The Relationship of Sociotropy and Autonomy to Symptoms of Depression and Anxiety

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Beck (1983) hypothesized that excessive interpersonal (sociotropy) and achievement (autonomy) concerns represent vulnerabilities to depression when congruent negative life events occur and that these personality constructs relate differentially to specific depressive symptoms. Recent research suggests that sociotropy relates to both depression and anxiety symptoms while autonomy may be specifically related to depression symptoms. This study employed a longitudinal, prospective design with a sample of 78 undergraduates to test aspects of Beck's (1983) hypotheses. Sociotropy correlated with anxiety symptoms while autonomy correlated with depression symptoms. Additionally, sociotropy moderated the relationship of life stress to depression symptoms for both negative interpersonal and achievement stress while autonomy moderated the relationship of life stress to depression symptoms for negative interpersonal events only. Finally, sociotropy and autonomy also moderated the relationship between life stress and anxiety symptoms in a pattern that was different from the pattern with depression symptoms. Findings from the present study add to a growing body of empirical evidence that sociotropy and autonomy relate to depression and introduce evidence indicating how these constructs may relate to anxiety.

Beck's (1983) cognitive-behavioral theory of depression describes personality dimensions characterized by excessive interpersonal concerns (sociotropy) or achievement concerns (autonomy) that predispose an individual to depression.

Most of the research findings from Beck's (1983) theory have been organized around two main hypotheses: the symptom specificity hypothesis and the event congruency hypothesis.

Symptom Specificity Hypothesis

Beck's (1983) "symptom specificity hypothesis" describes specific symptom profiles hypothesized to be characteristic of sociotropic and autonomous depressive syndromes. The features of the sociotropic syndrome include sadness, loneliness, "anxious depressive" symptoms (p. 274), being more likely to cry (than an autonomous individual), and labile mood. In contrast, the autonomous syndrome includes the features of: depressed mood that is unremitting and independent of good or bad events, unlikely to cry, "refractory anhedonia" [p. 275], avoiding others to maintain autonomy, and often rejecting the help of others. Several studies have tested this hypothesis with varying degrees of success. Robins, Hayes, Beck, and Kramer (1995), using a sample of dysphoric college students, provided strong support of the symptom specificity hypothesis for both sociotropy and autonomy. In a study of clinically depressed patients, Robins, Block, and Peselow (1989) found support for the sociotropic depression symptoms, but not the autonomous depression symptoms.

Recent research also suggests that sociotropy is meaningfully related to symptoms of anxiety as well as depression. In a mixed sample of clinically depressed or clinically anxious outpatients, Persons, Burns, Perloff, and Miranda (1993) found limited support for the relationship between maladaptive achievement beliefs and the hypothesized "autonomous depressive symptoms," and between dependency beliefs, the hypothesized "sociotropic depression symptoms." However, the strongest relationship reported by these authors was between dependency beliefs and anxiety symptoms—particularly somatic anxiety symptoms. In another study using an undergraduate sample, sociotropy (controlling for autonomy) predicted both current dysphoria and current anxiety. Autonomy (controlling for sociotropy) predicted current depression symptoms but was unrelated to current anxiety symptoms (Clark & Beck, 1991).

Event Congruency Hypothesis

Beck's (1983) event congruency hypothesis is the diathesis-stress component of his theory. Individuals high in sociotropy are considered to be at greater risk for developing depressive symptoms when faced with interpersonal stressors while individuals high in autonomy are at greater risk for depression when negative achievement events occur. Empirical tests of event congruency have demonstrated stronger support for the sociotropy-interpersonal life event relationship than the autonomy-achievement life event relationship. Findings supporting the event congruency hypothesis for sociotropy have been reported

with depressed patients (Robins, 1990), dysphoric students (Robins, 1990) and bipolar patients (Hammen, Ellicott, & Gitlin, 1992). While studies have shown that autonomous individuals experience more negative achievement events than non-autonomous participants (Robins & Block, 1988), Robins and associates (1995) represents the only study to demonstrate that autonomy moderates the relationship of depression and life stress—with both achievement and interpersonal life events.

