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Vulnerability to Social Stress: Coping as a Mediator or Moderator of Sociotropy and Symptoms of Anxiety and Depression

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Although stressful events clearly play an important role in the development of symptoms of depression and anxiety, individuals are not equally sensitive to stress. Attempts to explain differences in adjustment have focused both on the coping strategies employed in response to stress, and on personality-related vulnerabilities to specific stressors. However, little is known about the interplay between coping and personality traits such as sociotropy, which is associated with increased sensitivity to negative social events. Measures of sociotropy and symptoms of depression and anxiety were obtained in a sample of undergraduates, along with reports of coping with interpersonal stress. Regressions controlling for recent stressful events indicated that coping does not directly mediate the relationship between sociotropy and distress, but does moderate the relationship. Both primary and secondary control engagement coping buffer the link between sociotropy and anxiety/depression, whereas disengagement coping augments the relationship. Implications for social cognitive models of vulnerability to stress are highlighted.

KEY WORDS: sociotropy; coping; anxiety; depression; interpersonal stress.

The high prevalence and adverse effects of depression and anxiety have made understanding the etiology of these disorders a priority for theorists and researchers. At this point, a substantial research literature both establishes stressful events as predictors of depression and anxiety and confirms that not all individuals are equally vulnerable to adversity (Monroe & Simons, 1991). However, despite an immense literature on responses to stress, advances in understanding individual differences in stress outcomes have been slow. Two separate lines of inquiry have attempted to explain variations in outcomes, with the first focusing on coping techniques (e.g., Lazarus &

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Folkman, 1984) and the second on personality traits that enhance vulnerability to stress (see review by Clark, Watson, & Mineka, 1994). Although both coping and personality partially predict adjustment following stressful events, very few studies have attempted to understand the interplay between the two (see Bolger & Zuckerman, 1995; Lengua & Sandler, 1996, for exceptions). One possibility is that the link between personality and distress is accounted for primarily by the selection of ineffective coping strategies, with coping mediating the link between personality and adjustment. A second possibility is that coping is not driven by personality, but does moderate the relationship between personality and adjustment, with levels of depression and anxiety determined by an interaction of coping techniques and personality. This study investigates these two possibilities by testing coping as both a mediator and a moderator of the relationship between personality and emotional distress, looking specifically at coping with social stress in individuals sensitive to interpersonal loss and conflict.

Although broad personality traits such as neuroticism are associated with anxiety and depression (Clark et al., 1994), early investigation of the interplay between coping and personality may be simplified by the exploration of traits linked to specific types of stress reactivity. One such trait is sociotropy, involving heightened concern about what others think and dependence on the approval of others for personal satisfaction (Beck, 1983). Beck theorized that sociotropic individuals, who place extreme importance on maintaining relationships and avoiding rejection, would be particularly vulnerable to depression following negative interpersonal events. Thus, theory predicts that sociotropic individuals should respond with greater distress to social than nonsocial stressors, and be more distressed than nonsociotropic individuals when faced with interpersonal loss, conflict, or rejection (Beck, 1983).

Empirical studies provide good support for theories about relations between sociotropy and reactivity to social stressors. Sociotropy is correlated with sadness, loneliness, anxiety, and low self-esteem (e.g., Alford & Gerrity, 1995; Jolly, Dyck, Kramer, & Wherry, 1996; Robins, Bagby, Rector, Lynch, & Kennedy, 1997; Robins & Luten, 1991), but does not appear to be simply a symptom of depression, as it persists following the remission of a depressive episode (Moore & Blackburn, 1993). In laboratory studies, sociotropic individuals exhibit immediate emotional and physiological reactivity to social stressors, with less reactivity to nonsocial stressors (Allen, de L. Horne, & Trinder, 1996; Ewart, Jorgensen, & Kolodner, 1998). Finally, the diathesis-stress model, which predicts that depressive symptoms result from an interaction between sociotropy and interpersonal stressors, is supported by cross-sectional (e.g., Bartelstone & Trull, 1995; Clark, Beck, & Brown, 1992; Robins, 1990; Rude & Burnham, 1993) and prospective studies (Hammen, Ellicott, & Gitlin, 1992; Robins, Hayes, Block, Kramer, & Villena, 1995) with undergraduate and clinical samples.

However, despite substantial evidence that sociotropy is associated with heightened risk for symptoms of depression and anxiety following negative interpersonal events, little is known about how sociotropic individuals actually respond to these stressors. One study found that sociotropy was unrelated to problem-solving skills (Haaga, Fine, Terrill, Stewart, & Beck, 1995), and a second found that perceived availability of social support contributed to psychological well-being in sociotropic Chinese college students (Cheung, Sun, Mak, & Fung, 1997). However, the extent to

which sociotropic individuals rely on techniques such as problem solving or seeking social support to manage interpersonal stress remains unknown. Given the numerous studies demonstrating that coping predicts psychological adjustment following stressful events, investigation of coping in sociotropic individuals is essential to developing a richer understanding of the relationship between sociotropy and symptoms of anxiety and depression.

