

The Specificity of Attributional Style and Expectations to Positive and Negative Affectivity, Depression, and Anxiety¹

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Ninety-four undergraduate subjects completed measures of trait positive and negative affectivity, anxiety, depression, optimism, hopelessness, and attributional style. After writing about negative events or hearing a tape describing a positive academic experience, they completed measures of state positive and negative affect and of self-efficacy expectancies. Positive affectivity was associated with attributional style for positive, but not negative, events. Negative affectivity was associated with attributional style for negative, but not positive, events. Negative event attributional style was specifically associated with anxiety; expectancies and positive event attributional style with depression. Attributional style predicted state positive affect following completion of negative essays, but not negative affect, nor either affect following the positive tape. Effects of attributional style on affect were partially independent of expectations. Results are discussed in terms of the importance of distinguishing between processes related to positive and negative affect in order to distinguish anxiety from depression.

KEY WORDS: attributional style; expectations; depression; anxiety; affect; cognitive specificity.

Anxiety and depression are often highly correlated (e.g., Gotlib, 1984). As a result, many studies purporting to study one could as easily be used as

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evidence concerning the other. Recent evidence suggests that some of the overlap between anxiety and depression may be captured by the broad concept of negative affectivity (Watson & Clark, 1984). Those scoring high on measures of negative affectivity (NA) demonstrate elevated levels of both depression and anxiety.

However, depression and anxiety are also, to some extent, distinct. For instance, those who are depressed score low on positive affectivity (PA), whereas PA is unrelated to anxiety (see Watson & Kendall, 1989, for an extended discussion). Research on the specificity of variables to anxiety and depression might do well, then, to examine the specificity of the relations of these variables to PA and NA (Clark, Beck, & Stewart, 1990). The primary aim of our research was to examine the differential relation to PA and NA of cognitive factors believed to play a role in depression and anxiety, namely, attributions and expectations.

Attributions of negative events to causes that are stable in time and global across situations have been linked with depression both theoretically (Abramson, Metalsky, & Alloy, 1989; Abramson, Seligman, & Teasdale, 1978) and empirically (Sweeney, Anderson, & Bailey, 1986). Current attribution theories of depression do not specify a role for attributions for positive events. However, attributing positive events to unstable and specific sources is associated with depression, albeit less strongly than is attributional style for negative events (Peterson, 1991a; Sweeney et al., 1986).

Expectations have been tied both to depression and anxiety. For instance, the hopelessness theory of depression (Abramson et al., 1989) suggests that the view that negative events are likely to occur and positive not to occur produces feelings of hopelessness and, so, depression. Empirically, Beck's (1970) contention that depressed people show an especially negative view of the future has been corroborated in many studies (Haaga, Dyck, & Ernst, 1991). Low efficacy expectations, that is, the judgment that one is unlikely to be able to perform particular actions, have been tied to both anxiety and depression (Bandura, 1988; Kanfer & Zeiss, 1983).

In view of the high overlap of anxiety and depression, researchers have begun to examine the question of cognitive specificity. To date, studies examining attributional specificity to depression vs. anxiety present a mixed picture. Some have supported the specificity of attributional style to depression (Heimberg, Vermilyea, Dodge, Becker, & Barlow, 1987; Ingram, Kendall, Smith, Donnell, & Ronan, 1987; Riskind, Castellon, & Beck, 1989) while others have not (Heimberg, Klosko, Dodge, Shadick, Becker, & Barlow, 1989; Johnson & Miller, 1990). Although hopelessness has been found to be correlated with both depression and anxiety, some recent research indicates that it shows specificity to depression (e.g., Beck, Riskind, Brown, & Steer, 1988).

None of the research on the specificity of attributional style and expectations to depression vs. anxiety has taken into account PA and NA. If a particular cognitive variable is associated with NA, then it should be associated with both depression and anxiety, given the nonspecificity of NA. However, if a cognitive variable is related to PA, but not NA, then the logic of prior research on PA suggests that it will also be specific to depression and not extend to anxiety. We therefore examined the relations of measures of PA, NA, anxiety, and depression to expectations and attributional style for positive and negative events.

Some research on the specificity issue has utilized measures of anxiety and depression that are highly intercorrelated, possibly because of overlapping item content (Gotlib & Cane, 1989), which could lead to underestimation of specificity. Therefore, we indexed anxiety with a measure [Beck Anxiety Inventory (BAI); Beck, Epstein, Brown, & Steer, 1988] designed to be distinct from depression measures. We also were able to examine two other distinct issues involving these variables, as described below.