Hypotheses

The majority of the studies that have assessed aspects of Beck's (1983) theory have done so using clinical samples or analog samples (i.e., dysphoric students). The present study was designed to test aspects of Beck's (1983) symptom specificity and event-congruency hypotheses and to extend it in two ways. First, the sample in the current study consisted of unselected college students to determine the way in which Beck's (1983) theory relates to subclinical fluctuations in symptom levels. Second, the current study also assessed the relationship of anxiety symptoms to sociotropy and autonomy. Specifically, we predicted that:

1. sociotropy would be significantly correlated with depression and anxiety symptoms, while autonomy would be significantly correlated only with depression; and
2. congruency would be demonstrated between sociotropy and interpersonal events in the prediction of both subsequent depression and anxiety; and congruency would be demonstrated for autonomy and achievement events in the prediction of subsequent depression but not anxiety.

METHOD

Participants

Seventy-eight undergraduates (54 women) participated in this study to fulfill partial course requirements of an introductory psychology class. Of the 78 students who attended the first session, 73 attended the second session. The sample was predominately Caucasian (n = 70), and included 6 African Americans and two Asians. The sample had an average age of 20 years (SD = 3.7).

Materials

Symptom 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

mponents as well as suicidal wishes. Beck, Steer, and Garbin (1988) conducted neta-analytic study of the BDI and reported the mean coefficient alpha across 25 ars of studies in psychiatric populations to be 0.86.

The Stimulus-Response Inventory of General Trait Anxiousness (GTA; ndler & Okada, 1975; Phillips & Endler, 1982) is a self-report inventory that ks individuals to report their responses to each of five general situations nterpersonal, physical danger, ambiguous, daily activities, and social intertion) on 15 separate dimensions. A GTA total score is computed by summing e response to all 75 items. Kennedy, Perkins, and W. E. Craighead (1987) und that the total score of the GTA demonstrated good convergent and scriminant validity (Pearson's *r* of .43 with the BDI) when compared to other xiety measures. Further, Kennedy and W. E. Craighead (1988) showed that e GTA when used with the BDI was useful in distinguishing between xious-only, depressed-only and mixed (anxious and depressed) states.

Personality Measure. The Personal Style Inventory II (PSI-II; Robins et al., 94) is a 48-item self-report instrument that measures the constructs of sociotropy d autonomy. The PSI-II is a factor-analyzed version of the Sociotropy Autonomy ale (Beck et al., 1983) with six items dropped from each scale. Internal consisncies for both the Sociotropy Scale ($\alpha = .88$) and the Autonomy Scale ($\alpha = .86$) re strong. Further, the correlation between Sociotropy and Autonomy was low =. 18) suggesting that these scales measure orthogonal constructs.

Life Stress Measure. The Life Experiences Survey (LES; Sarason, Johnson, & gel, 1978) is a 57-item instrument designed to assess the occurrence and bjective impact for both positive and negative life events. Participants indicate ents they have encountered over the last year by rating specific events on a scale m extremely negative (-3) to extremely positive (+3). For the current study, the tructions of the LES were modified to include only the interval of time during e's participation in the study—the eight weeks between the questionnaire ssions. Because concerns that impact ratings are susceptible to magnification in perceptions of depressed individuals, the number of negative events was used the measure of life stress in the subsequent regression analyses. Additionally, ents were classified as interpersonal or achievement using the classifications rived by Robins and colleagues (1995). In the Robins and colleagues (1995) dy, four individuals categorized the items from the LES as either interpersonal achievement. Only events in which there was agreement from at least 3 out of 4 ders were retained. Robins and associates (1995) reported that 13 interpersonal d 11 achievement events satisfied this criterion.

