Cognitive Therapy and Research, Vol. 20, No. 1, 1996, pp. 1-12

Mood-State Dependence in Cognitive Vulnerability to Depression: The Roles of Positive and Negative Affect

John E. Roberts[1]
Northwestern University

Jon D. Kassel
University of Pittsburgh

Recent theory and research suggests that cognitive differences between depression-prone and nonvulnerable individuals are only apparent under priming conditions, such as dysphoric mood. For example, Miranda and Persons (1988; Miranda, Persons, & Byers, 1990) found that dysfunctional attitudes correlate with dysphoric affect in remitted depressives, but not in never depressed subjects. The current study replicated and extended this research by examining a wider variety of cognitive constructs (dysfunctional attitudes, automatic positive and negative thoughts, self-esteem), as well as testing the roles of low positive affect (PA) and high negative affect (NA) as mood primes, separately and combined. Consistent with previous findings, results indicated that NA was more strongly associated with negativity on all measured cognitive constructs in remitted dysphorics, than in never dysphoric subjects. In contrast, low PA and the combination of high NA and low PA did not demonstrate this differential pattern of correlation.

KEY WORDS: depression; cognitive vulnerability; mood-state dependence.

It is now abundantly clear that episodes of depression are marked by a variety of negative cognitive characteristics (Barnett & Gotlib, 1988; Gotlib

[1]Address all correspondence concerning this article to John E. Roberts, who is now at State University of New York at Buffalo, Department of Psychology, Park Hall, Box 604110, Buffalo, New York, 14260-4110.

0147-5916/96/0200-0001$09.50/0

& Hammen, 1992; Haaga, Dyck, & Ernst, 1991). However, the vast majority of studies have been unable to demonstrate cognitive differences between depression-prone persons, such as remitted depressives, and nonvulnerable individuals (for reviews see Barnett & Gotlib, 1988; Haaga et al., 1991), raising the question as to whether negative thinking represents anything more than an "epiphenomenon" or symptom of depression (Coyne & Gotlib, 1986). Further, the few studies that have found greater negative thinking in remitted depressives (Altman & Witternborn, 1980; Cofer & Wittenborn, 1980; Eaves & Rush, 1984) are difficult to interpret because they failed to control subclinical symptomatology. As noted by others, postremission elevations in depressive symptoms could account for these few positive findings (e.g., Peselow, Robins, Block, Barouche, & Fieve, 1990). Most damaging to the cognitive model are studies demonstrating that dysfunctional attitudes (thought to reflect stable underlying schemata) appear to "remit" as the depression abates (e.g., Hamilton & Abramson, 1983; Simons, Garfield, & Murphy, 1984).

However, the above mentioned studies are based on the assumption that cognitive vulnerability is active and accessible at the time of assessment. In contrast, a number of theorists argue that underlying negative constructs are latent and nonaccessible under ordinary conditions (Beck, Rush, Shaw, & Emery, 1979; Persons & Miranda, 1992; Riskind & Rholes, 1984; Roberts & Monroe, 1994; Segal & Ingram, 1994; Teasdale, 1983, 1988; Teasdale & Barnard, 1993). For example, Teasdale (1983, 1988) suggested that dysphoric mood acts as a "prime" that activates negative beliefs and self-representations in persons vulnerable to depression. Within this model, dysphoric mood is required in order for cognitive differences to become manifest. In support of this hypothesis, recent studies have found that dysfunctional attitudes correlate highly with naturally occurring dysphoric mood in remitted depressives, but show little relation with mood in never depressed subjects (Miranda & Persons, 1988; Miranda, Persons, & Byers, 1990). Thus, when experiencing mild dysphoria, remitted depressives endorse higher levels of dysfunctional attitudes than never depressed individuals (who are equally dysphoric). However, when in nondysphoric mood states, remitted and never depressed individuals do not differ on this measure (see also Brown & Mankowski, 1993). Further, depressive mood inductions result in negative memory biases (Teasdale & Dent, 1987) and disruptions in attention (Ingram, Bernet, & McLaughlin, 1994) in remitted depressives, but not in never depressed individuals. Overall, this growing body of research suggests that negative cognitive constructs are manifest when primed by dysphoric mood, but are latent and nonaccessible when unprimed (see Segal & Ingram, 1994, for a recent review).

