Cogn Ther Res (2006) 30:201–210
DOI 10.1007/s10608-006-9019-8

ORIGINAL ARTICLE

Flexibility and Negative Affect: Examining the Associations of Explanatory Flexibility and Coping Flexibility to Each Other and to Depression and Anxiety

David M. Fresco · Nathan L. Williams · Nicole R. Nugent

Published online: 11 November 2006

Abstract Recent research on vulnerabilities to depression and anxiety has begun to de-emphasize cognitive content in favor of the responsiveness of the individual to variations in situational context in arriving at explanations of events (explanatory flexibility) or attempts to cope with negative events (coping flexibility). The present study integrates these promising avenues of conceptualization by assessing the respective contributions of explanatory and coping flexibility to current levels of depression and anxiety symptoms. Results of structural equation modeling support a model of partial mediation in which both explanatory flexibility and coping flexibility independently contribute to the prediction of latent negative affect, with coping flexibility partially mediating the influence of explanatory flexibility.

Keywords Coping · Explanatory flexibility · Anxiety · Depression

One finding that has consistently emerged across a diverse array of the biomedical and psychological literatures is the role of rigidity (e.g., physiological, behavioral, cognitive) in the pathogenesis of physical and psychological disorders. Although a thorough review of this literature is beyond the scope of the current study, the problems of rigidity have been discussed across a variety of literatures. Examples include decreased heart rate variability, attentional allocation biases to perseverative thinking (e.g., worry, rumination), behavioral inactivity, and inflexible patterns of behavior (Brosschot & Thayer, 2004; Johnsen et al., 2003; Thayer & Lane, 2002; Wilson & Murrell, 2004). Similarly, the range of physical and psychological consequences associated with rigidity includes heart disease, hypertension, as well as anxiety, mood, and personality disorders (e.g. Thayer & Lane, 2002).

D. M. Fresco (✉) · N. R. Nugent
Department of Psychology, Kent State University,
118 Kent Hall, Kent, OH 44242
e-mail: fresco@kent.edu

N. L. Williams
University of Arkansas, AR

Increased levels of cognitive, behavioral, and affective flexibility have been associated with more creative and persistent efforts at problem-solving (e.g. Isen & Daubman, 1984), enhanced adaptation to stress and negative life events (e.g. Rosenbaum & Ben-Ari, 1985), and resilience to physical injury and illness (e.g. Miller, Shoda, & Hurley, 1996). Isen and Daubman (1984) provide evidence that positive mood can facilitate flexible cognitive processing, including the broad use of categories, recognition of more and weaker relationships among objects, and the development of creative solutions to problems.

Recent research on depression and anxiety has begun to emphasize the study of the responsiveness of the individual to variations in situational context in arriving at explanations of events (explanatory flexibility) or attempts to cope with negative events (coping flexibility). These models posit that individuals who demonstrate a tendency to approach stressful situations contextually and flexibly will more likely find more adaptive solution than individuals who tend to see negative events as arising from indistinct causes and who respond with a narrow range of coping behaviors. Initial research into both explanatory and coping flexibility suggests that these have distinct influences on anxiety and depression. The present research offers an initial exploration of the pathways through which explanatory and coping flexibility may respectively, and conjointly, influence negative affect.

Explanatory flexibility (Fresco, Rytwinski, & Craighead, in press; Fresco, Heimberg, Abramowitz, & Bertram, 2006a) is defined as the degree to which individuals balance their interpretation of events with historical and current contextual factors and make effective use of that information. Fresco et al. (in press) operationalized explanatory flexibility as the standard deviation of an individual's responses to the stable and global items for negative events from the Attributional Style Questionnaire (ASQ; Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982). A small standard deviation was conceptualized as a measure of rigidity, whereas a large standard deviation was interpreted as a measure of flexibility. In that study of unselected undergraduates, explanatory flexibility demonstrated a modest correlation ($r = -.25$) with explanatory style. Importantly, explanatory flexibility, but not explanatory style, moderated the relationship of negative life events to levels of self-reported depression symptoms measured eight weeks later. The association of negative life events to subsequent levels of depression symptoms was strong among participants with low explanatory flexibility, whereas negative life events were unrelated to subsequent levels of depression symptoms among participants with high explanatory flexibility.