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the beginning of the semester, participants gave informed consent and then mpleted a set of questionnaires including the BDI, GTA, and the PSI-II. Both mptom measures were again completed approximately eight weeks later. In addition, participants completed the LES to obtain a measure of life stress spanning the time interval since session 1. Following the second questionnaire session, participants were awarded their course credit and debriefed.

RESULTS

Descriptive Statistics

Table 1 displays the sample means and standard deviations for all symptom and personality measures along the diagonal in this matrix of zero order correlations. In addition, participants averaged 0.91 negative interpersonal events ($SD = 1.07$) and 0.73 negative achievement events ($SD = 1.11$).

Symptom Specificity

Zero order correlations among measures of sociotropy, autonomy, depression and anxiety were used to test the symptom specificity hypothesis. As seen in Table 1, sociotropy was significantly correlated with Time 1 and Time 2 anxiety as well as Time 2 depression. Tests of dependent correlations revealed that the correlation between sociotropy and Time 1 anxiety was significantly

TABLE 1. Means and Standard Deviations and Zero-Order Correlations Among Measures of Depression, Anxiety, Sociotropy, and Autonomy

	BDI1	BDI2	GTA1	GTA2	SOCIO	AUTO
BDI1	8.15 (6.68)					
BDI2	0.61*	7.11 (6.70)				
GTA1	0.56*	0.55*	206.95 (37.89)			
GTA2	0.51*	0.60*	0.81*	200.22 (36.78)		
SOCIO	0.24	0.36*	0.44*	0.41*	4.08 (0.56)	
AUTO	0.35*	0.38*	0.03	0.16	0.14	3.55 (0.56)

Note. BDI1, Time 1 Beck Depression Inventory; BDI2, Time 2 Beck Depression Inventory; GTA1, Time 1 S-R General Trait Anxiousness Inventory; GTA2, Time 2 S-R General Trait Anxiousness Inventory; SOCIO, Personal Style Inventory II Sociotropy Scale; AUTO, Personal Style Inventory II Autonomy Scale, * $p < .05$; Sample means and standard deviations are presented along the diagonal.

stronger than the correlation between sociotropy and Time 1 depression [t (75) = 3.54, p = .0007)]. Similarly, autonomy was significantly correlated with Time 1 and Time 2 depression, but not with anxiety from either time point. The correlation between autonomy and Time 1 depression was significantly stronger than the correlation between autonomy and Time 1 anxiety [t (75) = 3.66, p = .0005)].

Since the measures of depression and anxiety were significantly correlated (r = .55), partial correlations between the personality dimension and the relevant symptom measure were also computed to control for the influence of the other symptom measure. Sociotropy was significantly correlated with Time 1 residualized anxiety (r = .38) and Time 2 residualized anxiety (r = .26), but not with Time 1 residualized depression (r = .02) or Time 2 residualized depression (r = .16). Autonomy was significantly correlated with both Time 1 residualized depression (r = .43) and Time 2 residualized depression (r = .38), but not with either measure of residualized anxiety (Time 1, r = -.21; Time 2, r = -.06).

Event Congruency

To test the event congruency hypothesis, a series of hierarchical multiple regression analyses were used to assess the interaction of the personality dimensions with both congruent and incongruent life events as predictors for either Time 2 BDI or Time 2 GTA. The most commonly used strategy is the multiple regression/correlation technique for prospective psychopathology research originally devised by Cohen and Cohen (1983).

Time 2 Depression

Both the congruent Sociotropy and Interpersonal Events and the incongruent Sociotropy and Achievement Events interactions added to the prediction of Time 2 depression when controlling for the respective covariates and main effects. Thus, sociotropy moderated the relationship between life stress and Time 2 depression irrespective of the domain of the life stress. When autonomy served as the personality measure, only the incongruent Autonomy and Interpersonal Events interaction added to the prediction of Time 2 depression (see Table 2).