Currently, it is unclear which cognitive variables show this effect. Previous studies comparing priming effects in remitted and never depressed individuals have examined dysfunctional attitudes (Miranda & Persons, 1988; Miranda et al., 1990), negative biases in memory (Teasdale & Dent, 1987), and attentional processes (Ingram et al., 1994), but not other cognitive constructs associated with depression (e.g., automatic thoughts, self-esteem). Moreover, little attention has been devoted to the nature of the prime itself. In response to this gap, Segal and Ingram (1994) have recently begun to specify the general nature of primes that likely activate negative cognitive constructs in depression-prone persons. For example, the authors suggest that primes can be broadly based on either semantic input or mood (Segal & Ingram, 1994). Nonetheless, there has been no discussion of the specific nature of mood as a prime.

Recent factor analytic studies suggest that positive affect (PA) and negative affect (NA) are two primary dimensions of mood (e.g., Watson & Tellegen, 1985). Individuals high in PA feel enthusiastic, excited, strong, elated, confident, and friendly, whereas those low in this dimension feel dull, disinterested, unenthusiastic, and sluggish. In contrast, individuals high in NA experience a variety of unpleasant emotional states, such as sadness, anxiety, anger, and guilt, whereas those low in NA feel calm and relaxed. Interestingly, high NA appears to be associated with both depression and anxiety, whereas low PA is uniquely associated with depression and represents anhedonia (Clark & Watson, 1991; Clark, Watson, & Mineka, 1994; Watson, Clark, & Carey, 1988). Thus, depression involves a combination of both major dimensions of mood: high NA, reflecting emotional distress and low PA, reflecting anhedonia. Unfortunately, previous studies examining mood-state dependence with naturally occurring affect (Miranda & Persons, 1988; Miranda et al., 1990) have used unidimensional measures of mood.[2] In contrast, Clark and Watson's model (1991; Clark, et al., 1994) suggestes that the combination of high NA *and* low PA might be particularly powerful in priming cognitive constructs associated with vulnerability to depression.

The current study was a replication and extension of Miranda and Person's earlier work (Miranda & Persons, 1988; Miranda et al., 1990) based on data from a larger investigation of psychosocial risk factors in depression. We examined a variety of cognitive variables theoretically and empirically related to depression, including dysfunctional attitudes, automatic positive and negative thoughts, and self-esteem. We hypothesized that measures of negative cognition would correlate with positive and negative

[2]Unidimensional scales appear to have been created in these two studies by totaling the number of NA-related adjectives endorsed on the Multiple Affective Adjective Checklist (Zuckerman, 1960) and subtracting the number of PA-related adjectives endorsed.

affect more strongly in remitted dysphorics (RD)[3] than in never dysphoric (ND) individuals. The present study was able to determine whether Miranda and Persons' (1988; Miranda et al., 1990) findings generalize to cognitive variables other than dysfunctional attitudes. Importantly, we were also able to test whether low PA, high NA, or their combined effect is associated with heightened accessibility of negative cognitive constructs in individuals at risk for depression.

METHOD

Subjects

Subjects were 225 undergraduate students (141 female) enrolled in introductory psychology courses at the University of Pittsburgh. Of this initial pool of subjects, the current study focused on remitted dysphorics (n = 88) and individuals without a lifetime history of dysphoria (n = 74), as defined below. Within this subsample of 162 subjects (104 female), ages ranged from 17 to 49 years old with a mean of 20.6 (SD = 5.4). Subjects participated in exchange for course credit.

Procedure

Subjects were administered a battery of questionnaires in groups as large as 25 individuals. Included were measures of depression, positive and negative affect, automatic thoughts (positive and negative), dysfunctional attitudes, and self-esteem. As part of another study, subjects returned 2-months later, at which time they were debriefed.

