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ASSOCIATION OF ATTRIBUTIONAL STYLE FOR NEGATIVE AND POSITIVE EVENTS AND THE OCCURRENCE OF LIFE EVENTS WITH DEPRESSION AND ANXIETY

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This study examined the relationship of attributional styles for negative and positive events with depression and anxiety. A sample of 239 college students underwent structured diagnostic interviews and completed self–report measures of attributional style and major life events at two time points separated by approximately four weeks. Using cross–sectional methodology, attributional styles for negative and positive events were compared across current diagnoses of unipolar depression and/or anxiety. A current mood disorder, when comorbid with an anxiety disorder, was associated with a tendency to see negative events as arising from internal, stable, and global causes. A depression diagnosis was distinguished from no depression diagnosis by the tendency to assign external, unstable, and specific causes for positive events. Using a prospective design, Time 1 attributional styles for negative and positive events were assessed as moderators of the relationships between negative and positive life events and levels of subsequent depression symptoms. The tendency to see negative events arising from internal, stable, and global causes and positive events arising from external, unstable, and specific causes, was associated with higher levels of clinician-assessed depression symptoms, particularly when confronted with negative life events or the absence of positive events. Findings indicate that attributional style for positive events contributes to our understanding of cognitive vulnerability to emotional disorders.

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In the quarter century since the publication of the Reformulated Learned Helplessness theory (Abramson, Seligman, & Teasdale, 1978), a large body of research has examined the relationship of attributional style, defined as the habitual way that individuals assign causes to events, to a wide variety of psychological, health, and achievement outcomes. Although the Abramson et al. (1978) statement considered attributional style for both negative and positive events as they relate to depression, the vast majority of studies have focused on attributional style for negative events. This emphasis on attributional style for negative events may have come about because early reviews and meta–analytic studies showed it to be more highly related to depression than was attributional style for positive events (Peterson, 1991, Robins, 1988; Sweeny, Anderson, & Bailey, 1986).

Although attributional style for positive events has not demonstrated a strong relationship with the onset of depression, several studies demonstrate that attributional style for positive events is related to recovery from depression and the risk for relapse (Edelman, Ahrens, & Haaga, 1994; Ilardi, Craighead, & Evans, 1997; Johnson, Crofton, & Feinstein, 1996; Needles & Abramson, 1990). Similarly, four studies found that attributional style for negative and positive events can distinguish individuals with depression from individuals with anxiety (Craighead & Kennedy, 1984; Heimberg, Vermilyea, Dodge, Becker, Barlow, 1987; Heimberg et al., 1989; Ingram, Kendall, Smith, & Donnell, 1987).

RECOVERY FROM AND RESILIENCE TO DEPRESSION

Needles and Abramson (1990) proposed a model for recovery from depression that was based on the interaction of attributional style for positive events and the occurrence of positive life events. In a sample of depressed students, the interaction of attributional style for positive events and the occurrence of positive events predicted decreases in symptoms of depression as well as decreases in hopelessness. Two additional studies with samples of dysphoric students (Edelman et al., 1994) and depressed inpatients (Johnson et al., 1996) provided findings that generally supported the hypothesis that attributional style for positive events and the onset of positive events resulted in reductions in depression. Finally, Ilardi et al. (1997) reported that attributional style for positive events was a significant predictor of resilience to depression relapse after controlling for factors such as character pathology. Ilardi et al. (1997) speculated that attributional style for positive events may help individuals stave off subclinical bouts of dysphoria that commonly occur following a clinically significant episode of major depression. However, the authors did not propose any specific mechanisms for the

relationship of attributional style for positive events to lowered risk for depression relapse.

DISTINGUISHING DEPRESSION FROM ANXIETY

Four cross–sectional studies have examined the relationship between the presence of depression and/or anxiety and attributional style for positive and negative events. Heimberg and colleagues (Heimberg et al., 1987, 1989) compared adult outpatients who earned either a diagnosis of dysthymia or anxiety (e.g., social phobia, panic disorder, or panic disorder with agoraphobia) to adults with no current diagnoses (normal controls). All patients, irrespective of a current diagnosis of dysthymia or anxiety, endorsed a more depressogenic attributional style (e.g., internal, stable and global attributions) for negative events than normal controls. None of the depressed and anxious groups differed from one another. With respect to attributional style for positive events, the depressed group scored lower on attributional style for positive events (i.e., more external, unstable, specific) than the anxious groups and normal controls. The anxious groups did not score differently from the normal control group on attributional style for positive events (Heimberg et al., 1987, 1989). Thus, the tendency to assign internal, stable, and global causes to negative events was present in individuals with either depression or anxiety, but the tendency to assign external, specific, and unstable causes to positive events was only present in depressed individuals.

