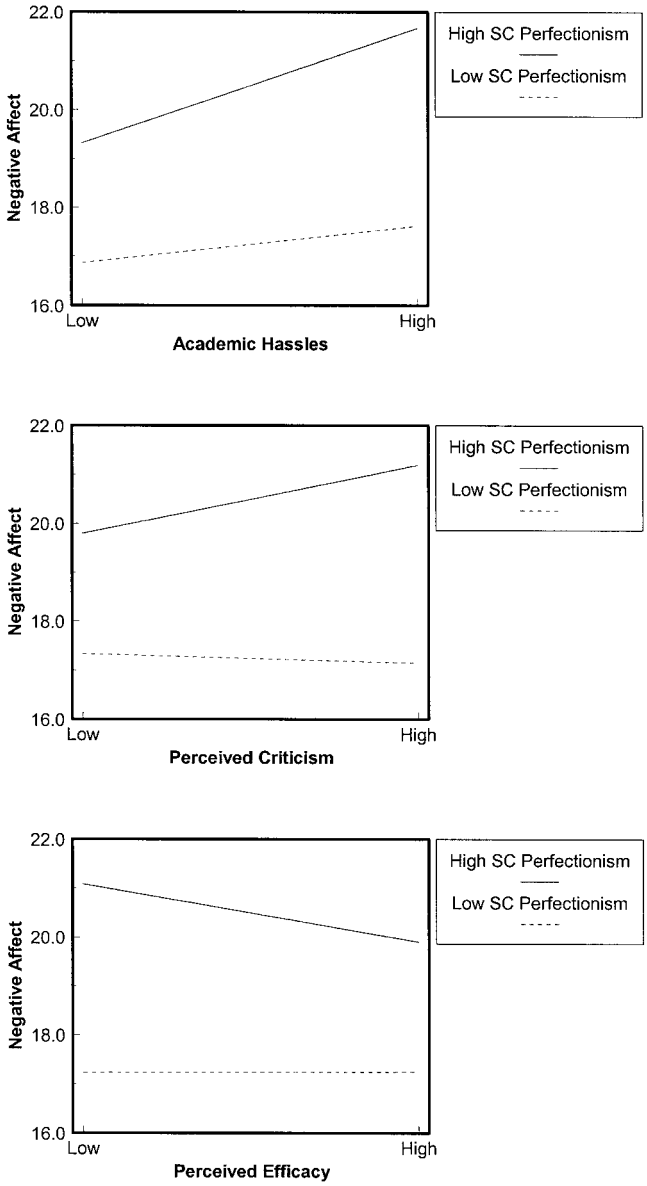

Figure 5. Relation between negative affect and academic hassles (top), perceived criticism (middle), and perceived efficacy (bottom), respectively, as a function of self-critical (SC) perfectionism. Values for SC perfectionism, academic hassles, perceived criticism, and perceived efficacy are plotted using low (one standard deviation below the mean) and high (one standard deviation above the mean) values.

SC perfectionism, coping mechanisms, and affect. The next analyses examined the effectiveness of coping strategies in de-

creasing negative affect and increasing positive affect, respectively. We estimated a multilevel model with four coping strategies (i.e., self-blame, avoidant coping, problem-focused coping, positive reinterpretation and growth) in the same Level 1 equation, allowing us to examine the unique effects of each coping mechanism. In addition, SC perfectionism was tested as a moderator of these within-person relations between coping and negative affect and positive affect.

In the analyses predicting negative affect, individuals (on average) experienced more negative affect on days when they reported high self-blame with respect to their most bothersome event of the day (see Table 6). Furthermore, as shown in Figure 6, the positive relation between self-blame and negative affect was stronger for high-SC perfectionists than for low-SC perfectionists, as predicted. In the analyses predicting positive affect, on days when individuals engaged in positive reinterpretation coping and less self-blame with their most bothersome event of the day, they experienced more positive affect (see Table 6). Furthermore, as hypothesized, engagement in problem-focused coping (see Figure 6) and less avoidant coping was related to increases in positive affect for low-SC perfectionists but not high-SC perfectionists. There was also a moderating effect of SC perfectionism on the relation between positive reinterpretation and positive affect. This effect suggests that high-SC perfectionists (slope = .64), as compared with low-SC perfectionists (slope = .24), experienced greater increases in positive affect on days when they engaged in positive reinterpretation and growth with their most bothersome event of the day.