Measures

Depression. The Inventory to Diagnose Depression (IDD; Zimmerman, Coryell, Corenthal, & Wilson, 1986) was used to measure total severity of depressive symptomatology, as well as to determine if subjects met *Diagnostic and Statistical Manual for Mental Disorders* (3rd ed., rev.) (DSM-III-R; American Psychiatric Association, 1987) symptom criteria for major depressive disorder. When treated as a continuous measure, the IDD correlates

[3]As discussed in the Methods section, we defined subjects with dysphoria as those who met symptom criteria for major depressive disorder, but not necessarily duration criteria.

highly with the Beck Depression Inventory and the Hamilton Rating Scale for Depression (Zimmerman et al., 1986). When treated categorically, the IDD shows good agreement with the Diagnostic Interview Schedule (DIS) when they are completed within 2 days of each other (κ = .8; Zimmerman & Coryell, 1988). In the present sample, coefficient alpha was .85.

The IDD, Lifetime Version (IDD-L; Zimmerman & Coryell, 1987) was used to assess subjects' worst lifetime depression. The IDD-L has good sensitivity (74%) and specificity (93%) when compared to the DIS (κ = .6; Zimmerman & Coryell, 1987). Coefficient alpha was .92 in the present sample.

For the purposes of our study, we defined remitted dysphorics as subjects whose worst lifetime depression met DSM-III-R symptom criteria for major depression, but who currently did not meet symptom criteria. In addition, these subjects were required to score 20 or higher on the IDD-L and less than 20 on the IDD. Never dysphoric subjects had worst lifetime experiences of depression that failed to meet DSM-III-R symptom criteria for major depressive disorder. In addition, these subjects were required to score less than 20 on both the IDD-L and the IDD.

Positive and Negative Affect. A modified version of the Multiple Affective Adjective Checklist (MAACL; Zuckerman, 1960; Zuckerman, Lubin, & Rinck, 1983) was used to assess PA and NA. PA was measured with 10 items loading .4 or higher on Gotlib and Meyer's (1986) PA factor (e.g., enthusiastic, tender, joyful, loving), whereas NA was measured with 24 items loading .4 or higher on the NA factor (e.g., sad, afraid, lonely, furious). Subjects circled adjectives that described how they felt anytime during the day. Coefficient alpha was .78 for PA and .86 for NA in the present sample.

Automatic Thoughts. The Automatic Thoughts Questionnaire (ATQ) is a 30-item measure of negative self-statements. Subjects indicate the frequency of these negative thoughts over the past week (Hollon & Kendall, 1980). The Automatic Thoughts Questionnaire—Positive (ATQ-P) is a 30-item scale of positive thoughts. Like the ATQ, subjects rate the frequency of these thoughts over the past week (Ingram, Slater, Atkinson, & Scott, 1990; Ingram & Wisnicki, 1988). In the present sample coefficient alpha was .96 for the ATQ and .94 for the ATQ-P.

Dysfunctional Attitudes. The Dysfunctional Attitude Scale is a 40-item measure of beliefs that are thought to predispose individuals to depression (Weissman & Beck, 1978). Items such as "I cannot be happy unless most people I know admire me" and "Being isolated from others is bound to lead to unhappiness" are rated on a 7-point belief scale (1 = totally disagree; 7 = totally agree). Coefficient alpha was .91 in the present sample.

Self-Esteem. The Rosenberg Self-Esteem Scale is a measure of global self-regard consisting of 10 items with good face validity, e.g., "On the whole, I am satisfied with myself" (Rosenberg, 1965). Consistent with other studies, this instrument was scored on a 5-point Likert scale (1 = strongly agree; 5 = strongly disagree). In the present sample, coefficient alpha was .88.

Data Analytic Strategy

The mood-state hypothesis (Persons & Miranda, 1992) was tested by comparing the magnitudes of association between mood (PA, NA) and cognition in subjects with and without a history of dysphoria using Fisher's Z transformation (Kleinbaum & Kupper, 1978). We predicted that PA and NA would correlate with the ATQ, ATQ-P, DAS, and self-esteem more strongly in RD subjects than in ND subjects.

