Reciprocal Relations Between Depressive Symptoms and Self-Criticism (but Not Dependency) Among Early Adolescent Girls (but Not Boys)

Golan Shahar,[1,5] **Sidney J. Blatt,**[1] **David C. Zuroff,**[2] **Gabriel P. Kuperminc,**[3] **and Bonnie J. Leadbeater**[4]

Recent criticism of theories of personality vulnerability to depression posits that personality may be an outcome, rather than a cause, of depressive symptoms. In this study, we address this criticism, focusing on the personality dimensions of dependency and self-criticism (S. J. Blatt & D. C. Zuroff, 1992). Dependency, self-criticism, and depressive symptoms were assessed twice over a 1-year interval in a large sample of early adolescent girls and boys. A vulnerability model, *in which dependency and self-criticism influence depressive symptoms, was contrasted with a* "scar" model, *in which depressive symptoms influence dependency and self-criticism, and with a* reciprocal causality model, *in which both constructs influence each other over time. Cross-lagged analyses using structural equation modeling supported a reciprocal causality model involving self-criticism (but not dependency) among girls (but not boys). Results suggest that in early adolescence, girls' self-criticism and depressive symptoms contribute to a vicious phenomenological cycle.*

KEY WORDS: personality; depression; vulnerability; scar; cross-lagged-design.

INTRODUCTION

Two and a half decades of intensive research have yielded considerable support for the role of personality in the formation, maintenance, and exacerbation of depression (for reviews, see Beck, 1983; Blatt & Zuroff, 1992; Flett, Hewitt, Endler, & Bagby, 1995; Robins, 1995). However, Coyne and Whiffen (1995), in their critical review of the filed of personality and depression, suggested that these dimensions could serve as *outcomes*, rather than causes, of depression.

[1]Department of Psychiatry and Psychology, Yale University, New Haven, Connecticut.
[2]Department of Psychology, McGill University, Montreal, Canada.
[3]Department of Psychology, Georgia State University, Atlanta, Georgia.
[4]Department of Psychology, University of Victoria, British Columbia, Canada.
[5]Correspondence should be directed to Golan Shahar, Department of Psychiatry, Yale University, 205 Whitney Avenue, New Haven, Connecticut 06511; e-mail: golan.shahar@yale.edu.

In this paper, we address this controversy by examining three models of the possible relations between personality and depression. The first, the *vulnerability model*, predicts that personality influences depression. The second, the *"scar" model*, predicts that depression influences personality. The third, the *reciprocal causality model*, integrates the vulnerability and "scar" model by postulating reciprocal relations between personality and depression over time. Below we elaborate on the three models and the way they were compared in this study.

The Vulnerability Model

Personality has been traditionally conceptualized as a diathesis for depressive disorders (Monroe & Simons, 1991), particularly vis-à-vis its interaction with stressful life events. Individuals, constrained by their personality vulnerabilities, were expected to experience depression in reaction to disruptive life experiences (Brown & Harris, 1978). This stress-diathesis model (Monroe & Simons, 1991) has dominated research on personality and depression in the last two and a half decades (see review by Coyne & Whiffen, 1995).

The introduction of the constructs of sociotropy and autonomy (Beck, 1983) and dependency and self-criticism (Blatt, 1974; Blatt, D'Afflitti, & Quinlan, 1976; Blatt & Zuroff, 1992) as personality dimensions of vulnerability enabled the formulation of the "congruency hypothesis" (Hammen, Marks, Mayol, & DeMayo, 1985; Zuroff & Mongrain, 1987). This hypothesis includes precise predictions of interactions between personality and life events. That is, individuals with extreme tendencies of dependency or sociotropy are expected to experience depressive symptoms only when their major concerns (i.e., maintaining close and protective interpersonal relations) are threatened by interpersonal stressful events (e.g., rejections, confrontations, abandonment, and loss). Similarly, individuals with extreme self-criticism or autonomy are expected to experience depressive symptoms only when their principal concerns (i.e., obtaining differentiation via achievement and power) are threatened by failure-related events (e.g., exam failure, being laid-off). However, despite the testability and common-sense appeal of this hypothesis, only partial empirical support has been obtained. Although most studies demonstrated the specific vulnerability of dependency or sociotropy to interpersonal events, equivalent specific vulnerability of self-criticism or autonomy to failure-related stress has rarely been demonstrated (e.g., Bartelstone & Trull, 1995; for reviews, see Blatt & Zuroff, 1992; Coyne & Whiffen, 1995; Flett et al., 1995; Robins, 1995).

As a consequence of this partial support for the congruency hypothesis, researchers began to focus on a "main-effect" rather than on an interactive/stress-diathesis effect of dependency/sociotropy and self-criticism/autonomy on depression. Specifically, researchers have begun to examine action models of vulnerability whereby the "main effect" of personality (i.e., dependency/sociotropy and self-criticism/autonomy) on depression is mediated, rather than moderated, by life events (Priel & Shahar, 2000; Shahar & Priel, 2003; Zuroff, 1992). Thus, in a series of studies, several investigators (e.g., Zuroff, Dunkley, Shahar, and their respective colleagues) have shown that individuals with elevated self-criticism, and in some instances with elevated dependency, generate stressful life events, which in

turn increase their depression (Dunkley, & Blankstein, 2000; Dunkley, Blanskstein, Halsall, Williams, & Winkworth, 2000; Mongrain & Zuroff, 1994; Priel & Shahar, 2000; Shahar & Priel, 2003).

The "Scar" Model

Coyne and colleagues (Coyne & Calarco, 1995; Coyne, Gallo, Klinkman, & Calarco, 1998; Coyne & Whiffen, 1995) argued that dependency/sociotropy and self-criticism/autonomy serve as outcomes, rather than vulnerability factors, of depression. Specifically, depression was hypothesized by Coyne and colleagues to increase individuals' perception of being dependent on others (Coyne & Whiffen, 1995) and/or to reduce their self-confidence (Coyne et al., 1998; Coyne & Calarco, 1995), thus resulting in individuals' reporting elevated levels of dependency/sociotropy and self-criticism/autonomy. This point is intimately tied to Coyne and colleagues' earlier criticism of cognitive models of depression (Coyne, 1994; Coyne & Gotlib, 1983, 1986) in which the authors call for considering cognition as an outcome, rather than as a cause, of depression (Coyne & Gotlib, 1983, 1986; but see rejoinders by Segal & Shaw, 1986a, 1986b).

The argument put forth by Coyne and colleagues can be linked to the more general "scar" hypothesis (Rhode, Lewinsohn, & Seeley, 1990), according to which personality changes result from depression similar to the way a scar evolves around a wound. The potentially devastating effects of depressive symptoms, or of a full-blown depressive episode (Coyne et al., 1998; Coyne & Calarco, 1995), seem unlikely to leave individuals' personality untouched. Yet empirical research addressing the "scar" hypothesis is scarce, and the initial evidence for its support, while encouraging, is sparse.