Although there are many ways of categorizing coping responses, a primary distinction is between disengagement coping (distancing oneself from the stressor or related feelings) and engagement coping (approaching the event or associated emotions). Engagement coping can be further divided into primary control strategies, involving attempts to control the stressor or one's emotions, and secondary control strategies, involving efforts to adapt to the stressor (Compas, Connor-Smith, Thomsen, Saltzman, & Wadsworth, 2001; Weisz, McCabe, & Denning, 1994). Primary control strategies, such as problem solving and seeking emotional support, are linked to lower levels of distress (Osowiecki & Compas, 1999; Whatley, Foreman, & Richards, 1998), as are secondary control strategies, such as cognitive restructuring and distraction (Epping-Jordan et al., 1999; Nolen-Hoeksema, Parker, & Larson, 1994; Wegner, 1994). Disengagement coping strategies, such as avoidance and denial, are generally associated with heightened symptoms of depression and anxiety (e.g., Fukunishi, 1996; Holmes & Stevenson, 1990; Morrow, Thoreson, & Penney, 1995).

Recent work suggests both that personality may influence the selection of coping techniques and that personality and coping may interact to predict distress. For example, traits such as inhibition and neuroticism are associated with increased reliance on disengagement coping in samples as diverse as adults caring for a spouse with Alzheimer's disease (Hooker, Frazier, & Monahan, 1994), and college students (Amirkhan, Risinger, & Swickert, 1995; Watson & Hubbard, 1996). A diary study assessing the coping of college students not only demonstrated that individuals high in neuroticism used more disengagement, but also that disengagement was beneficial for students high in neuroticism and detrimental for those low in neuroticism (Bolger & Zuckerman, 1995). These findings suggest that a match between personality and coping may minimize emotional distress. However, in a sample of children coping with parental divorce, avoidant coping was associated with anxiety and conduct problems for inhibited youth, but not for youth low in inhibition (Lengua & Sandler, 1996). Thus, although preliminary evidence suggests that the interaction between personality and coping may be important in understanding adjustment, the small number of studies and mixed findings prohibit conclusions about relations between personality and coping.

This study investigates the role coping plays in the adjustment of sociotropic individuals facing social stress. Based on previous research, this study begins with the assumption that negative interpersonal events are stressful for sociotropic individuals and place them at risk for emotional distress. A cross-sectional design is used to test two possible models of the role of coping. First, the vulnerability to distress associated with sociotropy may be explained by the selection of less effective coping methods by sociotropic individuals. This possibility is explored by testing a coping mediated model of relations between sociotropy and distress. Because relations between sociotropy and coping have not been investigated, it is difficult to predict the coping

preferences of sociotropic individuals. However, sociotropy correlates strongly with neuroticism, and some consider sociotropy a specific, interpersonally focused facet of neuroticism (see Dunkley, Blankstein, & Flett, 1997; Zuroff, 1994). Thus, like individuals high in neuroticism, sociotropic individuals are expected to rely more heavily on disengagement than on engagement coping. High levels of disengagement coping and low levels of engagement should be associated with greater distress.

However, associations between personality and coping are likely to be complex, as the majority of individuals respond to stress with a mixture of engagement and disengagement coping (Miller, Combs, & Kruus, 1993; Violanti, 1992). Although selection of coping techniques may be partially related to personality, coping is also influenced by diverse factors such as situational demands, environmental resources and constraints, and exposure to stress responses modeled by parents (Compas et al., 2001). Thus, an alternative moderated model tests the hypothesis that a strong relationship between sociotropy and symptoms of anxiety and depression exists only for sociotropic individuals who fail to use effective coping techniques or who rely on ineffective or harmful coping techniques. Specifically, because primary control coping involves use of emotional regulation, problem solving, and social support strategies, high use of primary control coping should attenuate relations between sociotropy and symptoms of anxiety or depression. Problem-solving strategies should help to resolve the negative situation, and social support should provide the reassurance that is valued by sociotropic individuals. Similarly, as secondary control coping focuses on adaptation to uncontrollable stressors, such as loss or rejection, and on the use of cognitive restructuring to challenge unrealistic negative thoughts, secondary control coping is expected to attenuate relations between sociotropy and symptoms of anxiety or depression. In effect, secondary control strategies may decrease the high emotional arousal of sociotropic individuals, and help them to perceive negative social events in the same way nonsociotropic individuals do. Predictions about the possible interaction between sociotropy and disengagement coping are more difficult, as findings from previous studies exploring the interplay between disengagement and personality traits similar to sociotropy were discrepant (Bolger & Zuckerman, 1995; Lengua & Sandler, 1996). However, as avoidance and denial are unlikely to assist sociotropic individuals in meeting goals such as repairing damaged relationships or maintaining the approval of others, disengagement coping is hypothesized to enhance the relationship between sociotropy and symptoms of anxiety and depression.