Clark and Watson's model (e.g., Clark & Watson, 1991) suggests that the combination of high NA and low PA might be a uniquely potent prime for negative cognitive in depression-prone individuals. Statistically, this effect would be represented by a triple interaction between NA, PA, and history of dysphoria. We used setwise multiple regression to test this hypothesis (Cohen & Cohen, 1983). Cognitive measures were treated as dependent variables. In each of four analyses (corresponding to our four cognitive measures), history of dysphoria, PA, and NA were simultaneously entered at Step 1, all possible two-way interactions were simultaneously entered at Step 2, and, finally, the History × PA × NA triple interaction was entered at Step 3 (see Cohen & Cohen; 1983).

RESULTS

Descriptive Statistics

Means and standard deviations of all variables are presented in Table I for the entire sample, as well as separately for RD and ND subjects. The RD group reported more severe worst lifetime depressions than the ND group, $t(113.4) = 15.71$, $p < .001$ (separate variances test). Further, RD subjects reported greater current depressive symptomatology than ND subjects, $t(160) = 5.21$, $p < .001$, as well as higher levels of NA, $t(160) = 1.98$, $p < .05$. However, the two groups did not differ on PA, $t(160) = 0.06$. Finally, there were no significant differences between the RD and ND groups on cognitive variables, $ts(160) < 1.67$, except on the ATQ,

Table I. Means and Standard Deviations for Cognitive Measures

	Total sample (n = 162)		Remitted dysphoric (N = 88)		Never dysphoric N = 74)	
Measures[a]	*M*	*SD*	*M*	*SD*	*M*	*SD*
IDD-L	25.2	15.4	35.9	13.0	12.5	4.8
IDD	9.9	5.0	11.7	4.8	7.9	4.4
PA	4.1	2.7	4.1	2.8	4.2	2.6
NA	3.7	3.8	4.2	4.0	3.1	3.4
ATQ	52.4	15.1	56.0	17.5	48.1	10.2
ATQ-P	101.9	19.2	101.3	19.5	102.8	19.0
DAS	115.7	27.9	118.8	25.6	112.0	30.2
Self-esteem	39.6	5.6	39.0	6.0	40.4	4.9

[a]IDD = Inventory to Diagnose Depression; IDD-L = IDD, Lifetime Version; PA = Positive Affect; NA = Negative Affect; ATQ = Automatic Thoughts Questionnaire; ATQ-P = Automatic Thoughts Questionnaire—Positive; DAS = Dysfunctional Attitude Scale.

where RD subjects scored higher, $t(160) = 3.58$, $p < .001$ (separate variances test). This sole cognitive difference was nonsignificant after current depressive symptomatology was covaried, $F(1, 159) = 1.36$.

Gender differences were largely absent on variables of interest. Males and females reported equally severe worst lifetime depressions, as well as similar levels of current depressive symptomatology, PA, and NA, $ts(160) < 1.43$. Although females reported a greater frequency of negative automatic thoughts (54.9 vs. 47.8), $t(158.7) = 3.36$, $p < .05$ (separate variances test), no other gender differences were apparent on cognitive variables, $ts(160) < 1.32$. Consistent with previous work suggesting that PA and NA are orthogonal, these variables only showed a small correlation in the present data ($r = -.16$, $p < .05$).

Mood-State Analyses

We predicted that correlations between cognitive measures and both PA and NA would be larger in RD and ND subjects. In order to address the possibility that restricted variance in the ND group also could account for such findings, Levene's test of equality of variances was conducted. Results indicated that this potential artifact was generally not a problem in the current data. Variances in PA, NA, ATQ-P, DAS, and self-esteem were not significantly different in the two groups. However, there was greater variance on the ATQ in the RD group, $p < .01$.

Negative Affect. As predicted, each of the correlations between NA and cognitive variables was significantly larger for RD subjects than for ND sub-

Table II. Correlations Between Negative Affect and Cognitive Measures

Measures[a]	Negative affect: Remitted dysphorics	Negative affect: Never dysphoric	z
ATQ	.62[e]	.24[c]	2.99[d]
ATQ-P	−.40[e]	−.12, n.s.	1.86[b]
DAS	.50[e]	.02, n.s.	3.28[d]
Self-esteem	−.45[e]	−.16, n.s.	2.01[c]

[a]ATQ = Automatic Thoughts Questionnaire; ATQ-P = Automatic Thoughts Questionnaire—Positive; DAS = Dysfunctional Attitude Scale.
[b]$p < .1$.
[c]$p < .05$.
[d]$p < .01$.
[e]$p < .001$.