Rhode et al. (1990) investigated a community sample with a mean age somewhat higher than that of the modal depressed patient and demonstrated that a depressive episode predicted a decrease of participants' interpersonal skills. Santor, Bagby, and Joffe (1997), studied patients who received pharmacological treatment for depression, and reported that changes in patients' depressive symptoms predicted changes in patients' neuroticism and extraversion. Davila, Burge, and Hammen, (1997), studied the transition of women from adolescence to young adulthood and found that an episode of depression during adolescence lowered the likelihood of women's developing secure attachments during young adulthood. Salmala-Aro and Nurmi (1996), investigating a relatively large group ($N = 256$) of Finish undergraduates over a period of two years, hypothesized reciprocal relations between depressive symptoms and these young adults' appraisal of personal projects. Their findings were consistent with a "scar" hypothesis, whereby participants' elevated levels of depressive symptoms at Time 1 predicted a decrease in their positive appraisal of personal projects. Finally, Coyne and colleagues (Coyne et al., 1998; Coyne & Calarco, 1995), conducting a qualitative study and two surveys of depressed patients, found considerable phenomenological change following an episode of depression, including lack of energy, difficulties in managing burdens on others, increased need to impose limitations and maintain a balance in life, increased fear of taking risks, and sense of stigma. Nevertheless, because these studies were cross-sectional, it is unclear whether these

retrospectively reported changes refer to stable personality traits or to more transient mood states or transient functional capacities. This highlights the importance of examining the "scar" model with constructs such as dependency and self-criticism, which are not only the most well-researched constructs in the field of personality and depression (Coyne & Whiffen, 1995; Robins, 1995), but were also demonstrated to be stable personality traits rather than mood states (Zuroff, Blatt, Sanislow, Bondi, & Pilkonis, 1999).

The Reciprocal-Causality Model

It is important to note that the vulnerability and "scar" models are not mutually exclusive, because personality and depressive symptoms might be reciprocally related. For instance, whereas dependency/sociotropy and self-criticism/autonomy can lead to depression, depression can also exacerbate, or attenuate, the within-participant levels of these personality dimensions over time. The mechanisms accounting for the effect of dependency/sociotorpy and self-criticism/autonomy on depression were described above and include either activation of vulnerability by life stress (Zuroff & Mongrain, 1987), or a generation of life stress, which in turn leads to depression (e.g., Priel & Shahar, 2000). The mechanisms for the effect of depression on dependency and self-criticism are largely unexplored, but they can be inferred from the literature. For instance, the effect of depressive symptoms on the self might be cognitively mediated. Experiencing depressed mood may increase individuals' self-focused attention (Salovey, 1992), particularly as it is directed to one's shortcomings (Nolen-Hoeksema, 1990), consequently decreasing self-confidence and increasing self-doubt. Similarly, depression might prompt individuals to seek reassurance from significant others (Coyne, 1976a; Joiner, Coyne, & Blalock, 1998), a behavior that is consistent with theoretical descriptions of the dependent personality (Bornstein, 1995).

To the best of our knowledge, a full-fledged examination of the reciprocal causality model has not been conducted. However, encouraging evidence was obtained in a study conducted by Zuroff, Igreja, and Mongrain (1990). The authors followed 46 undergraduate females over a 12-month period. Measures of dependency, self-criticism, and depressive symptoms were administered at baseline and 12 months later. Regression analyses revealed that dependency and self-criticism did not predict subsequent depressive symptoms, as measured by the Beck Depression Inventory (BDI; Beck, 1967). However, dependency and self-criticism did predict congruent depressed mood. Specifically, dependency predicted anaclitic depressed mood (i.e., mood centered on loneliness and rejection), whereas self-criticism predicted introjective depressed mood (i.e., mood centered on guilt and self-criticism). Moreover, BDI depressive symptoms at Time 1 tended to predict Time 2 self-criticism, $F(1, 42) = 3.8$, $p < .06$. Because of the various limitations acknowledged by the authors (i.e., modest sample size that was restricted to college student women, considerable attrition, Zuroff, Igreja et al., 1990), they concluded that these findings should be interpreted with caution. However, as pointed out by the authors, "This result hints at the existence of a reciprocal relation between depressed affect and self-criticism; further research into more complex causal models of vulnerability may be warranted"

(Zuroff, Igreja, et al., 1990, p. 323). These findings paved the way to the present investigation.

This Study

We compared the vulnerability, "scar," and reciprocal-causality models utilizing data from the White Plains Project (Leadbeater, Kuperminc, Blatt, & Herzog, 1999), in a large sample of early adolescent girls and boys (i.e., in 6th and 7th grades) who were evaluated over a 1-year interval. An extensive protocol of questionnaires was administered to assess the personality dimensions of dependency and self-criticism, as measured by the Depressive Experiences Questionnaire for Adolescents (DEQ-A; Blatt, Schaffer, Bers, & Quinlan, 1992), as well as self-concept, symptoms, stressful life events, and interpersonal relations with parents and peers. This protocol was administered twice over a 1-year period in a cross-lagged, longitudinal design.

A cross-lagged longitudinal design is frequently applied in nonexperimental studies to compare rival hypotheses regarding causal relations between variables (Hays, Marshall, Wang, & Sherbourne, 1994; Marmor & Montemayor, 1977). The principal characteristic of this research design is the measurement of two or more variables, two or more times. This multivariate, multiwave measurement yields estimates of *synchronous relations* (i.e., the association between the target variables at each point in time), *stability effects* (i.e., the prediction of a variable by its previous levels), and, most importantly, *cross-lagged effects*. These latter effects refer to the prediction of one or more variables by other variables that have been measured previously, controlling for the baseline level of the predicted variable (i.e., controlling for stability effects).

In this study, dependency, self-criticism, and depressive symptoms were all assessed twice, allowing for the estimation of synchronous, stability, and cross-lagged effects among these variables. Our focus was on the cross-lagged effects, which are differentially predicted by each of the theoretical models described above. Thus, *according to the vulnerability model*, dependency and self-criticism at Time 1 should predict depressive symptoms at Time 2, controlling for depressive symptoms at Time 1. In contrast, *according to the "scar" model*, depressive symptoms should predict both dependency and self-criticism at Time 2, controlling for dependency and self-criticism at Time 1. Finally, *according to the reciprocal-causality model*, both cross-lagged effects (i.e., one leading from Time 1 personality to Time 2 depressive symptoms, and the other leading from Time 1 depressive symptoms to Time 2 personality) should be statistically significant. In testing these three theoretical models, we explored a possibility that the relations between self-criticism and depressive symptoms vary as a function of participants' gender.

METHOD

Participants

Participants were 230 adolescent girls and 230 adolescent boys in 6th and 7th grades (aged 11–14 years) in a public middle school in an urban setting. The sample

included 50% non-Hispanic Whites, 21% African American, 26% Hispanic, and 2.6% Asian students. Thirty-eight percent of the students were eligible to receive free or reduced-price lunches. The majority of the adolescents (78%) lived with two parents, 20% lived with one parent, and 2% lived with other parents or guardians (see detailed description of this sample in Leadbeater et al., 1999).

Measures

The extensive protocol included assessments of adolescents' personality and self-concept, depressive symptoms, internalizing and externalizing symptoms, stressful life events, and quality of relations with peers, parents, and school performance. From this extensive protocol we selected two instruments that were particular pertinent to our hypotheses. These were the Depressive Experience Questionnaire for Adolescents (DEQ-A, Blatt et al., 1992) and the Beck Depression Inventory (BDI, Beck, 1967).

