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Attachment, autonomy, and multifinality in adolescent internalizing and risky behavioral symptoms

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Abstract
A diathesis-stress *interaction* model is used to describe multifinality in adolescent internalizing and risky behavioral outcomes. Problematic behavior associated with adolescent insecure preoccupation (a diathesis) was expected to interact with the level of maternal autonomous discourse (a stressor) to predict specific adolescent outcomes. Assessments of adolescent preoccupied attachment organization, observations of maternal displays of autonomy in mother–adolescent interactions, and adolescent reports of internalizing symptoms and risky behaviors were obtained at age 16. As predicted, maternal autonomy in the mother–adolescent relationship helped to explain multifinality in dysfunctional symptoms among preoccupied adolescents. Adolescent preoccupation was more strongly linked to internalizing behavior when mothers demonstrated low levels of autonomy in interactions with their adolescents and more strongly linked to risky behavior when mothers displayed extremely high levels of autonomy. Implications for autonomy processes in increasing our understanding of how adolescent insecure–preoccupation relates to profiles of specific problems during adolescence are discussed as is the importance of exploring the role of attachment in different contexts.

One of the more enduring challenges in the study of developmental psychopathology is to understand the phenomenon of multifinality, in which an initial vulnerability may be associated with different behavioral outcomes for different individuals (Cicchetti & Rogosch, 1996). Understanding not just psychopathology in *general* but also the factors associated with its expression in *specific* forms is critical to identifying profiles of individuals who may benefit from different kinds of help and intervention (Achenbach, 1978) and for targeting problem-specific prevention programs (Tolan, Guerra, & Kendall, 1995; Weisz & Weersing, 1999). Understanding multifinality involves identifying the particular contextual factors that, in combination with a specific risk factor, are associated with different *types* of pathology (Cicchetti & Rogosch, 1996). In the present study, a diathesis–stress interaction model, which posits that the specific way in which an underlying vulnerability is manifested relates to other contextual challenges (Sroufe, 1997), is proposed to describe multifinality in problematic outcomes among preoccupied adolescents. This model is used to examine one of the critical questions of multifinality in adolescent psychopathology: under what stresses are specific problematic representations of family relationships (diathesis) more strongly associated with internalizing symptoms versus risky behaviors?

This study focuses on a specific vulnerability—a preoccupied attachment organization—linked to *both* internalizing states *and* risky

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behavior in adolescence (Allen & Land, 1999). We concentrate on insecure preoccupation because we see it as likely to pose an especially problematic challenge during adolescence, a time when the development of personal identity and transitions in relationships climax. Insecure preoccupation with attachment reflects a state of overstimulation and/or excessive anger when thinking about attachment experiences and is characterized by an excessive sense of involvement in attachment relationships and a confused or weak sense of personal identity (Main & Goldwyn, 1998). Preoccupation has been linked to higher levels of *both* deviant behavior *and* depression in adolescence, which is not surprising, given the extent to which excessive involvement in attachment relationships may conflict with normative developmental transitions (Allen, Moore, Kuperminc, & Bell, 1998; Cooper, Shaver, & Collins, 1998). Less clear are the factors associated with the specific ways in which pathology associated with preoccupation will be manifested during adolescence (e.g., more internalizing vs. risky behavior; Allen & Land, 1999; Cassidy, 1994). Understanding such multifinality is critical to identifying processes underlying different forms of psychopathology and developing appropriate treatment and prevention approaches. This study considers a specific parenting behavior, maternal autonomous communication (i.e., intensity of maternal reasoned, confident arguments), as a predictor of whether insecure preoccupation will be manifested more in terms of internalizing states or engagement in risky behaviors. This conception of multifinality is illustrated in Figure 1.

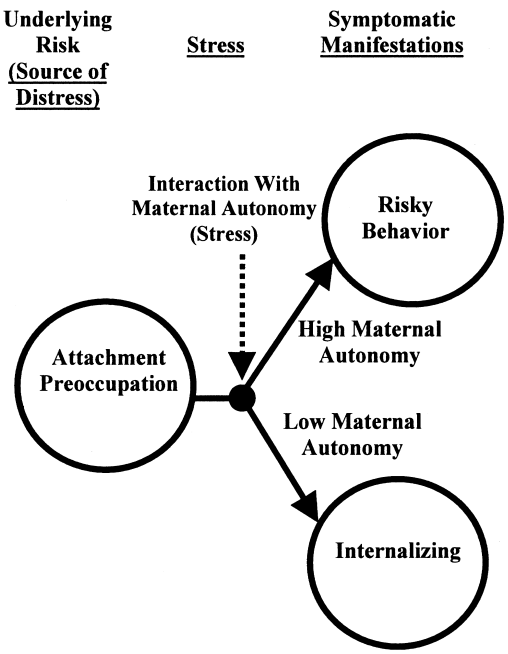


Figure 1. The hypothesized multifinality in internalizing and risky behaviors for preoccupied adolescents.

We suggest that the specific type of problematic behavior displayed by highly preoccupied adolescents is meaningful when considered within the parenting context. It is well recognized that the quality of family interactions surrounding autonomy issues is linked to adolescent emotional and behavioral adjustment (e.g. Allen, Hauser, Bell, & O'Connor, 1994; Pavlidis & McCauley, 2001). For example, parental suppression of autonomy through psychological control has been linked to adolescent internalizing symptoms, whereas low behavioral control has been connected to externalizing symptoms (Barber, Olsen, & Shale, 1994). Other research suggests that the relationship between a parent's restriction of autonomy and adolescent outcomes is stronger under certain conditions, such as when the adolescent is more open to thinking about attachment related issues (Allen, Moore, et al., 1998). Another feature of autonomy in the parent–adolescent relationship, autonomous communication demonstrated by parents (e.g., discourse reflecting differentiation and independence of thought), may be an important family contextual factor associated with multifinality in problematic outcomes when there is a risk factor such as preoccupation. Research suggests that, whereas some families of preoccupied adolescents are open to family members' expressions of independent thoughts and feelings, other families of preoccupied adolescents are more resistant to such expressions (Reimer, Overton, Steidl, Rosenstein, & Horowitz, 1996). Thus, within the preoccupied subgroup there are important differences in familial openness to autonomy. While the interrelationships between *adolescents'* autonomy strivings and models of attachment have been clearly

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articulated (e.g., Allen & Hauser, 1996; Kobak, Everhart, Seabrook, & Ferenz–Gillies, 1994; Noom, Dekovic, & Meeus, 1999), research has only begun to explore the interrelationship between *parents' own autonomous expressions* and adolescents' models of attachment (Allen & Hauser, 1996; Allen, Hauser, Bell, et al., 1994; Allen et al., 2002). Because of their overengagement with parents, insecurely preoccupied adolescents may feel particularly threatened by parental expressions of autonomy (Allen et al., 2002).

Recent research demonstrates one type of moderating effect of maternal autonomous communication on the link between adolescent preoccupation and pathology. For insecure–preoccupied adolescents, we previously reported that *high* maternal use of reasoned, autonomous arguments was linked with increases in delinquent behavior (e.g., all criminal behavior except drug use) and decreases in social skills from ages 14 to 16 (Allen et al., 2002). Mothers who show strong displays of autonomy with assertive, independent arguments during discussions with their adolescents are likely to pose a confusing dilemma for the adolescent who is intensely preoccupied with maintaining a close maternal relationship. A parent's assertion of autonomous separation in thoughts and ideas may leave these adolescents, who perceive the relationship as tenuous and delicate, feeling threatened and may unleash feelings of fear, pent-up anger, and frustration. Mothers who are self-assured, reasoned, and confident may also dominate and control family discussions in ways that leave their preoccupied adolescents more likely to seek their own autonomy *outside* of the relationship, through externalizing and risky behaviors. These adolescents may be turning to delinquent behaviors both in frustration and as a way to vent angry and/or confused feelings (Allen, Hauser, Eickholt, Bell, & O'Connor, 1994). For preoccupied adolescents, externalizing and risky behaviors may even serve as attachment behaviors in that they implicitly cry out for help and intervention from the parent (Allen & Land, 1999; Kobak & Cole, 1994). The present investigation extends our previous work (Allen et al., 2002) by examining whether the relationship between high maternal autonomy and delinquency also holds for potentially self-destructive "risky" behaviors (i.e., drug and alcohol use and sexual behavior).

The main goal of the present study, however, is to examine the hypothesis that the relationship between high levels of maternal autonomy and externalizing or risky behavior seen among more preoccupied adolescents is just *one* possible outcome associated with the diathesis–stress interaction between adolescent preoccupation and maternal autonomous communication. For preoccupied adolescents, who have difficulty gaining cognitive and emotional distance in attachment relationships, a mother who is unassertive and tentative, displaying very *little* autonomy, would be likely to exacerbate feelings of enmeshment and entanglement in the relationship. A mother who does not display autonomy in interactions with her teen suggests, not only that she may lack the skills and emotional strength to handle distance within the relationship, but also that potentially contentious interactions are to be avoided. These mothers' preoccupied adolescents are likely to imitate maternal avoidance and passivity and, as a result, to learn to use an internal (rather than external) coping style to manage their underlying distress (Allen & Ladd, 1999; Kobak & Cole, 1994). Further, these mothers' failure to model autonomy within the family may leave their adolescents particularly vulnerable to dysphoric states by exacerbating feelings of overdependency and overinvolvement in the relationship during a developmental phase when autonomy challenges are paramount (Kobak & Cole, 1994). This is in contrast to the highly autonomous but risky behaviors that preoccupied adolescents with highly autonomous mothers may employ to express their affective arousal and underlying distress.

The present investigation sought to provide new information regarding the interrelationship between autonomy processes and preoccupied attachment relationships as they relate to multifinality in adolescent outcomes. This study considered the relations among adolescent preoccupied attachment, maternal autonomous behaviors, and subclinical levels of adolescents' risky behavior (i.e., earlier onset of

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sexual activity, higher levels of soft drug use) and internalizing symptoms (i.e., anxiety, depression) at age 16. This study examined a critical hypothesis from the diathesis–stress model proposed above—that is, a moderating effect of autonomy processes on adolescent preoccupied attachment, in which the presence of high levels of maternal autonomy would be associated with heightened risky behaviors and lower levels of internalizing behaviors for more preoccupied adolescents. Conversely, lower levels of maternal autonomy were expected to be linked to heightened levels of internalizing behaviors and lower levels of other risky behaviors among more preoccupied adolescents. These hypotheses were all assessed using a combination of interview, observational, and self-report data, within a moderately at-risk sample of midadolescents that was specifically targeted to allow hypotheses to be examined within a maximally meaningful range of functioning (e.g., including substantial numbers of adolescents functioning both adequately and poorly).

Methods

Subjects

Data for the analyses in this study were collected from a sample of 123 students in the 9th and 10th grades (62 male, 61 female) and their mothers. Adolescents were recruited through two public schools serving rural, suburban, and moderately urban populations. The 9th and 10th graders were selected for inclusion in the study based upon the presence of at least one of four possible academic risk factors, including failing a single course for a single marking period, any lifetime history of grade retention, 10 or more absences in one marking period, or any history of school suspension. These broad selection criteria were established to sample a sizable range of adolescents who could be identified from academic records as having the potential for future academic and social difficulties. This included both adolescents already experiencing serious difficulties and those who were performing adequately with only occasional, minor problems. As intended, these criteria identified approximately one-half of all 9th and 10th grade students as eligible for the study. Of this preidentified group, approximately one-half agreed to participate in the study following an initial mailing that included post cards the families could return if they were interested in participating and follow-up calls to those expressing interest.

The mean age of the adolescents in this study was 15.9 years (SD = 0.77). The self-identified racial/ethnic background of the sample was 62% European American, 37% African American, and less than 1% other. The median family income was $25,000 (range = <$5,000 to >$70,000), and parents' median education level was a high school diploma with some training after high school (range = <eighth grade education to completion of advanced degree).

In terms of risky behaviors, the average lifetime soft drug use was one or two occasions drinking and/or using marijuana, 60% had had sexual intercourse before the time of data collection, and among these sexually active adolescents the average age of onset of sexual intercourse was 14.2 years. On the whole, the sample reported an average score of 9 points out of 63 on the Beck Depression Inventory (BDI; Beck & Steer, 1987) and an average anxiety score of 33 out of 60 on the State Trait Anxiety Inventory (STAI; Spielberger, 1983). Seventeen percent (21 adolescents) of the sample reported scores above the range for clinical depression on the BDI.

Procedure

After adolescents who met study criteria were identified, letters were sent to each family of a potential participant explaining the investigation as an ongoing study of the lives of teens and their families. These initial explanatory letters were then followed by phone calls to families who indicated a willingness to be further contacted. If both the teen and the parent(s) agreed to participate in the study, the family was scheduled to come to our offices for two 3-hr sessions. Families were paid a total of $105 for participation, and transportation and child care were provided if necessary. At each session, active, informed con-

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sent was obtained from parents and teens. In the initial introduction and throughout both sessions, confidentiality was assured to all family members, and adolescents were told that their parents would not be informed of any of the answers they provided. Participants' data were protected by a Confidentiality Certificate issued by the U.S. Department of Health and Human Services, which protected information from subpoena by federal, state, and local courts.

Measures

Adult Attachment Interview (*AAI*) *and* Q-*set.* This structured interview (AAI, George, Kaplan, & Main, 1996; *Q*-set, Kobak et al., 1993) probes individuals' descriptions of their childhood relationships with parents by asking for both abstract descriptions and specific supporting memories. For example, participants were asked to list five words describing their early childhood relationships with each parent and then to describe specific episodes that reflected those words. Other questions focused upon specific instances of upset, separation, loss, trauma, and rejection. Finally, interviewers asked participants to provide more integrative descriptions of changes in relationships with parents and the current state of those relationships. The interview consisted of 18 questions and lasted 1 hr on average. Slight adaptations to the adult version were made so that the questions were more natural, and easily understood by an adolescent population (Ward & Carlson, 1995). Interviews were audiotaped and transcribed for coding.

The AAI *Q*-set (Kobak et al., 1993) was designed to closely parallel the Adult Attachment Interview Classification System (Main & Goldwyn, 1998), but to also yield continuous measures of qualities of attachment organization. Nevertheless, the data produced by the system can be reduced via an algorithm to classifications that have been found to largely agree with three-category ratings from the AAI Classification System, both in the field generally and when applied to a subsample of this particular population using coders from this lab (Allen, Hauser, & Borman–Spurrell, 1996; Allen, Moore, et al., 1998; Kobak et al., 1993). Each rater reads a transcript and provides a *Q*-sort description by assigning 100 items into nine categories ranging from most to least characteristic of the interview, using a forced distribution. All interviews were blindly rated by at least two raters with extensive training in both the *Q*-sort and the main AAI Classification System.

These *Q*-sorts were then compared with four dimensional prototype sorts: *secure versus anxious interview strategies*, reflecting the overall degree of coherence of discourse, the integration of episodic and semantic attachment memories, and a clear objective valuing of attachment; *preoccupied strategies*, reflecting either rambling, extensive, but ultimately unfocused discourse about attachment experiences or angry preoccupation with attachment figures; *dismissing strategies*, reflecting inability or unwillingness to recount attachment experiences, idealization of attachment figures that is discordant with reported experiences, and lack of evidence of valuing attachment; and *deactivating versus hyperactivating strategies*, representing the overall balance of dismissing and preoccupied styles. The current investigation focused on the *preoccupied strategies* dimension. The correlation of the 100 items of an adolescent's *Q*-sort with each dimension (range = −1.00 to 1.00) were then taken as the subject's scale score for that dimension. The Spearman–Brown interrater reliability for the preoccupied scale score was .82.

Although this system was designed to yield continuous measures of qualities of attachment organization which do not automatically translate into classifications from the Main and Goldwyn system (1998), when scale scores were reduced to classifications in this study by simply using the largest *Q*-scale score above .20 as the primary classification (Kobak et al., 1993), 18% of the sample was characterized as preoccupied. When scale scores were compared to a subsample ($N = 76$) of the adolescent AAIs classified by an independent coder with well-established reliability in classifying AAIs (U. Wartner), 74% received identical codes ($\kappa = .56$, $p < .001$) and 84% matched in terms of security versus insecurity ($\kappa = .68$, $p < .001$). Thus, all further analyses

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in the present report were performed using the continuous scales.

Autonomy and relatedness coding system. Adolescents and their mothers participated in a revealed differences paradigm in which they discussed an area of disagreement. Typical topics of discussion included money, grades, household rules, friends, and brothers and sisters; other possible areas included communication, plans for the future, alcohol and drugs, religion, and dating. These interactions were videotaped and then transcribed.

The videotapes and transcripts of the mother–adolescent interactions were coded for behaviors exhibiting autonomy, using the Autonomy and Relatedness Coding System (Allen, Hauser, McElhaney, & Tate, 1998). Concrete behavioral guidelines were utilized to code mothers' individual speech on 1 or more of 10 subscales. Two of these subscales (stating reasons and exhibiting confidence) were combined to yield the Displaying Autonomy scale, which was the scale of primary interest in this study (other scales capture elements of promoting relatedness and attempts to undermine autonomy and relatedness). The Maternal Promoting Autonomy scale captures aspects of the ways that the mother handles the disagreement being discussed. First, it captures the extent to which she presents the reasoning underlying her position. The scale focuses on the mother's use and presentation of a reasoned argument, rather than on the quality of reasoning being displayed. Second, this scale captures the degree of confidence displayed by the mother during the discussion. As expected, these two subscales for displays of autonomy (reasoning and confidence) were significantly correlated (r = .67) for mothers.

Two trained coders coded each interaction and their codes were then averaged. Interrater reliability was calculated using the intraclass correlation coefficient (r = .86), which is considered excellent (Cicchetti & Sparrow, 1981). Past research utilizing this coding system found it to be a reliable predictor of both family and adolescent functioning (Allen, Hauser, Bell, et al., 1994; Allen, Hauser, Eickholt, et al., 1994). Although some earlier research combined scales for displaying autonomy and displaying relatedness, more recent work has shown the value of examining the autonomy scale separately when focusing explicitly on autonomy issues in families (McElhaney & Allen, 2001).

Risky behaviors.

Early sexual behavior. Adolescents reported whether they had ever had sexual intercourse, and if so, at what age they first had sex. Early sexual behavior was determined by subtracting the age of first sexual intercourse from the age of 19 among sexually active adolescents (thus, higher scores reflecting earlier sexual intercourse) and set to zero for those adolescents who had not yet had intercourse. Although the validity and reliability of self-reported sexual behaviors are rarely measured, most researchers in this field believe these items possess face validity and are reasonably reliable (Kirby, 1997). Additionally, data from in-person interviews and anonymous surveys tend to be consistent (Kirby, 1997).

Soft drug use. Adolescents' drug and alcohol use over their lifetime was determined from responses to the Alcohol and Drug Use Questionnaire (Johnston, O'Malley, & Bachman, 1987). Soft drug use measures the number of occasions in an adolescent's lifetime in which alcohol or marijuana was used. The soft drug use score was positively skewed, and was thus transformed with a natural logarithmic transformation prior to analyses. Johnston et al. (1987) found high reliability from year to year, and consistency between related measures of drug use within the same questionnaire administration. Generally, self-reports of problem behaviors, when sensitively obtained, have been found to be reliable and to correlate with reports of independent observers (Patterson & Stouthamer–Loeber, 1984).

Internalizing behavior problems.

Depression. Adolescents completed the BDI, a 21-item questionnaire designed to assess the severity of depression in adolescents and adults (Beck & Steer, 1987). The BDI is one of the most widely accepted instruments for detecting possible depression in normal

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populations. Summary scores of the 21 items were used to measure adolescents' depressed mood. Each item is rated on a 4-point scale (0–3), so that the maximum score is 63.

Anxiety. Adolescents' self-reported state anxiety was measured using a subscale of the STAI (Spielberger, 1983). The STAI has demonstrated concurrent validity in normal populations of adolescents (Carey, Faulstich, & Carey, 1994). The present investigation made use of the state anxiety subscale (rather than the trait subscale) because we were most interested in state related outcomes. The state anxiety subscale of the STAI measures symptoms of anxiety by asking the adolescent to indicate on a 3-point scale the degree to which they experience a symptom. The total scale is a sum of 20 items.

Measures used in post hoc analysis.

Expression of emotion. Mothers reported the amount of emotion they expressed with their adolescent on the Expression of Emotion Questionnaire. This measure was originally designed by Patterson (1982) and subsequently revised and further validated by Hetherington and Clingempeel (1992). Previous factor analytic work identified two factors: an expressive affection subscale (e.g., how often the parent hugged, spent time with, or laughed with the teen) and an instrumental affection subscale (e.g., how often the parent engaged in various joint activities, such as visiting with friends, going for a walk).

Results

Preliminary analyses

Sample means. Means and standard deviations for all substantive variables are presented in Table 1. Distributions of all variables were first examined for adherence to distributional assumptions of the inferential statistics used.

Demographic effects. Analyses examined the relation of adolescent preoccupation, maternal promotion of autonomy, and the assessed measures of adolescent functioning with adolescents' gender, self-identified racial/ethnic background, and parents' income. These results are presented in Table 2. Results indicated numerous main effects for gender, racial/ethnic minority status, and family income on the assessed variables. Thus, these three demographic factors were entered into all analyses predicting adolescent functioning so as to assure that any effects obtained were not simply artifacts of demographic differences within the sample. Demographic effects are reported along with other analyses.

Table 1. *Means and standard deviations of attachment, autonomy, and outcome variables*

	M	*SD*
Adolescent attachment preoccupation	0.06	0.21
Mother promoting autonomy	2.68	0.68
Adolescent anxiety	33.40	10.11
Adolescent depression	8.61	8.48
Adolescent alcohol and drug use	1.27	0.85
Adolescent age at first sexual experience, among sexually active adolescents	14.20	3.16

Interactions of each of the demographic factors with autonomy promotion in the prediction of indices of functioning were also assessed, so as to assure that any interactions with preoccupation were not artifacts of sample demographic differences. Interaction terms were created by centering and then calculating the product of the two variables of interest. No significant moderator effects of demographic factors were found from these analyses.

Intercorrelations among measures of functioning. For descriptive purposes, simple univariate correlations were examined among all outcome variables, and are also presented in Table 2. Significant positive correlations were found between adolescent depression and anxiety ($r = .62$, $p < .001$) and adolescent early sexual behavior and soft drug use ($r = .28$, $p < .001$). Correlations *across* the different domains of functioning assessed (e.g., internalizing and risky behaviors) were not significant ($p < .05$) and ranged in absolute

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Table 2. *Correlation of adolescent preoccupation and maternal promotion of her autonomy and indices of psychosocial functioning*

Variable	1	2	3	4	5	6	7	8	9
1. Adolescent preoccupation	—	.01	−.05	.15†	.23**	.09	.15†	−.11	−.08
2. Maternal autonomy promotion		—	.14	−.03	−.07	.18†	−.11	.02	.17†
3. Adolescent age onset sex			—	−.08	.08	.28**	−.11	.20*	−.19*
4. Adolescent anxiety				—	.62**	.15†	.15†	−.11	.08
5. Adolescent depression					—	.11	.31**	.09	−.12
6. Adolescent soft drug use						—	.06	−.22*	.15
7. Adolescent gender							—	−.05	−.06
8. Adolescent minority status (0 = nonminority; 1 = member of minority group)								—	−.47**
9. Family income									—

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

values from $r = .08$ to .15. These modest correlations suggest both that truly different aspects of functioning were being assessed, and that comorbidity across domains in this sample was low. Maternal promotion of autonomy was not significantly linked to adolescent preoccupation, or any of the assessed outcomes (e.g. internalizing or risky behaviors).

Primary analysis

We employed a twofold analytic strategy. First, simple correlations of attachment preoccupation with the outcomes in question were performed. As mentioned, these data are presented for all outcomes in the study in Table 2 and indicate a range of correlations of attachment strategies and autonomy processes and indices of functioning.

Next, we examined the extent to which an interaction between preoccupied attachment organization and maternal displays of autonomy within the mother–adolescent dyad would add to the explained variance in measures of functioning, over and above variance explained by demographic effects, and the attachment and autonomy variables. For example, in a hierarchical regression predicting soft drug use, we first entered a block of demographic factors (i.e. gender, minority status, and family income). Preoccupied attachment organization was entered next, followed by maternal displays of autonomy within the dyad. Finally, interactions of attachment with maternal autonomy were examined in a final block.

Risky behaviors. We first examined whether maternal autonomy moderated the relation between adolescent preoccupation and soft drug use and early sexual intercourse. As expected, a significant interaction ($\beta = .27$, $p < .001$) of adolescent preoccupation and maternal autonomy in relation to soft drug use was found. There was a trend level main effect of maternal autonomy ($\beta = .17$, $p < .10$) after accounting for adolescent preoccupation and demographic factors, but no significant main effects of preoccupation after accounting for demographic effects (i.e., gender, minority status, and family income level). The significant interactions with maternal displays of autonomy are presented in Step VI of Table 3 and are depicted graphically in Figure 2, with high and low values for preoccupation and maternal autonomy representing scores one standard deviation above or below the mean for each variable.

Similarly, for adolescent early sexual intercourse, there were no significant main effects for either maternal autonomy or preoccupation. However, the interaction of the two variables was significantly related to early sexual intercourse ($\beta = .23$, $p \leq .01$), as presented in Step IV of Table 3 and depicted graphically in Figure 2.

These findings suggest that for relatively

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Table 3. *Predicting adolescent soft drug use and early sexual intercourse*

	B	ΔR^2	Total R^2
Soft Drug Use			
Step I			
Gender (1 = M; 2 = F)	.05		
Minority group membership	−.22†		
Family income	.03	.053	.053
Step II			
Adolescent attachment preoccupation	.09	.008	.061
Step III			
Maternal promotion of autonomy	.17†	.025†	.086†
Step IV			
Adolescent preoccupation × maternal autonomy	.27**	.065**	.151**
Early Sexual Behavior			
Step I			
Gender (1 = M; 2 = F)	−.05		
Minority group membership	.08		
Family income	−.12	.030	.030
Step II			
Adolescent attachment preoccupation	.00	.002	.032
Step III			
Maternal promotion of autonomy	.14	.017	.049
Step IV			
Adolescent preoccupation × maternal autonomy	.23**	.061**	.110*

Note: The beta weights are from the variable's entry into the model ($N = 110–118$).
**$p \leq .01$. *$p < .05$. †$p < .10$.

more preoccupied teens, maternal displays of autonomy were predictive of higher levels of risky behaviors; however, for less preoccupied adolescents, maternal displays of autonomy played their expected role of predicting lower levels of risky behaviors (drug use and early sexual behavior). In sum, an additional 7% of the variance in soft drug use, and 6% of the variance in early sexual behavior could be accounted for by the combination of attachment organization and mothers' autonomy behaviors.

Internalizing behaviors. We next examined whether maternal autonomy moderated the relation between adolescent preoccupation and adolescent anxiety and depression. A significant interaction between preoccupation and maternal autonomy ($\beta = -.29$, $p \leq .01$) was found for adolescent anxiety, as presented in Step IV of Table 4 and depicted graphically in Figure 3. Simple univariate analysis revealed a trend level correlation between preoccupation and anxiety ($r = .15$, $p < .10$). However, there were no significant main effects of preoccupation after accounting for the demographic factors, or maternal autonomy after accounting for demographic factors and adolescent preoccupation.

Adolescent preoccupation added to the prediction of self-reported depression ($\beta = .20$, $p < .05$), over and above demographic effects. There were no significant main effects for maternal autonomy after accounting for demographic effects and adolescent preoccupation. Further, a significant interaction of maternal autonomy and adolescent preoccupation ($\beta = -.22$, $p \leq .01$) was found. This is presented in Step IV of Table 4 and depicted graphically in Figure 3.

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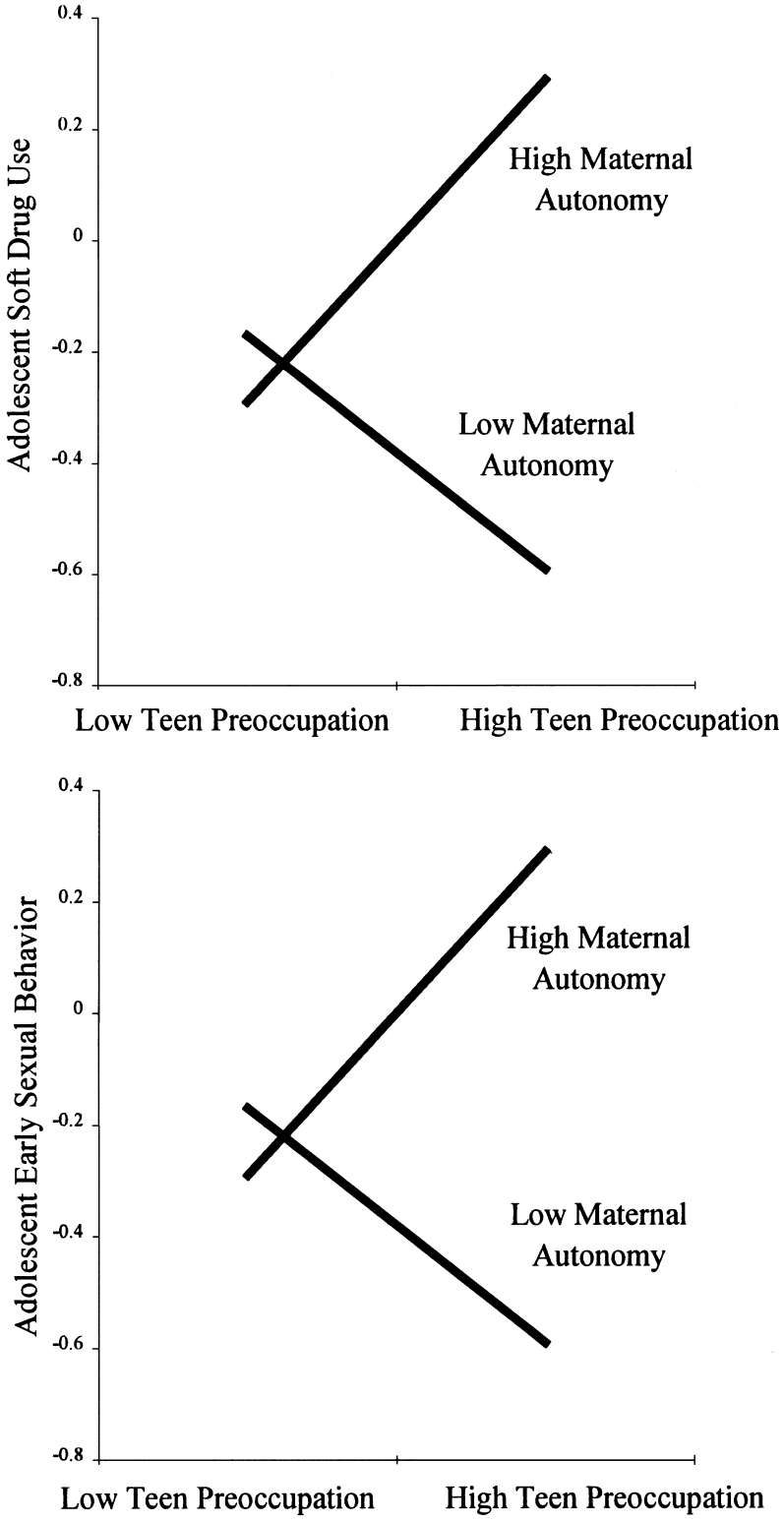


Figure 2. The interaction of maternal autonomy and adolescent preoccupation in predicting adolescent soft drug use and early sexual behavior. The variables are presented as standardized; low and high refer to values that are −1 and +1 *SD* from the mean, respectively.

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Table 4. *Predicting adolescent anxiety and depression*

	B	ΔR^2	Total R^2
Anxiety			
Step I			
Gender (1 = M; 2 = F)	.15		
Minority group membership	−.09		
Family income	.05	.035	.035
Step II			
Adolescent attachment preoccupation	.14	.013	.048
Step III			
Maternal promotion of autonomy	−.02	.003	.051
Step IV			
Adolescent preoccupation × maternal autonomy	−.29**	.069**	.120*
Depression			
Step I			
Gender (1 = M; 2 = F)	.30***		
Minority group membership	.14		
Family income	−.07	.106**	.106**
Step II			
Adolescent attachment preoccupation	.20*	.042*	.148***
Step III			
Maternal promotion of autonomy	−.04	.003	.151**
Step IV			
Adolescent preoccupation × maternal autonomy	−.22**	.048**	.199***

Note: The B weights are from the variable's entry into the model (n = 121).
***p < .001. **$p \leq .01$. *p < .05.

These findings suggest that for low-preoccupied teens, maternal displays of autonomy were associated with slightly higher levels of internalizing behaviors (e.g., anxiety and depression); however, for relatively more preoccupied teens, maternal displays of autonomy were predictive of lower levels of internalizing behaviors. In sum, an additional 4% of the variance in depression was explained by adolescent preoccupation. Further, an additional 5% of the variance in depression and an additional 7% of the variance in anxiety could be accounted for by the combination of preoccupied attachment organization and autonomy behaviors.

For investigative purposes, we also considered whether other forms of adolescent insecurity (e.g. dismissing attachment) would interact with maternal autonomy displays in a stress–diathesis interaction model paralleling that described for preoccupation above. No such effect was found.

Finally, post hoc analyses were run to help elucidate the meaning of autonomy in these analyses. Simple univariate correlations revealed that mothers who were more autonomous reported significantly lower levels of both expressive ($r = -.28$, $p < .01$) and instrumental ($r = -.19$, $p < .05$) affection with their adolescents. These findings support our emerging hypothesis that mothers who communicate intensely reasoned and confident autonomous arguments may be perceived by their preoccupied adolescent as slightly domineering and detached from the relationship, whereas mothers who display very little autonomy may come across as highly emotionally involved and expressive.

Discussion

This study found that maternal autonomy within the mother–adolescent relationship was significantly related to multifinality in dysfunctional symptoms among preoccupied adolescents. Whether higher preoccupation was more

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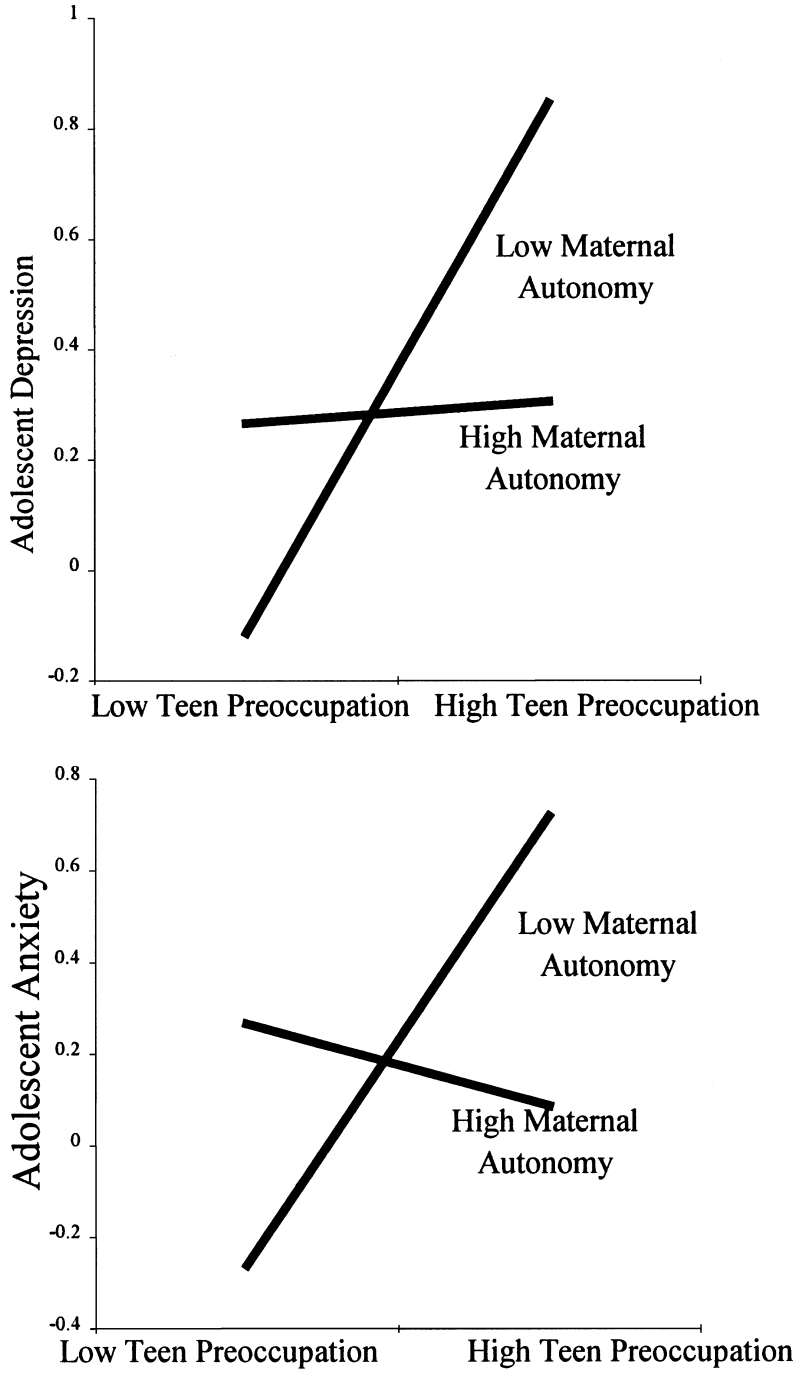


Figure 3. The interaction of maternal autonomy and adolescent preoccupation in predicting adolescent anxiety and depression. The variables are presented as standardized; low and high refer to values that are −1 and +1 *SD* from the mean, respectively.

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strongly linked to internalizing versus risky behaviors was directly related to whether mothers were expressing low versus high levels of autonomy during discussion with their teens. For highly preoccupied adolescents, maternal use of highly confident, reasoned arguments was consistently associated with higher levels of the assessed risky behaviors—both early sexual behavior and soft drug use—and lower levels of the assessed internalizing behaviors—anxiety and depression. In contrast, highly preoccupied adolescents whose mothers were less assertive and reasoned in discussions had adolescents who reported more internalizing symptoms but fewer risky behaviors. These findings were highly robust statistically and were obtained with multiple methods (i.e., self-report, interview, and observational) and multiple reporters.

Taken together, these results suggest that whether higher levels of preoccupation in adolescents are related to internalizing symptoms or risky behaviors is related to the family context in which it occurs. These findings provide an example of the importance of exploring the role of attachment in different contexts, and also demonstrate an important role for parental autonomy processes to increase our understanding of how adolescent insecure–preoccupation relates to *specific* problems during adolescence. Each of these findings is discussed in turn below.

The first portion of our investigation of multifinality in preoccupied symptoms used regression analysis to explore adolescent risky behaviors. Maternal autonomy was found to moderate the relationship between preoccupation and adolescent risky behaviors at age 16. When high preoccupation occurred in conjunction with strong maternal displays of autonomy, it was found to relate to heightened soft drug use and to earlier onset of sexual behavior. This finding is consistent with recent work that shows that the relationship between adolescent preoccupied attachment and delinquent outcomes may best be understood by viewing it in the context of other factors (e.g. demographics, parenting strategies, ongoing family relationships), and accumulating evidence that preoccupation may be related to risky behaviors, particularly in the context of other risk factors (Allen et al., 2002; Allen, Moore, et al., 1998; Sroufe et al., 1985). The nonsignificant main effects of preoccupation on the observed risky behaviors (i.e., early sex and soft drug use) suggest that other potentiating factors, such as family interaction patterns, may be important to the relationship between preoccupation and risky behaviors.

This study found a complementary moderating effect of maternal autonomy on internalizing symptoms for preoccupied adolescents. The connection between preoccupation and internalizing symptoms (i.e., depression and anxiety) was even stronger for adolescents whose mothers displayed relatively low levels of autonomy. For more preoccupied adolescents, maternal displays of autonomy were associated with *lower* levels of depression and anxiety, although to increased risky behavior. The finding of a relationship between higher levels of preoccupied attachment and heightened reports of depression, even after accounting for demographic effects, is consistent with prior research (Cole–Detke & Kobak, 1996; Kobak, Sudler, & Gamble, 1991). Further, while simple univariate analysis revealed a trend level significant relationship between adolescent preoccupation and anxiety symptoms, this relationship was not significant once demographic effects were taken into account. Research on preoccupation and anxiety in adolescence to date has focused on clinical samples and anxiety disorders rather than subclinical anxiety symptoms (Warren, Huston, Egeland, & Sroufe, 1997). While further work is necessary to elucidate the relationship between anxiety symptoms and adolescent preoccupation in nonclinical samples, this report suggests that contextual factors may be important in understanding this relationship.

One explanation for these findings is that for highly insecure–preoccupied adolescents, the amount of autonomy displayed by mothers may be closely linked to the nature of the way the preoccupied adolescent will seek to secure maternal attention. Within the context of low maternal autonomy, the more preoccupied adolescent may feel that internalizing behaviors are the most effective vehicle for sustaining parental attention and involvement without threatening the relationship. A parent who is both tentative and unexpressive (i.e.,

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nonautonomous) is modeling an approach in which the relationship is regarded as fragile and contention avoided. In this environment, the preoccupied adolescent would be likely to feel anxious about the status of the relationship itself, and call for intervention in a way that minimizes relational strain and maximizes maternal attention. The finding that mothers who display less autonomy are more expressive of emotion may mean that for their preoccupied adolescents, who are struggling with issues of autonomy as reflected in their preoccupation with attachment, emotional expression is seen as a primary means to exert oneself. A pattern of heightened attention to internal signs of underlying distress may be a way for adolescents with more hyperactivated attachment models to seek attention and comfort (Allen & Land, 1999; Kobak & Cole, 1994; Kobak et al., 1993). Within this context, risky behaviors may be rare, and even avoided, because of the possibly distancing, angry, and conflictual interactions likely to be brought about by these behaviors (Allen, Moore, et al., 1998). Preoccupied adolescents in dyads with low maternal autonomy may also be less likely to move toward autonomous functioning themselves, further heightening feelings of enmeshment and overinvolvement in the parent–adolescent relationship. A failure to negotiate important autonomy issues may exacerbate feelings of overdependency with parents, being out of phase with peers, and a sense of social isolation that leaves these adolescents especially prone to anxiety and dysphoria (Kobak et al., 1991).

A highly autonomous parent, in contrast, may subtly discourage preoccupied adolescents from focusing upon dysphoric affect, enmeshed fears, and anxiety by sanctioning the assertion of feelings and thoughts. The fact that these mothers report expressing less emotion with their adolescents supports the idea that their preoccupied adolescents might avoid focusing on affect and instead use other means to express their underlying distress. When mothers are strongly expressing their autonomy, preoccupied adolescents may be mimicking parental autonomous behaviors but in a detrimental fashion. High levels of maternal autonomy may serve a releasing function that in effect permits acting out distress and impulses, as has been suggested by childhood research (Sroufe, 1991). Parental autonomy may thus encourage the more preoccupied adolescent to "autonomously" act out angry, anxious feelings that accompany insecure preoccupation in ways that lead to dysregulation of behavior (Allen et al., 2002). For highly preoccupied individuals, seeing a parent's displays of autonomy may evoke anger and fear because of their distancing effect, much like separation can evoke exceptionally strong protest in some insecure-resistant infants and children (Ainsworth, Blehar, Waters, & Wall, 1978; Greenberg, Speltz, Deklyen, & Endriga, 1991). These feelings, in turn, may result in dysregulation of behavior and dysfunctional efforts to gain parental attention and interaction (Kobak & Cole, 1994; Allen & Land, 1999). Problem behaviors in adolescence have been described as outward demonstrations of both anger and underlying distress, or as maladaptive efforts to cope with those feelings (Blatt & Homann, 1992), both of which may be relevant to more preoccupied adolescents whose mothers display high levels of autonomy. Because preoccupied adolescents are likely to seek out social experiences and acceptance from peers, and because sex and drug use are in part social risk factors, highly preoccupied adolescents whose mothers do not shy away from conflict may be the most likely to engage in these behaviors (Cooper et al., 1998).

This study provides some of the first evidence that autonomy displayed in the family during adolescence is directly related *to the way* in which preoccupied adolescents express their underlying distress. Although the exact causal path remains for future research to resolve, these data seem to suggest that, at least for preoccupied adolescents, the optimal form of parenting may involve moderate levels of maternal autonomy. For preoccupied adolescents, characterized by unmodulated and extreme emotional patterns, these modest levels of mothers' autonomous differentiation in thoughts and ideas may enable a much smoother process of balancing attachment and autonomy needs. Considered collectively, the results of the present investigation highlight the value of examining a broader array of outcomes and

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influences than is typically examined in studies that focus upon *either* risk or internalizing behaviors. Indeed, our results indicate that, when multiple influences (e.g., maternal autonomy in combination with adolescent preoccupation) and outcomes (e.g., internalizing and risky behaviors) are considered, preoccupied adolescents may display any of several unique but theoretically predictable behavioral profiles. