

# A Social–Interactional Model of the Development of Depressive Symptoms in Adolescence

Joseph P. Allen  
University of Virginia

Glenda Insabella  
Yale University

Maryfrances R. Porter  
University of Virginia

Felicia D. Smith  
Harvard Medical School

Debbie Land  
University of Pittsburgh

Nicole Phillips  
University of California, Los Angeles

This study used longitudinal, multimethod data to examine specific patterns of behavioral interaction with parents and peers that were hypothesized to predict increasing levels of depressive symptoms in early adolescence. Adolescents' struggles in establishing autonomy and relatedness in interactions with mothers, and a withdrawn, angry, or dependent pattern of behavior with a best friend, were assessed with observational and peer-report methods in a community sample of 143 adolescents, who were also assessed for levels of depressive symptoms at age 13 and with whom the authors followed up 1 year later. Study hypotheses were confirmed, with dysfunctional interaction patterns with parents and peers combining additively to account for substantial change variance in depressive symptoms over time. Results are interpreted as highlighting specific behavioral patterns that may be promising to address via psychosocial interventions targeting adolescent depression.

*Keywords:* adolescent, depression, peer, parent, interaction

Early adolescence brings about a substantial increase in the incidence of depressive symptoms with serious long-term sequelae (Gotlib, Lewinsohn, & Seeley, 1998; Lewinsohn, Hops, Roberts, & Seeley, 1993; Lewinsohn, Rohde, & Seely, 1998). The two best-validated psychosocial interventions for adolescent depression—interpersonal psychotherapy and cognitive-behavior therapy—both implicate dysfunctional social interaction patterns in the development of depression (Kaslow, McClure, & Connell, 2002; Mufson, Weissman, Moreau, & Garfinkel, 1999). Yet, relatively little is known about the specific patterns of behavioral interaction in early adolescence that predict future depression and that might be effectively targeted by such interventions.

Problems in interpersonal relationships, leading to aversive and nonrewarding experiences in social interactions, have long been identified as risk factors for depressive symptoms (Coyne, 1976a, 1976b). A developmental psychopathology perspective suggests that areas of greatest vulnerability in interpersonal relationships occur when they potentially interfere with critical developmental tasks at given points in the life span (Cicchetti & Toth, 1998; Sroufe, 1997; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). In adolescence, establishing autonomy while maintaining positive relationships with parents, and establishing autonomy while developing close peer relationships, are two such critical tasks (Kobak & Ferenz-Gillies, 1995; Kobak, Sudler, & Gamble, 1991).

Adolescent difficulties in the struggle to attain autonomy while maintaining positive relationships with parents create enormous developmental strains that may lead to depressive symptoms—both in terms of the adolescents' ability to be assertive within the family without undermining key relationships and in terms of the models for assertiveness that these relationships establish for the future. In adulthood, failures of assertiveness and withdrawal in the face of conflict have been consistently associated with depression (Joiner, 2000; Price, Sloman, Gardner, Gilbert, & Rohde, 1994). Several studies have examined links between overall parental dysfunction or a general lack of family support and adolescent depression (Lewinsohn, Roberts, Seeley, & Rohde, 1994; Nelson, Hammen, Brennan, & Ullman, 2003; Patterson & Capaldi, 1990; Tencer et al., in press). Only one, however, examined predictions of change over time (Sheeber, Hops, Alpert, Davis, & Andrews, 1997). More important, the only study to examine the

---

Joseph P. Allen, Department of Psychology, University of Virginia; Glenda Insabella, School of Nursing and Department of Psychiatry, Yale University; Maryfrances R. Porter, Medical Center, University of Virginia; Felicia D. Smith, Harvard Medical School; Debbie Land, University of Pittsburgh; Nicole Phillips, Department of Psychology, University of California, Los Angeles.

Felicia D. Smith is now at the Department of Psychiatry and Behavioral Sciences, University of Louisville School of Medicine; Debbie Land is now in Baltimore, MD.

This study and its write-up were supported by grants from the National Institute of Mental Health (R01-MH44934, R01-MH58066, and F31-MH65711-01).

Correspondence concerning this article should be sent to Joseph P. Allen at Department of Psychology, University of Virginia, Box 400400, Charlottesville, VA 22904-4400. Email: allen@virginia.edu

specific behavioral link between difficulties establishing autonomy and future depression (Allen, Hauser, Eickholt, Bell, & O'Connor, 1994) found the hypothesized link, although within a design that confounded the effects of family interaction difficulties with the effects of psychiatric hospitalization and concurrent depression.

During adolescence, peer relationships are rapidly becoming primary contexts of social interaction and development (Berndt, 1996; Buhrmester, 1998). Several studies have linked depression to overall difficulties in peer relationships, whether assessed as rejection, lack of popularity, or lack of interpersonal support (Galambos, Leadbeater, & Barker, 2004; Harter & Whitesell, 1996; Henrich, Blatt, Kuperminc, Zohar, & Leadbeater, 2001; Nolan, Flynn, & Garber, 2003; Prinstein & Aikins, 2004). Two of these studies linked broad markers of overall peer difficulty to change in depressive symptoms (Nolan et al., 2003; Prinstein & Aikins, 2004). Research is now needed to identify specific patterns of adolescent behavior with peers that might be subject to intervention (particularly within close relationships), which have been found important in understanding adult depression but which have not been examined with respect to adolescent depression (Daley & Hammen, 2002; Davila, Karney, Hall, & Bradbury, 2003). This study examined the hypothesis that future increases in depressive symptoms will be predicted by the presence of high levels of withdrawal, anger, and dependency in the context of close peer relationships in early adolescence—interpersonal characteristics that each reflect difficulty modulating degrees of autonomy and closeness within these relationships.

Withdrawal from social interaction has been widely linked to depressive symptoms (Reynolds & Johnston, 1994). In adulthood, Joiner (2002) has argued that withdrawal may be a risk factor, not just a consequence of depression. From a developmental perspective, social withdrawal is likely to be particularly problematic in adolescence, given the need to develop new social skills to meet the demands of increasingly complex and intense adolescent peer relationships. Several studies have found concurrent links between shyness, withdrawal, and depressive symptoms in children and adults (Alpert, Uebelacker, McLean, & Nierenberg, 1997; Boivin, Hymel, & Bukowski, 1995; Joiner, 1997). No research to date, however, has examined withdrawal not just as a concurrent marker of depressive symptoms but as a predictor of changing future levels of adolescent depression.

A second marker of difficulty in managing the give and take of peer relationships resides in conflictual peer relationships characterized by high levels of dysfunctional anger. Kobak et al. (1991) reports finding cross-sectional links between conflictual mother-adolescent interactions and adolescent depressive symptoms, and it is easy to imagine ways in which high levels of anger directed toward peers would lead to aversive and depressogenic peer interactions over time. One possibility is that conflictual patterns of behavior are learned within families and then replicated with peers (Hammen & Brennan, 2001), but links between high levels of angry conflict in adolescent-peer relationships and the development of depressive symptoms over time have not previously been assessed.