The DEQ-A (Blatt et al., 1992), a 66-item questionnaire developed for participants ranging from early (age 12) to late adolescence, on the basis of the adult version of the Depressive Experiences Questionnaire (DEQ, Blatt et al., 1976). Three factor scores have been consistently identified in adults, college students, and adolescents: (a) *Dependency* assesses needs for obtaining and maintaining close, nurturing and protective interpersonal relations (e.g., "without the support of others who are close to me, I would be helpless"), (b) *Self-criticism* taps tendencies of setting high self-standards and engaging in a critical stance towards the self when these standards are perceived as unmet (e.g., "If I fail to live up to expectations, I feel unworthy"), (c) *Efficacy* reflects feelings of strength and self-confidence. Responses to the DEQ-A are given on a 7-point scale (*strongly agree* to *strongly disagree*). The reliability and validity of these DEQ factors are at acceptable levels (Blatt et al., 1992; Blatt, Hart, Quinlan, Leadbeater, & Auerbach, 1993; Luthar & Blatt, 1995). Consistent with prior research (e.g., Blatt et al., 1992), factor analysis conducted on the DEQ-A in this sample, yielded three primary orthogonal factors (Leadbeater et al., 1999). The dependency and self-criticism factor, but not the efficacy factor, were used in the present paper.

The BDI (Beck, 1967), a 21-item questionnaire, assesses cognitive, behavioral, and somatic symptoms of depression. The reliability and validity of the BDI have been demonstrated in both clinical and nonclinical samples (e.g., Beck, Steer, & Garbin, 1988), including a sample of adolescents (Beck, Carlson, Russell, & Brownfield, 1987). A BDI item assessing loss of interest in sex was omitted for this middle school sample because it was developmentally inappropriate.

Procedure

Data were collected in two assessments, one in January 1995 and the other in January 1996. In each year, $10 was donated to the school's student activity fund on behalf of each participating student. Participants were also treated to snacks at the end of the assessment day. Questionnaires were group administered in classroom settings of 20–25 students. A member of the research team introduced the

questionnaires, and each item was read aloud by teachers. A Spanish version was administered in separate bilingual sessions for students who requested it. Special education students were tested in separate sessions and were allowed extra time.

In this study, we based our statistical analyses on the conservative case-wise deletion of missing values procedure (i.e., participants who did not have information on both the DEQ and BDI were omitted from the analyses). Consequently, analyses were conducted on 228 girls and 224 boys. The ethnic makeup of this analyzed sample was identical to that of the overall sample—50% were non-Hispanic Whites, 20.8% were African American, 26.8% were Hispanic, and 2.4% were Asian.

RESULTS

Analytic Approach

Our hypotheses were examined using Structural Equation Modeling (SEM, Hoyle & Smith, 1994). As proposed by Hays et al. (1994), SEM may be the analytic procedure of choice when examining cross-lagged effects. The specified cross-lagged model was examined simultaneously among girls and boys (i.e., a multigroup cross-lagged structural equation model). This model is presented in Fig. 1.

As shown in Fig. 1, *synchronous relations* are assessed at both Time 1 (i.e, the double-headed arrows among the variables) and Time 2 (i.e, the double-headed arrows between the "disturbances": the parts of the variance in the variables that are not explained by the model). Likewise, the paths leading from variables at Time 1 to their Time 2 respective levels estimate *stability effects*. Finally, the paths leading from Time 1 dependency and self-criticism to Time 2 depressive symptoms, and from Time 1 depressive symptoms to Time 2 dependency and self-criticism, estimate the *cross-lagged effects*. The model was simultaneously run among boys and girls, enabling us to examine the moderating effect of gender on the relations between dependency and self-criticism, and depressive symptoms.[6]

Two additional central features are included in Fig. 1. The first is that the correlations between dependency and self-criticism, and the correlations between their "disturbances" (their residual variance) are fixed at zero. This constraint is enabled by deriving scores of dependency and self-criticism scores using principal component analysis, a procedure that forces factor scores to be orthogonal. The second feature is the lack of cross-lagged effects between dependency and self-criticism. These effects are not presented because this theory lacks predictions as to the effect of one dimension on the other during early adolescence.[7]

---

[6]In multigroup SEM, although different parameters are reported for each group—only a single SEM analysis is conducted. Specifically, in this single analysis, parameters are estimated separately, but simultaneously, for each of the groups involved. On the basis of the model specified, a single variance/covariance matrix is derived, and is compared to the actual variance/covariance matrix that describes the relations between the variable. Such a comparison serves as a basis for many fit indices, including those used here.

[7]Correlations between the "disturbances" were specified following Hays et al. (1994). These correlations capture common variance of self-criticism and depressive symptoms at Time 2, which is not related to self-criticism and depressive symptoms at Time 1. An example for one possible source of such common variance is method variance. Both constructs were assessed via self-report measures.

Girls

Boys
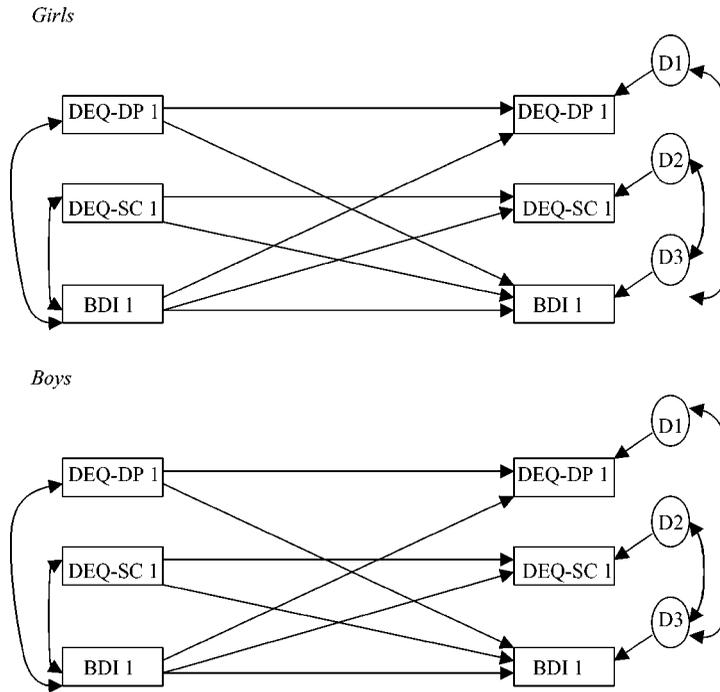
Note: DEQ-DP = Dependency factor of the Depressive Experiences Questionnaire; DEQ-SC = Self-criticism factor of the Depressive Experiences Questionnaire; BDI = Beck Depression Inventory.

Fig. 1. The conceptual multigroup cross-lagged structural equation model.

Analyses were conducted using the AMOS 4.01 program (Arbuckle, 1999), based on the Maximum Likelihood (ML) estimation procedure. The following indices were selected to evaluate model fit: the chi-square index (low and preferably non-significant chi-square values reflect an adequate model fit), the Bentler–Bonett Non-normed Fit Index (NNFI, Bentler & Bonett, 1980) which is represented in AMOS by the Tucker–Lewis Indicator (TLI, values higher than .90 represent acceptable model fit), and the Root-Mean-Square of Approximation (RMSEA, Steiger, 1980; values of .05 and lower represent acceptable model fit).