Craighead and Kennedy (1984) also found that attributional style for positive events distinguished depressed participants from anxious participants. On the ASQ, both anxious and depressed participants tended to assign internal, stable, and global causes to negative events. However, anxious participants, like normal control participants, also tended to assign internal, stable, and global causes to positive events, whereas depressed participants assigned external, unstable, and specific causes to positive events.

However, one study reported a different pattern of findings. Ingram et al. (1987) screened a sample of college students with self–report measures of depression and anxiety to classify the participants into groups high or low on depression and anxiety. Unlike the results of Craighead and Kennedy (1984), Ingram et al. (1987) reported main effects for depression (irrespective of anxiety) for both attributional style for negative events and positive events. Consistent with previous studies, individuals with elevated levels of depressive symptoms exhibited a more depressogenic attributional style for positive events than both individuals with anxious symptoms only and individuals with neither anxious

nor depressive symptoms. However, unlike the previous studies, depressed-only and depressed/anxious participants differed from anxious-only and normal control participants by endorsing a more internal, stable, and global attributional style for negative events.

A handful of prior studies indicate that attributional style for positive events has a meaningful relationship with depression in longitudinal and cross–sectional studies and with anxiety in cross–sectional, but not longitudinal studies. The present study sought to examine the relationship of attributional style for positive and negative events to depression and anxiety. First, using cross–sectional methodology in a sample of college students assessed with structured diagnostic interviews, we compared attributional style for positive and negative events in groups composed by participants' current diagnostic status with respect to unipolar depression and/or anxiety. Specifically, we wished to examine whether the pattern of attributional style scores corresponded more closely to the studies of Heimberg et al. (1987, 1989) or of Ingram et al. (1987). Second, using a prospective design, we wished to extend the scope of these cross–sectional findings by assessing the relationship of attributional style for negative and positive events, assessed at Time 1, and intervening negative and positive life events with levels of subsequent depression and anxiety symptoms. Specifically, we examined the degree to which attributional style for positive events moderated the relationship of life events to depression and anxiety beyond that of attributional style for negative events.

METHOD

PARTICIPANTS[1]

Approximately 3,000 undergraduates at a private university participated in an initial screening designed to identify individuals likely to have unipolar depression, bipolar depression, and anxiety disorders. Participants who met cut-offs on *any* of the self–report screening measures and a subset of those who scored in the normal range on *all* measures were invited for Time 1—which involved participating in a

1. Participants from the current study overlap with the participants reported by Reilly–Harrington, Alloy, Fresco, & Whitehouse (1999). The two studies share participants with current or lifetime unipolar mood diagnoses, and normal control participants. Participants with current or lifetime bipolar mood diagnoses are only included in Reilly–Harrington et al. (1999). Participants with a current or lifetime anxiety disorder (and no unipolar or bipolar mood disorder) are used in the current study, but not in Reilly–Harrington et al. (1999).

lifetime structured diagnostic interview. Participants who completed this two–stage screening process were given $5 and five experimental credits for their participation. Based on the results of the diagnostic interview, all participants who met criteria for a lifetime unipolar depressive disorder and/or a lifetime anxiety disorder, and a random subset of participants with no lifetime history of psychopathology were invited to participate in the rest of Time 1. This participation involved completing additional self–report measures and a computer information–processing task battery within two days of their interview. These participants also returned approximately 1 month later for a follow–up diagnostic interview, additional self–report measures, and a repeat of the computer task battery (Time 2). For completing this last phase of the study, participants earned an additional $20. At the beginning of the study, participants were told that all feelings, thoughts, and information provided would remain strictly confidential, and that referrals would be made to a physician or to the Student Health Service if any significant problems arose.

The final sample consisted of 239 participants (141 women and 98 men) with a mean age of 20.59 years (SD = 4.71). One hundred twenty–eight participants (78 women) met criteria for a lifetime history of unipolar depression and no lifetime history of an anxiety disorder; 14 (ten women) met criteria for a lifetime history of an anxiety disorder and no lifetime history of unipolar depression; 60 (41 women) met criteria for a lifetime history of both unipolar depression and an anxiety disorder, and 36 participants (23 women) had no lifetime history of psychopathology. Additionally, with respect to current diagnostic status, 46 participants (27 women) met criteria for unipolar depression without an anxiety disorder; 14 (ten women) participants met criteria for an anxiety disorder without unipolar depression; and 16 individuals (ten women) met criteria for both unipolar depression and an anxiety disorder. There were no significant differences between proportions of men and women as a function of lifetime diagnosis [$\chi^2(3) = 1.3$, ns] or current diagnosis [$\chi^2(3) = 0.8$, ns]. At Time 2, 227 of the original 239 participants were retained.