Excessive emotional dependency in relationships has also been posited as a potential contributor to depression through its role in generating negative interpersonal outcomes (Blatt & et al., 1982; Joiner, Metalsky, Katz, & Beach, 1999). Although longitudinal research on adults has yielded mixed results to date (Lewinsohn,

Rohde, Seeley, Klein, & Gotlib, 2000; Shahar et al., 2004), self-reports of excessive emotional reliance on others have been found to predict onset of depression in mid- to late adolescence (Lewinsohn et al., 1994). Unfortunately, the use of self-reports to assess dependency made it impossible to determine whether links to depression were a result of actual dependency versus a negative self-evaluation and rating bias among depressed individuals. No research to date has examined links between independent observations of emotional dependency upon peers in adolescence and future depression.

This prospective, multimethod study sought to identify specific dysfunctional patterns of social interaction in adolescents' close relationships that would predict increasing levels of depression over time. We hypothesized, first, that future increases in adolescent depressive symptoms would be predicted by directly observed adolescent struggles in establishing autonomy while they search to maintain a sense of relatedness with their mothers during disagreements. Second, we hypothesized that a triad of peer interaction qualities consisting of withdrawal, dysfunctional anger, and inappropriate dependency would each also serve as predictors of future levels of depression. Third, we hypothesized that family and peer domains would be sufficiently independent sources of potential distress that each would contribute uniquely to understanding future increases in adolescents' levels of depressive symptoms. All questions were assessed in a community sample of early adolescents interviewed and observed with both parents and best friends and then followed over a 1-year period. Given inconsistent findings in the literature regarding the role of gender in moderating pathways to depression in early adolescence (Compton, Snyder, Schrepferman, Bank, & Shortt, 2003; Galambos et al., 2004; Sheeber et al., 1997), gender was considered as a potential moderator in all analyses.

## Method

### Participants

This report is drawn from a larger longitudinal investigation of adolescent social development in familial and peer contexts. Participants included 143 seventh and eighth graders (69 boys and 74 girls) and their parents and closest friends; participants were initially interviewed when the adolescent was approximately age 13 (age:  $M = 13.34$ ,  $SD = 0.63$ ) then reinterviewed 1 year later (age  $M = 14.26$ ,  $SD = 0.77$ ). The sample was racially/ethnically and socioeconomically diverse: 90 adolescents identified themselves as Caucasian, 39 as African American, 2 as Asian American, 2 as Hispanic/Latino, 7 as mixed ethnicity, and 3 as other and/or mixed minority groups. Adolescents' parents reported a median family income in the \$40,000–\$59,999 range ( $M = \$44,900$ ,  $SD = \$22,000$ ).

At each wave, adolescents' were also asked to nominate their "closest friend" of the same gender to be included in the study as well as an additional peer who was within their circle of four closest friends. Close friends were defined as "people you know well, spend time with and who you talk to about things that happen in your life." For adolescents who had difficulty naming close friends, it was explained that naming their "closest" friends did not mean that they were necessarily very close to these friends, just that they were close to these friends relative to other acquaintances they might have. Close friends reported that they had known the adolescents for an average of 5.33 years ( $SD = 2.98$ ) at the first wave. The close friends selected at the second wave of data collection, who were different individuals than those selected at the first wave for 69% of adolescents, reported that they had known adolescents an average of 4.35 years ( $SD = 3.24$ ) at the second wave.

Adolescents were recruited from the 7th and 8th grades at a public middle school drawing from suburban and urban populations in the south-eastern United States. An initial mailing to parents of students in the relevant grades in the school gave them the opportunity to opt out of any further contact with the study. Only 2% of parents opted out of such contact. Of all families subsequently contacted by phone, 63% agreed to participate and had an adolescent who was able to come in with both a parent and a close friend. This sample appeared generally comparable to the overall population of the school in terms of racial/ethnic composition (37% non-White in sample vs. approximately 40% non-White in school) and socioeconomic status (mean household income = \$44,900 in sample vs. \$48,000 for community at large). The adolescents provided informed assent, and their parents provided informed consent before each interview session. The same assent/consent procedures were also used for collateral peers and their parents. Interviews took place in private offices within a university academic building.

At the first wave of data collection, adolescents came in for two visits, the first with their parents, and the second with their identified closest friend. Approximately 1 year later, adolescents again came in for two visits, the first with just the adolescent and the second with the person who they named as their current closest friend in the Wave 2 individual interview. Parents, adolescents, and peers were all paid for their participation. The sample that participated in both Waves 1 and 2 of the study was a subsample of 153 adolescents who had complete data at Wave 1. Attrition analyses revealed no significant differences between the 143 adolescents who did versus the 10 adolescents who did not return for the second wave of the study on any of the demographic or substantive measures in the study.

### Measures

**Depressive symptoms.** Adolescents reported the degree of their depressive symptoms using the Child Depression Inventory (Kovacs & Beck, 1977). This 27-item inventory is based on the Beck Depression Inventory and has been well validated as a measure of depressive symptomatology linked to poor self-esteem, hopelessness, and negative cognitive attributions (Kazdin, 1990). This measure uses a continuum/severity approach to assessing depressive symptoms that recognizes that levels of depressive symptoms below diagnostic thresholds may nevertheless be important predictors of significant dysfunction (Lewinsohn, Solomon, Seeley, & Zeiss, 2000). Internal consistency for this measure was good (Cronbach's  $\alpha = .84$ ).

**Observed autonomy and relatedness with mother.** Adolescents and their mothers participated in a revealed-differences task in which they discussed a family issue that they had separately identified as an area of disagreement. Adolescents and their mothers were then brought together, and the discussion began with the adolescent playing an audiotape that he or she had previously recorded with an interviewer in which he or she stated the problem, his or her perspective on it, and what the adolescent thought his or her mother's perspective was. Typical topics of discussion included money, grades, household rules, friends, and sibling issues. These interactions lasted 8 min and were videotaped and then transcribed.

The coding system employed (Allen et al., 2000; Allen, Hauser, Bell, & O'Connor, 1994) yields a rating for the adolescent's overall behavior toward their mothers in the interaction. Ratings are molar in nature, yielding overall scores for adolescents' behaviors across the entire the interaction; however, these molar scores are derived from an anchored coding system that considers both the frequency and intensity of each speech relevant to that behavior during the interaction in assigning the overall molar score. The overall scale for behavior undermining autonomy and relatedness with mother was selected on the basis of prior research and theory to tap struggles with autonomy processes that were most likely to predict psychological dysfunction over time (Allen, Hauser, O'Connor, & Bell, 2002). Specific interactive behaviors were coded then summed together on a priori grounds into primary scales on the basis of behaviors that

make it more difficult for individuals to express autonomy in a discussion—such as by overpersonalizing a disagreement, recanting a position and appearing persuaded the position is wrong (thus ending the discussion), or pressuring another person to agree—and behaviors that undermine relatedness by overtly expressing hostility toward, or rudely interrupting or ignoring, a family member. Each interaction was reliably coded as the average of scores obtained by two trained raters blind to other data from the study. Interrater reliability was calculated with intraclass correlation coefficients and was in what is considered the excellent range ( $r = .86$ ) for this coefficient (Cicchetti & Sparrow, 1981). Prior research has linked behavior undermining autonomy and relatedness to adolescent depressive symptoms and to future hostility in adult peer relationships (Allen, Hauser, Eichholt, et al., 1994; Allen et al., 2002).