To formally compare the vulnerability, "scar," and reciprocal causality theoretical models, we conducted nested-model comparisons using SEM. The model presented in Fig. 1 is consistent with the theoretical "reciprocal causality model" because it includes paths leading from Time 1 self-criticism to Time 2 depressive symptoms and from Time 1 depressive symptoms to Time 2 self-criticism. This model was compared with a vulnerability model, in which the paths from Time 1 depressive symptoms to Time 2 self-criticism were omitted, and with a "scar" model, in which the inverse paths from Time 1 self-criticism to Time 2 depressive symptoms were

omitted. These models were compared using the chi-square fit statistics. Statistically significant chi-square *changes* between the models indicated superiority of fit of one models over another (i.e., models with significantly lower chi-square were deemed superior). Finally, we arrived at the most parsimonious model by focusing on the model with the best fit and omitting nonsignificant paths from this model (Bentler & Mooijaart, 1989).

SEM Results

The correlation matrix that served as basis for all SEM analyses is presented in Table I. This table also includes the means and standard deviations of the study variables. Means, standard deviations and correlations are presented separately for girls and boys. Numbers above the diagonal refer to girls, and numbers below the diagonal refer to boys.

Estimating the model presented in Fig. 1, we found that it fits the data well, $\chi^2(8) = 12.13$, $p = .145$; NNFI = 0.97; RMSEA = 0.03. The following *synchronous relations* were found. *Among girls*, Time 1 BDI correlated modestly with Time 1 dependency, $r = .22$, *Critical Ratio* $(C.R.) = 3.29$, $p = .001$, and with Time 1 self-criticism, $r = .27$, $C.R. = 3.98$, $p < .01$. Time 2 disturbance of BDI (i.e., the variance of BDI that is not predicted by the paths in the model) was nonsignificantly correlated with Time 2 disturbance of dependency, $r = .05$, $C.R. = .75$, *ns*. In contrast, the Time 2 "disturbances" of BDI and self-criticism were correlated, $r = .34$, $C.R. = 4.87$, $p < .001$. *Among boys*, Time 1 BDI correlated significantly with Time 1 self-criticism, $r = .33$, $C.R. = 4.70$, $p < .001$, but not with Time 1 dependency, $r = .02$, $C.R. = .37$, *ns*. Time 2 disturbance of BDI correlated significantly with both Time 2 "disturbances" of self-criticism, $r = .19$, $C.R. = 2.82$, $p < .01$, and dependency, $r = .16$, $C.R. = 2.40$, $p < .05$.

With respect to *stability effects*, Time 1 dependency, self-criticism and depressive symptoms significantly predicted Time 2 levels of these variables both among girls, $\beta = .58$, $C.R. = 10.48$, $p < .001$; $\beta = .53$, $C.R. = 9.87$, $p < .001$; $\beta = .50$, $C.R. = 8.90$, $p < .001$; for dependency, self-criticism, and depressive symptoms, respectively, and among boys, $\beta = .48$, $C.R. = 8.18$, $p < .001$; $\beta = .55$, $C.R. = 9.30$, $p < .001$;

Table I. Means, Standard Deviations, and Intercorrelations Among the Study Variables

	1	2	3	4	5	6	M	SD
DEQ-DP 1	—	.02	0.22*	.58**	.03	0.12	0.31	0.97
DEQ-SC 1	.02	—	0.27**	.01	.59**	0.36**	−0.07	1.10
BDI 1	.02	.33**	—	.12	.36**	0.56**	7.92	7.99
DEQ-DP 2	.48**	.02	0.04	—	.07	0.11	0.07	0.97
DEQ-SC 2	.11	.55**	0.19*	.18*	—	0.53**	−0.28	0.94
BDI 2	.05	.17*	0.34**	.19*	.27**	—	8.31	8.68
M	−.27	.07	8.48	−.49	−.06	7.25	—	—
SD	.95	.87	8.52	.94	.82	7.36	—	—

Notes. Numbers above the diagonal refer to girls; numbers below the diagonal refer to boys. DEQ-DP = Dependency factor of the Depressive Experiences Questionnaire; DEQ-SC = Self-criticism factor of the Depressive Experiences Questionnaire; BDI = Beck Depression Inventory.
* $p < .01$; ** $p < .001$; two-tailed tests.

$\beta = .31$, $C.R. = 4.71$, $p < .001$; for dependency, self-criticism, and depressive symptoms, respectively.

However, the focus of our attention was on *the cross-lagged effects*. Among boys, all cross-lagged effects were nonsignificant. Among girls, two statistically significant cross-lagged effects were found: the first leading from Time 1 self-criticism to Time 2 depressive symptoms, $\beta = .23$, $C.R. = 4.15$, $p < .001$, and the second leading from Time 1 depressive symptoms to Time 2 self-criticism, $\beta = .22$, $C.R. = 4.02$, $p < .001$. Both effects were in the positive direction, suggesting that initial elevated levels of self-criticism predicted subsequent elevated levels of depressive symptoms, and vice versa.

Recall that the above SEM model is consistent with the "reciprocal causality" model. We formally compared this model to the vulnerability and "scar" models using a nested-model procedure. First we omitted the path leading from Time 1 depressive symptoms to Time 2 self-criticism and estimated the fit of this model, which corresponds to the vulnerability model. Second, we omitted the path leading from Time 1 self-criticism to Time 2 depressive symptoms and estimated the fit of this model, which corresponds to the "scar" model. Because these paths were found to be nonsignificant among boys, the relevant paths were omitted only among girls. The chi-square level of the reciprocal causality model was compared to the chi-square levels of the vulnerability and "scar" models. A significant difference in chi-square indicates that the fit model with the lower chi-square level is superior in relation to the other models.

As shown in Table II, the fit of the model presented in Fig. 1, which corresponds to the reciprocal causality model for girls, was superior to the fit of the SEM models which correspond to the vulnerability and "scar" models. Specifically, the chi-square level of the reciprocal causality model, $\chi^2(8) = 12.13$, was significantly lower than the chi-square level of the vulnerability model, $\chi^2(9) = 27.75$; $\chi^2 change(1) = 15.62$, $p < .001$. Similarly, the chi-square level of the reciprocal causality model was significantly lower than the chi-square level of the "scar" model, $\chi^2(9) = 28.71$; $\chi^2 change(1) = 16.58$, $p < .001$.

We arrived at the most parsimonious model (Bentler & Mooijaart, 1989) by focusing on the reciprocal causality model, which manifested the best fit, and omitting nonsignificant paths from these models. *Among girls*, we omitted the nonsignificant correlation between the "disturbances" of Time 2 dependency and Time 2 depressive symptoms. Among boys, we omitted the correlation between Time 1 dependency and Time 1 depressive symptoms, as well as the cross-lagged effects involving self-criticism and depressive symptoms. *Among both boys and girls*, we omitted the

**Table II.** Fit of the Vulnerability, "scar," Reciprocal Causality, and Most Parsimonious Models

Model	χ^2	df	NNFI	RMSEA
Vulnerability	27.75[b]	9	.96	.07
"Scar"	28.71[b]	9	.96	.07
Reciprocal causality	12.13[a]	8	.99	.03
Most parsimonious	13.97[a]	12	.99	.02

Note. Different superscripts reflect a significant χ^2 change at $p < .001$.

cross-lagged effects involving dependency and depressive symptoms. As shown in Table II, the fit of the most parsimonious model was very good, $\chi^2(12) = 13.97$, $p = .302$; NNFI $= 0.99$; RMSEA $= 0.02$. Moreover, the fit of the most parsimonious model was comparable to the fit of the reciprocal causality model, $\chi^2 change(1) = 1.83$, ns, suggesting that the omission of the nonsignificant parameters did not reduce model fit. In Fig. 2 we present the standardized parameters of the most parsimonious model, which we deemed as the final SEM model.