Supplementary Analyses

To assess whether PS perfectionism and DEQ dependency moderated the within-person relations among daily affect and event type, stress and event appraisals, and coping, we conducted all multilevel analyses testing these variables as moderators in addition to SC perfectionism. There were no significant findings for PS perfectionism or either of its indicators (i.e., MPS self-oriented perfectionism, FMPS personal standards) as an additional moderator. For DEQ dependency, the positive relation between social hassles and negative affect was stronger ($p < .05$) for high dependents (slope = .23) than for low dependents (slope = .09).

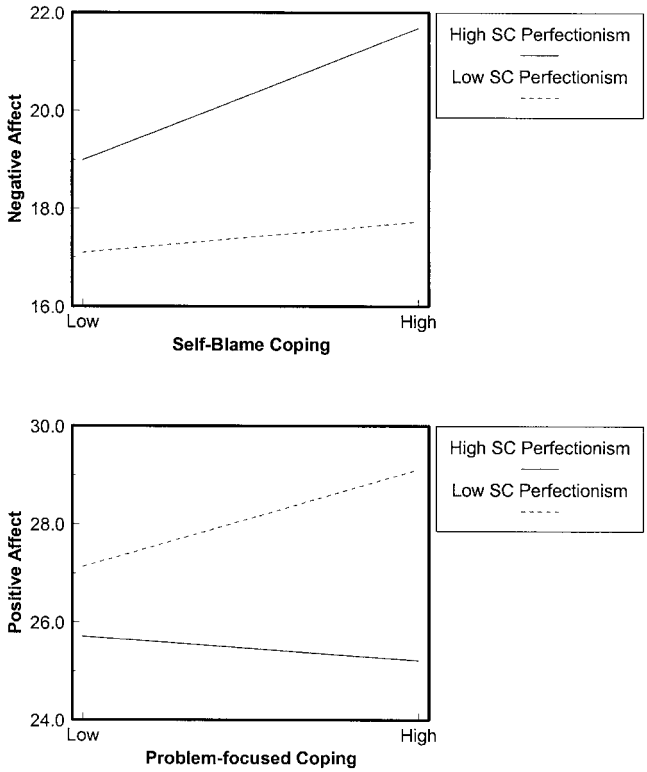

Figure 6. Relation between self-blame and negative affect (top) and between problem-focused coping and positive affect (bottom), respectively, as a function of self-critical (SC) perfectionism. Values for SC perfectionism, self-blame, and problem-focused coping are plotted using low (one standard deviation below the mean) and high (one standard deviation above the mean) values.

Table 6
Multilevel Regressions: Effects of Coping Responses on Negative Affect and Positive Affect and the Moderating Effect of Self-Critical Perfectionism

Coping strategy	Negative affect	Positive affect
Level 1 parameters		
Self-blame	0.387***	−0.568***
Avoidant coping	0.075	−0.086
Problem-focused coping	0.041	0.055
Positive reinterpretation coping	0.053	0.443***
Cross-level interaction parameters		
SC Perfectionism × Self-Blame	0.241**	
SC Perfectionism × Avoidant Coping		0.135*
SC Perfectionism × Problem-Focused Coping		−0.091**
SC Perfectionism × Positive Reinterpretation		0.198*

Note. Regression coefficients are unstandardized.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The present study replicates past findings demonstrating the utility of considering perfectionism as consisting of two dimensions (e.g., Dunkley et al., 2000; Frost et al., 1993; Rice et al., 1998), which we refer to as SC perfectionism and PS perfectionism. In addition, the present study corroborates previous findings (e.g., Mongrain & Zuroff, 1995; Zuroff et al., 1995) in demonstrating an association between SC perfectionism and higher levels of negative affect and lower levels of positive affect averaged over 7 days. The present study uses a daily diary methodology to examine both dispositional and situational influences of SC perfectionism on the stress and coping process to better understand how these types of perfectionists respond to everyday stressors.