Prediction of Subsequent Affect

Attributional style has been found, sometimes, to interact with stress to predict subsequent symptomatology (Alloy, Kayne, Romer, & Crocker, 1992; Dixon & Ahrens, 1992; Hunsley, 1989; Metalsky, Halberstadt, & Abramson, 1987; Nolen-Hoeksema, Girgus, & Seligman, 1986; but see Folette & Jacobson, 1987; Hammen, Adrian, & Hiroto, 1988; and Hummer & Hokanson, 1990, for contrary results). The studies performed to date have used naturally occurring events and time intervals of, at the least, days to study the interaction. To examine the processes involved in the relation of attributions to distress, it would be helpful to study the relation in more controlled circumstances. Therefore, in this study, we introduced a surrogate for stress, writing about negative experiences, or for a positive event, listening to a tape describing positive academic experiences. We measured attributional style prior to the essay or tape and both state PA and NA afterwards. This allowed a laboratory examination of the prediction that attributions should predict affect following experience of negative events.

Mediating Role of Expectations

Hopelessness theory suggests that attributional style affects distress through its effect on expectations. That is, those who tend to explain the

causes of negative events in global, stable terms should have bleak expectations of the future, which, in turn, proximally cause bad feelings. Recently, Hull and Mendolia (1991) tested this prediction. They measured expectations, using the Life Orientation Test (LOT; Scheier & Carver, 1985), depression, as assessed by the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979), and attributional style, using the Attributional Style Questionnaire (ASQ; Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982), concurrently. In two studies, they found that attributional style for both positive and negative events exerted a direct effect upon optimism, which then predicted depression. Contrary to the theory, attributional style for negative events also predicted depression directly. The current study examines the attributional style–expectation–distress relation using somewhat different measures and procedures from those of Hull and Mendolia (1991).

In sum, we used a mixed correlational–experimental design to address two issues involving the specificity of cognitive variables to affects: (a) the relations among attributional style and expectations, on one hand, and positive and negative affectivity, on the other; and (b) the specificity of patterns of attributions and expectations to depression rather than anxiety. We also examined the interaction of attributional style and stress in predicting subsequent affect in a more constrained setting than other such studies have featured, while exploring the mediating role of expectations.

METHODS

Subjects. Subjects were 74 female and 20 male undergraduate volunteers at The American University. Subjects were drawn from a variety of psychology courses and received course credit for their participation.

Instruments. Affect was measured via the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Two forms of the PANAS were used. At the beginning of the session, subjects completed a trait version with instructions to indicate for each adjective “to what extent you generally feel this way, that is, how you feel on the average.” At the end of the session, subjects completed a state form of the PANAS indicating “to what extent you feel this way right now, that is, at the present moment” for each adjective. The PANAS consists of two sets of 10 adjectives each, one set measuring positive affect, the other negative affect. The two have been found to be only moderately correlated with each other, $r = -.15$ and $-.17$, for the state and trait instructions, respectively. Eight-week retest reliability is about .70 for “general”

instructions and .50 for “moment” instructions (Watson, Clark, & Tellegen, 1988).

Depressive symptom severity was assessed with the BDI (Beck et al., 1979), a 21-item self-report scale with high internal consistency and convergent validity with interviewer ratings of depressive symptoms (Beck, Steer, & Garbin, 1988).

Anxiety symptoms were measured with the BAI (Beck, Epstein, et al., 1988). This 21-item scale has shown high internal consistency, short-term retest reliability, and concurrent validity (Beck, Epstein, et al., 1988) as well as responsiveness to cognitive therapy (Haaga, DeRubeis, Stewart, & Beck, 1991). Particularly important for our purposes is that the developers of the BAI took pains to minimize its overlap with depression measures. A recent review of psychometric studies of anxiety and depression (Clark & Watson, 1991) concluded that preliminary evidence indicates the success of this attempt to bolster discriminant validity but noted, “The BAI is new and has not yet been studied much by researchers other than its creators” (Clark & Watson, 1991, p. 320).

Attributional style for negative events was assessed using the Expanded Attributional Style Questionnaire (EASQ; Peterson & Villanova, 1988). The EASQ consists of 24 events, for each of which subjects indicate a cause of the event and rate the internality, stability, and globality of the cause on 7-point Likert scales. We used the generality scale, that is, the sum of the averages of the stability and globality subscales, in our analyses. This was done because of the emphasis recently given to these two dimensions in hopelessness theory (Abramson et al., 1989). Fifteen subjects failed to answer questions about one event. For these subjects, generality averages were computed over the remaining 23 events. Eight subjects omitted more than one question.³ These eight subjects were not included in the analyses involving the EASQ. In the current study, the generality scale of the EASQ had excellent internal consistency, $\alpha = .92$.

Attributional style for positive events was assessed using six scenarios drawn from the Attributional Style Questionnaire (ASQ-P; Peterson et al., 1982). Again, we used the generality scale, which had moderate internal consistency, $\alpha = .74$.