Omission of Self-Denigration Items From the BDI

We were concerned by the possibility that the cross-lagged effects involving self-criticism and depressive symptoms among early adolescent girls were confounded by the self-denigration items in the BDI (Imber et al., 1990; Joiner, F. Gencoz, T. Gencoz, Metalsky, & Rudd, 2001). Because these items (e.g., "I feel I am a complete
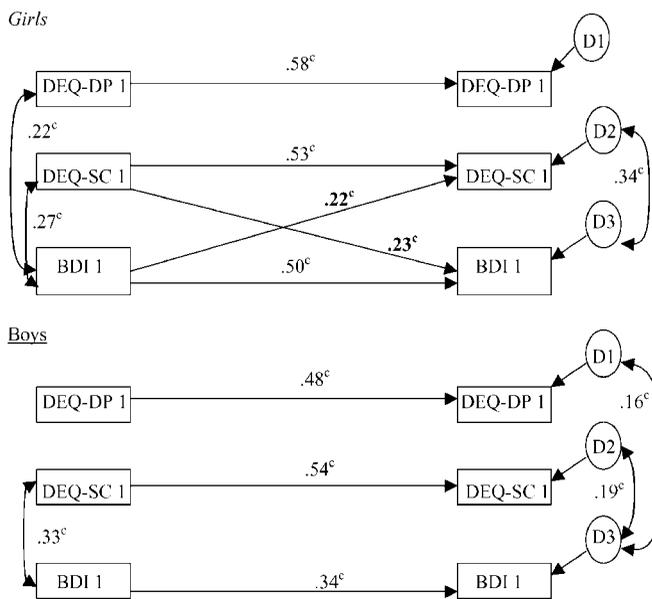
Notes:

1. Numbers are standardized path coefficients. Cross-lagged effects are highlighted.

2. DEQ-DP = Dependency factor of the Depressive Experiences Questionnaire; DEQ-SC = Self-criticism factor of the Depressive Experiences Questionnaire; BDI = Beck Depression Inventory.

3. $^c p < .001$, two-tailed tests.

Fig. 2. Standardized parameters of the most parsimonious SEM model.

failure as a person") are similar in content to items of the DEQ self-criticism subscale, they may serve as the source of the cross-lagged effects involving the two constructs. Hence, we omitted the self-denigration items and recomputed BDI scores, and then repeated the cross-lagged analysis. Results of these analyses were identical to the one described above, suggesting that the self-denigration items of the BDI are not the source of the cross-lagged effects involving self-criticism and depressive symptoms among early adolescent girls.

Role of Stressful Life Events

Although in the introduction we described the current status of the vulnerability model as pertaining to a "main effect" perspective rather than to an interactive/stress-diathesis one, the availability of data on participants' stressful events at both waves of measurement prompted us to examine the role of life events in each of the models tested. In this study, stressful events were measured via the junior high school version of the Adolescent Perceived Event Scale (APES, Compas, Davis, Forsythe, & Wagner, 1987), a commonly used measure of stressful events in adolescence. Participants indicated whether or not each of 108 major events and daily hassles had occurred within the past 3 months and rated the stressfulness of the event on a 5-point scale.

We examined the role of stressful events by utilizing two sets of multiple regression analyses. In the first set, BDI at Time 2 served as outcome. The predictors were BDI1, DEQ dependency or self-criticism at wave 1, stressful events, gender, two-way interactions between the DEQ variables, stressful events and gender, and a three way interaction between these variable. In the second set, DEQ dependency or self-criticism at wave 3 served as outcome. The predictors were DEQ dependency or self-criticism at wave 1, BDI 1, stressful events, gender, two-way interactions between the latter three variables, and a three-way interaction. Analyses were conducted separately with stressful events at Time 1 and at Time 3. With one exception—no statistically significant interactions were found. The exception was a three-way interaction between Time 1 BDI, stressful events, and gender in predicting changes in self-criticism over time, $F(1, 441) = 7.29$, $p < .01$). Probing this interaction, we found different interactive patterns involving depressive symptoms and stressful events among girls and boys. Among girls a counter-intuitive pattern was found whereby elevated depression at Time 1 interacted with elevated stress at Time 1 to predict reduced self-criticism over time. In contrast, among boys elevated depression at Time 1 interacted with elevated stress at Time 1 to predict increased, rather than reduced, self-criticism over time. Although herein we report this interaction to encourage future attempts at its replication, we elected to refrain from providing it with a substantive interpretation because (a) it was not predicted on an a priori basis, (b) the pattern found among girls is counterintuitive and runs counter to theoretical considerations whereby depression and stress should augment each other in increasing, rather than decreasing vulnerability. Thus, a conservative approach to this pattern entails refraining from interpreting it until further replications are reported (c) it was the single statistically significant interaction out of eight regression analyses, and hence could have been obtained by chance, and

(d) higher-order interaction such as the one obtained here are usually unstable and difficult to replicate (Chaplin, 1991).

Possible Confounding and Moderating Effects of Age and Ethnicity

We also examined the possibility that the obtained reciprocal relations between self-criticism and depressive symptoms among girls are either confounded or moderated by girls' age and their ethnicity. To address this possibility, we conducted two sets of analyses. First, we repeated the analyses described above while statistically controlling for the effects of age and ethnicity on changes in self-criticism and depressive symptoms. The same reciprocal relations between self-criticism and depressive symptoms emerged, and the effects of age and ethnicity on changes in these constructs' level over time were not significant. Second, we examined interaction effects of Time 1 levels of self-criticism and depressive symptoms, age, and ethnicity, on Time 2 levels of self-criticism and depressive symptoms. None of these interactions were statistically significant. Thus, age and ethnicity appeared to serve neither as confounds nor as moderators of the results obtained in this study.

DISCUSSION

The debate as to the nature of the relationship between personality and depression served as a central focus of attention in the past two decades of depression research (Coyne & Whiffen, 1995; Flett et al., 1995; Klein, Wonderlich, & Shea, 1997). Whereas previous cognitive and psychodynamic models (Beck, 1983; Blatt, 1974) postulated that personality is a vulnerability factor in depression, Coyne and colleagues (e.g., Coyne et al., 1998; Coyne & Calarco, 1995; Coyne & Gotlib, 1983; Coyne & Whiffen, 1995) argued that cognition and personality are influenced by depression, rather than influence depression.

The present report sheds light on this controversy in several ways. First, in analyzing the premises of the vulnerability and "scar" models, it concludes that these two models are not mutually exclusive, and that their integration gives rise to a third, more complex, *reciprocal causality model*. Second, this study is the first to systematically compare the three theoretical models (i.e., vulnerability, "scar," and reciprocal causality models) using an analytic procedure of choice—that of a cross-lagged, structural equation modeling. Third, this study revealed a finding unreported thus far—that depressive symptoms and self-criticism are reciprocally related. Finally, that the reciprocal relations between depressive symptoms and self-criticism are themselves moderated by gender further elucidated the complex relations between personality and depression by showing that such relations might change as a function of other variables.