Several recently conducted studies provide further support for the relevance of explanatory flexibility as a vulnerability to negative affect. Fresco et al. (2006a) examined the effects of a mood priming challenge on explanatory flexibility. Ninety-seven college students (48 with a prior history of a major depressive disorder [MDD]), completed measures of explanatory style and explanatory flexibility prior to and immediately after a sad mood induction. Eighteen of the previously depressed participants were currently dysphoric as indexed by a Beck Depression Inventory (BDI; Beck et al., 1979) score of 10 or greater; whereas 30 previously depressed participants were euthymic (BDI <10). Currently dysphoric participants with a history of MDD endorsed a more stable and global explanatory style for negative events before the mood priming challenge as compared to both currently euthymic participants with a history of MDD and never depressed participants. The latter two groups did not differ from one another on baseline explanatory style. Further, the three groups did not differ from one another on baseline explanatory flexibility. Following the mood priming challenge, participants endorsed greater levels of sad mood after the mood induction irrespective of depression history status and current mood status. Findings revealed that euthymic participants with a history of MDD evidenced a significant reduction in explanatory flexibility following the mood induction, whereas dysphoric participants with a history of MDD and never depressed participants did not. The magnitude

of the change in explanatory flexibility in the currently euthymic participants corresponded to a large effect size (Cohen's $f = .34$).[3] Conversely, dysphoric participants with a past MDD experienced increases in explanatory style for negative events following the mood induction ($f = .24$), whereas euthymic participants with a past MDD and never depressed participants did not. Fresco et al. (2006a) speculated that the reduction in explanatory flexibility following the mood priming challenge for currently euthymic participants with a past MDD may function in a similar manner to the protective bias described by McCabe and colleagues (*cf*., McCabe, Gotlib, & Martin, 2000; McCabe & Toman, 2000) in the deployment of attention task paradigm (Gotlib, McLachlan, & Katz, 1988).

Briefly, in this work, neutral (e.g., calm, courteous), negative (e.g., despondent, inadequate) or positive (e.g., delighted, optimistic) words are paired with one another and presented on the computer screen and then replaced by different colored bars, either red or green. Participants are instructed to press a key corresponding to the bar they see first. McCabe and colleagues have consistently found that euthymic participants, particularly euthymic participants with a history of MDD, evidence a preference for neutral or positive words when paired with a negative word, but their performance does not differ from chance when positive and neutral words are paired. McCabe and colleagues see this protective bias as a means of avoiding or warding off the effects of exposure to stimuli that might lead to the return of depression. By contrast, for currently dysphoric participants, this bias provides little benefit given the persistence of sad mood.

Additional support for the explanatory flexibility construct is provided by Fresco, Schumm, and Dobson's (2006b) secondary analysis of a dismantling study of Beck's cognitive therapy of depression. In that study, 150 patients with current major depression were randomly assigned to one of three treatments: a treatment focused exclusively on the behavioral activation (BA) component of CT, a treatment that included both BA and the teaching of skills to modify automatic thoughts (AT) but that excluded the components of CT that focus on core schema, or the full CT treatment. All patients completed a self-report measure of explanatory style—thereby permitting a secondary analysis of explanatory flexibility and explanatory style. All three treatments demonstrated equivalent success by the end of the acute treatment phase. Recovery was defined as no longer meeting criteria for MDD and being relatively asymptomatic on a measure of clinician-assessed depression symptoms. New analyses were conducted to examine the role of explanatory flexibility and explanatory style in the recovery from depression. A significant Responder Status (2) by Therapy (3) interaction ($f = .23$) revealed that BA responders scored higher on explanatory flexibility than BA nonresponders, but did not differ on explanatory style. In contrast, AT responders scored lower on explanatory style than AT nonresponders but did not differ on explanatory flexibility. Further, the combination of high explanatory flexibility and low explanatory style conferred the greatest protection against relapse.