³This compared to a maximum of three subjects with incomplete data on any of our other measures. This nonresponse rate and the informal observation that the length and abstractness (e.g., questions about the globality of hypothetical causes of hypothetical setbacks) of the EASQ provoke complaints from some subjects suggest that the EASQ is a somewhat aversive measure to complete. At the very least, it is time-consuming, a feature that prompted Whitley (1991) to develop a short form of the EASQ. However, the extra annoyance is worthwhile (at least for investigators) in view of the full EASQ's high reliability (Peterson, 1991b), which enhances effect sizes, and thus statistical power in studies of its relations with other variables (Robins, 1988).

We used two dispositional measures to operationalize expectations, as well as a self-efficacy measure more likely to be responsive to our experimental manipulation. Dispositional optimistic expectations were assessed with the LOT (Scheier & Carver, 1985). This eight-item (plus four unscored filler items) measure taps the extent to which respondents agree with indicators of generalized positive outcome expectancies (e.g., "I always look on the bright side of things"). Scheier and Carver (1985) reported high 4-week retest reliability for the LOT, as well as positive correlations with self-esteem and negative correlations with depression, social anxiety, and hopelessness. Although factor analysis indicated two factors in this scale, the difference between them is conceptually irrelevant (positive vs. negative wording), leading Scheier and Carver (1985) to recommend treating the LOT as unidimensional. We used only the total score, with which each of the factor scores was highly correlated ($r = .88$ for both).

The Hopelessness Scale (HS; Beck, Weissman, Lester, & Trexler, 1974) is a 20-item true-false measure of generalized negative expectancies about one's own future. HS scores correlate positively with self-reported and clinician-rated depression symptom severity (e.g., Beck, Riskind, et al., 1988), with suicidal ideation (e.g., Beck, Kovacs, & Weissman, 1975) and, prospectively, with risk of completed suicide (e.g., Beck, Steer, Kovacs, & Garrison, 1985).

Self-efficacy was measured using the Self-Efficacy Questionnaire (SEQ), drawn from items used in previous studies (Cervone, Kopp, & Schaumann, 1992; Kavanagh & Bower, 1985). The scale consisted of 24 items assessing specific academic, interpersonal, and athletic activities. For each, subjects indicated, on a 100-point scale, how confident they were that they could perform the activity. Sample activities included getting an A on a 20-page paper in a class outside the subject's major; approaching a group of strangers at a social gathering, introducing themselves, and joining in the conversation; and hitting a hard softball 120 feet. The SEQ had strong internal consistency, $\alpha = .90$.

Procedure

Subjects participated in groups of 1 to 3. Subjects were initially given a packet of questionnaires to complete, including the BDI, BAI, EASQ, ASQ-P, trait form of the PANAS, LOT, HS, and three other questionnaires not relevant for our purposes. All of the questionnaires were administered in one of four different random orders. After completing these questionnaires, subjects either (a) wrote two essays about negative events that had recently occurred in their lives or (b) listened to a tape recording describing

Table I. Descriptive Statistics^a

Variable	<i>N</i>	Mean	<i>SD</i>
Premanipulation			
EASQ-GEN	86	8.54	1.55
ASQ-P-GEN	92	10.60	1.46
PANAS-PA-Trait	94	34.78	6.97
PANAS-NA-Trait	91	21.93	7.57
BDI	94	8.35	7.38
BAI	93	10.59	7.54
LOT	94	19.50	5.89
HS	93	3.85	3.99
Postmanipulation			
Negative essay			
PANAS-PA-State	49	26.51	9.33
PANAS-NA-State	49	15.82	7.34
SEQ	49	55.98	15.90
Positive tape			
PANAS-PA-State	43	36.42	8.63
PANAS-NA-State	43	14.05	5.86
SEQ	44	66.83	15.11

^aNote: EASQ-GEN = Expanded Attributional Style Questionnaire—Generality Subscore; ASQ-P-GEN = Attributional Style Questionnaire—Positive Generality Subscore; PANAS-PA-Trait = Positive and Negative Affect Schedule, Positive Affect, Trait Version; PANAS-NA-Trait = Positive and Negative Affect Schedule, Negative Affect, Trait Version; BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory; LOT = Life Orientation Test; HS = Hopelessness Scale; PANAS-PA-State and PANAS-NA-State = Positive and Negative Affect Schedule, Negative and Positive Affect, respectively, State Version; SEQ = Self Efficacy Questionnaire.

a series of positive academic events and were instructed to imagine these events occurring for them. Groups were assigned randomly to either the positive or negative condition. After completing the essays or listening to the tapes, subjects completed the state version of the PANAS and the SEQ, in that order. Finally, subjects were debriefed. Those who had written negative essays listened to the positive tape to assist in restoration of a positive mood.

RESULTS

Descriptive statistics on the primary variables are presented in Table I. Intercorrelations of variables completed prior to the manipulation are presented in Table II.