The longitudinal effect of self-criticism on depressive symptoms among early adolescent girls is consistent with previous research depicting self-criticism as a serious vulnerability factor (for review, see Blatt, 1995; Blatt, Shahar, & Zuroff, 2001; Shahar, 2001). Considerable knowledge has been gained recently about the mechanisms through which self-criticism exerts this effect. Specifically, self-critical

individuals generate a particularly malignant social context, which contributes to the development and exacerbation of emotional distress (Aub'e & Whiffen, 1996; Fichman, Koestner, & Zuroff, 1994; Mongrain, 1998; Mongrain, Vettsese, Shuster, & Kendal, 1998; Priel & Shahar, 2000; Shahar & Priel, 2003; Zuroff et al., 2000; Zuroff & Duncan, 1999). The present study adds to the depiction of self-criticism as a powerful vulnerability factor by demonstrating that among early adolescent girls, this factor not only influences depressive symptoms, but is also influenced by these symptoms. Thus, at least among early adolescent girls, depressive symptoms and self-criticism appears to be implicated in a vicious phenomenological cycle: The tendency of some girls to set unrealistically high self-standards and adopt a punitive stance towards the self when these standards are not met renders these girls vulnerable to develop depressive symptoms. Concurrently, the tendency of these girls to experience depressive symptoms exacerbates their self-critical stance. In all likelihood, this vicious cognitive cycle persists in late adolescence and young adulthood, thereby contributing to the chronic nature of depression (Joiner, 2000)

Although previous research has shed considerable light on the mechanisms of the effect of self-criticism on depressive symptoms, little is known about mechanisms through which depressive symptoms might increase self-criticism. Nevertheless, several hypothetical mechanisms can be considered. First, *cognitive mechanisms* may mediate the effect of depressive symptoms on self-criticism. Depressed mood increases individuals' self-focused attention (Salovey, 1992), making negative self-schema more accessible (Persons & Miranda, 1992; Segal & Ingram, 1994; Teasdale, 1983). Second, depressive symptoms bring about *functional impairments*, such as reduced academic functioning (Haines, Norris, & Kashy, 1996; Kaltiala-Heino, Rimpelae, & Rantanen, 1998; Vincenzi, 1987), which may contribute in turn to elevated self-criticism. Finally, depressive symptoms are likely to influence self-criticism via *interpersonal mechanisms*. The rejections and confrontations (Coyne, 1976b; Hammen, 1991; Joiner, 1994) that are frequently generated by depressive symptoms may decrease individuals' self-confidence about their interpersonal skills, thereby increasing self-criticism.

Why, then, did depressive symptoms not increase self-criticism among boys? In attempting to explain this somewhat unexpected null finding, we were reminded that the inverse effect, that of self-criticism on depressive symptoms, was also statistically significant among girls, but not among boys. Thus, our findings imply that in early adolescence, depressive symptoms and self-criticism influence each other among girls, but not among boys. Because of the relative dearth of systematic studies of gender differences in the link between personality and depression during adolescence, a definite explanation for the pattern reported here awaits further research. However, it is possible that this gender difference is related to another documented gender difference in levels of depression that is found in this age group. Specifically, the age group studied herein (i.e., 11–14) is the very age group in which girls begin to report significantly higher levels of depression, as compared to boys (Compass, Ey, & Grant, 1994). Possibly, a *threshold process* is operative, such that depression is linked to other psychosocial variables (e.g., self-criticism) only when it reaches a certain level. To the extent that such threshold exists, it might be in this age among girls, but

not among boys, leading to stronger cross-lagged associations between self-criticism and depressive symptoms.

In this study, dependency did not predict depressive symptoms over time in either gender. Although this null finding stands in contrast to the traditional conceptualizations of dependency as a risk factor, it is consistent with recent research on dependency (see Bornstein, 1998, for review). Psychometric studies of the adult and adolescent versions of the DEQ, for example, demonstrate that the dependency factor of the DEQ-A includes items that tap more immature dependence, as well as more mature and adaptive form of relatedness (Blatt, Zohar, Quinlan, Luthar, & Hart, 1996; Blatt, Zohar, Quinlan, Zuroff, & Mongrain, 1995; Henrich, Blatt, Zohar, Kuperminc, & Leadbeater, 2000; Rude & Burnham, 1995). In these studies, "dependence" correlated more strongly than "relatedness" with depression and measures of psychopathology (Blatt et al., 1995, 1996), whereas "relatedness" correlated with several measures of well-being, including warmth and efficacy (Blatt et al., 1996) and interpersonal competence (Henrich et al., 2000). Similarly, Mongrain (1998) and Priel, Shahar, and their colleagues (Priel & Shahar, 2000; Shahar & Priel, 2003) demonstrated the when the distress-related variance of the DEQ-dependency factor is partialled out, this factor predicts elevated levels of social support and positive life events. Thus, mounting evidence suggests the possibility of resilience—alongside possible risks—in the construct of dependency (Bornstein, 1998).

Several qualifications and suggestions for further research should be outlined. First, although findings of this study are consistent with the reciprocal causality theoretical model, we are reminded that nonexperimental studies such as this one are limited in terms of their ability to ascertain causal relations between variables. Consequently, we cannot rule out the possibility that these reciprocal relations between the two clinical variables are accounted for by their shared variance with a third, unexamined variable. Hence, future research should replicate the results presented here while controlling for additional pertinent variables. Similarly, the possibility that shared method variance might have contributed to the results obtained should be addressed by examining the relations between self-criticism and depressive symptoms using a variety of assessment instruments.

Second, our findings were obtained with a population of early adolescents, and thus may not necessarily generalize to other age groups. In comparison to this study, Zuroff et al. (1990) found weaker cross-lagged relations between dependency, self-criticism, and depressive symptoms in female college students: these personality constructs did not predict depressive symptoms over time, and depressive symptoms had only a nearly significant effect of self-criticism over time. It is possible that among females, depression might be more stable in young adulthood than in adolescence. The reciprocal relations between self-criticism and depressive symptoms may be particularly strong in adolescence, when gender issues are salient, but these relations may weaken over time.

Third, although the constructs of self-criticism and autonomy are frequently used interchangeably (e.g., Coyne & Whiffen, 1995), caution should be exercised in concluding that the findings obtained here also describe the relations between autonomy and depressive symptoms. Despite theoretical similarities between these constructs, only a modest empirical overlap was obtained between measures of these

two constructs (e.g., Rude & Burnham, 1993). It is incumbent on future studies to determine the extent to which depressive symptoms and autonomy and/or sociotropy are reciprocally related.

Finally, in this study we did not document participants' history of major depressive episode(s). Given that the population ranged in age from 11 to 14, the vast majority of the participants probably did not have a history of depression. This, coupled with the fact that the focus of this study was on continuous scores of depressive symptoms rather than a psychiatric diagnosis of depression, suggest that scarring of personality by depression should be construed in relative, rather than absolute terms. However, recent evidence suggests that in adolescence, even "subclinical" levels of depressive symptoms predict serious interpersonal impairment (Gotlib, Lewinson, & Seeley, 1995), as well as subsequent major depression and substance abuse (Lewinson, Solomon, Seeley, & Zeiss, 2000). The present study extends these findings by demonstrating that such depression not only brings about interpersonal impairment and predisposes individuals to full-blown depression and psychopathology, but it also increases their personal vulnerability to depression.

ACKNOWLEDGMENT

REFERENCES

Arbuckle, J. L. (1999). *AMOS: A structural equation modeling software*. Chicago, IL: Small Waters Corporation.

Aub'e, J., & Whiffen, V. E. (1996). Depressive styles and social acuity: Further further evidence for distinct interpersonal correlates of dependency and self-criticism. *Communication Research*, *23,* 407–424.

Bartelstone, J. H., & Trull, T. J. (1995). Personality, life events and depression. *Journal of Personality Assessment*, *64,* 279–294.

Beck, A. T. (1967). *Depression: Causes and treatment*. Philadelphia: University of Pennsylvania Press.

Beck, A. T. (1983). *Cognitive therapy for depression: New perspectives*. In P. J. Clayton & J. E. Barett (Eds.), *Treatment of depression: Old controversies and new approaches* (pp. 265–290). New York: Raven.

Beck, A. T., Carlson, G. A., Russell, A. T., & Brownfield, F. E. (1987). The use of depression rating instruments in developmentally and educationally delayed adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *26,* 97–100.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, *8,* 77–100.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88,* 588–606.

Bentler, P. M., & Mooijaart, A. (1989). Choice of structural equation models via parsimony: A rational based on precision. *Psychological Bulletin*, *106,* 315–317.

Blatt, S. J. (1974). Levels of object representation in anaclitic and introjective depression. *Psychoanalytic Study of the Child*, *29,* 107–157.

Blatt, S. J. (1995). The destructiveness of perfectionism: Implications for the treatment of depression. *American Psychologist*, *50,* 1003–1020.

Blatt, S. J., D'Afflitti, J. P., & Quinlan, D. M. (1976). Experiences of depression in normal young adults. *Journal of Abnormal Psychology*, *85,* 383–389.

Blatt, S. J., Hart, B., Quinlan, D. M., Leadbeater, B., & Auerbach, J. (1993). Interpersonal and self-critical dysphoria and behavioral problems in adolescents. *Journal of Youth and Adolescence*, *22,* 253–269.

Blatt, S. J., Schaffer, C. E., Bers, S. A., & Quinlan, D. M. (1992). Psychometric properties of the Adolescent Depressive Experiences Questionnaire. *Journal of Personality Assessment*, *59*, 82–98.

Blatt, S. J., Shahar, G., & Zuroff, D. C. (2001). The anaclitic (sociotropic) and introjective (autonomous) dimensions. *Psychotherapy*, *38*, 449–454.

Blatt, S. J., Zohar, A., Quinlan, D. M., Luthar, S. S., & Hart, B. (1996). Levels of relatedness within the dependency factor of the Depressive Experiences Questionnaire for Adolescents. *Journal of Personality Assessment*, *67*, 52–71.

Blatt, S. J., Zohar, A. H., Quinlan, D. M., Zuroff, D. C., & Mongrain, M. (1995). Subscales within the dependency factor of The Depressive Experiences Questionnaire. *Journal of Personality Assessment*, *64*, 319–339.

Blatt, S. J., & Zuroff, D. C. (1992). Interpersonal relatedness and self-definition: Two prototypes for depression. *Clinical Psychology Review*, *12*, 527–562.

Bornstein, R. F. (1995). *The dependent personality*. New-York: Guilford, Press.

Bornstein, R. F. (1998). Depathologizing dependency. *Journal of Nervous and Mental Disease*, *186*, 67–73.

Brown, G. W., & Harris, T. (1978). *Social origins of depression: A study of psychiatric disorders in women*. London: Tavistock.

Chaplin, W. F. (1991). The next generation of moderator research in personality psychology. *Journal of Personality*, *59*, 143–178.

Compas, B. E., Davis, G. E., Forsythe, C. J., & Wagner, B. (1987). Assessment of major and daily stressful events during adolescence: The Adolescent Perceived Event Scale. *Journal of Consulting and Clinical Psychology*, *66*, 534–541.

Compas, B. E., Ey, S., & Grant, K. E. (1994). Taxonomy, assessment, and diagnosis of depression during adolescence. *Psychological Bulletin*, *114*, 323–344.

Coyne, J. C. (1976a). Toward an interpersonal description of depression. *Psychiatry*, *39*, 28–40.

Coyne, J. C. (1976b). Depression and the response of others. *Journal of Abnormal Psychology*, *85*, 186–193.

Coyne, J. C. (1994). Self-report distress. Analog or ersatz depression? *Psychological Bulletin*, *116*, 29–45.

Coyne, J. C., & Calarco, M. (1995). The experience of depression: Results from focus groups. *Psychiatry*, *58*, 149–163.

Coyne, J. C., Gallo, S. M., Klinkman, M. S., & Calarco, M. M. (1998). Effects of recent and past major depression and distress on self-concept and coping. *Journal of Abnormal Psychology*, *107*, 86–96.

Coyne, J. C., & Gotlib, I. H. (1983). The role of cognition in depression: A critical appraisal. *Psychological Bulletin*, *94*, 472–505.

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

Coyne, J. C., & Whiffen, V. E. (1995). Issues in personality as diathesis for depression: The case of sociotropy-dependency and autonomy-self-criticism. *Psychological Bulletin*, *118*, 358–378.

Davila, J., Burge, D., & Hammen, C. (1997). Why does attachment style change? *Journal of Personality and Social Psychology*, *73*, 826–838.

Dunkley, D. M., & Blankstein, K. R. (2000). Self-critical perfectionism, coping, hassles, and current distress: A structural equation modeling approach. *Cognitive Therapy and Research*, *24*, 713–730.

Dunkley, D. M., Blankstein, K. R., Halsall, J., Williams, M., & Winkworth, G. (2000). The relation between perfectionism and distress: Hassles, coping, and perceived social support as mediators and moderators. *Journal of Counseling Psychology*, *47*, 437–453.

Fichman, L., Koestner, R., & Zuroff, D. C. (1994). Depressive styles in adolescence: Assessment, relation to social functioning and developmental trends. *Journal of Youth and Adolescence*, *23*, 315–330.

Flett, G. L., Hewitt, P. L., Endler, N. S., & Bagby, R. M. (1995). Conceptualization and assessment of personality factors in depression. *European Journal of Personality*, *9*, 309–350.

Gotlib, I. H., Lewinsohn, P. M., & Seeley, J. R. (1995). Symptoms versus a diagnosis of depression: Differences in psychosocial functioning. *Journal of Consulting and Clinical Psychology*, *63*, 90–100.

Haines, M. E., Norris, M. P., & Kashy, D. A. (1996). The effects of depressed mood on academic performance in college students. *Journal of College Student Development*, *37*, 519–526.

Hammen, C. (1991). The generation of stress in the course of unipolar depression. *Journal of Abnormal Psychology*, *100*, 555–561.

Hammen, C., Marks, T., Mayol, A., & DeMayo, R. (1985). Depressive self-schemes, life stress, and vulnerability to depression. *Journal of Abnormal Psychology*, *98*, 154–160.

Hays, R. D., Marshall, G. N., Wang, E. Y. I., & Sherbourne, C. D. (1994). Four years cross-lagged associations between physical and mental health in a medical outcome study. *Journal of Consulting and Clinical Psychology*, *62*, 441–449.

Henrich, C., Blatt, S. J., Zohar, A., Kuperminc, G. P., & Leadbeater, B. J. (2000). Levels of interpersonal concerns and social functioning in early adolescent boys and girls. *Journal of Personality Assessment*, *76*, 48–67.

Hoyle, R. H., & Smith, G. T. (1994). Formulating research questions as structural equation models: A conceptual overview. *Journal of Consulting and Clinical Psychology*, 63, 429–440.