Before testing the structural and hierarchical linear models, we assessed the extent to which there are consistent differences among individuals in the stress they experience and the way they appraise events and social support and cope with everyday stressors. Overall, the findings (see Table 1) attest to the importance of considering both situational and trait influences for understanding the role of cognitive appraisal and coping processes in stress and

adaptation (e.g., Lazarus & Folkman, 1984). The notion that changes in stress, cognitive appraisals, and coping occur across situational contexts in individuals who can also be characterized as having stable traits of stress, cognitive appraisals, and coping is consistent with the current view of traits in general (see Moskowitz, Brown, & Coté, 1997). The present study examines the dispositional and situational influences of SC perfectionism on the stress, appraisal, and coping process as an explanation for its relations with high daily negative affect and low daily positive affect. The results are discussed in three sections. First, the mediational models explaining SC perfectionism's association with high negative affect and low positive affect are discussed. Second, we discuss the mediational model explaining the relation between SC perfectionism and avoidant coping. Finally, the effects of SC perfectionism on reactivity to event type, reactivity to stress and event appraisals, and coping effectiveness are discussed.

Dispositional Influences of SC Perfectionism: Mediational Models

Researchers have argued that aggregating situational reports can be a more valid method for assessing traits than are retrospective, summary questionnaires (see Epstein, 1979; Moskowitz, 1986; Schwartz et al., 1999). To our knowledge, the present study is the first to use SEM to examine aggregated, situational assessments of stress, appraisals, and coping simultaneously as dispositional mediators in the relation between personality and daily mood.

Specificity in the mediating components between SC perfectionism and negative and positive affect. Using Dunkley et al.'s (2000) structural model (see Figure 1) to predict negative affect and positive affect separately, we were able to partition the mediating trait correlates of SC perfectionism into those that were specific to daily negative affect and positive affect, respectively. Specifically, the relation between SC perfectionism and negative affect was fully mediated by hassles and avoidant coping, which was related to negative affect indirectly through its positive association with hassles and event stress (see Figure 3). This finding corroborates Dunkley et al.'s (2000) model, which suggests that the relation between SC perfectionism and distress is mediated by the tendency of these individuals to engage in dysfunctional, avoidant kinds of coping, such as disengagement and denial, and to perceive that they have much at stake with many stressors. Further, this finding expands on Dunkley et al.'s model by demonstrating that avoidant coping explains the relation between SC perfectionism and the stress associated with the most bothersome event of the day in addition to the relation between SC perfectionism and daily hassles. Overall, these results are in keeping with evidence that suggests that SC individuals engage in ineffective self-regulation strategies that serve to prolong their negative affect (Fichman, Koestner, Zuroff, & Gordon, 1999). In contrast, low perceived social support was the primary mediator in the fully mediated negative relation between SC perfectionism and positive affect. This is consistent with Dunkley et al. (2000) in supporting SC perfectionists' negative appraisal of the availability of social resources as a critical mediator that hinders their adjustment to stress.

There were two main differences between the present results and those of Dunkley et al. (2000). First, in contrast to the relation between PS perfectionism and the retrospective, dispositional, problem-focused coping reported in Dunkley et al. (2000) and other studies (e.g., Dunkley & Blankstein, 2000; Flett, Russo, & Hewitt, 1994), no relation was found between PS perfectionism and aggregated, situational reports of problem-focused coping in the present study. Thus, PS perfectionists might demonstrate positive distortions in their recollections of certain aspects of functioning, and, hence, the use of situation-specific or daily measures might offer greater validity than do retrospective, summary questionnaires for examining positive correlates of PS perfectionism. In addition, perceived social support was related to positive affect but was not uniquely related to negative affect, which might appear inconsistent with its unique relation with the distress latent variable in Dunkley et al. (2000). However, the distress latent construct in Dunkley et al. (2000) was a considerably broader variable than negative affect as assessed in the present study; its indicators included depressive symptoms and anhedonic depression from the Mood and Anxiety Symptom Questionnaire (Watson & Clark, 1991). Because measures of positive affect are related (negatively) much more strongly and consistently to depressive than to anxious symptoms (see Watson et al., 1995), the distress variable may have reflected the presence of both high negative affect and low positive affect.