SELF–REPORT MEASURES

The Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979) is a 21–item instrument that broadly assesses the symptoms of depression, including the affective, cognitive, behavioral, somatic, and motivational components, as well as suicidal wishes. In the present study, participants who scored 10 or above on the BDI during the screening

were invited to participate in the Time 1 assessment. The BDI was again administered at both Time 1 and Time 2.

The trait version of the State–Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970) is a 20–item, self–report measure of dispositional anxiety that has demonstrated good reliability and validity in college student samples. For the present study, participants who scored 40 or above on the STAI were invited to participate in the second screening phase. The STAI was also administered at both time points in the longitudinal study.

ATTRIBUTIONAL STYLE MEASURE

The Attributional Style Questionnaire (ASQ; Peterson et al., 1982; Seligman, Abramson, Semmel, & von Baeyer, 1979) is a self–report inventory that assesses attributions for six positive and six negative hypothetical events along the dimensions of internality, stability, and globality. Typically, composite scores summing or averaging internal, stable, and global ratings for negative events (CN) and positive events (CP) are computed. Peterson et al. (1982) found modest internal consistencies for the individual dimensions but the composite scores have a more respectable Cronbach's alpha ($\alpha = .75$ for CP; $\alpha = .72$ for CN). Similarly, Peterson et al. (1982) reported good test–retest correlations with an interval of four weeks: $r = .70$ for the positive event composite score and $r = .64$ for the negative event composite score. In the present study, internal consistencies for CN ($\alpha = .79$) and CP ($\alpha = .82$) were acceptable.

LIFE EVENTS MEASURE

The Life Experiences Survey (LES; Sarason, Johnson, & Siegel, 1978) is a 57–item instrument, designed to measure life changes, including a list of ten events specifically for students. Participants indicate events that they have encountered over the last month and then rate each event on a scale from extremely negative (–3) to extremely positive (+3). The LES allows separate assessment of positive and negative life experiences in addition to individualized ratings of the impact of events. Given concerns that impact ratings are susceptible to magnification in the perceptions of depressive individuals, we used the number of negative events and the number of positive events in our subsequent regression analyses. Further, three items were dropped because of tautological concerns that they represented symptoms of depression or a physical condition.

STRUCTURED DIAGNOSTIC INTERVIEW - LIFETIME VERSION

The Schedule for Affective Disorders and Schizophrenia–Lifetime Version (SADS–L; Endicott & Spitzer, 1978) is a semistructured diagnostic interview that probes for the occurrence, duration, and severity of symptoms related to mood disorders, psychotic disorders, anxiety disorders, and other disorders currently and across one's lifetime. The SADS–L is based on the Research Diagnostic Criteria (RDC; Spitzer, Endicott, & Robins, 1978). Four graduate-level research assistants who were extensively trained on each of the measures in the study conducted the diagnostic interviews. Each research assistant received approximately 55 hours of instruction on diagnostic interviewing, RDC criteria, and decision rules before administering any interviews. The training program consisted of role plays, videotapes of simulated interviews, and practice interviews. Interrater reliabilities for RDC diagnoses, based on joint interviews conducted on a subset of participants (n = 60) were excellent. For the unipolar depressive disorders, kappa statistics ranged from .89 to 1.00 for current episodes and from .81 to 1.00 for past episodes. For bipolar spectrum disorders, kappas were .90 for current episodes and .75 for past episodes. For the anxiety disorders, kappas were .79 for current episodes and .67 for past episodes. For substance use disorders, kappas were 1.00 for current episodes and .77 for past episodes. Finally, for participants not currently mentally ill, the kappa was .87, whereas the kappa was .84 for participants who never met criteria for a mental illness. Separate composite measures of clinician–rated depression and anxiety symptoms were created by summing the severity ratings on the individual symptoms in the respective depression and anxiety sections of the SADS–L. Time 1 symptom measures demonstrated a strong correlation with one another (r = .71).

STRUCTURED DIAGNOSTIC INTERVIEW - CHANGE VERSION

The Schedule for Affective Disorders and Schizophrenia–Change Version (SADS–C; Spitzer & Endicott, 1978) is a semistructured diagnostic interview that probes for the presence, duration, and severity of symptoms related to mood disorders, psychotic disorders, anxiety disorders, and other disorders since the last interview. In the present study, the SADS–C was administered at Time 2 to assess the month–long period since the SADS–L at Time 1. High levels of reliability were achieved using the SADS–C in this study. Average kappas were greater than or equal to .80. Separate composite measures of clinician–rated depression and anxiety symptoms were also created on the SADS–C by summing the severity ratings on the individual symptoms in the respective de-

pression and anxiety sections. Time 2 symptom measures also demonstrated a strong correlation with one another (r = .67).