Time 2 Anxiety

Four similar multiple regression analyses were conducted to predict Time 2 GTA. The congruent Sociotrophy and Interpersonal Events and Autonomy and Achievement Events interactions added to the prediction of Time 2 anxiety (see Table 3).

TABLE 2. Hierarchical, Setwise Multiple Regression Analyses to Predict Time 2 BDI

	Predictors	*B*	*t*	Step's R^2
Step 1	BDI1	0.60	6.14***	.37
Step 2	SOCIO	2.02	1.93*	
	INTEV	0.86	1.92*	.50
Step 3	SOCIO*INTEV	1.25	2.10*	.54
Step 1	BDI1	0.60	6.14***	.37
Step 2	SOCIO	2.85	2.75**	
	ACHEV	1.79	3.22**	.51
Step 3	SOCIO*ACHEV	2.94	4.15***	.61
Step 1	BDI1	0.60	6.14***	.37
Step 2	AUTO	1.99	1.74	
	ACHEV	1.60	2.77**	.47
Step 3	AUTO*ACHEV	-1.36	-0.88	.48
Step 1	BDI1	0.60	6.14***	.37
Step 2	AUTO	2.68	2.43*	
	INTEV	1.97	3.57**	.51
Step 3	AUTO*INTEV	2.48	2.20*	.54

Note. BDI1, Time 1 Beck Depression Inventory; SOCIO, Personal Style Inventory II Sociotropy Scale; AUTO, Personal Style Inventory II Autonomy Scale, INTEV, Number of Time 2 LES Interpersonal Events; ACHEV, Number of Time 2 LES Achievement Events.
*p < .05. **p < .01. ***p < .001.

Analysis of Partial Variance Figures

To understand the nature of personality-event interactions, the Analysis of Partial Variance (APV) procedure, developed by Cohen and Cohen (1983), is commonly used. The APV procedure uses the coefficients from the significant full-model regression analyses and solves them at various levels of the predictor variables. In the current study, equations were solved at +1 standard deviation and/or -1 standard deviation of the relevant predictors.

Depression Figures

Since both the congruent and incongruent interactions involving sociotropy in the prediction of Time 2 depression were significant, two APVs were solved. In both cases, high sociotropy was associated with a strong relationship between negative life stress and Time 2 depression. However, low sociotropy

BLE 3. Hierarchical, Setwise Multiple Regression Analyses to dict Time 2 GTA.

	Predictors	*B*	*t*	Step's R^2
› 1	GTA1	0.77	11.75***	.55
› 2	SOCIO	4.30	0.78	
	INTEV	-3.78	-1.78	.64
› 3	SOCIO*INTEV	6.87	2.44*	.67
› 1	GTA1	0.77	11.75***	.55
› 2	SOCIO	4.42	0.89	
	ACHEV	3.08	1.33	.68
› 3	SOCIO*ACHEV	3.82	1.10	.68
› 1	GTA1	0.77	11.75***	.55
› 2	AUTO	7.83	1.70	
	ACHEV	2.11	0.91	.69
› 3	AUTO*ACHEV	-15.42	-2.44*	.71
› 1	GTA1	0.77	11.75***	.55
› 2	AUTO	8.73	1.95*	
	INTEV	-1.07	-0.45	.69
› 3	AUTO*INTEV	2.74	0.54	.69

ɜ. BDI1, Time 1 Beck Depression Inventory; GTA1, Time 1 S-R eral Trait Anxiousness Inventory; SOCIO, Personal Style Inventory II ıotropy Scale; AUTO, Personal Style Inventory II Autonomy Scale; EV, Number of Time 2 LES Interpersonal Events; ACHEV, Number of e 2 LES Achievement Events.
: .05. **$p < .01$. ***$p < .001$.

associated with no relationship between life stress and Time 2 depression. milar pattern emerged in the APV graph for the incongruent interaction of nomy and negative interpersonal events. High autonomy was associated . a strong relationship between negative interpersonal events and Time 2 ession, whereas low levels of autonomy were associated with no relation- between negative interpersonal life events and Time 2 depression. Graphs ıese interactions appear in Figures 1-3.