METHOD

Participants and Procedures

Participants were drawn from a group of 473 introductory psychology students involved in a larger study of responses to interpersonal stress. First year college students were considered appropriate for a study of social stress as they represent a population likely to be experiencing an increase in the intensity and demands of peer relationships, often without the supports of a familiar environment (Wagner, Compas, &

Howell, 1988). Measures relevant to this study were completed either in small groups ($N = 113$) or individually ($N = 354$) in exchange for course credit. The battery included questionnaires assessing recent life stressors and social stressors, coping with social stressors, sociotropy, and symptoms of depression and anxiety. Because this study investigates the interplay between sociotropy and coping in response to interpersonal stress, only those participants reporting at least one recent stressful interpersonal event were retained for analysis. The 66 participants dropped from the sample because they did not identify at least one stressful interpersonal event did not differ in age from those retained, but were more likely to be male (46% male in excluded sample, 32% male in retained sample). As expected, participants excluded because they did not report a stressful interpersonal event reported lower levels of sociotropy, $M = 88.0$, $SD = 15.8$, than those retained, $M = 95.9$, $SD = 16.0$, as well as slightly lower T-scores for anxiety/depression, $M = 54.9$, $SD = 5.9$, for those excluded, and $M = 56.8$, $SD = 8.6$, for those retained. In addition, participants failing to complete one or more of the measures were dropped from the sample ($N = 23$). There were no differences between participants completing all measures and those failing to complete a measure on age, sex, sociotropy, or symptoms of anxiety/depression. Thus, the final sample consisted of 383 students, 68% female, ranging in age from 16 to 26 ($M = 18.5$, $SD = 1.1$).

Measures

Sociotropy

Vulnerability to interpersonal stress was assessed using the 48-item Personal Style Inventory (PSI; Robins et al., 1994), which assesses agreement or disagreement with statements about personal characteristics on a 6-point scale. The measure consists of two broad sociotropy and autonomy scales. Principle-components analysis supports the independence of these scales, and the scales have excellent convergent and discriminant validity (Robins et al., 1994). Internal consistency of the broad sociotropy scale in this study was acceptable at .75.

Social Stress Questionnaire (SSQ)

The SSQ is a brief measure created for this study to assess the number of negative interpersonal events participants experienced during the last 6 months, and the degree to which those events were perceived as stressful. The measure was modeled after the Adolescent Perceived Events Scale (Compas, Davis, Forsythe, & Wagner, 1987), which has well-established reliability and validity. Ten items likely to be stressful for 1st-year college students were selected, including "Not having as many friends as you want," "Having problems with roommates," and "Breaking up with or being rejected by a boyfriend/girlfriend." For each item endorsed, participants were asked to rate the level of stress caused by the event on a 4-point scale ($\alpha = .72$). This measure yields two scores: Total social stress, sum of the number of negative interpersonal events reported, and total perceived stress, sum of the level of stress ratings.

Responses to Stress Questionnaire (RSQ)

Participants' responses to interpersonal stress were measured using the RSQ, a 57-item scale designed to assess both coping and involuntary (i.e., temperamental or overlearned) responses to stress (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). For this study, participants were asked to report the types of coping strategies they use in response to interpersonal stressors like the ones they endorsed on the SSQ. Participants rated the frequency of each coping response or involuntary reaction on a 4-point scale, ranging from "not at all" to "a little," "some," or "a lot." The RSQ is comprised of five factors, validated with confirmatory factor analysis in multiple samples of adolescents and young adults coping with a variety of negative events (Connor-Smith et al., 2000). Only three coping factors were used in this study. *Primary Control Coping* ($\alpha = .82$) consists of problem solving, emotional regulation, and emotional expression; *Secondary Control Coping* ($\alpha = .80$) consists of distraction, positive thinking, cognitive restructuring, and acceptance; and *Disengagement Coping* ($\alpha = .73$) consists of avoidance, denial, and wishful thinking. This measure has shown good convergent validity with other coping questionnaires and good test-retest reliability. For this study, scales were scored as proportions of the total amount of volitional coping endorsed, thus controlling for differences in the base rate of overall endorsement (see Osowiecki & Compas, 1999; Vitaliano, Maiuro, Russo, & Becker, 1987). This scoring method was selected because study hypotheses were concerned with the degree to which sociotropic individuals relied on a particular type of coping relative to other strategies.