A first step in this study was to replicate prior work concerning the relation of PA and NA to depression and anxiety. Therefore, we examined the correlation of trait PA and NA to BDI and BAI scores as well as to each other. Consistent with prior work, NA was strongly related to both

Table II. Intercorrelations of Premanipulation Measures^a

	EASQ	ASQ	PA	NA	BDI	BAI	LOT	HS
EASQ	1.00							
ASQ	.08	1.00						
PA	-.16	.47 ^b	1.00					
NA	.21 ^c	.06	-.17	1.00				
BDI	.31 ^b	-.25 ^c	-.44 ^c	.71 ^b	1.00			
BAI	.38 ^b	-.13	-.17	.65 ^b	.67 ^b	1.00		
LOT	-.35 ^b	.30 ^b	.52 ^b	-.47 ^b	-.59 ^b	-.40 ^b	1.00	
HS	.31 ^b	-.45 ^b	-.53 ^b	.45 ^b	.71 ^b	.52 ^b	-.71 ^b	1.00

^aNote: EASQ = Expanded Attributional Style Questionnaire—Generality Subscore; ASQ = Attributional Style Questionnaire (positive events) Generality Subscore; PA = Positive and Negative Affect Schedule, Positive Affect, Trait Version; NA = Positive and Negative Affect Schedule, Negative Affect, Trait Version; BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory; LOT = Life Orientation Test; HS = Hopelessness Scale.

^b $p < .01$.

^c $p < .05$.

BDI and BAI scores, but not to PA. Also, PA was related to BDI scores, but not to BAI scores. Corroborating research on the covariation of anxiety and depression measures (Clark & Watson, 1991), BDI and BAI scores were somewhat more highly related in this nonclinical study ($r(92) = .67$, $p < .01$)⁴ than in studies using clinical populations (e.g., $r = .48$ in Beck, Epstein, et al., 1988; $r = .50$ in Fydrich, Dowdall, & Chambless, 1992).

Attribution–Affect Specificity

The relation of attributional style and expectations to the measures of affectivity, anxiety, and depression was the primary focus of the study. First, we examined attributions' relation to trait PA and trait NA. Interestingly, the attributional styles were differentially related to PA and NA. In particular, attributional style for negative events was associated with NA, but not PA. In contrast, attributional style for positive events was associated with PA, but not NA.

The relations of attributions to PA and NA and of the latter to depression and anxiety suggest that attributions for positive and negative events should show differential relations to anxiety and depression. In particular, attributional style for negative events should be associated with both anxiety and depression, since NA is common to both. In contrast, attributional style for positive events should be associated with depression, but

⁴Subjects who failed to complete any given questionnaire in this study were excluded from analyses involving that measure. Thus, the degrees of freedom vary across analyses.

not anxiety, since PA is only associated with depression. As can be seen in Table II, these patterns held true.

Given that BDI and BAI scores were associated, we conducted a more fine-grained analysis of specificity. We examined the partial correlations of attributions with each of BDI and BAI after controlling for the other. After controlling for BAI scores, attributional style for positive events still predicted BDI scores, $pr = -.22$, $F(1, 88) = 4.34$, $p < .05$. Attributional style for negative events did not, $pr = .07$, $F(1, 82) = 0.45$, n.s. This supports the ability of attributions for positive events, but not negative events, to predict variance unique to depression. After controlling for BDI scores, attributional style for negative events still predicted anxiety, $F(1, 82) = 5.35$, $p < .05$, $pr = .25$. This is somewhat surprising, and suggests that attributions for negative events have some relation to anxiety above and beyond their relation to depression. Attributions for positive events still did not predict BAI scores, $pr = .05$.

Expectation–Affect Specificity

Expectations, whether assessed via the LOT or the hopelessness scale, were associated with both PA and NA. Given that expectations were associated with NA, and NA was associated with both BDI and BAI scores, expectations would likely be related to both BDI and BAI scores. Indeed, they were.

However, expectations were associated with PA as well as NA. Because PA was associated with BDI but not BAI scores, expectations should share some unique variance with BDI scores after controlling for BAI scores. Indeed, after partialing out BAI scores, both optimism and hopelessness still predicted depression, $F(1, 90) = 25.02$, $p < .01$, $pr = -.47$, and $F(1, 90) = 43.16$, $p < .01$, $pr = .57$, respectively. Thus, despite shared variance with anxiety, expectations also are related to unique variance in depression. In contrast, once BDI scores had been partialled, neither LOT, $F(1, 90) = 0.03$, n.s., nor HS, $F(1, 90) = 0.70$, n.s., predicted residual BAI scores.