PROCEDURE

Participants were recruited from undergraduate psychology courses to participate in a study of depression, anxiety, and cognitive processes. In the screening phase of the study, participants completed a packet of self–report instruments that included the BDI and the STAI. At Time 1, participants were administered the SADS–L. Participants who met the RDC for a lifetime unipolar mood disorder or a lifetime anxiety disorder were asked to participate in a 30–day follow–up study. Similarly, individuals who did not meet criteria for any lifetime psychopathology (normal controls) were also invited to participate in the follow–up study. Eligible participants attended sessions on consecutive days following the SADS–L when they completed the BDI, STAI, ASQ, LES, and assessments not related to the current study. Participants returned for Time 2 approximately 1 month later to complete the SADS–C as well as repeats of the assessments from Time 1.

RESULTS

CROSS–SECTIONAL ANALYSES

The first set of analyses examined the attributional styles of individuals based on their current diagnostic status. To make this analysis comparable to previous studies, a subset of the sample was retained, consisting of participants who were currently depressed/never anxious (n = 46), currently anxious/never depressed (n = 14), currently depressed and anxious (n = 16), and who had no lifetime psychopathology (n = 36) for a total of 112 participants. Omnibus tests for attributional style for negative events [F(3,108) = 7.03, p < 0.001] and for positive events [F(3,108) = 3.70, p = 0.014] yielded statistically significant diagnostic group differences. Group and sample means and standard deviations are presented in Table 1. These omnibus tests were followed up with pairwise comparisons to evaluate similarities in the pattern of mean differences as compared to previous studies (Craighead & Kennedy, 1984; Heimberg et al., 1987, 1989; Ingram et al., 1987). For attributional style for negative events, normal control participants scored lower than currently depressed/anxious participants [t(108) = 4.50, p < .0001, d = .87], but not depressed-only participants [t(108) = 1.86, p = .07, d = .36] or anxious-only participants [t(108) = 0.50, ns, d = .10]. Depressed-only participants scored lower than currently depressed/anxious participants [t(108) =

TABLE 1. Means and Standard Deviations of Time 1 Attributional Style Scores by Current Diagnostic Status

	No Diagnostic History (n = 36)	Currently Depressed (n = 46)	Currently Anxious (n = 14)	Currently Both (n = 16)	Sample (N = 112)
ASQ–CN					
Mean	4.12	4.36	4.21	4.91	4.26
SD	0.62	0.53	0.63	0.61	0.63
ASQ–CP					
Mean	5.34	4.91	5.30	4.92	5.09
SD	0.71	0.61	0.64	0.67	0.68

Note. ASQ–CN = Attributional Style Questionnaire Composite Negative Score; ASQ–CP = Attributional Style Questionnaire Composite Positive Score.

3.23, p = .002, d = .62], but did not differ from anxious-only participants [t(108) = 0.84, *ns*, d = .16]. Anxious-only participants did not differ from currently depressed/anxious participants [t(108) = 1.58, *ns*, d = .30]. For attributional style for positive events, normal control participants scored higher than currently depressed/anxious participants [t(108) = 4.50, p < .0001, d = .87] and depressed-only participants [t(108) = 2.14, p = .03, d = .41] but not anxious-only participants [t(108) = –0.20, *ns*, d = .04]. Depressed-only participants scored lower than currently anxious participants [t(108) = 1.93, p = .057, d = .37], but did not differ from depressed/anxious participants [t(108) = 0.30, *ns*, d = .16]. There was a trend for anxious-only participants to score higher than currently depressed/anxious participants [t(108) = 1.58, p = .11, d = .30].

LONGITUDINAL, PROSPECTIVE ANALYSES

Data Analysis Strategy. The second set of analyses assessed whether attributional style for negative and positive events moderated the relationship between the occurrence of negative and positive life events and changes in clinician–rated depression symptoms[2] from Time 1 to Time 2. Continuous measures of clinician–rated depression and anxiety symptoms were computed from the SADS–L and SADS–C interviews and inspected for appropriateness of use in these longitudinal analyses. In-

2. For the sake of brevity, clinician–rated depression symptoms are reported. Findings were comparable when self–report symptom indices were used. These analyses are available from the corresponding author.

spection suggested that there was sufficient variability and range of scores with respect to clinician–rated depression symptoms (Time 1 M = 8.37, SD = 11.50, Range 0-43; Time 2 M = 7.15, SD = 6.46, Range 0-38) but not for clinician–rated anxiety symptoms (Time 1 M = 3.58, SD = 4.29, Range 0-22; Time 2 M = 2.97, SD = 2.58, Range 0-13). Thus, subsequent analyses assessed whether attributional style for positive events moderated the association of life events with depression beyond that of attributional style for negative events, but no prospective analyses were performed for anxiety symptoms. To address these questions, a series of two hierarchical, setwise regression analyses were conducted.