Table III. Correlations Between Positive Affect and Cognitive Measures

Measures[a]	Positive affect: Remitted dysphorics	Positive affect: Never dysphoric	z
ATQ	−.32[d]	−.12, n.s.	1.32, n.s.
ATQ-P	.27[c]	.22[b]	0.34, n.s.
DAS	−.13, n.s.	−.27[c]	0.90, n.s.
Self-esteem	.18[b]	.25[c]	0.46, n.s.

[a]ATQ = Automatic Thoughts Questionnaire; ATQ-P = Automatic Thoughts Questionnaire—Positive; DAS = Dysfunctional Attitude Scale.
[b]$p < .1$.
[c]$p < .05$.
[d]$p < .01$.

jects (see Table II). In fact, NA was not significantly correlated with the ATQ-P, DAS, or self-esteem in the ND group, whereas there was only a small correlation with the ATQ ($r = .24$). In contrast, these correlations were moderate to large in the RD group (absolute values of r ranged from .40 to .62).

Positive Affect. As can be seen in Table III, the correlations between PA and cognitive measures were rather small in both the RD and ND groups (all absolute values of $r < .33$). Of most relevance, these correlations did not significantly differ between the two groups, $zs < 1.33$, indicating that low PA did not make negative cognitive patterns differentially accessible in depression-prone individuals.

Combination of Low PA and High NA. Based on Clark and Watson's model (Clark & Watson, 1991), we predicted that the combination of low PA and high NA would be a particularly powerful prime in depression-prone individuals. In contrast to these predictions, the triple interaction between history of dysphoria, PA, and NA was nonsignificant in predicting each cognitive variable [all $Fs(1, 154) < 0.80$] in regression analyses.

DISCUSSION

The current study was designed to test whether Miranda and Persons' (1988; Miranda et al., 1990) mood-state findings would generalize to cognitive variables in addition to dysfunctional attitudes, as well as to further specify the nature of mood required to prime such cognitive constructs.

Consistent with Miranda and Persons' (1988; Miranda et al., 1990) findings, our data suggest that the relation between negative thinking and NA is stronger in remitted dysphorics than in never dysphoric, nonvulnerable persons. In addition to dysfunctional attitudes, automatic thoughts (both positive and negative) and self-esteem appear to be mood-state dependent in depression-prone persons, but not in nonvulnerable persons.

These data contribute to the growing pattern of findings that suggests that cognitive differences between depression-prone and nonvulnerable individuals only arise subsequent to various forms of priming (Segal & Ingram, 1994). Consistent with studies of unprimed cognition, depression-prone persons (i.e., remitted dysphorics) failed to report greater negative thinking on any cognitive measure once current symptoms were controlled. However, in line with the mood-state hypothesis (Persons & Miranda, 1992; Teasdale, 1988), depression-prone subjects demonstrated marked associations between negative thinking and NA, whereas nonvulnerable persons showed little such association.

In contrast, PA was only weakly correlated with our four cognitive measures in *both* remitted and never dysphoric subjects. Most importantly, the magnitude of these correlations did not differ between groups. Finally, the combined effect of high NA and low PA did not make cognitive constructs differentially accessible to remitted dysphorics. Given that NA is associated with both depression and anxiety, whereas PA is specifically associated with depression (Clark & Watson, 1991; Clark et al., 1994; Watson et al., 1988), these findings raise the question as to whether mood-state patterns are specific to depression versus anxiety. In this regard, NA might similarly prime patterns of cognition associated with anxiety in individuals at risk for such disorders. For example, within a sample of subjects who score low in state anxiety, NA might be correlated with anxious cognition (danger-related thoughts) more strongly in those who are high in trait anxiety than those who score lower. Similarly, negative mood inductions in initially low-state anxiety subjects might be associated with larger increases in anxious cognition in high trait anxiety subjects.