Attributional Style in the Prediction of Subsequent Affect

The first subsidiary issue we examined was whether attributions could predict affect experienced after a brief manipulation. As a first step, it was important to determine whether the manipulation had any effects. Condition (positive tape vs. negative essay) influenced state PA, $F(1, 90) = 27.71$, $p < .0001$, but did not influence state NA, $F(1, 90) = 1.60$, n.s. In com-

Table III. Correlations of Premanipulation Measures with Postmanipulation State Measures^a

	Positive condition (tape)			Negative condition (essay)		
	PA-S	NA-S	SEQ	PA-S	NA-S	SEQ
EASQ	.00	.21	-.20	-.42 ^b	.20	-.13
ASQ	.19	.12	.07	.45 ^b	-.11	.33 ^c
PA-T	.32 ^c	.13	.36 ^c	.52 ^b	-.01	.43 ^b
NA-T	.04	.36 ^c	-.22	-.23	.46 ^b	-.34 ^c
BDI	-.01	.18	-.12	-.36 ^c	.47 ^b	-.50 ^b
BAI	.02	.28	-.16	-.33 ^c	.61 ^b	-.47 ^b
LOT	.08	.17	.37 ^c	.45 ^b	-.30 ^c	.40 ^b
HS	-.15	.01	-.36 ^c	-.45 ^b	.31 ^c	-.34 ^c
NA-S	-.15			-.21		
SEQ	.46 ^b	-.13		.51 ^b	-.27	

^aNotes: EASQ = Expanded Attributional Style Questionnaire Generality Subscore; ASQ = Attributional Style Questionnaire (positive events) Generality Subscore; PA-T = Positive and Negative Affect Schedule, Positive Affect, Trait Version; NA-T = Positive and Negative Affect Schedule, Negative Affect, Trait Version; BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory; LOT = Life Orientation Test; HS = Hopelessness Scale; PA-S = Positive and Negative Affect Schedule, Positive Affect, State Version (postmanipulation); NA-S = Positive and Negative Affect Schedule, Negative Affect, State Version (postmanipulation); SEQ = Self-Efficacy Questionnaire (postmanipulation).

^b $p < .01$.

^c $p < .05$.

bination with the low levels of NA in the essay condition ($M = 15.8$ on a 10 to 50 scale), this calls into question the negativity and positivity of the manipulations. The manipulation also affected self-efficacy, $F(1, 91) = 11.32, p < .005$, replicating findings that mood manipulations can influence self-efficacy judgments (Kavanagh & Bower, 1985).⁵ Due to these group differences in self-efficacy and the hypothesized specificity of attributional style effects to negative situations, we examined data from the tape and essay conditions separately. Intercorrelations of postmanipulation measures, and their correlations with premanipulation measures, are presented in Table III.

Negative Essay Condition. To examine the ability of attributional style to predict affect after thinking about negative events, we performed four sets of hierarchical regressions. The dependent measures were either postmanipulation positive or negative affect. As can be seen in Table III, state affect was associated with trait affect. Therefore, in analyses predicting state

⁵There was also an interaction of condition and SEQ subscale, $F(2, 182) = 3.62, p < .03$. The largest effect of condition on efficacy occurred for athletic events, likely because efficacy for athletic events started at a lower point than did efficacy for academic or achievement events.

PA, we controlled for trait PA, measured before the manipulation. Similarly, analyses of state NA controlled for trait NA. After controlling for trait affect, either the negative attribution generality score or the positive attribution generality score was entered into the regression. Attributional style did predict state PA. This was the case both for attributions for negative events, $F(1, 40) = 6.42, p < .025, pr = -.37$, and attributions for positive events, $F(1, 45) = 4.30, p < .05, pr = .30$. Neither set of attributions predicted state NA.

The second subsidiary issue we examined was whether expectations mediate the relation of attributions to affect. We performed the regressions predicting state PA again, this time partialing out SEQ scores before entering attributions as a predictor of state positive affect. If attributions still predict affect after controlling for expectations, then the effect of attribution is not entirely mediated by efficacy. Attributional style for negative events did predict PA even after accounting for self-efficacy, $F(1, 39) = 7.02, p < .02, pr = -.39$. Attributions for positive events also continued to predict PA, though the effect only reached marginal statistical significance, $F(1, 43) = 3.02, p < .10, pr = .26$.⁶

Positive Tape Condition. In contrast to the negative essay condition, attributions predicted neither state PA nor NA in the positive tape condition. This result is not unexpected, since attributions are predicted to affect distress only after negative, not positive, events.

DISCUSSION

The main focus of this study was on the specificity of cognitive factors to depression, anxiety, and positive and negative affectivity. The “meta-construct” model of psychopathology (Ingram, 1990; Ingram & Kendall, 1987) suggests that some factors are unique to depression, others unique to anxiety, and yet others common to both. We found evidence for the presence of each of these three types of factors in this study. Furthermore, the relation of cognitive variables to affectivity was informative about their relations to depression and anxiety.

We found differential relations of cognitive measures to positive and negative affectivity. Attributional style for negative events was associated with NA but not PA. In contrast, attributional style for positive events was

⁶We also examined the mediating role of trait expectations, as measured by the LOT and HS, in the attribution–trait affect relation. After controlling for expectations, attributions for negative events no longer predicted the BDI or trait PA, but did predict BAI. Attributions for positive events no longer predicted BDI, but did predict BAI. The results were the same regardless of whether the expectation measure was the LOT or HS.

associated with PA but not NA. Finally, expectations were associated with both PA and NA.

As PA and NA were differentially related to anxiety and depression, so were cognitive measures. Specific, unstable attributions for positive events and low PA were uniquely associated with depression. Research on depression has long focused on the consequences of aversive events (Haaga & Ahrens, 1992). Our data suggest that thoughts concerning the more enjoyable events in life may be more unique to depression. This is consistent with research demonstrating that depressed people experience fewer positive events (Lewinsohn & Graf, 1973), set lower standards (Ahrens, Zeiss, & Kanfer, 1988), and experience less positive affect (Watson, Clark, & Carey, 1988). Similarly, hopelessness theory (Abramson et al., 1989) considers the absence of positive events to play a causal role in depression, though most research on variants of that theory has examined thoughts concerning negative events (but see Needles & Abramson, 1990, for an exception).

In contrast, attributions for negative events shared variance with both anxiety and depression. However, once anxiety was controlled, attributions no longer predicted depression, whereas they still predicted anxiety after controlling for depression. This latter result challenges the assertion that attributions for negative events are unique to depression, as opposed to other psychopathologies. Thus, for attributions about negative events, our data are consistent with those other studies failing to demonstrate specificity of attributions to depression (e.g., Heimberg et al., 1989; Johnson & Miller, 1990).

The two dispositional measures of expectation, hopelessness and optimism, displayed a third pattern of relations to distress. Expectations were correlated with all of the affect measures. However, they also displayed specificity to depression. Once depression had been partialled out, expectations were no longer related to anxiety. In contrast, a strong relation to depression remained after controlling for anxiety. This specificity is a novel finding, to our knowledge, with respect to optimism, but with hopelessness, this represents a replication of several clinical studies (e.g., Beck, Riskind, et al., 1988; for a review, see Haaga, Dyck, & Ernst, 1991). The ability to predict unique variance in depression is consistent with the relation of expectations to PA.

Prediction of State Affect

Results concerning the ability of attributional style to predict subsequent affect were mixed. Both attributions for positive and negative

events predicted state PA after a negative essay writing task, even after controlling for trait affect assessed prior to the writing task. However, neither set of attributions predicted state NA, nor was any affect predictable by any attributions after subjects listened to a positive tape. That attributional style did not predict affect after the positive tape is consistent with the assertion that attributions influence affect only after negative events (Abramson et al., 1989). Perhaps the lack of effects upon negative affect was due to the manipulation, which influenced positive, but not negative, affect. The effect of attributions on positive affect in the essay condition provides some limited support for a prediction of hopelessness theory. However, this support should be taken very cautiously pending other approaches to controlled examination of the attribution–stress relation in predicting affect. The mixed nature of the predictive power of attributions in this study is consistent with prior studies of the attribution–stress interaction, some of which have found significant effects on depression and others not, as noted in the introduction. Further work is needed to clarify the conditions under which the interaction is a useful predictor.

Hopelessness theory suggests that the relation of attributions to distress should be mediated by expectations (Abramson et al., 1989). However, in this study, attributions instead predicted state PA even after controlling for self-efficacy expectations. This is consistent with the results of other recent work (Hull & Mendolia, 1991). It should be noted, though, that the relation of attributional style to depression was, indeed, mediated by expectations (see footnote 6).

Methodological Considerations

The results of our study address two additional points of methodology. First is the importance of controlling for “secondary affective confounding” (Ingram, 1989) in evaluating relations of depression or anxiety to other variables. Our results argue against one interpretation of the greater *magnitude* of correlations with depression for attributional style for bad events, as compared to attributional style for positive events. Peterson (1991a) speculated that attributional style for good events might not yield rich data because people are less “mindful” (Langer, 1989) in thinking about good events and therefore offer unrevealing, stereotypic responses to them. By controlling for anxiety, on the other hand, we were able to show that attributional style for positive events was actually *uniquely* associated with depression whereas attributional style for negative events was not.

A second issue concerns the discriminant validity of the LOT. Prior research indicated that the LOT might be confounded with NA, correlating as strongly with NA measures as with another optimism measure (Smith, Pope, Rhodewalt, & Poulton, 1989). Correlations linking the LOT with attributional style and affect measures would take on a modest, even redundant meaning if LOT scores actually reflect (low) NA rather than optimism. Our data are more encouraging than those of Smith et al. in this respect, though. In particular, we note that the LOT correlated $-.71$ with the HS, its conceptual opposite as an expectancy measure, compared to $-.47$ with the PANAS NA subscale (trait form). Discriminant validity should perhaps not be judged in a dichotomous, present/absent fashion (Haaga, 1992), and the LOT might well benefit from revision to reduce further its overlap with NA, but our results lead us to conclude that at least part of the variance in LOT scores uniquely reflects the intended construct of optimism.

Conclusion

Positive and negative affect are distinct, semi-independent entities. Moreover, attributional style for positive events, attributional style for negative events, and expectations relate differentially to them. Understanding these relations sheds light on the specificity of cognitive variables to anxiety and depression.

REFERENCES

- Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, *96*, 358-372.
- 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.
- Ahrens, A. H., Zeiss, A. M., & Kanfer, R. (1988). Dysphoric deficits in interpersonal standards, self-efficacy, and social comparison. *Cognitive Therapy and Research*, *12*, 53-67.
- Alloy, L. B., Kayne, N. T., Romer, D., & Crocker, J. (1992). *Predicting depression and elation reactions in the classroom: A test of an attributional diathesis-stress theory of depression*. Manuscript submitted for publication.
- Bandura, A. (1988). Self-efficacy conception of anxiety. *Anxiety Research*, *1*, 77-98.
- Beck, A. T. (1970). The core problem in depression: The cognitive triad. In J. H. Masserman (Ed.), *Depression: Theories and therapies* (pp. 47-55). New York: Grune & Stratton.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, *56*, 893-897.
- Beck, A. T., Kovacs, M., & Weissman, A. (1975). Hopelessness and suicidal behavior: An overview. *Journal of the American Medical Association*, *234*, 1146-1149.
- Beck, A. T., Riskind, J. H., Brown, G., & Steer, R. A. (1988). Levels of hopelessness in DSM-III disorders: A partial test of content specificity in depression. *Cognitive Therapy and Research*, *12*, 459-469.

- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.
- Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*, 77-100.
- Beck, A. T., Steer, R. S., Kovacs, M., & Garrison, B. (1985). Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *American Journal of Psychiatry, 142*, 559-563.
- Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: The Hopelessness Scale. *Journal of Consulting and Clinical Psychology, 42*, 861-865.
- Cervone, D., Kopp, D. A., & Schaumann, L. (1992). *The influence of induced mood on personal standards, expectancies, and self-efficacy judgments*. Unpublished manuscript, University of Illinois-Chicago.
- Clark, D. A., Beck, A. T., & Stewart, B. (1990). Cognitive specificity and positive-negative affectivity: Complementary or contradictory views on anxiety and depression. *Journal of Abnormal Psychology, 99*, 148-155.
- Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*, 316-336.
- Dixon, J. F., & Ahrens, A. H. (1992). Stress and attributional style as predictors of self-reported depression in children. *Cognitive Therapy and Research, 16*.
- Follette, V. M., & Jacobson, N. S. (1987). Importance of attributions as a predictor of how people cope with failure. *Journal of Personality and Social Psychology, 52*, 1205-1211.
- Fydrich, T., Dowdall, D., & Chambless, D. L. (1992). Aspects of reliability and validity of the Beck Anxiety Inventory. *Journal of Anxiety Disorders, 6*, 55-61.
- Gotlib, I. (1984). Depression and general psychopathology in university students. *Journal of Abnormal Psychology, 93*, 19-30.
- Gotlib, I. H., & Cane, D. B. (1989). Self-report assessment of depression and anxiety. In P. C. Kendall & D. Watson (Eds.), *Anxiety and depression: Distinctive and overlapping features* (pp. 131-169). San Diego: Academic Press.
- Haaga, D. A. F. (1992). Catastrophizing, confounds, and depression: A comment on Sullivan & D'Eon (1990). *Journal of Abnormal Psychology, 1992, 101*, 206-207.
- Haaga, D. A. F., & Ahrens, A. H. (in press). A disagreement about the benefits of agreement-seeking. *Psychological Inquiry, 3*, 244-247.
- Haaga, D. A. F., DeRubeis, R. J., Stewart, B. L., & Beck, A. T. (1991). Relationship of intelligence with cognitive therapy outcome. *Behaviour Research and Therapy, 29*, 277-281.
- Haaga, D. A. F., Dyck, M. J., & Ernst, D. (1991). Empirical status of cognitive theory of depression. *Psychological Bulletin, 110*, 215-236.
- Hammen, C., Adrian, C., & Hiroto, D. (1988). A longitudinal test of the attributional vulnerability model in children at risk for depression. *British Journal of Clinical Psychology, 27*, 37-46.
- Heimberg, R. G., Klosko, J. S., Dodge, C. S., Shadick, R., Becker, R. E., & Barlow, D. H. (1989). Anxiety disorders, depression, and attributional style: A further test of the specificity of depressive attributions. *Cognitive Therapy and Research, 13*, 21-36.
- Heimberg, R. G., Vermilyea, J. A., Dodge, C. S., Becker, R. E., & Barlow, D. H. (1987). Attributional style, depression, and anxiety: An evaluation of the specificity of depressive attributions. *Cognitive Therapy and Research, 11*, 537-550.
- Hull, J. G., & Mendolia, M. (1991). Modeling the relations of attributional style, expectancies, and depression. *Journal of Personality and Social Psychology, 61*, 85-97.
- Hummer, J. T., & Hokanson, J. E. (1990). The causal relations of attributions to depression: A prospective longitudinal study. *Journal of Social and Clinical Psychology, 9*, 511-528.
- Hunsley, J. (1989). Vulnerability to depressive mood: An examination of the temporal consistency of the reformulated learned helplessness model. *Cognitive Therapy and Research, 3*, 599-608.
- Ingram, R. E. (1989). Affective confounds in social-cognitive research. *Journal of Personality and Social Psychology, 57*, 715-722.
- Ingram, R. E. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin, 107*, 156-176.

- Ingram, R. E., & Kendall, P. C. (1987). The cognitive side of anxiety. *Cognitive Therapy and Research, 11*, 523-536.
- Ingram, R. E., Kendall, P. C., Smith, T. W., Donnell, C., & Ronan, K. (1987). Cognitive specificity in emotional distress. *Journal of Personality and Social Psychology, 53*, 734-742.
- Johnson, J. G., & Miller, S. M. (1990). Attributional, life-event, and affective predictors of onset of depression, anxiety, and negative attributional style. *Cognitive Therapy and Research, 14*, 417-430.
- Kanfer, R., & Zeiss, A. M. (1983). Depression, interpersonal standard-setting, and judgments of self-efficacy. *Journal of Abnormal Psychology, 92*, 319-329.
- Kavanagh, D. J., & Bower, G. H. (1985). Mood and self-efficacy: Impact of joy and sadness on perceived capabilities. *Cognitive Therapy and Research, 9*, 507-526.
- Langer, E. J. (1989). *Mindfulness*. Reading, MA: Addison-Wesley.
- Lewinsohn, P. M., & Graf, M. (1973). Pleasant activities and depression. *Journal of Consulting and Clinical Psychology, 41*, 261-268.
- Metalsky, G. I., Halberstadt, L. J., & Abramson, L. Y. (1987). Vulnerability and invulnerability to depressive mood reactions: Toward a more powerful test of the diathesis-stress and causal mediation components of the reformulated theory of depression. *Journal of Personality and Social Psychology, 52*, 386-393.
- Needles, D. J., & Abramson, L. Y. (1990). Positive life events, attributional style, and hopefulness: Testing a model of recovery from depression. *Journal of Abnormal Psychology, 99*, 156-165.
- Nolen-Hoeksema, S., Girgus, J., & Seligman, M. E. P. (1986). Learned helplessness in children: A longitudinal study of depression, achievement, and explanatory style. *Journal of Personality and Social Psychology, 51*, 435-442.
- Peterson, C. (1991a). The meaning and measurement of explanatory style. *Psychological Inquiry, 2*, 1-10.
- Peterson, C. (1991b). On shortening the Expanded Attributional Style Questionnaire. *Journal of Personality Assessment, 56*, 179-183.
- 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*, 287-299.
- Peterson, C., & Villanova, P. (1988). An Expanded Attributional Style Questionnaire. *Journal of Abnormal Psychology, 97*, 87-89.
- Riskind, J. H., Castellon, C. S., & Beck, A. T. (1989). Spontaneous causal explanations in unipolar depression and generalized anxiety: Content analysis of dysfunctional thought diaries. *Cognitive Therapy and Research, 13*, 97-108.
- Robins, C. J. (1988). Attributions and depression: Why is the literature so inconsistent? *Journal of Personality and Social Psychology, 54*, 880-889.
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology, 4*, 219-247.
- Smith, T. W., Pope, M. K., Rhodewalt, F., & Poulton, J. L. (1989). Optimism, neuroticism, coping, and symptom reports: An alternative interpretation of the Life Orientation Test. *Journal of Personality and Social Psychology, 56*, 640-648.
- Sweeney, P. D., Anderson, K., & Bailey, S. (1986). Attributional style in depression: A meta-analytic review. *Journal of Personality and Social Psychology, 50*, 974-991.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*, 465-490.
- Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affect and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97*, 346-353.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.
- Watson, D., & Kendall, P. C. (1989). Understanding anxiety and depression: Their relation to negative and positive affective states. In P. C. Kendall & D. Watson (Eds.), *Anxiety and depression: Distinctive and overlapping features* (pp. 3-26). San Diego: Academic Press.
- Whitley, Jr., B. E. (1991). A short form of the Expanded Attributional Style Questionnaire. *Journal of Personality Assessment, 56*, 365-369.