Young Adult Self Report (YASR)

Symptoms of depression and anxiety were measured using the 119-item YASR, which asks respondents to report emotions and behaviors over the past 6 months. The YASR measures eight syndromes derived based on principle-components analysis of 1455 clinically referred young adults. These syndromes include anxious/depressed, withdrawn, somatic complaints, thought problems, attention problems, intrusive, aggressive behavior, and delinquent behavior. The syndromes have excellent reliability and validity and are associated with *DSM-III-R* diagnoses obtained from structured interviews (Achenbach, 1997). Additionally, syndrome scores have been normed on a nationally representative sample of 1058 adults, and have been shown to discriminate between young adults referred and those not referred for mental health services (Achenbach, 1997). Raw scores on the anxious/depressed syndrome were used as the measure of emotional distress for this study, as items include the cognitive and emotional symptoms of distress that have been strongly linked to sociotropy (e.g., Alford & Gerrity, 1995; Jolly et al., 1996; Robins et al., 1997; Robins & Luten, 1991).

RESULTS

Results are presented in three sections. First, correlations between sociotropy, stress, anxiety/depression, and coping are presented, and sex differences in these variables are explored. Second, coping-mediated models of the relationship between

sociotropy and anxiety/depression are tested for all three coping strategies. Finally, tests of coping-moderated models of the relationship between sociotropy and anxiety/depression are presented for each type of coping.[4]

Relations Between Sociotropy, Stress, Coping, and Symptoms of Depression and Anxiety

Descriptive statistics and correlational analyses are presented in Table I. Sociotropy showed small but significant correlations with both the total number of social stressors reported and with perceived social stress. The size of these correlations suggests that measures of sociotropy and social stress were relatively independent of one another. As expected, sociotropy was significantly correlated with anxiety/depression, suggesting a strong relationship between sociotropy and distress. Simple correlations investigating the link between sociotropy and coping demonstrated that sociotropy was not significantly correlated with primary control coping. However, it was negatively correlated with secondary control coping and positively correlated with disengagement coping. Thus, individuals high in sociotropy appear more likely to rely on avoidance and denial than those low in sociotropy, and less likely to rely on techniques such as cognitive restructuring or distraction. Correlational analyses also demonstrated relations between coping and adjustment. Primary control coping was negatively correlated with anxiety/depression, as was secondary control coping. Finally, disengagement coping was associated with higher levels of anxiety/depression.

As prior research has suggested sex differences in sociotropy (Allen et al., 1996; Robins et al., 1994) and the selection of coping strategies, the data were explored to determine whether regression analyses should control for sex. No sex differences were found in mean level of social stress, anxiety/depression, or in the proportion of disengagement coping used. However, as expected, sociotropy scores were higher for women ($M = 98.0$) than for men ($M = 91.4$, $t = -3.8$, $p < .001$). Women also used a higher proportion of primary control coping ($M = 0.45$ for women, 0.38 for men, $t = -6.5$, $p < .001$), and a lower proportion of secondary control coping ($M = 0.33$ for women, 0.37 for men, $t = 4.8$, $p < .001$). There were no sex differences for disengagement coping.

Tests of Mediated Models

Three sets of regressions were tested, with each set exploring mediation of the relationship between sociotropy and anxiety/depression by one of the three coping variables. All regressions controlled for sex and total number of social stressors reported.[5] Following standard procedures, each mediated model was tested in three stages

[4]Proportional coping scores measure the extent to which an individual relies upon on a given coping strategy compared to other strategies. An alternate measure is the absolute frequency of coping strategy use. Thus, a parallel set of coping mediation and moderation analyses were conducted using total frequency, rather than proportional, coping scores. In all cases, findings based on total coping frequency were comparable to those based on proportional scores.

[5]Parallel analyses were conducted controlling for the total perceived stressfulness of events rather than the total number of stressful events. Results were virtually identical for mediated and moderated models.

Table I. Descriptive Statistics and Correlations Between Stress, Sociotropy, Coping, and Adjustment

	Total number of social stressors	Total perceived social stress	Sociotropy	Primary control coping	Secondary control coping	Disengagement coping	*M*	*SD*
Total number of social stressors	—						4.3	2.1
Total perceived social stress	.82***	—					8.9	5.6
Sociotropy	.17***	.18**	—				95.8	16.0
Primary control coping	−.01	.02	−.04	—			.43	.09
Secondary control coping	−.17***	−.18***	−.29***	−.40***	—		.34	.09
Disengagement coping	.16**	.14**	.29***	−.61***	−.48***	—	.23	1.0
Anxiety/depression raw score	.30***	.31***	.53***	−.11*	−.41***	.45***	11.4	6.9
Anxiety/depression *T*-score							56.8	8.55

Note. Correlations with $p < .0005$ remain significant following Bonferroni correction.
*$p < .05$. **$p < .01$. ***$p < .001$.