In sum, given that negative affect is nonspecific and reflects the general presence of anxious and depressive symptoms (L. A. Clark & Watson, 1991), avoidant coping might be the element of SC perfectionism that explains its association with a broad range of negative emotional states. On the other hand, low perceived social support might be specific to the experience of anhedonia in SC perfectionists.

SC perfectionism and avoidant coping: Self-blame and perceived efficacy as mediators. We found that the relation between SC perfectionism and avoidant coping was fully mediated by low perceived efficacy and self-blame, with the latter related to avoidant coping both directly and indirectly through perceived criticism (see Figure 4). The association between SC perfectionism and self-blame is consistent with other findings (Hewitt & Flett, 1991; Vettese & Mongrain, 2000), as is the relation between SC perfectionism and low perceived efficacy (e.g., Martin et al., 1996). Thus, in stressful situations, SC perfectionists blame their perceived deficiencies, becoming preoccupied with their self-worth, which partly explains their use of avoidant coping (see Dweck & Sorich, 1999). As well, self-blame fully explained the relation between SC perfectionism and perceived criticism from others, which is consistent with evidence that suggests that cognitions about the self and others are intimately linked (see Brand, Lakey, & Berman, 1995). Finally, SC perfectionists lack confidence in their ability to handle stressful situations adequately, which also partly explains their avoidant coping tendencies.

Situational Influences of SC Perfectionism in Relation to Negative and Positive Affect: Reactivity to Event Type, Stress and Event Appraisals, and Coping Effectiveness

Neuroticism is the personality variable that has received the most attention in relation to reactivity to daily stressors (e.g., Bolger & Schilling, 1991; Suls, Martin, & David, 1998), the effectiveness of coping strategies (Bolger & Zuckerman, 1995), and reactivity to negative appraisals (Gunthert et al., 1999). Neuroticism is a nonspecific personality construct that refers to the

tendency to experience a wide variety of negative emotions, including anxiety and depression (Costa & McCrae, 1992). The present study is the first to use multilevel modeling to examine the effects of specific vulnerability constructs, namely perfectionism and dependency, on the stress and coping process. Empirical studies locating SC perfectionism and dependency within the comprehensive scheme of the Big Five factor model of personality (e.g., Costa & McCrae, 1992) have supported Blatt's (e.g., 1995) theoretical descriptions of SC perfectionists and dependents that point to these constructs as two specific forms of neuroticism. More specifically, in relation to the facets of neuroticism, it has been found that SC perfectionists are uniquely prone to feelings of guilt, sadness, hopelessness, and loneliness (depression; Hill, McIntire, & Bacharach, 1997); in contrast, dependent individuals uniquely tend to feel prone to feelings of fear, worry, and nervousness (anxiety) and inability to cope with stress (vulnerability; Dunkley, Blankstein, & Flett, 1997; Mongrain, 1993). We examined whether high negative affect and low positive affect in SC perfectionists might be explained by these individuals' heightened reactivity to certain types of daily events and appraisals and their ineffective use of coping strategies. Specifically, SC perfectionists were hypothesized to be more emotionally reactive to stressors that imply possible failure, loss of control, and criticism from others. In contrast, dependent individuals were hypothesized to be more emotionally reactive to stressors that imply disruption of satisfying interpersonal relationships.

SC perfectionism and reactivity to event type. Consistent with other studies (e.g., Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Gunthert et al., 1999), participants reported higher levels of negative affect on days when their most bothersome event of the day was interpersonal. Congruence for negative affect was not found, as neither SC perfectionists nor dependent individuals experienced more negative affect in response to events that matched their vulnerability. However, consistent with the congruency hypothesis, SC perfectionism had a moderating effect on the relation between academic events and positive affect. That is, low-SC perfectionists but not high-SC perfectionists reported increases in positive affect when they experienced an academic event, which indicates that these individuals might feel enthusiastic and inspired when their most bothersome event of the day is academic. (Low-SC perfectionists also experienced negative affect in response to academic events, but not to a significantly different degree than high-SC perfectionists.) In contrast, high-SC perfectionists reported decreases in positive affect when they experienced an academic event.