Further, it is unclear how well our findings would generalize to formally diagnosed clinical depressives. In this regard, although our dysphoric subjects met symptom criteria for major depressive disorder by self-report, they did not necessarily meet duration criteria. Nonetheless, these subjects experienced a significant bout of depressive symptomatology and were likely to be vulnerable to major depression. In this regard, a number of studies have found that elevated levels of depressive symptoms are associated with increased risk for future episodes of major depression (Horwath, Johnson, Klerman, & Weissmann, 1992; Lewinsohn, Hoberman, & Rosenbaum, 1988; Zonderman, Herbst, Schmidt, Costa, & McCrae, 1993). Nonetheless, future research needs to replicate these findings in well-diagnosed clinical samples. It is also important for future studies to establish whether direct mood manipulations create effects similar to those found with naturally occurring individual differences in mood. Finally, more work needs to be done examining the effects of priming on memory and attention, as opposed to self-report measures of cognition (Gotlib & McCabe, 1992; Segal, 1988).

REFERENCES

Altman, J. H., & Wittenborn, J. R. (1980). Depression prone personality in women. *Journal of Abnormal Psychology, 89*, 303-308.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of disorders* (3rd ed., rev.). Washington, DC: Author.

Barnett, P. A., & Gotlib, I. H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychological Bulletin, 104*, 97-126.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.

Brown, J. D., Mankowski, T. A. (1993). Self-esteem, mood, and self-evaluation: Changes in mood and the way you see you. *Journal of Personality and Social Psychology, 64*, 421-430.

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*, 316-336.

Clark, L. A., Watson, D., & Mineka, S. (1994). Temperament, personality, and the mood and anxiety disorders. *Journal of Abnormal Psychology, 103*, 103-116.

Cofer, D. H., & Wittenborn, J. R. (1980). Personality characteristics of formerly depressed women. *Journal of Abnormal Psychology, 89*, 309-314.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.

Coyne, J. C., & Gorlib, I. H. (1986). Studying the role of cognition in depression: Well-trodden paths and cul-de-sacs. *Cognitive Therapy and Research, 10*, 695-705.

Dent, J., & Teasdale, J. D. (1988). Negative cognition and the persistence of depression. *Journal of Abnormal Psychology, 97*, 29-34.

Eaves, G., & Rush, A. J. (1984). Cognitive patterns in symptomatic and remitted unipolar major depression. *Journal of Abnormal Psychology, 93*, 31-40.

Gotlib, I. H., & Hammen, C. L. (1992). *Psychological aspects of depression: Toward a cognitive interpersonal integration*. Chichester: John Wiley & Sons.

Gotlib, I. H., & McCabe, S. B. (1992). An information-processing approach to the study of cognitive functioning in depression. In E. F. Walker, R. H. Dworkin, & B. A. Cornblatt (Eds.), *Experimental personality and psychopathology research* (Vol. 15). New York: Springer.

Gotlib, I. H. & Meger, J. P. (1986). Factor analysis of the Multiple Affect Adjective Check List: A separation of positive and negative affect. *Journal of Personality and Social Psychology, 50*, 1161-1165.

Haaga, D. A., Dyck, M. J., & Ernst, D. (1991). Empirical status of cognitive theory of depression. *Psychological Bulletin, 110*, 215-236.

Hamilton, E. W., & Abramson, L. Y. (1983). Cognitive patterns and major depressive disorder: A longitudinal study in a hospital setting. *Journal of Abnormal Psychology, 92*, 173-184.

Hollon, S. D., & Kendall, P. C. (1980). Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. *Cognitive Therapy and Research, 4*, 383-395.

Horwath, E., Johnson, J., Klerman, G. L., & Weissman, M. M. (1992). Depressive symptoms as relative and attributable risk factors for first-onset major depression. *Archives of General Psychiatry, 49*, 817-823.

Ingram, R. E., Bernet, C. Z., McLaughlin, S. C. (1994). Attention allocation processes in individuals. *Cognitive Therapy and Research, 18*, 317-332.

Ingram, R. E., Slater, M. A., Atkinson, J. H., & Scott, W. (1990). Positive automatic cognition in major affective disorder. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 2*, 209-211.

Ingram, R. E., & Wisnicki, K. S. (1988). Assessment of positive automatic cognition. *Journal of Consulting and Clinical Psychology, 56*, 898-902.