(Baron & Kenny, 1986). In the first stage, sociotropy significantly predicted anxiety/depression, $F(3, 380) = 62.9$, $p < .001$, $R^2 = .33$, $\beta = .51$, $p < .001$. In the second stage, three sets of regressions demonstrated that sociotropy had significant negative relationships with primary control coping, $F(3, 380) = 17.1$, $p < .001$, $R^2 = .12$, $\beta = -.10$, $p < .05$, and secondary control coping, $F(3, 380) = 23.3$, $p < .001$, $R^2 = .16$, $\beta = -.25$, $p < .001$, and a significant positive relationship with disengagement coping, $F(3, 380) = 16.9$, $p < .001$, $R^2 = .12$, $\beta = .30$, $p < .001$. In the third stage, simultaneous entry of sociotropy and one coping variable demonstrated that none of the three coping factors served as mediators, as there was not a substantial decrease from the beta for sociotropy as an independent predictor. The beta for sociotropy decreased only .01 for the test of mediation by primary control coping, .06 for secondary control coping, and .09 for disengagement coping. In all three coping mediation models, sociotropy remained a significant predictor of anxiety/depression, $p < .001$, and coping appeared to be a relatively independent predictor of anxiety/depression. In the final models, primary control coping approached significance, $\beta = -.08$, $p < .10$, and secondary control and disengagement coping were significant predictors, $\beta = -.27$, $p < .001$, and $\beta = -.30$, $p < .001$, respectively.

Tests of Coping Moderated Models

Moderated model regression analyses were used to test the hypothesis that the relationship between sociotropy and distress occurs primarily under certain conditions, with coping serving either as an amplifier or as a buffer. Primary and secondary control coping were hypothesized to have a buffering effect on the relationship between sociotropy and anxiety/depression, with the link between sociotropy and anxiety/depression weaker at high levels of either coping strategy. Disengagement coping was hypothesized to have an amplifying effect, with a more pronounced relationship between sociotropy and distress for individuals using high levels of avoidance.

Moderation was tested by constructing a regression equation that included sociotropy, coping, and a multiplicative term representing the interaction between sociotropy and coping. As with tests of the mediated models, a separate set of regression analyses was used for each of the three coping strategies, with all regressions controlling for sex and number of social stressors reported. In these models, a significant interaction term with a negative beta would suggest that an effective coping strategy is buffering the relationship between sociotropy and anxiety/depression. A significant interaction term with a positive beta would indicate that an ineffective coping strategy is augmenting the relationship (Aiken & West, 1991; Baron & Kenny, 1986). Following standard procedure, measures of coping and sociotropy were centered in tests of coping moderation to maximize interpretability and minimize potential problems with multicollinearity (Aiken & West, 1991; Finney, Mitchell, Cronkite, & Moos, 1984). Regression results are presented in Table II.[6]

[6]A strong, untested quadratic relation between variables may lead to spurious findings of moderation (e.g., Lubinski & Humphreys, 1990; MacCallum & Mar, 1995). This possibility was tested with models that included coping, sociotropy, a quadratic coping term (coping squared), a quadratic sociotropy term, and the interaction between coping and sociotropy. Sociotropy did have a nonlinear relationship with

Table II. Tests of Simple Coping Moderated Model

Step	R^2	β at entry	t
	Primary control coping		
1. Sex		.04	0.77
Social stress	.09	.30	6.20***
2. Sociotropy		.50	11.50***
Primary control coping	.34	−.08	−1.83
3. Sociotropy × Primary Control Coping	.35	−.09	−2.00*
	Secondary control coping		
1. Sex		.04	0.77
Social stress	.09	.30	6.20***
2. Sociotropy		.44	10.27***
Secondary Control Coping	.40	−.28	−6.31***
3. Sociotropy × Secondary Control Coping	.42	−.14	−3.61***
	Disengagement coping		
1. Sex		.04	0.77
Social stress	.09	.30	6.20***
2. Sociotropy		.42	9.72***
Disengagement coping	.41	.30	7.22***
3. Sociotropy × Disengagement Coping	.42	.14	3.46***

*$p < .05$. ***$p < .001$.

The primary control coping model accounted for 35% of the variance in anxiety/depression, with the interaction between coping and sociotropy indicating that primary control coping served as a buffer. Similarly, the secondary control coping model accounted for 42% of the variance, with secondary control coping serving as a buffer. Finally, disengagement coping amplified the relationship between sociotropy and anxiety/depression, with the disengagement coping model accounting for 43% of the variance in anxiety/depression.[7] Figure 1 shows the simple slopes for the relation between sociotropy and anxiety/depression plotted at high and low levels of each type of coping (high $= +1$ *SD*, low $= -1$ *SD*). For all three types of coping, the slopes at high and low levels of coping differ significantly from zero. This indicates that the relationship between sociotropy and anxiety/depression is decreased, but not eliminated, by high use of effective coping strategies or avoidance of ineffective coping strategies.[8]

anxiety/depression, with anxiety/depression scores increasing more rapidly at high levels of sociotropy. However, findings for coping moderation remained very similar to findings from the linear model. For simplicity, only findings from the linear model are presented in the text.