SC perfectionism and reactivity to stress and event appraisals. Our results suggest that appraisals of event stress and daily hassles both play a role in stress reactivity. That is, negative affect was positively related to event stress, academic hassles, and social hassles, whereas positive affect was negatively related to event stress and academic hassles. Studies examining reactivity to daily stress have typically focused on either single events (e.g., Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Gunthert et al., 1999) or cumulative events (e.g., Suls et al., 1998) but not both. The between-persons and within-person findings of the present study as well as the dispositional versus situational influences analyses underscore the importance of assessing appraisals of both single events and cumulative daily events in gaining a more complete understanding of the effects of stress on daily mood. Further, as Bolger and Zuckerman (1995) focused on reactivity and coping effectiveness in response to interpersonal conflicts, the present research highlights the relevance of also focusing on achievement-related stressors, particularly in college student populations.

In addition to experiencing more hassles, perceived criticism, and low perceived efficacy (see Table 2), high-SC perfectionists, relative to low-SC perfectionists, experienced more negative affect on days when they experienced elevated levels of academic hassles and perceived criticism from others, and low levels of confidence in their ability to cope. Overall, these results provide strong support for the congruency hypothesis, which contends that SC perfectionists are especially vulnerable to failure, loss of control, and criticism from others and relatively less vulnerable to threats to intimacy and relatedness with others (see Blatt, 1995; Zuroff & Mongrain, 1987). SC perfectionism appears narrower and more specific than neuroticism, which also yields reactivity to interpersonal events (e.g., Bolger & Zuckerman, 1995; Suls et al., 1998). Moreover, these findings conflict with the general lack of support that has been found for SC perfectionism as a specific vulnerability factor to achievement-related stress in studies using between-persons designs and analyses. Thus, our findings illuminate the utility of using within-person designs and analyses in future tests of the congruency hypothesis.

In addition, high-dependent individuals, relative to low-dependent individuals, experienced increases in negative affect on days when they experienced more social hassles. This result is consistent with numerous studies that indicate that dependent individuals are vulnerable to depression in response to social events that imply disruption of satisfying interpersonal relationships (e.g., Lakey & Ross, 1994; Rude & Burnham, 1993; Zuroff & Mongrain, 1987). Finally, PS perfectionists were not specifically reactive to any event types or appraisals of stress and events, which supports the contention that having high PS and goals is not in itself maladaptive (Frost et al., 1990). Given that PS perfectionism measures are unrelated to the Neuroticism factor of the Big Five and are more closely associated with the adaptive factor of Conscientiousness (Hill et al., 1997; Stumpf & Parker, 2000), it is not surprising that PS perfectionism is only problematic in conjunction with individual differences in certain variables, such as achievement-related stress (e.g., Hewitt et al., 1996), low perceived social support (Dunkley et al., 2000), and negative attributional style (Chang & Sanna, 2001).

SC perfectionism and coping effectiveness. In a recent issue of the *American Psychologist*, Coyne and Racioppo (2000) discussed the lack of progress in explaining the psychological mechanisms through which people manage stress effectively and cited the limitations of coping assessment techniques. Alternatively, Folkman and Moskowitz (2000) attributed this unfulfilled promise to the lack of attention given to the role of positive affect in the coping process. In addition, Tennen et al. (2000) argued that coping investigators have relied too heavily on between-persons designs and analyses. They contended that the study of day-to-day coping using within-person designs and analyses would provide a much richer picture of how coping works. The present study supports the merit of both of these proposed solutions.

Participants generally reported more negative affect on days when they used self-blame in coping with their most bothersome stressor, as found by Gunthert et al. (1999). Further, as hypothe-

sized, high-SC perfectionists reported even greater increases in negative affect on days when they engaged in higher self-blame. This suggests that, in addition to engaging in more self-blame (Table 2), these individuals are especially vulnerable to their own self-scrutiny and judgment (see Blatt, 1995). Participants also experienced high levels of positive affect on days when they engaged in relatively more positive reinterpretation and growth coping and relatively less self-blame. Further, low-SC perfectionists, in contrast to high-SC perfectionists, experienced more positive affect on days when they engaged in more problem-focused coping and less avoidant coping. These results, together with the between-persons results (see Figure 3), support the contention of Folkman and Moskowitz (2000) that both positive reinterpretation and problem-focused coping are coping strategies that generate positive affect. Further, the fact that problem-focused coping was ineffective for high-SC perfectionists might be interpreted as indicating that these individuals have unrealistic standards that often preclude any instrumental or problem-focused behaviors that would move them closer to their goals (see Flett et al., 1998), which might also explain why they do not tend to choose problem-focused coping (see Table 3). Finally, there was a moderating effect of SC perfectionism on the relation between positive reinterpretation and positive affect. Thus, although SC perfectionists did not typically choose to engage in positive reinterpretation coping (see Table 3), this coping strategy was particularly effective for high-SC perfectionists when they did use it, which further suggests that the distress of SC perfectionists has a strong cognitive component.

Clinical Implications

It is important to consider the clinical implications of these results, particularly given recent suggestions that coping research has offered very little to clinicians and clinical researchers (Coyne & Racioppo, 2000; Somerfield & McCrae, 2000). Further, perfectionism and self-criticism have emerged as important factors that have a negative impact on the treatment of depression (e.g., Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998; Rector, Bagby, Segal, Joffe, & Levitt, 2000). The broad implications for intervention of the present study are as follows: (a) Decreasing SC perfectionists' negative affect and the negative impact of the stressful events they experience might be accomplished by increasing their self-efficacy in handling stressful situations and reducing their tendency to engage in avoidant coping, their perceptions of criticism from others, and their perception that they have much at stake with many minor or daily stressors, especially achievement-related stressors; (b) reducing SC perfectionists' avoidant coping in stressful situations might be achieved by decreasing their tendency to blame their abilities and increasing their efficacy in handling stressors; and (c) increasing SC perfectionists' positive affect might be accomplished by increasing their perceptions of social support availability and use of positive reinterpretation and growth coping. The underlying premise in this intervention approach is that these cognitive and behavioral aspects of perfectionism are more malleable than the personality trait itself (see Cantor, 1990; Procidano & Smith, 1997) and could be appropriate targets in an intervention to treat depressed clients who are perfectionists (see Dunkley et al., 2000).

Limitations and Directions for Future Research

Although the methodology used in this study is an advance over previous studies relying on retrospective, global, one-occasion self-reports, there are some limitations and areas that warrant attention in future research. First, as the measures were completed at the end of the day, we could not ascertain the direction of causality among variables, and it is possible, for example, that affect influenced the reports of stress and event appraisals, coping, and perceived social support. Assessing participants' moods at the beginning of the day would be beneficial in determining the direction of causality of the relations observed in this study. Second, we assessed stress, appraisals, and coping only once per day and, therefore, were unable to capture the dynamics of appraisal and coping processes as they are experienced during the day (e.g., Lazarus & Folkman, 1984). Primary appraisals, which play an important role in determining whether events are labeled as stressful, are likely very rapid and require more frequent repeated measurements than are perhaps feasible with diary methodologies. Cognitive priming studies, in which individuals are exposed to experimental stimuli and their subsequent cognitive reactions are examined, would be useful to better inspect appraisals as stressful events unfold (see Ingram, Miranda, & Segal, 1998). Finally, the present results are based on a college student population, and their generalizability to clinical populations needs to be examined.

Conclusion

The present study supports the growing recognition of the influence of both dispositional and situational factors in the stress and coping process (see Somerfield & McCrae, 2000). It is clear that individual differences exist in hassles, appraisals of stress and events, coping styles, and perceived social support appraisals. Furthermore, SC perfectionists experience both high levels of daily negative affect and low levels of daily positive affect because they possess a number of maladaptive tendencies; are emotionally reactive to stressors that threaten personal failure, loss of control, and criticism from others; and are particularly ineffective in their use of certain coping strategies.

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