**Overall quality of relationship with mother.** The Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987) was used to assess adolescents' perceptions of the overall quality of their relationship with their mothers in terms of the degree of trust, communication, and alienation in the relationship. A composite score of the adolescent's perceptions of the overall quality of this relationship was obtained from 25 five-point Likert scale items. This composite measure has been shown to have good test-retest reliability and has been related to other measures of family environment and teen psychosocial functioning (Armsden & Greenberg, 1987). Cronbach's alpha in this sample was .95 for the composite score.

**Emotional dependency upon closest friend.** Adolescents participated in an 8-min interaction task with their closest friend, during which they asked that peer for help with a "problem they were having that they could use some advice or support about." Typical topics included dating, problems with peers or siblings, raising money, or deciding about joining sports teams. These interactions were coded with the Supportive Behavior Coding System (Allen, Hall, Insabella, Land, Marsh, & Porter, 2001), which was based on several related systems (Crowell et al., 1998; Haynes & Fainsilber Katz, 1998; Julien et al., 1997). The degree of the adolescent's call for emotional support from their peer was coded as an indicator of emotional dependency in terms of the intensity of emotional distress that the adolescent conveyed to their friend and their persistence in asking for help with it during the interaction. Each interaction was coded as an average of the scores obtained by two trained raters blind to other data from the study, with excellent reliability (intra-class  $r = .83$ ).

**Observed adolescent autonomy and relatedness with peers.** Each adolescent-close friend dyad participated in an 8-min videotaped task in which they were presented with a hypothetical dilemma that involved deciding which 7 out of a possible 12 fictional patients with a rare disease should be selected for a limited amount of antidote, which was based on the sinking-ship dilemma (Pfeiffer & Jones, 1974). After making their decisions separately, adolescents and their close friends were then brought together in a revealed differences paradigm in which they could compare their answers (Strodtbeck, 1951). They were then asked to try to come up with a consensus list of 7 patients. The Autonomy-Relatedness Coding System for Peer Interactions was used to code these interactions (Allen, Porter, & McFarland, 2001). This coding system is an adaptation of the Autonomy and Relatedness Coding System (Allen et al., 2000). As with that system (described above), it also captures behaviors undermining autonomy with peers and behaviors undermining relatedness with peers. Given that unlike in the adult system, there is as yet no a priori theoretical or empirical basis for combining these scales with respect to peer interactions, they are coded and analyzed separately. Each interaction was coded as an average of the scores obtained by two trained raters blind to other data from the study with good reliability ( $r = .72$  and  $.78$  for scales for undermining autonomy and undermining relatedness, respectively).

**Peer-rated social withdrawal.** The Withdrawal scale from the Pupil Evaluation Inventory (Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976) sums the best friend's ratings (on a scale ranging from 0 = *not true* to 2 = *very often or often true*) of the target student on nine different items tapping socially withdrawn behavior, such as "S/he often doesn't want to hang out

or do things with other kids.” The scale has been shown to have good reliability and validity as a marker of childhood vulnerability to psychopathology (Pekarik et al., 1976; Weintraub, Prinz, & Neale, 1978). Internal consistency for the scale was good (Cronbach’s  $\alpha = .72$ ).

Results

Preliminary Analyses

*Univariate statistics.* Means and standard deviations for all variables examined in the study are presented in Table 1. Notably, mean scores for the Children’s Depression Inventory in this sample were somewhat lower than reported means from meta-analyses (8.66 and 9.05 for 13-year old girls and boys, respectively; Twenge & Nolen-Hoeksema, 2002). Ten percent of youths scored above suggested clinical cutoffs (a scale score of 13; Kovacs, 1992) for mild depression at age 13, and 7% scored above this cutoff at the 1-year follow-up. Examination of changes over time in adolescents’ depressive symptoms indicates a trend toward a slight decrease in the overall level of depressive symptoms over the 1-year follow-up period of this study,  $t(143) = -1.96 p = .052$ .

Initial analyses examined the role of gender, family income, and racial/ethnic minority status on adolescent depression. Although girls displayed higher levels of behavior undermining autonomy and relatedness with mothers at age 13 and higher levels of calls for emotional support at age 14, none of the three demographic factors examined was related to adolescent depressive symptoms at either wave of data collection. However, given prior research findings on the role of gender in depression and its relation to predictor variables in this study, we retained gender in all analyses to account for any possible gender effects that might not reach conventional levels of statistical significance. We also examined possible moderating effects of gender on each of the relationships described in the primary analyses below. No such moderating effects were found beyond those expected by chance.

*Correlational analyses.* For descriptive purposes, Table 1 also presents simple correlations among all primary constructs examined in the study. These analyses indicate a number of simple correlations between family and peer relationship markers at age 13 and depressive symptoms at each time point, though these relationships are generally strongest with depressive symptoms at age 14. These analyses also indicate that with the exception of relationship markers obtained via the same method (i.e., coded from the same interaction) indices of youth functioning in parent and peer relationships are, for the most part, relatively independent of one another and thus provide relatively independent assessments of links between different facets of functioning with parents and peers and subsequent depression.

Primary Analyses

*Hypothesis 1.* Future increases in depressive symptoms will be predicted by difficulties establishing autonomy and relatedness in adolescents’ interactions with their mothers.

To address this hypothesis, we examined a series of hierarchical regressions predicting depressive symptoms at age 14. Levels of depressive symptoms at age 13 were entered first in all equations, followed by gender, and then followed by predictor variables of interest. This approach of predicting the future level of a variable,

Table 1  
Means, Standard Deviations, and Correlations Among Primary Constructs

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>M</i>	6.08	5.39	0.54	54.24	50.61	2.16	1.80	1.17	1.05	0.44	0.31	1.39	1.13
<i>SD</i>	4.57	4.93	0.40	10.76	10.37	2.52	2.21	0.60	0.39	0.73	0.42	1.14	1.17
1. Depressive symptoms (13)	.57***	—											
2. Depressive symptoms (14)	.21*	.33***	—										
3. Undermining autonomy and relatedness with mother (13)	-.52***	-.41***	-.11	—									
4. Overall quality of relationship with mother (13)	-.39***	-.42***	-.12	.54***	—								
5. Overall quality of relationship with mother (14)	.10	.24**	.22**	-.01	.00	—							
6. Social withdrawal from peers (13)	.22*	.24**	.06	-.17	-.18	.27**	—						
7. Social withdrawal from peers (14)	.05	.07	-.04	-.05	-.05	.12	.14	—					
8. Undermining autonomy with peer (13)	.00	.00	.08	-.07	-.19*	-.07	-.01	.08	—				
9. Undermining autonomy with peer (14)	.04	.25**	.09	-.17*	-.08	.16	.26**	.55***	.05	—			
10. Undermining relatedness with peer (13)	.01	.10	.07	-.02	-.08	.04	-.03	-.12	.41***	.14	—		
11. Undermining relatedness with peer (14)	-.12	.09	.03	.05	-.17	-.04	-.05	-.04	-.01	.03	.00	—	
12. Call for emotional support from peer (13)	.09	.07	-.07	-.02	-.18	-.08	-.02	.10	.02	-.13	-.06	-.25**	—
13. Call for emotional support from peer (14)													

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

such as depressive symptoms, while accounting for predictions from initial levels (e.g., stability) yields one marker of change in that variable: increases or decreases in future depressive symptoms relative to predictions from baseline levels (Cohen & Cohen, 1983). Predictive variables are entered into equations in order of the strength of their prior theoretical (and empirical, where known) links to depression, with variables with strongest links entered first. Analyses also assessed whether initial levels of depression interacted with any predictor variables in explaining future depression (Joiner, 1994), and these interactive effects are included below, when they were found to be significant.

Table 2 presents results in which adolescent behavior undermining autonomy and relatedness during disagreements with their mothers, and adolescents' assessments of the overall quality of that relationship, were entered into a regression equation predicting depressive symptoms at age 14, after we first accounted for adolescent gender and depressive symptoms at age 13. Both overall reported quality of relationship with mother and observed adolescent behavior undermining autonomy and relatedness in their interactions within the dyad contributed to understanding future increases in adolescent depressive symptoms. The effect of the adolescent's self-reported quality of relationship with their mother dropped to a trend level of prediction after we accounted for observed behavior undermining autonomy and relatedness. There was also an interaction between initial depressive symptoms and behavior undermining autonomy and relatedness in interactions. This interaction is depicted in Figure 1 using standardized scores for all variables and depicting regression lines for individuals one standard deviation above and below the mean score for baseline depression. For adolescents with relatively higher baseline levels of depressive symptoms, behavior undermining autonomy and relatedness with mothers was a stronger predictor of future depressive symptoms than for individuals with lower baseline levels of depressive symptoms.

*Hypothesis 2.* Future increases in depressive symptoms will be predicted by a combination of withdrawn, angry, and dependent behavior with peers.

Analyses next considered a constellation of observed close-peer interaction factors and peer-rated withdrawal as predictors of future levels of depressive symptoms. Table 3 presents results of

analyses using the approach outlined above, indicating that three of the four behaviors examined—behavior undermining relatedness with close friends, calls for emotional support from close friends, and social withdrawal—significantly predicted future levels of depressive symptoms, and further, each contributed independent variance to these predictions when considered jointly in regression analyses. Only adolescents' behaviors undermining autonomy in interactions with their close friends were not predictive of future depressive symptoms.

*Hypothesis 3.* Both familial and peer relational factors will contribute independent variance to explaining future increases in depressive symptoms.

Analyses next examined whether those predictors of future depressive symptoms identified from the family and peer domains above were redundant in their prediction of depressive symptoms or whether each contributed independent variance to these predictions. Table 4 presents results indicating that all of the previously identified predictors remained significant when considered jointly. This indicates that the assessed parental and peer relationship behaviors each independently contributed to understanding future relative increases in adolescent depression. Together, these predictors contributed an additional 15% of explained variance in total depressive symptoms beyond baseline depression and gender.

### Post Hoc Analyses

*Reciprocal effects of depressive symptoms on interpersonal behaviors.* Post hoc exploratory analyses also examined potential reciprocal effects of depressive symptoms at age 13 as predictors of change in qualities of interpersonal behavior over the following year. These were examined using the same hierarchical regression procedure described above, with the interpersonal behavior at age 14 predicted in a model with the behavior at age 13 entered first, followed by gender, and then followed by age 13 levels of depressive symptoms. These analyses revealed a significant predictive effect only for social withdrawal, with depressive symptoms at age 13 predicting relative increases in social withdrawal over time ( $\beta_{\text{Time 1 depression}} = .20, p = .02$ ). A trend was found for depressive symptoms to predict lower levels of reported quality of relationship with mothers over time ( $\beta_{\text{Time 1 depression}} = -.16, p = .06$ ).

Table 2  
Predicting Changes in Adolescent Depression From Qualities of Mother-Adolescent Interactions

Step	Depression (age 14)			
	$\beta$ entry	$\beta$ final	$\Delta R^2$	Total $R^2$
I: Depression (age 13)	.57***	.39***	.33***	.33***
II: Sex <sup>a</sup>	.07	.01	.00	.33***
III: Overall quality of relationship with mother	-.16*	-.15†	.02*	.35***
IV: Observed behavior undermining autonomy and relatedness with mother	.22***	.19**	.05***	.40***
V: Depression (Age 13) × Behavior Undermining Autonomy and Relatedness	.19**	.19**	.03**	.43***

Note.  $N = 141$ .

<sup>a</sup> 1 = males; 2 = females.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p \leq .001$ .

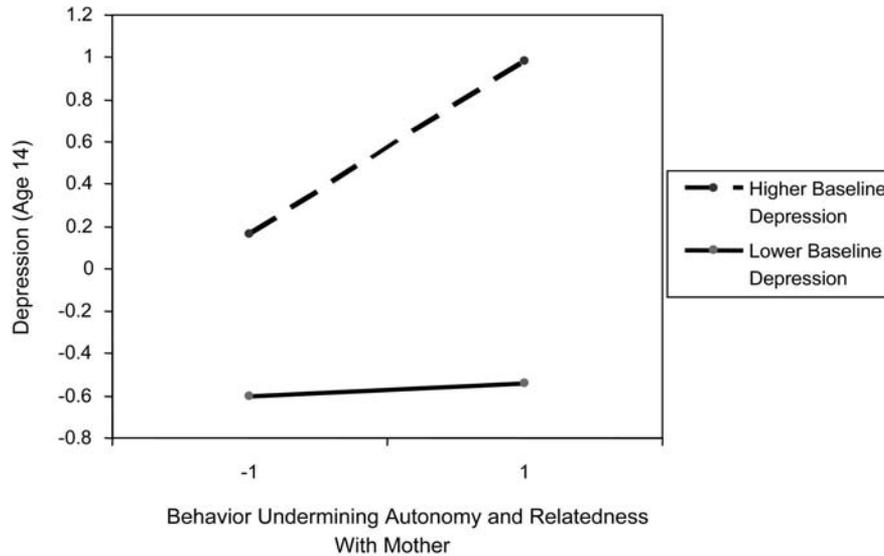


Figure 1. Interaction of initial levels of depression and behavior with mother undermining autonomy and relatedness in predicting depression at age 14.

### Discussion

This study identified a constellation of behaviors in close relationships that combined to predict relative increases in levels of depressive symptoms across a 1-year period in early adolescence. In discussions of disagreements with their mothers, adolescent behaviors that served to undermine autonomy and relatedness predicted relative increases in future levels of depressive symptoms. In close peer relationships, a triad of withdrawn, angry, or dependent behaviors predicted future relative increases in depressive symptoms. When examined together, observations from both parent and close friend interactions each contributed unique variance to explaining future depressive symptoms, suggesting that each domain may play an independent role in understanding the development of depressive symptoms during early adolescence.

Each of the reported findings reflected predictions of future levels of depression after accounting for concurrent levels. Al-

though not sufficient to establish causal relations, this approach does surmount the problem with identified concurrent links between depression and functioning—that they may simply reflect a role of depressive symptoms in creating psychosocial difficulties (Lewinsohn & Essau, 2002). This study also heavily used observational measures of actual social interactions. Although adolescent self-reports of global success or difficulty in social relationships have been linked to depressive symptoms, the use of observational data permits identification of specific behavior patterns that predict future symptoms and that are not confounded with negative perceptual biases on the part of depressed adolescents (Gotlib, 1983).

In mother–adolescent interactions, the link between adolescent behavior undermining autonomy and relatedness in disagreements and future relative increases in depressive symptoms is consistent with research that has emphasized the fundamental developmental

Table 3  
*Predicting Changes in Adolescent Depression From Qualities of Peer–Adolescent Interactions*

Step	Depression (age 14)			
	$\beta$ entry	$\beta$ final	$\Delta R^2$	Total $R^2$
I: Depression (age 13)	.58***	.57***	.33***	.33***
II: Sex <sup>a</sup>	.04	.03	.00	.33***
III			.06**	.39***
Observed behavior undermining autonomy with peer	-.12	-.11		
Observed behavior undermining relatedness with peer	.28***	.25***		
IV: Observed calls for emotional support from peer	.14*	.14*	.02*	.41***
V: Peer ratings of teen social withdrawal	.17**	.17**	.03**	.44***

Note.  $N = 143$ .

<sup>a</sup> 1 = males; 2 = females.

\*  $p < .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

Table 4  
*Predicting Changes in Adolescent Depression From Parent and Peer Interactions Conjointly*

Step	Depression (age 14)			
	$\beta$ entry	$\beta$ final	$\Delta R^2$	Total $R^2$
I: Depression (age 13)	.58***	.53***	.33***	.33***
II: Sex <sup>a</sup>	.04	.00	.00	.33***
III: Observed behavior undermining autonomy and relatedness with mother	.23***	.14*	.05***	.38***
IV: Observed behavior undermining relatedness with peer	.19**	.14*	.04**	.42***
V: Observed calls for emotional support from peer	.13*	.14*	.02*	.44***
VI: Peer ratings of teen social withdrawal	.13*	.15*	.02*	.46***
VII: Depression (Age 13) $\times$ Behavior Undermining Autonomy and Relatedness	.18**	.18**	.02**	.48***

Note.  $N = 141$ .

<sup>a</sup> 1 = males; 2 = females.

\*  $p < .05$ . \*\*  $p \leq .01$ . \*\*\*  $p < .001$ .

salience of autonomy and relatedness negotiations in adolescence (Allen, Hauser, Eichholt, et al., 1994; Kobak & Ferenz-Gillies, 1995; Kobak et al., 1991). Notably, this study found a modest interactive effect, such that adolescents' behavior undermining autonomy and relatedness in interactions with their mothers displayed the strongest relations to future depression for adolescents who were already experiencing higher baseline levels of depression. One explanation for these findings is that adolescents experiencing higher baseline depression may have had less energy with which to compensate if their relationships with their mothers were autonomy undermining. Although more energetic adolescents might strike out in other directions when faced with such enmeshing relationships, depressed adolescents, by virtue of their passivity, may be even more dependent upon and susceptible to the autonomy-undermining nature of their maternal relationships. One explanation for these findings, consistent with Hammen's (1991) stress-generation hypothesis, is that early adolescents who easily become enmeshed in hostile, autonomy-undermining behavior when discussing disagreements with parents are likely to experience increasing stress as adolescence progresses and as autonomy negotiations become more frequent and their stakes grow higher. Because the autonomy-gaining task is so central to adolescent development, it may be that interactions that significantly undermine the smooth progression of this task leave the adolescent feeling consistently frustrated, stressed, and prone to increasing depressive symptoms over time.

Early adolescents' overall appraisals of their relationships with their parents were also linked to future depressive symptoms, but these links became nonsignificant after accounting for actual observations of autonomy negotiations. This suggests that progress in the specific developmental task of negotiating one's autonomy with a parent may be more central than more general appraisals of the parental relationship in understanding the development of future depressive symptoms. Alternatively, it may simply be that observations of parent-teen interactions yield information that is more relevant to understanding the development of depressive symptoms—an explanation which would have significant implica-

tions in terms of clinical assessment procedures for potentially depressed adolescents.

Although parental relationship qualities clearly played a predictive role, relative increases in future depressive symptoms were also predicted from the hypothesized triad of behaviors with close peers: social withdrawal, observed angry interactions in the midst of autonomy discussions, or emotional dependency observed in interactions with a best friend, with each of these three factors making small, but additive, contributions to explaining future depressive symptoms.

The predictive role of social withdrawal, as observed from the perspective of one's closest friend, may in part be due to the rapid change in the nature and intensity of peer relationships that occurs in early adolescence (Collins, 1997). Withdrawal during this period would be likely to leave the adolescent ill positioned to keep up with rapidly changing norms and skill sets required to negotiate peer interactions. Withdrawal may thus set the stage for future distress as the adolescent either flounders in increasingly salient peer interactions due to lack of developed skills or is left out of these interactions entirely. Although withdrawal has often been considered as a possible effect of adolescent depression, these data suggest that it also warrants a consideration as a precursor of depressive symptoms. Prior researchers have reasonably questioned whether the associations of withdrawal and depression reflected the predictive power of withdrawal in terms of future depression, or the power of depression to predict future withdrawal, or some combination of the two. The current results provide evidence for both processes. These findings suggest the possibility of a self-reinforcing cycle in which depression may be self-propagating, in part through its tendency to predict higher future levels of withdrawal, which in turn lead to higher future levels of depression (Joiner, 2000).

Displays of behavior undermining relatedness (e.g., anger and hostility) toward a best friend also predicted relative increases in future depressive symptoms. Inability to handle even a relatively low-stress autonomy task (i.e., a disagreement about a hypothetical situation) without resorting to hostile or angry behavior may set

the adolescent up for difficulties in handling the negotiations that inevitably come with increasingly intense close peer relationships. This finding suggests the potential importance of learning to manage negotiations around autonomy issues with peers, not just with parents, as a significant developmental task, with implications for the development of depressive symptoms.

The final identified peer relationship predictor of future depressive symptoms—expressions of emotional dependency upon a best friend—is consistent with findings from self-report studies that high levels of emotional dependency on others are predictive of depression in late adolescence and young adulthood (Blatt & et al., 1982; Lewinsohn et al., 1994; Lewinsohn, Rohde, et al., 2000). The current findings extend prior self-report studies of dependency to early adolescents and their peers and, more important, do so by use of observational data to assess dependency. The use of observational data makes clear that previously reported links between dependency and depression are not simply due to perceptual biases that lead depression-prone individuals to label themselves as dependent. Notably, what was assessed was not a general expression of overall psychological distress (as captured by the Child Depression Inventory) but rather persistence in calling for support around specific instances of emotional distress about discrete topics that teens had selected for discussions with their best friends. In early adolescence in particular, expressions of emotional distress and calls for support may be problematic given that they are being made to other 13-year-olds, who may be neither well equipped nor even interested in meeting these calls.