Coping styles and coping flexibility

Williams (2002) developed a cognitive interactional model of appraisal and coping (CIMAC) as a synthesis of past coping research and theory, cognitive-clinical research and theory on emotional disorders, and more recent cognitive vulnerability research. The CIMAC is based on the assumption that individuals' relatively stable patterns of making meaning of the environment (e.g., explanatory style, dysfunctional attitudes, schemas, and/or styles of threat appraisal)

[3] Cohen's (1988) effect size *f* is used in ANOVA analyses and has small, medium, and large conventions of .10, .25, and .40 respectively.

should lead to relatively stable coping aims or purposes (i.e., coping styles). Coping styles are conceptualized as *cross-situational aims* to cope with real or imagined threat via four broad response domains: taking action, positive reappraisal, avoidance, and social support. Coping styles are differentiated from coping strategies or tactics, in that the latter assess the situation-specific ways in which an individual copes (e.g., drinking alcohol), whereas the former assess the more trait-like underlying aims or intentions of the coping efforts (e.g., avoidance). This functional approach to conceptualizing coping assumes that different individuals may utilize different coping tactics to accomplish the same coping aim, while the same individual may utilize the same coping tactic in different situations or at different points in time to accomplish different coping aims.

The CIMAC is also based on the assumption that flexibility in one's styles of appraisal or attribution (e.g., explanatory flexibility) should lead to increased flexibility in one's coping aims. That is, individuals who can generate multiple appraisals of potentially threatening or dangerous situations and who are responsive to situational cues should exhibit flexibility in their coping aims across situations (e.g., when faced with a negative interpersonal event an individual with coping flexibility may adopt the coping aim of seeking social support, but when faced with negative achievement-related feedback the individual may adopt the coping aim of taking action).

Coping Flexibility is defined as a stable individual difference variable of the extent to which individuals are able to adjust or adopt different aims of coping across different situations (Williams, 2002, 2006). For example, an individual who adopts an action-oriented coping style in situations where direct action is a viable response, but who adopts the aim of positive reappraisal style in situations that do not afford direct action would be thought to exhibit some level of coping flexibility. In contrast, an individual who continually adopts an action-oriented coping style regardless of the situation would be thought to exhibit coping rigidity. From this perspective, there is an implied assumption that variability in one's coping styles is positive and that such variability may lead to increased flexibility in the coping tactics that an individual may employ.

Williams (2002) developed the Coping Styles and Flexibility Inventory (CSFI) by first identifying four possible coping styles based on previous models of coping (e.g. Carver, Scheier, & Weintraub, 1989; Lazarus & Folkman, 1984) and refined with factor analytic techniques (Amirkhan, 1990). The CSFI is structured such that the use of these styles is assessed across a series of 12 specified hypothetical situations involving a variety of negative and/or threatening internal and external events (e.g., "When I feel angry," "When I receive bad news," "When I doubt my ability to succeed"). CSFI coping styles include action-oriented coping, positive reappraisal, avoidance, and social support seeking. In addition to providing measures of relatively stable coping styles, the CSFI also provides an index of *coping flexibility*, calculated to reflect participants' ability to adjust their use of coping styles across the different situations. This score was computed by first calculating the participants' standard deviation scores for the four coping styles and then taking the sum of those 12 standard deviation scores Thus, higher coping flexibility scores indicate greater variance in participants' coping aims across the 12 situations, whereas lower coping flexibility scores indicate less variance in these coping styles.

A series of recent studies provide evidence for a positive relationship between coping rigidity and anxiety and depression symptoms, as well as measures of cognitive vulnerabilities (e.g. Williams, 2002, 2006). Further, results from this program of research indicate that coping inflexibility may represent a general vulnerability factor for anxiety and depression symptoms. For example, in a two-month prospective study of cognitive vulnerabilities to anxiety and depression, coping flexibility moderated the relationship between respective cognitive vulnerabilities and residual anxiety and depression symptom scores.