Kleinbaum, D. G., & Kupper, L. L. (1978). *Applied regression analysis and other multivariate methods*. Boston: Duxbury Press.

Lewinsohn, P. M., Hoberman, H. M., & Rosenbaum, M. (1988). A prospective study of risk factors for unipolar depression. *Journal of Abnormal Psychology, 97*, 251-264.

Miranda, J., & Persons, J. B. (1988). Dysfunctional attitudes are mood-state dependent. *Journal of Abnormal Psychology, 97*, 76-79.

Miranda, J., Persons, J. B., & Byers, C. N. (1990). Endorsement of dysfunctional beliefs depends on current mood state. *Journal of Abnormal Psychology, 99*, 237-241.

Persons, J. B., & Miranda, J. (1992). Cognitive theories of vulnerability to depression: Reconciling negative evidence. *Cognitive Therapy and Research, 16*, 485-502.

Peselow E. D., Robins, C., Block, P., Barouche, F., & Fieve, R. R. (1990). Dysfunctional attitudes in depressed patients before and after clinical treatment and in normal control subjects. *American Journal of Psychiatry, 147*, 439-444.

Riskind, J. H., & Rholes, W. S. (1984). Cognitive accessibility and capacity of cognition to predict future depression: A theoretical note. *Cognitive Therapy and Research, 8*, 1-12.

Roberts, J. E., & Monroe, S. M. (1994). A multidimensional model of self-esteem in depression. *Clinical Psychology Review, 14*, 161-181.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Segal, Z. V. (1988). Appraisal of the self-schema construct in cognitive models of depression. *Psychological Bulletin, 103*, 147-162.

Segal, Z. V., & Ingram, R. E. (1994). Mood priming and construct activation in tests of cognitive vulnerability to unipolar depression. *Clinical Psychology Review, 14*, 663-695.

Simons, A. D., Garfield, S. L., & Murphy, G. E. (1984). The process of change in cognitive therapy and pharmacotherapy for depression. Changes in mood and cognition. *Archives of General Psychiatry, 41*, 45-51.

Teasdale, J. D. (1983). Negative thinking in depression: Cause, effect, or reciprocal relationship? *Advances in Behaviour Research and Therapy, 5*, 3-25.

Teasdale, J. D. (1988). Cognitive vulnerability to persistent depression. *Cognition and Emotion, 2*, 247-274.

Teasdale, J. D., & Barnard, P. J. (1993). *Affect cognition and change: Re-modelling depressive thought*. Hillsdale, NJ: Erlbaum.

Teasdale, J. D., & Dent, J. (1987). Cognitive vulnerability to depression: An investigation of two hypotheses. *British Journal of Clinical Psychology, 26*, 113-126.

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., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98,* 219-235.

Weissman, A., & Beck, A. (1978, November). *Development and the validation of dysfunctional attitude scale.* Paper presented at the meeting of the Association for Advancement of Behavior Therapy, Chicago.

Zimmerman, M., & Coryelll, W. (1987). The Inventory to Diagnose Depression, Lifetime Version. *Acta Psychiatrical Scandinavia, 75,* 495-499.

Zimmerman, M., & Coryell, W. (1988). The validity of a self-report questionnaire for diagnosing major depressive disorder. *Archives of General Psychiatry, 45,* 738-740.

Zimmerman, M., Coryell, W., Corenthal, C., & Wilson, S. (1986). A self-report scale to diagnose major depressive disorder. *Archives of General Psychiatry, 43,* 1076-1081.

Zonderman, A. B., Herbst, J. H., Schmidt, C., Costa, P. T, & McCrae, R. R. (1993). Depressive symptoms as a nonspecific, graded risk for psychiatric diagnoses. *Journal of Abnormal Psychology, 102,* 544-552.

Zuckerman, M. (1960). The development of an affect adjective check list for the measurement of anxiety. *Journal of Consulting Psychology, 24,* 457-462.

Zuckerman, M., Lubin, B., & Rinck, C. M. (1983). Construction of new scales for the multiple affect adjective check list. *Journal of Behavioral Assessment, 5,* 119-129.