Imber S. D., Pilkonis, P. A., Sotsky, S. M., Elkin, I., Watkins, J. T., Collins, J., et al. (1990). Mode-specific effects among three treatments for depression. *Journal of Consulting and Clinical Psychology*, 58, 352–359.

Joiner, T. E. (1994). Contagious depression: Existence, specificity to depressive symptoms, and the role of reassurance seeking. *Journal of Personality and Social Psychology*, 67, 287–296.

Joiner, T. E. (2000). Depression's vicious scree: Self-propagating and erosive processes in depression chronicity. *Clinical Psychology Science and Practice*, 7, 203–218.

Joiner, T. E., Coyne, J. C., & Blalock, J. (1998). On the interpersonal nature of depression: Overview and synthesis. In T. E. Joiner & J. C. Coyne (Eds.), *The interpersonal nature of depression* (pp. 3–19). Washington DC: American Psychological Association.

Joiner, T. E., Jr., Gencoz, F., Gencoz, T., Metalsky, G. I., & Rudd, M. D. (2001). The relation of self-hatred and sucidality in people with schizophrenia-spectrum symptoms. *Journal of Psychopathology and Behavioral Assessment*, 23, 107–115.

Kaltiala-Heino, R., Rimpelae, M., & Rantanen, P. (1998). School performance and self-reported depressive symptoms in middle adolescence. *Psychiatria Fennica*, 29, 40–49.

Klein, M. H., Wonderlich, S., & Shea, M. T. (1997). Models of relationships between personality and depression: Toward a framework for theory and research. In M. J. Klein, D. J. Kupfer, & M. T. Shea (Eds.), *Personality and depression: A current view*. New-York: Guilford.

Leadbeater, B. J., Kuperminc, G. P., Blatt, S. J., & Hertzog, C. (1999). A multivariate mode of gender differences in adolescent's internalizing and externalizing problems. *Developmental Psychology*, 35, 1268–1282.

Lewinson, P. M., Solomon, A., Seeley, J. R., & Zeiss, A. (2000). Clinical implications of "subthreshold" depressive symptoms. *Journal of Abnormal Psychology*, 109, 345–351.

Luthar, S. S., & Blatt, S. J. (1995). Differential vulnerability of dependency and self-criticism among disadvantaged teenagers. *Journal of Research on Adolescence*, 5, 431–449.

Marmor, G. S., & Montemayor, R. (1977). The cross-lagged panel design: A review. *Perceptual and Motor Skills*, 45, 883–893.

Mongrain, M. (1998). Parental representations and support-seeking behavior related to dependency and self-criticism. *Journal of Personality*, 66, 151–173.

Mongrain, M., Vettese, L. C., Shuster, B., & Kendal, N. (1998). Perceptual biases, affect, and behavior in the relationships of dependents and self-critics. *Journal of Personality and Social Psychology*, 75, 230–241.

Mongrain, M., & Zuroff, D. C. (1994). Ambivalence over emotional expression and negative life events: Mediators of depressive symptoms in dependent and self-critical individuals. *Personality and Individual Differences*, 16, 447–458.

Monroe, S. M., & Simons, A. D. (1991). Diathesis-stress theories in the context of life stress research: Implication for the depressive disorders. *Psychological Bulletin*, 110, 406–425.

Nolen-Hoeksema, S. (1990). *Sex differences in depression*. Stanford, CA: Stanford University Press.

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

Priel, B., & Shahar, G. (2000). Dependency, self-criticism, social context and distress: Comparing moderating and mediating models. *Personality and Individual Differences*, 28, 515–525.

Robins, C. J. (1995). Personality-event interaction models of depression. *European Journal of Personality*, 9, 367–378.

Rhode, P., Lewinsohn, P. M., & Seeley, J. R. (1990). Are people changed by the experience of having an episode of depression? A further test of the "scar" hypothesis. *Journal of Abnormal Psychology*, 99, 264–271.

Rude, S. S., & Burnham, B. L. (1993). Do interpersonal and achievement vulnerabilities interact with congruent events to predict depression? Comparison of the DEQ, SAS, DAS, and combined scales. *Cognitive Therapy and Research*, 17, 531–548.

Rude, S. S., & Burnham, B. L. (1995). Connectedness and neediness: Factors of The DEQ and SAS dependency scales. *Cognitive Therapy and Research*, 19, 323–340.

Salmela-Aro, K., & Nurmi, J. (1996). Depressive symptoms and personal project appraisals: A cross-lagged longitudinal study. *Personality and Individual Differences*, 21, 373–381.

Salovey, P. (1992). Mood-induced self-focused attention. *Journal of Personality and Social Psychology*, 62, 699–707.

Santor, D. A., Bagby, R. M., & Joffe, R. T. (1997). Evaluating stability and change in personality and depression. *Journal of Personality and Social Psychology*, 73,

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.

Segal, Z. V., & Shaw, B. F. (1986a). Cognition in depression: A reappraisal of Coyne and Gotlib's critique. *Cognitive Therapy and Research*, *10,* 671–693.

Segal, Z. V., & Shaw, B. F. (1986b). When cul-de-sacs are more mentality than reality: A rejoinder to Coyne and Gotlib. *Cognitive Therapy and Research*, *10,* 707–714.

Shahar, G. (2001). Personality, shame, and the breakdown of social bonds: The voice of quantitative depression research. *Psychiatry*, *64,* 228–239.

Shahar, G., & Priel, B. (2003). Active vulnerability, adolescent distress, and the mediating/suppressing role of life events. *Personality and Individual Differences*, *35,* 199–218.

Steiger, J. H. (1980). Test for comparing elements of a correlation matrix. *Psychological Bulletin*, *87,* 245–251.

Teasdale, J. D. (1983). Negative thinking in depression: Cause, affect, or reciprocal relation? *Advances in Behavior Research and Therapy*, *5,* 3–25.

Vincenzi, H. (1987). Depression and reading ability in sixth-grade children. *Journal of School Psychology*, *25,* 155–160.

Zuroff, D. C. (1992). New directions for cognitive models of depression. *Psychological Inquiry*, *3,* 274–277.

Zuroff, D. C., Blatt, S. J., Sanislow, C. A., III, Bondi, C. M., & Pilkonis, P. A. (1999). Vulnerability to depression: Reexamining state dependence and relative stability. *Journal of Abnormal Psychology*, *108,* 76–89.

Zuroff, D. C., Blatt, S. J., Sotsky, S. M., Krupnick, J. L., Martin, D. J., Sanislow, C. A., et al. (2000). Relation of therapeutic alliance and perfectionism to outcome in brief outpatient treatment of depression. *Journal of Consulting and Clinical Psychology*, *68,* 114–124.

Zuroff, D. C., & Duncan, N. (1999). Self-criticism and conflict resolution in romantic couples. *Canadian Journal of Behavioral Science*, *31,* 137–149.

Zuroff, D. C., Igreja, I., & Mongrain, M. (1990). Dysfunctional attitudes, dependency, and self-criticism as predictors of depressive mood states: A 12-month longitudinal study. *Cognitive Therapy and Research*, *14,* 315–326.

Zuroff, D. C., & Mongrain, M., (1987). Dependency and self-criticism: Vulnerability factors for depressive affective states. *Journal of Abnormal Psychology*, *96,* 14–22.