Present study

Although sharing conceptual and methodological similarities, explanatory flexibility and coping flexibility have not yet been assessed simultaneously to ascertain their respective relationships to levels of depression and anxiety. The present study integrates these promising avenues of conceptualization, by assessing the relationship of explanatory and coping flexibility to each other and to current levels of depression and anxiety symptoms. It was hypothesized that coping flexibility would mediate the relation between explanatory flexibility and a latent negative affect variable comprised of anxiety and depression symptoms. It was hypothesized that: (1) explanatory flexibility will predict levels of negative affect, (2) coping flexibility will predict levels of negative affect, and (3) coping flexibility will mediate the relationship between explanatory flexibility and negative affect.

Method

Participants and procedure

Two hundred sixty-three undergraduate students, who ranged in age from 17 to 52 ($M = 21.34$, $SD = 4.20$), completed the measures described below as part of a larger questionnaire packet for partial course credit in an introductory psychology class. The sample was predominantly comprised of women (78%) and Caucasians (42%); the racial composition of the sample included 9% African-American, 16% Asian, 22% Latino/Hispanic, and 3% "Other."

Measures

The *Attributional Style Questionnaire* (ASQ; Peterson et al., 1992) is a self-report instrument used to assess *explanatory style*, or the habitual way that individuals assign causes to negative and positive events along attributional dimensions of internality, stability, and globality. Respondents vividly imagine that 12 hypothetical events (6 negative and 6 positive: e.g., "Imagine that you gave an important talk and the audience reacted negatively" or "You meet a friend who compliments you on your appearance") have occurred, record one major cause for each hypothetical situation, and rate that cause along attributional dimensions. Traditionally, a composite score averaging stable and global items for negative events is computed, with larger scores representing a more depressogenic explanatory style. As per Fresco et al. (in press) and Fresco et al. (2006a), explanatory flexibility was computed as the standard deviation for the stable and global items for negative events with higher scores indicating greater explanatory flexibility (i.e., greater variability in their attributions across the six negative events).

The *Coping Styles and Flexibility Inventory* (CSFI; Williams, 2002) is a theoretically based measure of four conceptually-distinct coping styles (i.e., action-oriented coping, positive reappraisal, avoidance, and social support) that was designed to address the limitations of extant coping measures (see Stone, Greenberg, Kennedy-Moore, & Newman, 1991, for a review).[4]

[4] Stone et al. (1991) and others highlight a number of limitations of extant self-report coping measures, particularly those based on the transactional model of coping. In a recent critique of self-report coping measures, Coyne and Racioppo (2000) argued that more situation-specific inventories would produce more meaningful results than traditional self-reported coping measures. The CSFI was designed to circumvent the limitations of coping measures that do not specify a time period for coping or the type of situations on which respondents are reporting and that have respondents rate their use of coping strategies in response to a single stressful situation. Finally, the CSFI was

Respondents rate their use of each of these four coping styles on a 5-point scale (i.e., 1 = *Never* to 5 = *Always*) across twelve different scenarios that involve potentially negative or threatening events (e.g., participants read the event "When I regret something that I have done" and then rate their use of each of four coping styles, such as "I try to do something to change the thought, feeling, or situation" for action-oriented coping). Respondents are instructed to "rate each of the four coping responses for each item according to how you would normally attempt to cope with each experience or emotion". Importantly, the 12 events on the CSFI are different from those assessed by the ASQ. The primary thrust of the CSFI is to assess individuals' characteristic coping aims or purpose when faced with negative or threatening events across four broad response domains (i.e., the purpose or aim of one's coping efforts rather than the specific tactics by which one attempts to accomplish this aim).

The CSFI also provides an index of coping flexibility to assess variability in coping styles across negative or threatening events. Specifically, the coping flexibility index was operationalized as the sum of the participants' standard deviations for the four coping styles across the 12 situations. Greater variability on the coping flexibility index is assumed to reflect the ability to alter what an individual is attempting to do when faced with negative or threatening events (i.e., their coping aims) in accordance with situational contingencies. Williams (2002) provides evidence for the four factor structure of the CSFI, the internal consistency of the coping styles (Cronbach's α's were all above .80), and the temporal stability of the coping styles and coping flexibility index (r's ranged from a low of .67 for social support to a high of .82 for avoidance coping) across a series of three studies.