Order of entry into the models was determined in advance and follows a strategy customarily used to evaluate the presence of a diathesis–stress interaction (*cf.* Metalsky, Halberstadt, & Abramson, 1987; Metalsky & Joiner, 1992). The dependent variable in the models consisted of clinician–rated depression symptomatology completed at the Time 2 follow–up assessment, approximately four weeks following the initial Time 1 assessment. In both models, Time 1 clinician–rated depression was entered into the model as the covariate. Next, the main effects of attributional style for negative events, followed by attributional style for positive events, were entered, followed by either the number of negative events or the number of positive events experienced between Times 1 and 2 (assessed at Time 2). At Step 5, all nested two–way interactions were entered followed by the three–way interaction at Step 6. The rationale for entering the main effects separately and in this order was to examine the main effect influence of attributional style for positive events above and beyond attributional style for negative events. Thus, two full models were estimated: one that culminated in the three–way interaction of attributional style for negative events, attributional style for positive events, and number of negative life events, or the three–way interaction of attributional style for negative events, attributional style for positive events, and number of positive life events. Once the regression models were estimated, the Cohen and Cohen (1983) analysis of partial variance (APV) procedure was used to examine the nature of any significant two–way or three–way interactions. This procedure involves deriving estimated values for the respective dependent measures by taking high (+1 SD) and low (–1 SD) values for the predictors (based on the sample mean and standard deviation) and computing the algorithm based on the regression coefficients. The figure generated by the APV procedure yields predicted Time 2 depression symptoms scores as a function of all predictors including the Time 1 depression symptoms, which served as a covariate. Findings are reported using Cohen's (1988) effect size index of f^2 where .02 corresponds to a small effect, .15 corresponds to a medium effect, and .35 corresponds to a large effect.

TABLE 2. Hierarchical Regression Analysis Testing Attributional Style for Negative Events and Positive Events as Moderators of the Relationship Between Negative Life Events and Levels of Clinician–Rated Depression Symptoms

		Regression Coefficients				Regression Model			
Step	Predictor	*B*	*Pr*	*t*	*p*	R^2	*F* Change	*df*	*p*
1	ClinDEP1	0.21	.38	6.36	.0001	.14	36.79	1, 219	.0001
2	ASQ–CN	1.73	.18	3.13	.009	.17	7.00	1, 218	.009
3	ASQ–CP	–1.19	–.13	–2.13	.05	.18	3.80	1, 217	.05
4	NEGEV2	0.55	.25	3.77	.0001	.24	14.75	1, 216	.0001
5	Entry of Two–way Interactions					.26	1.96	3, 213	*ns*
	ASQ–CN*ASQ–CP	–1.99	–.17	–2.21	.028				
	ASQ–CN*NEGEV2	0.12	.04	0.57	*ns*				
	ASQ–CP*NEGEV2	0.07	.02	0.16	*ns*				
6	ASQ–CN*ASQ–CP*NEGEV2	–0.65	–.17	–2.51	.012	.28	6.35	1, 212	.012

Note. ClinDEP1 = Time 1 Clinician–rated Depression symptoms; ASQ–CN = Time 1 Attributional Style Questionnaire Composite Negative Score; ASQ–CP = Time 1 Attributional Style Questionnaire Composite Positive Score; NEGEV2 = Time 2 Number of Life Experiences Survey negative life events.

Relationship of Attributional Style and Negative Life Events to Clinician–rated Depression. As seen in Table 2, attributional style for negative (f^2 = .04) and positive events (f^2 = .01) and the number of negative life events (f^2 = .08) were all small, but significant main effect predictors of Time 2 clinician–rated depression symptoms, after controlling for Time 1 clinician–rated depression symptoms. However, the analysis revealed a significant two–way interaction for attributional style for negative and positive events (f^2 = .03), as well as the three–way interaction (f^2 = .03), both corresponding to small effect sizes, which further qualified these main effect relationships. The nature of the significant interaction was examined with APV and revealed that there was a positive relationship between negative life events and clinician–rated depression associated with an internal, stable, and global attributional style for negative events (High CN). However, the combination of High CN and an external, unstable, and specific attributional style for positive events (Low CP) was associated with relatively higher levels of clinician–rated depression at both high and low levels of negative life events, but especially at high levels of negative events (See Figure 1).

Relationship of Attributional Style and Positive Life Events to Clinician–rated Depression. As seen in Table 3, attributional style for negative (f^2 = .04) and positive events (f^2 = .01) were small, but significant main effect predictors of Time 2 clinician–rated depression symptoms, after

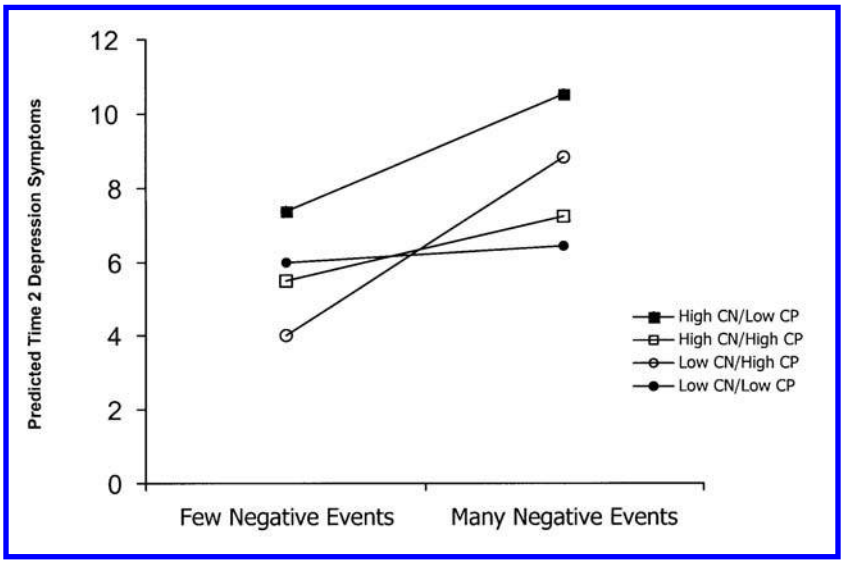

FIGURE 1. Analysis of partial variance of predicted Time 2 clinician-rated depression symptoms as a function of high and low levels of attributional style at high and low levels of negative life events.

controlling for Time 1 clinician–rated depression symptoms. However, these main effect relationships were further qualified by a significant two–way interaction for attributional style for negative and positive events (f^2 = .03), as well as the three–way interaction including number of positive life events (f^2 = .03), which both corresponded to small effect sizes. Follow–up APV analysis revealed that the combination of High CN and Low CP was generally associated with higher levels of clinician–rated depression irrespective of the number of positive events. Further, there was a negative association between the number of positive events and clinician–rated depression particularly with an attributional style characterized by Low CN and Low CP as well as High CN and High CP (See Figure 2).

DISCUSSION

Cross–sectional attributional style results revealed a pattern of findings more similar to published findings by Ingram et al. (1987) as compared to Craighead and Kennedy (1984) and Heimberg et al., (1987, 1989). Specifically, with respect to attributional style for negative events, individuals with current depression, particularly participants with comorbid

TABLE 3. Hierarchical Regression Analysis Testing Attributional Style For Negative Events and Positive Events as Moderators of the Relationship Between Positive Life Events and Levels of Clinician–Rated Depression Symptoms

		Regression Coefficients				Regression Model			
Step	Predictor	*B*	*pr*	*t*	*p*	R^2	*F* Change	*df*	*p*
1	ClinDEP1	0.21	.38	6.36	.0001	.14	36.79	1, 219	.0001
2	ASQ–CN	1.73	.18	3.13	.009	.17	7.00	1, 218	.009
3	ASQ–CP	–1.19	–.13	–2.13	.05	.18	3.80	1, 217	.05
4	POSEV	–0.13	–.05	–0.74	ns	.19	0.55	1, 216	ns
5	Entry of Two–way Interactions					.21	2.04	3, 213	*ns*
	ASQ–CN*ASQ–CP	–1.99	–.17	–2.36	.02				
	ASQ–CN*POSEV2	0.16	.04	0.53	*ns*				
	ASQ–CP*POSEV2	0.07	.02	0.16	*ns*				
6	ASQ–CN*ASQ–CP*POSEV2	–0.64	–.14	–2.51	.012	.23	6.35	1, 212	.012

Note. ClinDEP1 = Time 1 Clinician–rated Depression symptoms; ASQ–CN = Time 1 Attributional Style Questionnaire Composite Negative Score; ASQ–CP = Time 1 Attributional Style Questionnaire Composite Positive Score; POSEV2 = Time 2 Number of Life Experiences Survey positive life events

anxiety, tended to endorse a more internal, stable, and global attributional style for negative events than individuals with no lifetime history of psychopathology. However, participants with comorbid anxiety and depression endorsed a more depressogenic attributional style than participants with no lifetime psychopathology or participants with either an anxiety or depression diagnosis. With respect to attributional style for positive events, currently depressed individuals tended to endorse a less internal, stable, and global attributional style for positive events than individuals who were not currently depressed, regardless of the presence or absence of a current anxiety disorder. Like the results of Ingram et al. (1987), findings from the current study indicate that attributional style for both negative events and positive events demonstrates specificity to depression. However, in the case of attributional style for negative events, the addition of a comorbid anxiety disorder was associated with a more internal, stable, and global attributional style suggesting perhaps that in these cross–sectional data, it represents a proxy for psychopathology severity.

The cross–sectional findings in the current study also correspond favorably to initial reports from the Temple–Wisconsin Cognitive Vulnerability to Depression Project (CVD; Alloy, Abramson et al., 1999; 2000). Findings from the CVD were that high–risk participants (based on nega-

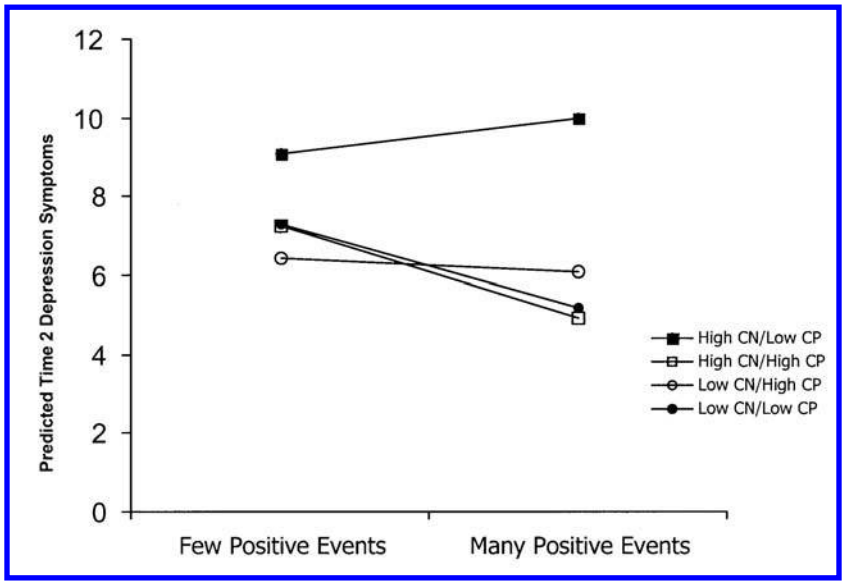

FIGURE 2. Analysis of partial variance of predicted Time 2 clinician-rated depression symptoms as a function of high and low levels of attributional style at high and low levels of positive life events.

tive attributional and inferential style for negative events and high-dysfunctional attitudes) exhibited a significantly higher rate of lifetime major, minor, and hopelessness depressive episodes than did low–risk (based on positive attributional and inferential style for negative events and low-dysfunctional attitudes) participants. The two groups did not differ on rates of past anxiety disorders (Alloy et al., 2000). Prospectively, high–risk participants were more likely to experience first onsets and recurrences of major, minor, and hopelessness depression episodes and onsets of anxiety disorders that were comorbid with depression than were low–risk participants. Again, the risk groups did not differ in their prospective onsets of anxiety disorder occurring without depression (Alloy, Abramson et al., 1999; Alloy, Abramson et al., 2006).

From a separate research tradition, other theorists have examined the comorbidity of depression and anxiety as it relates to affective states. Tripartite theory (Brown, Chorpita, & Barlow, 1998; Clark & Watson, 1991; Joiner, 1996; Watson, Clark et al., 1995; Watson, Weber et al., 1995), a psychometrically derived model comprised of three independent unipolar dimensions, subsumes the mood and anxiety disorders under the more general category of distress disorders. Negative Affectivity (NA) or Neuroticism, is conceptualized as a general vulnerability for depres-

sion and anxiety (Watson & Kendall, 1989). High NA encompasses negative affective states such as fear, anger, disgust, guilt, sadness, and loneliness, whereas low NA is characterized by states of calm or relaxation. A number of studies now report that depressed and/or anxious individuals endorse higher levels of negative affectivity than individuals who are neither depressed nor anxious (Clark, Watson, & Mineka, 1994). The second dimension, Positive Affectivity (PA) or Extraversion, is conceptualized as a specific vulnerability for depression (Watson & Kendall, 1989). High positive affectivity is associated with feelings of enthusiasm, joy, high interest and alertness, and determination; low PA is comprised of fatigue, anhedonia, and depression. Depressed individuals endorse levels of PA that are significantly lower than anxious individuals or individuals who are neither depressed nor anxious. Further, anxious–only individuals endorse PA in the same range as nonsymptomatic individuals (Clark et al., 1994). In a manner similar to tripartite theory, attributional style for positive events demonstrated specificity to depression, but there was no pattern of attributional style that demonstrated specificity to anxiety–only.

LONGITUDINAL FINDINGS

Overall, results from the longitudinal analyses indicated that a tendency to assign internal, stable, and global causes to negative events (i.e., high attributional style for negative events) was related to higher levels of depression over time. The association of attributional style for negative events with symptoms of depression was stronger when accompanied by a tendency to assign external, specific, and unstable causes to positive events (i.e., low attributional style for positive events).

ATTRIBUTIONAL STYLE FOR NEGATIVE EVENTS AND DEPRESSION

The significant three–way interaction between attributional style for negative and positive events and the number of negative events demonstrated a pattern of findings consistent with studies that supported the vulnerability–stress component of the Reformulated Learned Helplessness and Hopelessness Theories (Alloy & Clements, 1998; Alloy, Just, & Panzarella, 1997; Alloy, Reilly–Harrington, Fresco, Whitehouse, & Zechmeister, 1999; Hunsley, 1989; Metalsky et al., 1987; Metalsky & Joiner, 1992; Metalsky, Joiner, Hardin, & Abramson, 1993, Nolen–Hoeksema, Girgus, & Seligman, 1986; Spangler, Simons, Monroe, & Thase, 1993). The one difference between the current study and previous studies is that the relationship between attributional style for

negative events and life stress with depression was further moderated by attributional style for positive events.

ATTRIBUTIONAL STYLE FOR POSITIVE EVENTS AND DEPRESSION

To date, four previous studies have examined the relationship of attributional style for positive events and depression using a longitudinal, prospective design (Edelman et al., 1994, Johnson, Han, Douglas, Johannet, & Russell, 1996; Johnson et al., 1998; Needles & Abramson, 1990). These studies showed that, among depressed inpatients (Johnson et al., 1996), depressed outpatients (Johnson et al., 1998) and dysphoric college students (Edelman et al., 1994; Needles & Abramson, 1990), a tendency to assign internal, stable, and global causes to positive events was related to lower levels of subsequent depression. Further, in two of the studies, attributional style for positive events moderated the relationship between positive life events and depression. Findings from the current study were generally consistent with these previous studies. Attributional style for positive events demonstrated a significant and negative relationship with depression in all cases. Although attributional style for positive events did not serve as a moderator of the relationship between life stress and depression, this result is consistent with two of the four previous studies (Edelman et al., 1994; Johnson et al., 1996). Furthermore, we obtained two findings not reported by previous studies. First, the two–way interaction of attributional style for negative events and attributional style for positive events significantly added to the prediction of clinician–rated depression symptoms. However, this interaction was further qualified by the three–way interaction in both models with depression as the dependent measure. The combination of a highly internal, stable, and global attributional style for negative events, and an external, unstable, and specific attributional style for positive events was associated with the highest levels of depression irrespective of positive events.

ATTRIBUTIONAL STYLE SUMMARY

As noted above, the presence of a mood disorder was associated with a tendency to see negative events as arising from internal, stable, and global causes, and a tendency to assign external, unstable, and specific causes for positive events. In the longitudinal analyses, the tendency to see positive events as arising from external, unstable, and specific causes was generally associated with higher levels of depression in association with an internal, stable, and global attributional style for negative

events. Some helplessness theorists have questioned the utility of even assessing attributional style for positive events (Peterson & Villanova, 1988) and have even dropped items related to positive events from measures of attributional style (Peterson & Villanova, 1988). Findings from the present study offer cause to reconsider this recommendation.

LIMITATIONS

Although the current study provides further evidence that attributional style for positive events adds predictive power beyond that of attributional style for negative events, the current study suffers from some shortcomings that deserve mention. First, a focus of the current study was an attempt to find ways of differentiating depression from anxiety, despite the great overlap. A difficulty in conducting depression and anxiety comorbidity research is in finding measures of depression and anxiety that retain discriminant validity, given that such measures are often highly correlated. Indeed, the measures of depression and anxiety in this study were highly correlated. Future depression and anxiety comorbidity studies may benefit by using the Mood and Anxiety Symptom Questionnaire (MASQ; Watson & Clark, 1991), which assesses the symptoms that commonly occur in the mood and anxiety disorders, yet demonstrates strong discriminant validity between depression and anxiety symptoms. Similarly, as alluded to above, our measurement of clinician–rated symptoms, particularly anxiety symptoms, was not optimal. The SADS–L and SADS–C interviews are ideally suited for diagnosing lifetime and new onsets of psychiatric diagnoses respectively. However, they were not originally intended to assess continuous measures of symptoms associated with the various psychiatric diagnoses. Thus, future research may benefit from the use of clinician–assessed symptom measures to complement diagnostic assessment (cf. Hamilton, 1959, 1960).

Another limitation of the current study relates to the sample of participants itself. Great care was taken in screening and assessing current and lifetime psychopathology. Structured lifetime diagnostic interviews were administered to reveal the presence or absence of RDC diagnoses (Spitzer et al., 1978). As noted above, highly trained interviewers administered the SADS interviews and achieved impressive rates of agreement. However, participants in the current study were relatively high-functioning college students with only a handful ($n = 14$) currently receiving any form of treatment (Reilly–Harrington et al., 1999). Thus, before broad generalizations can be made, replication in a clinical sample would be required.

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