When considered together, both autonomy- and relatedness-undermining behaviors with parents and the withdrawn–angry–dependent triad of behaviors with friends each contributed small, but unique, amounts of variance to explain future depressive symptoms. The independence of these predictions, as well as consideration of the diverse nature of the three predictive behaviors, suggests that what each behavior shares in common is not a single underlying trait-like feature. Rather, it may be that each behavior reflects a distinct mechanism by which early adolescents can fare poorly in the critical social developmental task of learning to manage the give and take involved in negotiating issues of autonomy and relatedness in close relationships. This struggle may have been manifest in terms of social withdrawal by some adolescents, by quick turns to anger and hostility in others, and by high levels of emotional dependency or autonomy struggles in others. In each case, problems in establishing autonomy or relatedness in close relationships are likely to set the adolescent up for significant future difficulties in social interactions, creating the kinds of chronic stress and distress that have been found likely to lead to depression (Compas, Howell, Phares, & Williams, 1989; Hammen, 2000; Hammen, Shih, Altman, & Brennan, 2003).

The observational measures assessed in this study focused primarily upon the target adolescents' behavior. This was in keeping both with the past convention with these measures (Allen, Hauser, Eickholt, et al., 1994; Allen et al., 2002) and a theoretical focus on adolescent behavior that may predict future depression (and may potentially be amenable to intervention) and with typical uses of past observational research. The observed interactions, however, are inherently transactional in nature, extending over time and place in relationships with unique histories. From this perspective, it may make no more sense to speak of an adolescent's behavior in isolation in such an interaction than to speak of a dancer's steps in

isolation from those of his or her partner. Rather, it appears most sensible to view the adolescent's behavior as one window into an ongoing dyadic relationship that might alternatively have been viewed in terms of partner behavior or dyadic interaction patterns. From that perspective, what is being observed are specific problematic interaction patterns that may reflect ongoing problems in major social relationships (Coyne, 1976a, 1976b).

An alternative interpretation of these findings is that the interpersonal behaviors observed each reflect different manifestations of a more general construct of negative emotionality in interpersonal relationships. From this perspective, the specificity of the interpersonal interaction qualities observed may be less important than their overall negative character. We tend to think that the strong and nonredundant effects for the different qualities observed are more consistent with viewing these qualities as somewhat independent behavioral precursors of depression (rather than just an array of markers of a single trait). In either case, however, the results point toward the potential importance of considering interventions that might focus on altering these manifestations of problems in the interpersonal relationships of early adolescents.

The two most effective psychosocial interventions for depression in adolescence—cognitive–behavior therapy and interpersonal psychotherapy—both make heavy use of social skills training and social interactional approaches (Kaslow et al., 2002; Mufson et al., 1999). The findings of this study, if replicated, could be useful in targeting these therapies more precisely at specific behavioral patterns known to predict the greatest risk for future depressive symptoms. Given concerns raised about the safety and efficacy of psychopharmacological interventions for depressed adolescents (U.S. Food and Drug Administration, 2004), it is critical that we continue to enhance the knowledge base supporting psychosocial approaches to treating depressive symptoms.

Several limitations of this study also bear mention. First, although longitudinal studies predicting relative change over time in depressive symptoms can rule out many alternative noncausal hypotheses, they are not sufficient in and of themselves to establish causal relations between depressive symptoms and the behavior patterns observed. The development of stronger causal models linking social behavior and depression will ultimately depend upon assessments that capitalize on therapeutic efforts directed at changing behavior patterns such as those examined in this study.

Second, this study focused on depressive symptoms, not on diagnoses of major depression, and did so within a broadly representative community sample of adolescents. Although participation rates were good overall for this study, given its intensive nature, it may well be that more depressed adolescents were less likely to participate initially, and hence the study sample may somewhat underrepresent depression in the larger population from which it was drawn. This might also account for the somewhat less depressed nature of this sample relative to other samples reported in the literature. Although it is now well established that subsyndromal levels of depressive symptoms, as were likely most frequent among the more depressed adolescents in this sample, are associated with quite significant levels of distress and dysfunction (Hirschfeld, Klerman, Lavori, & Keller, 1989; Ingram & Siegle, 2002; Lewinsohn, Solomon, et al., 2000), further research is needed to assess the generalizability of these findings to more severely disturbed populations. It should also be noted that although this study focused upon depressive symptoms, it is quite

possible that the theoretical processes proposed would also apply to other internalizing symptoms (e.g., anxiety), and future research will be needed to examine the degree of specificity versus generality of the findings in this study to depression versus other symptoms.

In addition, this study raises, but cannot answer, important questions about whether patterns of relative change in depressive symptoms that begin during the age 13–14 window of this study reflect transient responses to prior social difficulties or the beginning of more significant clinical patterns of developing psychopathology. Similarly, although the effects observed in this study were statistically reliable and tended to be additive, predictions from any specific measure of social interactions to future symptoms tended to be small in magnitude. Although this is not surprising, given that these interactions reflected only extremely brief samples of observed behavior, and given the multidetermined nature of adolescent depression and the short-time frame of the study, it nevertheless suggests caution in considering direct clinical applications of any individual findings from this study. Although relative increases in levels of depressive symptoms are clearly of importance at any age, understanding the longer term developmental trends in such behavior as they relate to interpersonal interaction qualities is an important goal for future research. Additionally, mothers, but not fathers, were included in the present analyses, and it would be quite valuable to consider the role of father–adolescent interactions in future research on this topic.

Finally, it should be noted that this study focused solely on a fairly narrow period of development within early adolescence, although one during which depression is becoming an increasingly salient concern. The findings presented thus may not necessarily apply to other phases of adolescence. For example, no gender effects were observed in these data, and although this is consistent with epidemiological evidence that gender differences in depression do not become pronounced until the age 15–18 range (Hankin et al., 1998), these findings also suggest the importance of extending the current line of research into mid-adolescence and beyond. Similarly, the slight decline in overall levels of symptoms over time in this study, although consistent with meta-analytic results of longitudinal research on depression (Twenge & Nolen-Hoeksema, 2002), also suggests that further research later in adolescence will be needed to establish whether and how the particular relations between depressive symptoms and behavioral patterns observed in this study are maintained over time.

## References

- Allen, J. P., Hall, F. D., Insabella, G. M., Land, D. J., Marsh, P. A., & Porter, M. R. (2001). *Supportive Behavior Coding System*. Charlottesville, VA: University of Virginia.
- Allen, J. P., Hauser, S. T., Bell, K. L., McElhaney, K. B., Tate, D. C., Insabella, G. M., et al. (2000). *The autonomy and relatedness coding system*. Unpublished manuscript, University of Virginia, Charlottesville.
- Allen, J. P., Hauser, S. T., Bell, K. L., & O'Connor, T. G. (1994). Longitudinal assessment of autonomy and relatedness in adolescent–family interactions as predictors of adolescent ego development and self-esteem. *Child Development, 65*, 179–194.
- Allen, J. P., Hauser, S. T., Eichholt, C., Bell, K. L., & O'Connor, T. G. (1994). Autonomy and relatedness in family interactions as predictors of expressions of negative adolescent affect. *Journal of Research on Adolescence, 4*, 535–552.
- Allen, J. P., Hauser, S. T., O'Connor, T. G., & Bell, K. L. (2002). Prediction of peer-rated adult hostility from autonomy struggles in adolescent–family interactions. *Development and Psychopathology, 14*, 123–137.
- Allen, J. P., Porter, M. R., & McFarland, C. F. (2001). *The Autonomy and Relatedness Coding System for Peer Interactions*. Charlottesville, VA: University of Virginia.
- Alpert, J. E., Uebelacker, L. A., McLean, N. E., & Nierenberg, A. A. (1997). Social phobia, avoidant personality disorder and atypical depression: Co-occurrence and clinical implications. *Psychological Medicine, 27*, 627–633.
- Armsden, G. C., & Greenberg, M. T. (1987). The Inventory of Parent and Peer Attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence, 16*, 427–454.
- Berndt, T. J. (1996). Exploring the effects of friendship quality on social development. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 346–365). Cambridge, England: Cambridge University Press.
- Blatt, S. J., & et al. (1982). Dependency and self-criticism: Psychological dimensions of depression. *Journal of Consulting and Clinical Psychology, 50*, 113–124.
- Boivin, M., Hymel, S., & Bukowski, W. M. (1995). The roles of social withdrawal, peer rejection, and victimization by peers in predicting loneliness and depressed mood in childhood. *Development and Psychopathology, 7*, 765–785.
- Buhrmester, D. (1998). Need fulfillment, interpersonal competence, and the developmental contexts of early adolescent friendship. In W. M. Bukowski, A. F. Newcomb, & W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 158–185). Cambridge, England: Cambridge University Press.
- Cicchetti, D. V., & Sparrow, S. A. (1981). Developing criteria for establishing interrater reliability of specific items: Applications to assessment of adaptive behavior. *American Journal of Mental Deficiency, 86*, 127–137.
- Cicchetti, D., & Toth, S. L. (1998). The development of depression in children and adolescents. *American Psychologist, 53*, 221–241.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Collins, W. A. (1997). Relationships and development during adolescence: Interpersonal adaptation to individual change. *Personal Relationships, 4*, 1–14.
- Compas, B. E., Howell, D. C., Phares, V., & Williams, R. A. (1989). Parent and child stress and symptoms: An integrative analysis. *Developmental Psychology, 25*, 550–559.
- Compton, K., Snyder, J., Schrepferman, L., Bank, L., & Shortt, J. W. (2003). The contribution of parents and siblings to antisocial and depressive behavior in adolescents: A double jeopardy coercion model. *Development and Psychopathology, 15*, 163–182.
- Coyne, J. C. (1976a). Depression and the response of others. *Journal of Abnormal Psychology, 85*, 186–193.
- Coyne, J. C. (1976b). Toward an interactional description of depression. *Psychiatry: Journal for the Study of Interpersonal Processes, 39*, 28–40.
- Crowell, J., Pan, H., Goa, Y., Treboux, D., O'Connor, E., & Waters, E. B. (1998). *The Secure Base Scoring System for Adults* (Version 2.0). Unpublished manuscript, Stony Brook University, State University of New York.
- Daley, S. E., & Hammen, C. (2002). Depressive symptoms and close relationships during the transition to adulthood: Perspectives from dysphoric women, their best friends, and their romantic partners. *Journal of Consulting and Clinical Psychology, 70*, 129–141.
- Davila, J., Karney, B. R., Hall, T. W., & Bradbury, T. N. (2003). Depressive symptoms and marital satisfaction: Within-subject associations and

- the moderating effects of gender and neuroticism. *Journal of Family Psychology*, *17*, 557–570.
- Galambos, N. L., Leadbeater, B. J., & Barker, E. T. (2004). Gender differences in and risk factors for depression in adolescence: A 4-year longitudinal study. *International Journal of Behavioral Development*, *28*, 16–25.
- Gotlib, I. H. (1983). Perception and recall of interpersonal feedback: Negative bias in depression. *Cognitive Therapy and Research*, *7*, 399–412.
- Gotlib, I. H., Lewinsohn, P. M., & Seeley, J. R. (1998). Consequences of depression during adolescence: Marital status and marital functioning in early adulthood. *Journal of Abnormal Psychology*, *107*, 686–690.
- Hammen, C. (1991). Generation of stress in the course of unipolar depression. *Journal of Abnormal Psychology*, *100*, 555–561.
- Hammen, C. (2000). Interpersonal factors in an emerging developmental model of depression. In S. L. Johnson, A. M. Hayes, T. M. Field, N. Schneiderman, & P. M. McCabe (Eds.), *Stress, coping, and depression* (pp. 71–88). Mahwah, NJ: Erlbaum.
- Hammen, C., & Brennan, P. A. (2001). Depressed adolescents of depressed and nondepressed mothers: Tests of an interpersonal impairment hypothesis. *Journal of Consulting and Clinical Psychology*, *69*, 284–294.
- Hammen, C., Shih, J., Altman, T., & Brennan, P. A. (2003). Interpersonal impairment and the prediction of depressive symptoms in adolescent children of depressed and nondepressed mothers. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*, 571–577.
- Hankin, B. L., Abramson, L. Y., Moffitt, T. E., Silva, P. A., McGee, R., & Angell, K. E. (1998). Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology*, *107*, 128–140.
- Harter, S., & Whitesell, N. R. (1996). Multiple pathways to self-reported depression and psychological adjustment among adolescents. *Development and Psychopathology*, *8*, 761–777.
- Haynes, C., & Fainsilber Katz, L. (1998). *The Asset Coding Manual: Adolescent social skills evaluation technique*. Unpublished manuscript, University of Washington, Seattle.
- Henrich, C. C., Blatt, S. J., Kuperminc, G. P., Zohar, A., & Leadbeater, B. J. (2001). Levels of interpersonal concerns and social functioning in early adolescent boys and girls. *Journal of Personality Assessment*, *76*, 48–67.
- Hirschfeld, R. M., Klerman, G. L., Lavori, P., & Keller, M. B. (1989). Premorbid personality assessments of first onset of major depression. *Archives of General Psychiatry*, *46*, 345–350.
- Ingram, R. E., & Siegle, G. J. (2002). Contemporary methodological issues in the study of depression: Not your father's Oldsmobile. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (pp. 86–114). New York: Guilford Press.
- Joiner, T. E., Jr. (1994). Covariance of baseline symptom scores in prediction of future symptom scores: A methodological note. *Cognitive Therapy and Research*, *18*, 497–504.
- Joiner, T. E., Jr. (1997). Shyness and low social support as interactive diatheses, with loneliness as mediator: Testing an interpersonal-personality view of vulnerability to depressive symptoms. *Journal of Abnormal Psychology*, *106*, 386–394.
- Joiner, T. E., Jr. (2000). Depression's vicious scree: Self-propagating and erosive processes in depression chronicity. *Clinical Psychology: Science and Practice*, *7*, 203–218.
- Joiner, T. E., Jr. (2002). Depression in its interpersonal context. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (pp. 295–313). New York: Guilford Press.
- Joiner, T. E., Jr., Metalsky, G. I., Katz, J., & Beach, S. R. (1999). Depression and excessive reassurance-seeking. *Psychological Inquiry*, *10*, 269–278.
- Julien, D., Markman, H., Lindahl, K., Johnson, H., Van Widenfelt, B., & Herskovitz, J. (1997). *The interactional dimensions coding system*. Unpublished manuscript, University of Denver, CO.
- Kaslow, N. J., McClure, E. B., & Connell, A. M. (2002). Treatment of depression in children and adolescents. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (pp. 441–464). New York: Guilford Press.
- Kazdin, A. E. (1990). Childhood depression. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *31*, 121–160.
- Kobak, R. R., & Ferenz-Gillies, R. (1995). Emotion regulation and depressive symptoms during adolescence: A functionalist perspective. *Development and Psychopathology*, *7*, 183–192.
- Kobak, R. R., Sudler, N., & Gamble, W. (1991). Attachment and depressive symptoms during adolescence: A developmental pathways analysis. *Development and Psychopathology*, *3*, 461–474.
- Kovacs, M. (1992). *Children's Depression Inventory Manual*. New York: Multi-Health Systems.
- Kovacs, M., & Beck, A. T. (1977). *An empirical clinical approach toward a definition of childhood depression*. New York: Raven Press.
- Lewinsohn, P. M., & Essau, C. A. (2002). Depression in adolescents. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (pp. 541–559). New York: Guilford Press.
- Lewinsohn, P. M., Hops, H., Roberts, R. E., & Seeley, J. R. (1993). Adolescent psychopathology: I. Prevalence and incidence of depression and other DSM-III-R disorders in high school students. *Journal of Abnormal Psychology*, *102*, 133–144.
- Lewinsohn, P. M., Roberts, R. E., Seeley, J. R., & Rohde, P. (1994). Adolescent psychopathology: II. Psychosocial risk factors for depression. *Journal of Abnormal Psychology*, *103*, 302–315.
- Lewinsohn, P. M., Rohde, P., & Seely, J. R. (1998). Major depressive disorder in older adolescents: Prevalence, risk factors, and clinical implications. *Clinical Psychology Review*, *18*, 765–794.
- Lewinsohn, P. M., Rohde, P., Seeley, J. R., Klein, D. N., & Gotlib, I. H. (2000). Natural course of adolescent major depressive disorder in a community sample: Predictors of recurrence in young adults. *American Journal of Psychiatry*, *157*, 1584–1591.
- Lewinsohn, P. M., Solomon, A., Seeley, J. R., & Zeiss, A. (2000). Clinical implications of "subthreshold" depressive symptoms. *Journal of Abnormal Psychology*, *109*, 345–351.
- Mufson, L., Weissman, M. M., Moreau, D., & Garfinkel, R. (1999). Efficacy of interpersonal psychotherapy for depressed adolescents. *Archives of General Psychiatry*, *56*, 573–579.
- Nelson, D. R., Hammen, C., Brennan, P. A., & Ullman, J. B. (2003). The impact of maternal depression on adolescent adjustment: The role of expressed emotion. *Journal of Consulting and Clinical Psychology*, *71*, 935–944.
- Nolan, S. A., Flynn, C., & Garber, J. (2003). Prospective relations between rejection and depression in young adolescents. *Journal of Personality and Social Psychology*, *85*, 745–755.
- Patterson, G. R., & Capaldi, D. M. (1990). A mediational model for boys' depressed mood. In J. E. Rolf & A. S. Masten (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 141–163). New York: Cambridge University Press.
- Pekarik, E. G., Prinz, R. J., Liebert, D. E., Weintraub, S., & Neale, J. M. (1976). The pupil evaluation inventory: A sociometric technique for assessing children's social behavior. *Journal of Abnormal Child Psychology*, *4*, 83–97.
- Pfieffer, J. W., & Jones, J. E. (1974). *The 1974 annual handbook for group facilitators*. La Jolla, CA: University Associates Publishers.
- Price, J., Sloman, L., Gardner, R., Gilbert, P., & Rohde, P. (1994). The social competition hypothesis of depression. *British Journal of Psychiatry*, *164*, 309–315.
- Prinstein, M. J., & Aikins, J. W. (2004). Cognitive moderators of the longitudinal association between peer rejection and adolescent depressive symptoms. *Journal of Abnormal Child Psychology*, *32*, 147–158.

- Reynolds, W. M., & Johnston, H. F. (1994). The nature and study of depression in children and adolescents. In W. M. Reynolds & H. F. Johnston (Eds.), *Handbook of depression in children and adolescents. Issues in clinical child psychology* (pp. 3–17). New York: Plenum Press.
- Shahar, G., Blatt, S. J., Zuroff, D. C., Kuperminc, G. P., Leadbeater, B. J., & Bonnie, J. (2004). Reciprocal relations between depressive symptoms and self-criticism (but not dependency) among early adolescent girls (but not boys). *Cognitive Therapy and Research*, 28, 85–103.
- Sheeber, L., Hops, H., Alpert, A., Davis, B., & Andrews, J. (1997). Family support and conflict: Prospective relations to adolescent depression. *Journal of Abnormal Child Psychology*, 25, 333–344.
- Sroufe, L. A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology*, 9, 251–268.
- Strodtbeck, F. (1951). Husband–wife interaction over revealed differences. *American Sociology Review*, 16, 463–473.
- Tencer, H. T., Allen, J. P., McElhaney, K. B., Moore, C. M., O’Beirne Kelly, H., & Davis, S. (in press). The use of harsh physical discipline and developmental outcomes in adolescence. *Development and Psychopathology*.
- Twenge, J. M., & Nolen-Hoeksema, S. (2002). Age, gender, race, socioeconomic status, and birth cohort difference on the children’s depression inventory: A meta-analysis. *Journal of Abnormal Psychology*, 111, 578–588.
- U.S. Food and Drug Administration. (2004). *FDA public health advisory: Worsening depression and suicidality in patients being treated with antidepressant medications*. Washington, DC: Author.
- Weintraub, S., Prinz, R. J., & Neale, J. M. (1978). Peer evaluations of the competence of children vulnerable to psychopathology. *Journal of Abnormal Child Psychology*, 6, 461–473.
- Zahn-Waxler, C., Klimes-Dougan, B., & Slattery, M. J. (2000). Internalizing problems of childhood and adolescence: Prospects, pitfalls, and progress in understanding the development of anxiety and depression. *Development and Psychopathology*, 12, 443–466.

Received August 16, 2004

Revision received May 12, 2005

Accepted May 12, 2005 ■

## Low Publication Prices for APA Members and Affiliates

**Keeping you up-to-date.** All APA Fellows, Members, Associates, and Student Affiliates receive—as part of their annual dues—subscriptions to the *American Psychologist* and *APA Monitor*. High School Teacher and International Affiliates receive subscriptions to the *APA Monitor*, and they may subscribe to the *American Psychologist* at a significantly reduced rate. In addition, all Members and Student Affiliates are eligible for savings of up to 60% (plus a journal credit) on all other APA journals, as well as significant discounts on subscriptions from cooperating societies and publishers (e.g., the American Association for Counseling and Development, Academic Press, and Human Sciences Press).

**Essential resources.** APA members and affiliates receive special rates for purchases of APA books, including the *Publication Manual of the American Psychological Association*, and on dozens of new topical books each year.

**Other benefits of membership.** Membership in APA also provides eligibility for competitive insurance plans, continuing education programs, reduced APA convention fees, and specialty divisions.

**More information.** Write to American Psychological Association, Membership Services, 750 First Street, NE, Washington, DC 20002-4242.