Anxiety and depression symptoms

The *Beck Anxiety Inventory* (BAI: Beck, Epstein, Brown, & Steer, 1988) and the *Beck Depression Inventory-II* (BDI: Beck, Steer, & Brown, 1996) were used to measure self-reported levels of anxiety and depression symptoms, respectively. The BAI assesses the severity of anxiety symptoms in both clinical and non-clinical populations and has been shown to reliably discriminate anxiety from depression. Participants rate the extent to which they have experienced each of 21 anxiety symptoms over the past week on a 4-point Likert scale (1 = *Never* to 4 = *All the Time*) (e.g., "fear of dying"). The BDI is a commonly used self-report measure of depression symptoms. Participants indicate how often they have experienced each of 21 symptoms over the course of the past week on a 4-point Likert scale (1 = *Never* to 4 = *All the Time*). Previous work with the BDI has identified separate factors reflecting cognitive and somatic symptoms (e.g., Beck, Steer, & Garbin, 1988). Following this earlier work, a cognitive symptoms measure (BDI-COG) was comprised of 12 items ("I feel as though I am worthless") and a somatic symptoms measure (BDI-SOM) was comprised of 9 items ("I feel too tired to do anything").

Results

Sample characteristics and correlations

As seen in Table 1, the unselected college student sample that participated in the current study was comprised of relatively high functioning individuals, as evidenced by generally low levels

designed to provide a functional assessment of coping aims (i.e., the underlying purpose of coping) to circumvent difficulties associated with attempting to discern the function of coping based on the specific strategies or tactics that individuals endorse on self-report inventories.

Table 1 Sample means, (standard deviations), and zero-order correlations for all manifest variables

	1	2	3	4	5	6	Mean (SD)
1. BAI	*0.85*	0.53**	0.56**	0.23**	− 0.13*	− 0.17**	7.76 (5.75)
2. BDI – Cognitive		*0.76*	0.66**	0.36**	− 0.19**	− 0.18**	4.15 (2.59)
3. BDI - Somatic			*0.84*	0.32**	− 0.24**	− 0.21**	3.75 (2.43)
4. ASQ-Generality				*0.87*	− 0.28**	− 0.26**	3.86 (.84)
5. Explanatory Flexibility					*0.85*	0.34**	1.43 (.52)
6. Coping Flexibility						*0.90*	11.92 (4.75)

Note. *$p < 0.05$; **$p < 0.01$. Coefficient alphas are presented along the diagonal of the matrix. BAI: Beck Anxiety Inventory; BDI: Beck Depression Inventory; ASQ: Attributional Style Questionnaire.

of depression and anxiety.[5] Explanatory and coping flexibility were significantly associated with each other ($r = .34$, $p < .01$), as well as moderately correlated with the manifest measures of anxiety and depression symptoms (p's $< .05$).

Structural equation modeling

Using structural equation modeling, two simple regression models and a mediational model were examined. In all models, explanatory flexibility and coping flexibility served as manifest variables. A latent negative affect variable was assessed via the BAI, BDI-COG, and BDI-SOM indicators. The two symptom measures of the BDI were utilized, rather than a BDI total score, so that the latent negative affect variable would not be under-identified.[6]

In the two simple regression models, explanatory flexibility ($\beta = -.26$, $R^2 = .07$) and coping flexibility ($\beta = -.24$, $R^2 = .06$) significantly predicted latent negative affect. Next, a mediated model was examined in which coping flexibility was predicted to mediate the relation between explanatory and latent negative affect. The results of the simple regression models and the correlations presented in Table 1 provide evidence for the requisite assumptions of mediation (Baron, & Kenny, 1986): (1) explanatory flexibility (the IV) significantly predicts latent negative affect (the DV); (2) coping flexibility (the mediator) significantly predicts latent negative affect; and (3) explanatory flexibility significantly predicts coping flexibility (the mediator). The mediated structural model, presented in Fig. 1, demonstrated an excellent fit of the data: $\chi^2(4) = 1.83$, $p = .77$, $CFI = 1.00$, $NFI = 0.99$; $RMSEA = .001$, $SRMR = .013$. In contrast to a fully mediated model, however, explanatory flexibility and coping flexibility, though correlated, made significant independent contributions to the prediction of latent negative affect ($\beta = -.20$ and $\beta = -.18$, respectively), accounting for 9.3% of the variance in latent negative affect.

While full mediation was not supported, partial mediation appeared possible, given that the direct path from explanatory flexibility to latent negative affect decreased from $-.26$ to $-.20$ (a change of in β of 23%) with the inclusion of coping flexibility in the model. Based on the recommendations of MacKinnon, Lockwood, Hoffman, West, and Sheets (2002), partial

[5] The unselected college student sample had overall low levels of distress. On the BAI, 55% of the sample scored in the minimal range (0–7); 38% scored in the mild range (8–15); and 7% scored in the moderate range. On the BDI-II, as a total score, 84% scored in the minimal range (0–13); 12% scored in the mild range (14–19); and 4% scored in the moderate range. The restricted range of the manifest anxiety and depression symptom variables, and the subsequent latent negative affectivity variable, may have attenuated the relations between coping flexibility, explanatory flexibility, and negative affectivity in this sample.

[6] Path analysis models with either BDI-II or BAI as dependent manifest variables, as well as a structural model in which the latent negative affect variable was assessed only with the BDI-II and BAI indicators, were also examined and produced comparable results. These results are available upon request of the corresponding author.

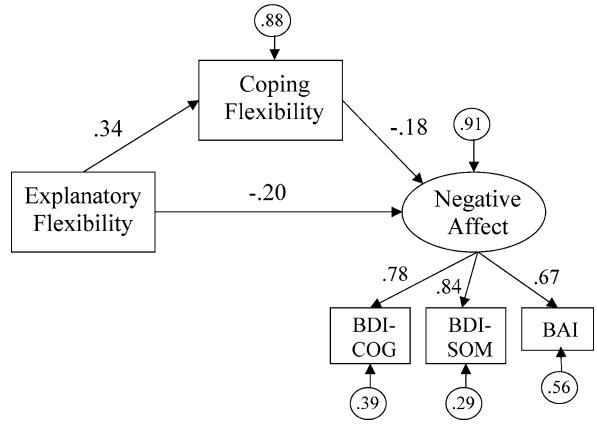

Fig. 1 Mediational structural model with standardized coefficients. *Note*. $n = 263$. *All path coefficients are significant at $p < .05$

mediation was statistically tested via the Freedman and Schatzkin (1992) and Sobel (1982) procedures.[7] Results of these tests converge in supporting a partially mediated model (Sobel test of the significance of the indirect path: $z = 2.31$, $p = .02$; Freedman & Schatzkin test of the change in the direct path: $t[261] = 2.10$, $p = .02$).

Discussion

These findings provide additional support for both explanatory flexibility and coping flexibility as factors associated with depression and anxiety symptoms. Specifically, our findings indicated that explanatory flexibility and coping flexibility are significantly correlated with one another and simultaneously add to the prediction of self-reported depression and anxiety symptoms. Contrary to our initial hypothesis, coping flexibility partially, but did not fully mediate the relationship between explanatory flexibility and negative affect.

This finding suggests that coping flexibility is not simply an applied extension of explanatory flexibility. Rather, explanatory flexibility and coping flexibility may represent two pathways that directly relate to negative emotions. Explanatory flexibility may impact the *meaning* assigned to events that, independent of behaviors or strategies applied to the events, directly relates to symptoms of depression or anxiety. In contrast, coping flexibility may affect the *coping strategies* or *tactics* that are mobilized, which may impact symptoms of depression or anxiety as a consequence of the effectiveness of the coping response or through one's perceptions of self-efficacy to employ effective coping, a construct that has been linked to both anxious and depressive symptoms (see Bandura, 1997, for a review of self-efficacy).

Beyond these direct effects of explanatory and coping flexibility, the constructs may themselves impact negative affect via different mediating or moderating mechanisms. For example, in a recent study, Williams (2006) provides evidence that coping flexibility moderates the

[7] The Sobel test provides a test of the extent to which the mediator significantly carries the influence of an independent variable to a dependent variable (i.e., the indirect path). A significant Sobel z indicates that the mediator does significantly carry the influence from the IV to the DV. Freedman and Schatzkin (1992) provide a test of the difference between the adjusted and unadjusted regression coefficient (i.e., the change in the direct path with the inclusion of the mediator in the model). MacKinnon et al. (2002) provide evidence from a Monte Carlo study that compared 14 methods to testing mediation that the Sobel (1982) and Freedman and Schatzkin (1992) tests have the most power and the most accurate Type I error rates for statistically testing mediation in most situations.

relationship between both explanatory style and intervening negative life events on residual depression scores over a six-week time period. Individuals who demonstrated lower levels of coping flexibility and a cognitive vulnerability to depression evidenced significant increases in depression symptoms when confronted with negative life events, whereas individuals who demonstrated higher levels of coping flexibility and a cognitive vulnerability to depression did not demonstrate significant increases in depression symptoms when confronted with negative life events. Moreover, lower levels of coping flexibility significantly predicted residual increases in depression symptoms independent of cognitive risk status.

Limitations and future studies

Several limitations of the present study warrant comment. First, participants in the present study consisted of relatively high functioning college students with relatively low levels of life stress compared to clinical populations. A potentially fruitful area of future study will be to replicate this study using treatment-seeking populations or community populations with clinically elevated levels of depression and anxiety symptoms. Second, in the present study we assessed mediation using cross-sectional data based on our theory that explanatory flexibility leads, in part, to coping flexibility. In future studies it may be beneficial to replicate these results in a cross-lagged longitudinal design to assess the causal relations between explanatory and coping flexibility and negative affect. Third, the manner in which explanatory flexibility and coping flexibility were measured do not directly assess whether a specific coping strategy was deployed based upon an analysis of an event's particular causes. Rather, the measure reflects more trait like tendencies to approach the causes and coping responses for negative events flexibly as opposed to rigidly. Thus, a next step in this line of research would be to evaluate how specific coping choices follow from the cognitive appraisals made by individuals. Finally, future studies may benefit from experimental methodologies that serve to activate explanatory flexibility or coping flexibility, such as Fresco and colleagues (2006a) use of a mood priming manipulation. Priming methodologies may prove useful if explanatory and coping flexibility, like their cognitive style counterparts, are most accurately assessed when activated by intervening moods or salient events.

References

Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, *87*, 49–74.

Amirkhan, J. H. (1990). A factor analytically derived measure of coping: The coping strategy indicatory. *Journal of Personality and Social Psychology*, *59*, 1066–1074.

Bandura, A. (1997). *Self-Efficacy: The exercise of control*. New York, NY: W. H. Freeman and Company.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.

Beck, A. T. (1967). *Depression: Causes and treatment*. Philadelphia: University of Pennsylvania Press.

Beck, A. T., & Clark, D. A. (1997). An information processing model of anxiety: Automatic and strategic processes. *Behaviour Research and Therapy*, *35*, 49–58.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety. *Journal of Clinical and Consulting Psychology*, *56*, 893–897.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation.

Beck, A. T., Steer, R. A., & Garbin, M. (1988). Psychometric properties of the Beck Depression Inventory: 25 years of evaluation. *Clinical Psychology Review*, *8*, 77–100.

Brosschot, J. F. & Thayer, J. F. (2004). Worry, Perseverative Thinking and Health. In Nyklicek, I., Temoshok, L., Vingerhoets, A. (Eds.). *Emotinal expression and health: Advances in theory, assessment, and clinical application* (pp. 99–114). Hove, East Sussex, England: Brunner-Routledge.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, *56*, 267–283.

Coyne, J. C., & Racciopo, M. (2000). Never the twain shall meet? Closing the gap between coping research and clinical intervention research. *American Psychologist*, *55*, 655–664.

Freedman, L. S., & Schatzkin, A. (1992). Sample size for studying intermediate endpoints within intervention trials of observational studies. *American Journal of Epidemiology*, *136*, 1148–1159.

Fresco, D. M., Rytwinski, N. K., & Craighead, L. W. (in press). Explanatory flexibility and negative life events interact to predict depression symptoms. *Journal of Social and Clinical Psychology*.

Fresco, D. M., Heimberg, R. G., Abramowitz, A., & Bertram, T. L. (2006a). The effect of a negative mood priming challenge on dysfunctional attitudes, explanatory style, and explanatory flexibility. *British Journal of Clinical Psychology*, *45*, 167–183.

Fresco, D. M., Schumm, J. A. & Dobson, K. S. (2006b). Explanatory flexibility and explanatory style: Modality-specific mechanisms of change when comparing behavioral activation with and without cognitive interventions. Submitted for publication.

Gotlib, I. H., McLachlan, A. L., & Katz, A. N. (1988). Biases in visual attention in depressed and nondepressed individuals. *Cognition and Emotion*, *2*, 185–200.

Isen, A. M., & Daubman, K. A. (1984). The influence of affect on categorization. *Journal of Personality and Social Psychology*, *47*, 1206–1217.

Johnsen, B. H., Thayer, J. F., Laberg, J. C., Wormnes, B., Raadal, M., Skaret, E., Kvale, G., Berg, E. (2003). Attentional and physiological characteristics of patients with dental anxiety. *Journal of Anxiety Disorders*, *17*, 75–87.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

McCabe, S. B., Gotlib, I. H., & Martin, R. A. (2000). The deployment-of-attention task and vulnerability to depression: Sad mood induction and history of depression. *Cognitive Therapy and Research*, *24*, 427–444.

McCabe, S. B., & Toman, P. E. (2000). Stimulus exposure duration in a deployment-of-attention task: Effects on dysphoric, recentlydysphoric, and nondysphoric individuals. *Cognition and Emotion*, *14*, 125–142.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, *7*, 83–104.

Miller, S. M., Shoda, Y., & Hurley, K. (1996) Applying cognitive-social theory to health-protective behavior: Breast self-examination in cancer screening. *Psychological Bulletin*, *119*, 70–94.

Peterson, C., Semmel, A., von Baeyer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The attributional style questionnaire. *Cognitive Therapy and Research*, *6*, 287–300.

Rosenbaum, M., & Ben-Ari, K. (1985). Learned helplessness and learned resourcefulness. Effects of noncontingent success and failure on individuals differing in self-control skills. *Journal of Personality and Social Psychology*, *48*, 198–215.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In Leinhardt, S. (Ed.), *Sociological methodology 1982* (pp. 290–312). Washington, DC: American Sociological Association.

Stone, A. A., Greenberg, M. A., Kennedy-Moore, E., & Newman, M. G. (1991). Self-report, situation-specific coping questionnaires: What are they measuring? *Journal of Personality and Social Psychology*, *61*, 648–658.

Thayer, J. F. & Lane, R. D. (2002). Perseverative thinking and health: Neurovisceral concomitants. *Psychology and Health*, *17*, 685–695.

Williams, N. L. (2002). *The cognitive interactional model of appraisal and coping: Implications for anxiety and depression*. Fairfax, VA: Dissertation. George Mason University.

Williams, N. L. (2006). *Coping styles and coping flexibility as vulnerabilities to emotional disorders*. Submitted for publication.

Wilson, K. G., & Murrell, A. R. (2004). Values work in Acceptance and Commitment Therapy: Setting a course for behavioral treatment. In S. C., Hayes, V. M., Follette, & M., Linehan (Eds.), *Mindfulness and Acceptance: Expanding the cognitive behavioral tradition* (pp. 120–151). New York: Guilford Press.