[7]Analyses exploring the two-way interaction between coping strategy and sociotropy assume the moderating role of coping is identical at high and low levels of stress. A second possibility is that coping moderates only at high levels of stress, suggesting a three-way interaction between sociotropy, stress, and coping. This possibility was tested for each type of coping, with regression equations, including stress, sociotropy, and coping; all possible two-way interactions; and the three-way interaction of Sociotropy × Stress × Coping. This three-way interaction was not significant for any of the three types of coping, nor were the two-way interactions of Stress × Sociotropy or Stress × Coping type. Coping moderation findings based on the two-way interactions of Sociotropy × Coping were essentially identical to those presented in the text.

[8]The trait of sociotropy is often contrasted with autonomy, the tendency to value achievement, and independent self-definition (Beck, 1983). Just as sociotropic individuals are thought to be particularly reactive to negative interpersonal events, individuals high in autonomy are thought to be vulnerable to depression following failure in a valued performance domain. Because some of the interpersonal stressors assessed in

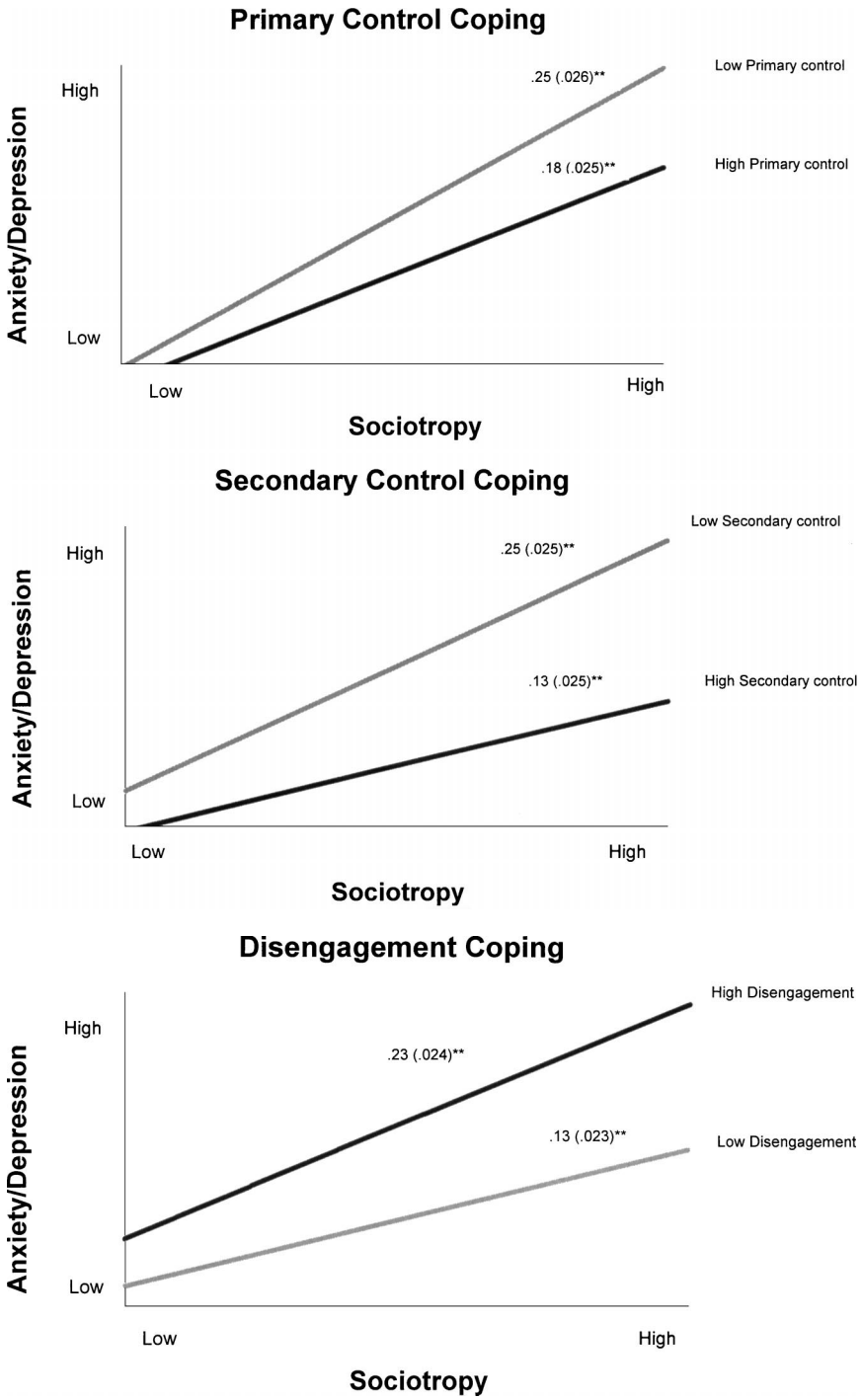

Fig. 1. Moderational model's interaction of sociotropy and coping in predicting symptoms of anxiety and depression. Simple slopes at values 1 *SD* above the mean (high), and 1 *SD* below the mean (low) presented separately for all three types of coping. Values depicted are unstandardized regression coefficients; standard errors are in parentheses ($^{**}p < .001$).

Table III. Test of Independence of Coping Moderation, Regressing Anxiety/Depression on Sociotropy, all Three Coping Strategies, and all Interactions Between Sociotropy and Coping

Step	R^2	β at entry	t
1. Sex		.04	.77
Social stress	.09	.30	6.21***
2. Sociotropy		.38	8.7***
Primary control coping		.04	.93
Secondary control coping		−.21	−4.9***
Disengagement coping	.44	.31	7.11***
3. Primary Control Coping × Sociotropy		−.02	−.40
Secondary Control Coping × Sociotropy		−.08	−1.80*
Disengagement Coping × Sociotropy	.45	.08	2.12**

*$p < .10$. **$p < .05$. ***$p < .001$.

Because coping measures were correlated, an additional regression analysis was conducted to determine the extent to which the interactions between coping and sociotropy were independent of one another. After controlling for sex and total social stress, sociotropy and all three types of coping were entered in the next step, followed by the interactions between sociotropy and each type of coping. Raw coping scores were used for this analysis because inclusion of all three proportional scores simultaneously leads to problems with multicollinearity. The model accounted for 45% of the variance in anxiety/depression. As shown in Table III, the interaction between sociotropy and disengagement remained significant, and the interaction between sociotropy and secondary control fell just below significance ($p = .07$). These findings suggest that secondary control and disengagement coping independently influence relations between sociotropy and adjustment.

DISCUSSION

As the study of stress and coping has matured, with growing consensus about the general efficacy of different coping strategies, it has become possible to explore the interplay of coping and personality characteristics. The goal of this study was to investigate the role coping plays in predicting adjustment for vulnerable individuals, with sociotropy selected for study because it has been clearly linked with reactivity to social stress. As expected based on previous findings, this study found a relationship between interpersonal stress, sociotropy, and symptoms of anxiety/depression. Next, the link between sociotropy and coping strategies was explored, demonstrating a connection between sociotropy and the strategies individuals used to cope with interpersonal stress. Higher sociotropy scores were associated with fewer attempts to solve problems; fewer attempts to adapt to a distressing event by using acceptance,

this study may have included achievement components (e.g., being rejected by an fraternity/sorority), we investigated coping mediation and moderation of relations between autonomy and anxiety/depression. Autonomy was associated with increased anxiety/depression, and was negatively related to primary and secondary control coping, and positively related to disengagement coping. However, coping neither mediated nor moderated relations between autonomy and anxiety/depression. Future assessment of the link between coping and autonomy should investigate coping with achievement-related stressors.

distraction, or cognitive restructuring; and more attempts to avoid or deny the negative event. This pattern of coping is likely to be problematic for sociotropic individuals, as avoidance strategies have been linked to increases in intrusive thoughts, anxiety, and depression (Wegner 1994, 1997), whereas distraction has been associated with fewer symptoms (Nolen-Hoeksema et al., 1994; Wegner, 1994). In accordance with previous findings, correlational analyses indicated that primary and secondary control coping were linked to fewer symptoms, and disengagement to more symptoms of anxiety/depression.

Mediated and moderated models were used to explore the role of coping in the relationship between sociotropy and symptoms of anxiety and depression. Analyses testing a mediated model investigated the hypothesis that relations between sociotropy and symptoms of distress could be accounted for primarily by the coping strategies sociotropic individuals selected. Although sociotropic individuals did have a slight tendency to choose less effective coping strategies, the link between sociotropy and coping was not strong, and coping did not serve as a mediator. Unlike neuroticism, which has been clearly linked to disengagement coping, it may be that sociotropy primarily influences which types of negative events are perceived as highly stressful, rather than dictating coping responses to the event. Although this study suggests that relations between sociotropy and anxiety/depression cannot be explained by ineffective coping, only a narrow range of social stressors were investigated, making it premature to conclude that coping is not a mediator. Replication in distressed samples and in longitudinal studies will be important.

A second set of moderated model analyses tested the hypothesis that coping strategies would either amplify or buffer the connection between sociotropy and symptoms of distress. Primary and secondary control coping both served as buffers, indicating a weaker relationship between sociotropy and symptoms of anxiety and depression for individuals using high levels of either strategy. The opposite was true for individuals relying primarily on disengagement coping, which served to amplify the relationship between sociotropy and distress. Although the amount of variance accounted for by moderator effects in these analyses was small, averaging around 2%, interactions in field studies typically account for only 1–3% of the variance (McClelland & Judd, 1993). Given the difficulty of detecting moderator effects in nonexperimental studies, interactions explaining as little as 1% of the variance can be meaningful (McClelland & Judd, 1993). Moderated model findings were consistent with expectations, and suggest that the coping strategies implemented by sociotropic individuals play a significant role in determining levels of depression and anxiety.

Attention to the specific coping strategies comprising the broad factors explored in this study may provide greater insight into the interactions between coping and sociotropy. A major component of primary control engagement coping is the use of social support for emotional regulation and expression. Given the importance that sociotropic individuals place on relationships, use of social support resources is likely to be a particularly successful coping strategy. Perceived social support was associated with less distress for sociotropic Chinese students (Cheung et al., 1997), and high levels of social support decreased the negative impact of dependency and interpersonal stress on health status in an undergraduate sample (Bornstein, 1995). Thus, the ability to generate and access social support may be an important buffer against depression

and anxiety for sociotropic individuals. Secondary control engagement coping strategies include using cognitive restructuring to challenge negative assumptions and find positive aspects of difficult situations, accepting unchangeable situations, and diverting attention from unsolvable problems. Thus, although most sociotropic individuals may initially respond to an interpersonal stressor with heightened distress, those accomplished in the use of secondary control coping strategies may gain perspective on the event more quickly, avoiding longer lasting symptoms of depression and anxiety. Finally, use of disengagement coping techniques may amplify the relationship between sociotropy and anxiety/depression both because of the negative effects of avoidance and denial described above, and because avoidance and denial prevent the use of protective primary and secondary control coping.

Results from this study parallel findings that the disengagement coping strategies preferred by inhibited children were more detrimental to them than to their uninhibited peers (Lengua & Sandler, 1996), but differ from the finding that disengagement coping was more beneficial for students high in neuroticism than those low in neuroticism (Bolger & Zuckerman, 1995). Definitions of disengagement or avoidance coping were similar across all three studies, and the interpersonal stressors explored in this study are similar to those studied by Bolger and Zuckerman (1995). One possible difference is that this study and the Lengua and Sandler study used measures assessing emotional adjustment over a period of several months, whereas Bolger and Zuckerman used daily reports of depression and anger. It is possible that inhibited individuals experience short-term benefits of disengagement coping, with avoidance providing an immediate feeling of relief as an unpleasant situation is escaped or ignored. However, these same individuals may experience longer-term symptoms of depression and anxiety because of the failure to adequately resolve or adapt to troubling interpersonal situations and relationships. This difference between short-term and long-term effects of coping would be consistent with laboratory studies suggesting that expression of feelings about stressful events can lead to greater immediate distress, but fewer health and psychological problems over time (Pennebaker, 1997).

Although this study supports further investigation of the role coping plays in the relationship between personality and adjustment, there are several limitations. The majority of the weaknesses stem from the use of a cross-sectional design, which does not permit analysis of causation in exploring relations between perceived stress, coping, and emotional adjustment. For example, the correlation between sociotropy and social stress ratings could indicate that sociotropic individuals perceive negative interpersonal events as more stressful than do nonsociotropic individuals. However, in this cross-sectional design, the relationship between interpersonal stressors and sociotropy could also mean that exposure to a series of negative interpersonal events increases sociotropy by enhancing sensitivity to those issues. Alternatively, individuals high in sociotropy actually may generate more interpersonal stressors (e.g., Daley et al., 1997), just as individuals high in neuroticism have been shown to do (Bolger & Zuckerman, 1995). The cross-sectional design also does not allow for comparison of the short-term and long-term impact of coping responses on symptoms of distress. However, the positive findings from this cross-sectional study provide support for future investment in longitudinal studies of relations between personality, coping, and adjustment.

A second limitation is the lack of an objective measure of the stressful interpersonal events experienced by individuals. Unfortunately, it is difficult to develop objective ratings for events such as breaking up with a romantic partner, not having enough friends, or conflicts with roommates. Although correlations between sociotropy and stress were low, it is possible that personality variables influenced reports of the number and intensity of interpersonal events. It may be that a social encounter that would be perceived as a stressor for someone high in sociotropy would be an irrelevant event for someone low in sociotropy, and not even reported on the social stress measure. In the future, both coping and personality research will benefit from the integration of field studies with laboratory techniques, as the presentation of standardized stressors in the laboratory allows for more objective assessment of reactivity to negative events.

Although exploration of the interplay between personality and coping is interesting in purely theoretical terms, better understanding of the role of coping will be important in developing prevention and intervention techniques for vulnerable individuals. As personality traits such as sociotropy are relatively stable, (Coyne & Whiffen, 1995; Moore & Blackburn, 1993), attempting to reduce risk for depression and anxiety by changing personality traits is unlikely to prove successful. Similarly, although exposure to some negative interpersonal events may fall within the realm of individual control, many of life's stressors are inevitable. Thus, neither personality itself, nor the experience of stressful events, are promising targets for intervention. However, as coping is an effortful and conscious undertaking, it is subject to intentional modification. The few studies available suggest that individuals with personality traits such as sociotropy are at particular risk for distress when they rely primarily on disengagement coping techniques. As avoidance also appears to be a more comfortable coping choice for sociotropic individuals, interventions encouraging increased use of engagement coping may be valuable in preventing and alleviating symptoms of depression and anxiety in vulnerable individuals.

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