iety Figures

ıre 4 depicts the APV for the significant interaction between sociotropy and ıtive interpersonal events in the prediction of Time 2 anxiety. The graph als that high sociotropy is associated with relatively high anxiety irrespec- of current levels of interpersonal life stress. By contrast, low sociotropy

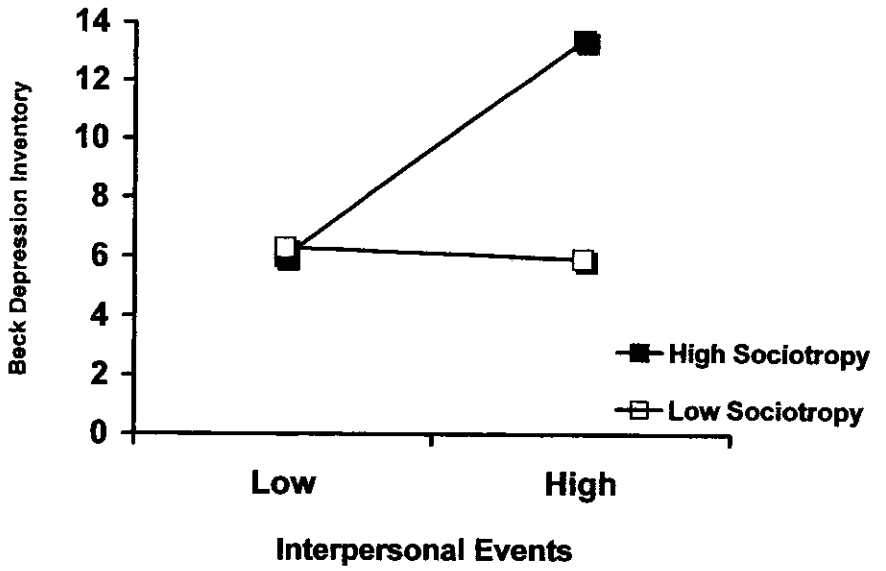


Figure 1. Analysis of partial variance depicting the interaction of Sociotropy and Negative Interpersonal Events to predict Time 2 BDI.

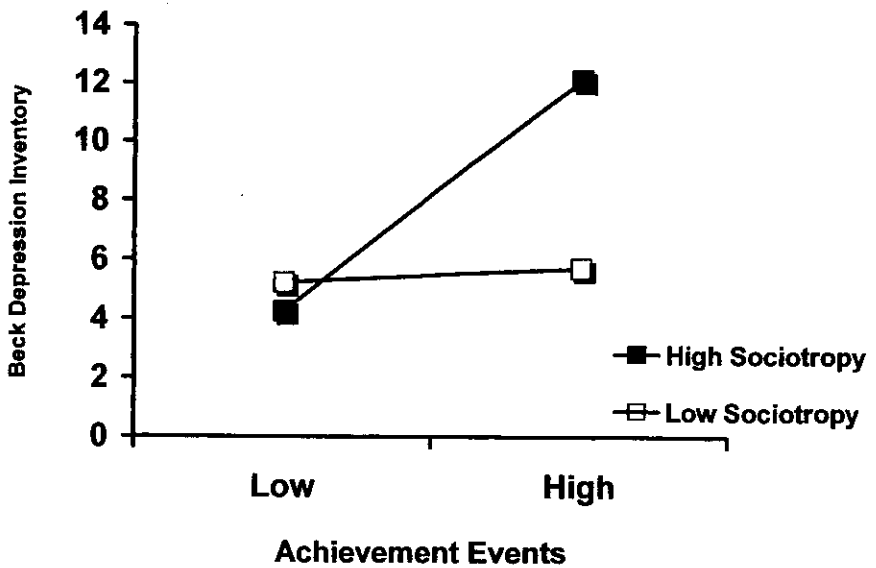
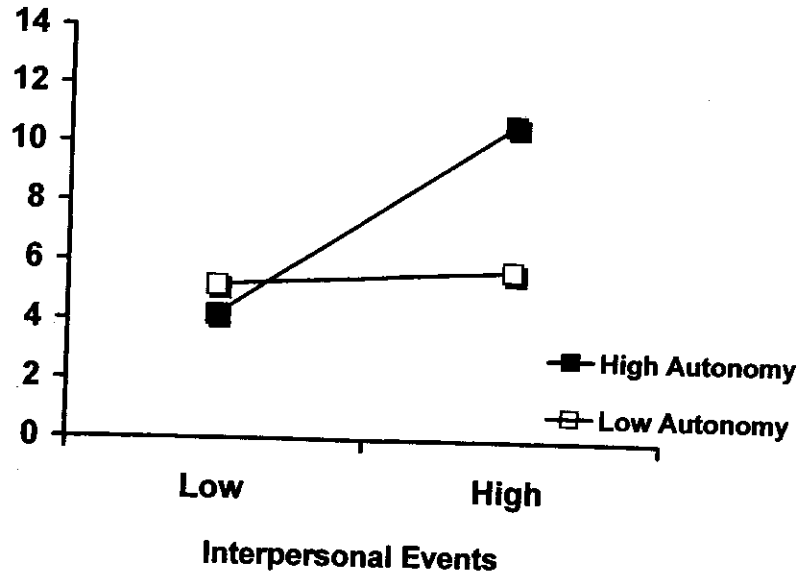
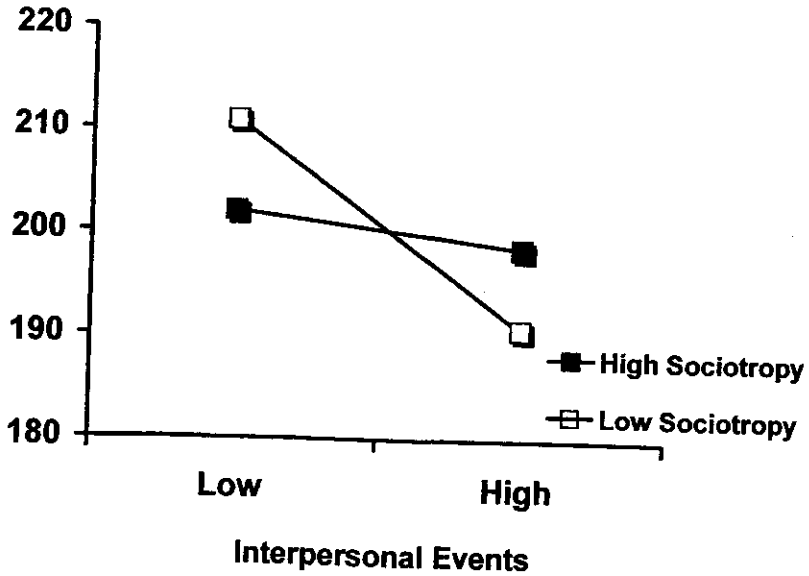


Figure 2. Analysis of partial variance depicting the interaction of Sociotropy and Negative Achievement Events to predict Time 2 BDI.



gure 3. Analysis of partial variance depicting the interaction of Autonomy d Negative Interpersonal Events to predict Time 2 BDI.



ure 4. Analysis of partial variance depicting the interaction of Sociotropy Negative Interpersonal Events to predict Time 2 GTA.

was associated with a strong negative relationship between negative interpersonal events and anxiety. That is, individuals low in sociotropy tended to experience less anxiety as a function of more negative interpersonal stress.

In the autonomy graph (Figure 5), low autonomy was associated with a strong positive relationship between negative achievement events and anxiety. Conversely, high autonomy was associated with a moderately negative relationship between negative achievement events and anxiety.

DISCUSSION

The findings from the present study were fairly supportive of our extension to Beck's (1983) symptom specificity hypothesis. Sociotropy was related to anxiety symptoms at both time points, but in contrast to our hypothesis, not related to depression symptoms at either time point. Consistent with our hypotheses, autonomy was related only to depression. The relationship of sociotropy to anxiety symptoms and of autonomy to depression symptoms remained when using residualized measures of depression and anxiety symptoms.

There are three limitations to the symptom-specificity hypothesis findings in the present study. First, zero-order correlations and partial correlations

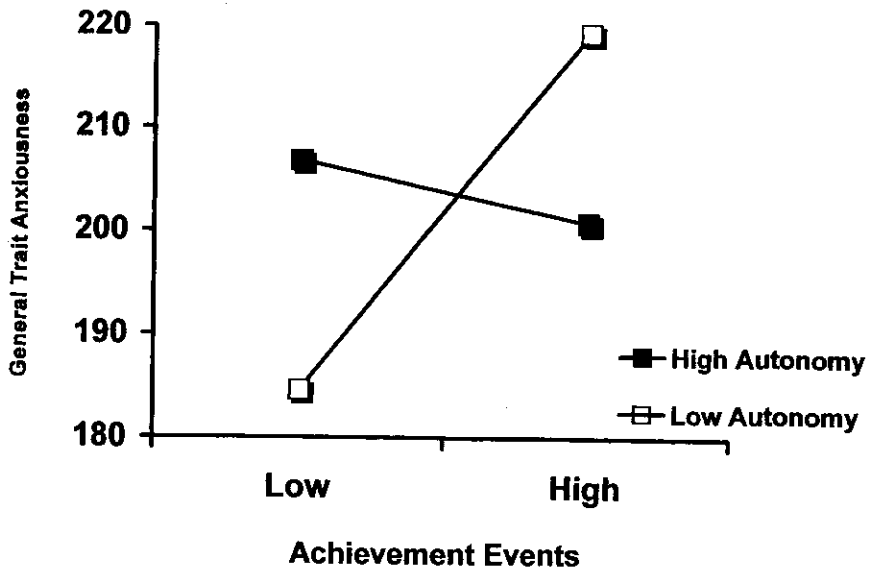


Figure 5. Analysis of partial variance depicting the interaction of Autonomy and Achievement Stress to predict Time 2 GTA.

between personality and symptom measures do not provide the most sensitive test of the symptom specificity hypothesis. For example, Persons and colleagues (1993) used a sophisticated, item-level probit analysis to test each hypothesized symptom for its relationship to maladaptive dependency or achievement beliefs. Second, the present study used existing measures of depression and anxiety rather than creating symptom profiles of the hypothesized symptoms as done by Robins and associates (1995). Third, the anxiety measure used in the present study was selected because of its relative low correlation with the BDI, but it assesses trait anxiety, not state anxiety. Additional research is needed with indices of both state and trait anxiety. It is interesting to note that even using a trait measure, differences in anxiety were detected at two levels of interpersonal and achievement stress.

Findings from the present study offer only partial support of Beck's (1983) event congruency hypothesis as well as our extensions to this hypothesis. Sociotropy represented a general (or non-specific) vulnerability factor for depression symptoms by moderating the relationship of both interpersonal and achievement events to depression symptoms. This finding is consistent with several other prospective studies (Robins & Block, 1988; Robins et al., 1995). Explanations for sociotropy as a general vulnerability include measurement error, and the possibility that sociotropic individuals may tend to view all bad happenings in terms of their social consequences (Robins et al., 1995). These explanations seem valid in the present study also.

The event congruency hypothesis findings with respect to autonomy in the prediction of depression symptoms were also contrary to our predictions. In the present study, the incongruent interaction of autonomy and interpersonal stress was significant while the congruent interaction was not. However, no prospective studies have reported perfect event congruency results for autonomy (but see Robins et al., 1995).

Perhaps the most novel findings to report from the present study are the event congruency analyses with anxiety as the dependent measure. For both sociotropy and autonomy, congruent interactions were significant whereas neither of the incongruent interactions was significant. High levels of sociotropy were associated with relatively high levels of anxiety irrespective of negative interpersonal stress. Low levels of sociotropy were associated with a strong relationship between negative interpersonal stress and anxiety. A different pattern of findings emerged between autonomy and anxiety. High autonomy was associated with a negative relationship between negative achievement stress and anxiety whereas low autonomy was associated with a positive relationship between negative achievement stress and anxiety

One way to understand the relationship between autonomy and anxiety may be through perfectionism, which represents one facet of Beck's (1983) concept of autonomy. Indeed, the PSI-2 is comprised of three subscales including a four-item subscale that the authors called Perfectionism/Self-Criticism. The other two

factors reflect different aspects of Beck's (1983) autonomy construct including Need for Control and Defensive Separation. In addition to worsening the course of treatment for depression, two studies show that perfectionism is elevated in individuals with anxiety disorders (Frost & Steketee, 1997; Juster, Heimberg, Frost, & Holt, 1996). Specifically, Frost and Steketee (1997) found that individuals with obsessive compulsive disorder were elevated on all dimensions of perfectionism and individuals with panic disorder with agoraphobia were elevated on some dimensions of perfectionism. Juster and colleagues (1996) reported that individuals with social phobia endorsed levels of perfectionism that were higher than community control participants. Thus, if Beck's (1983) autonomy is conceptually related to perfectionism, the presence of anxiety even in times of low achievement stress may represent the attempt of the highly autonomous individual to stave off achievement failures by engaging in their primary coping strategies of impression management, hyper vigilant scanning of their environment, and harsh, stringent self-evaluation.

Findings from the current study also suggest that anxiety functions in a different way for individuals high in sociotropy. The core belief of these individuals is that they possess socially undesirable traits that are unchangeable (Beck, 1983). These individuals measure their self-worth by the number and quality of their interpersonal relationships and strive to preserve these relationships at all cost. Thus, reassurance-seeking and self-deprecation are strategies that would likely be used by highly sociotropic individuals during times of low interpersonal stress. One study provides some support for this supposition. Haaga, Fine, Terrill, Stewart, and Beck (1995) assessed the association of self-report measures of sociotropy, problem-solving orientation and skills as well as levels of depression and anxiety symptoms in a sample of undergraduates. The results indicated that sociotropy was positively correlated with both depression and anxiety symptoms and negatively correlated with problem orientation (a measure assessing attitudes about one's efficacy to adequately address one's own problems). Interestingly, sociotropy was uncorrelated with problem-solving skills. That is, sociotropic beliefs were associated with self-reported perceptions of problem-solving inadequacies and unrelated to self-reported utilization of problem-solving behaviors or skills. Thus, individuals high in sociotropy may show a preference for recruiting support and acceptance in their lives by conveying personal flaws and frailties. This strategy may in turn manifest itself in the form of elevating levels of anxiety.

There was one notable limitation to the event of congruency findings. The current study used a self-report measure of life stress. Although efforts were made to account for possible confounding effects of self-report life stress impact, these instruments may suffer from additional measurement shortcomings. Future studies would benefit from the assessment of life stress using the more reliable, but time-intensive and costly life stress interviews that objectify and contextualize the assessment of life stress (Monroe, 1982).

In summary, we conceptualize autonomy and sociotropy as cognitive-personality dimensions related to maladaptive coping styles as well as vulnerabilities to depression symptoms. If this conceptualization is correct, individuals would be characterized by the use of different patterns of strategies to prevent losses in salient domains and by different ways of responding to actual negative events or stressors in those domains. Future research examining sociotropy and autonomy may benefit from the inclusion of measures of social support and problem-solving skills/attitudes.

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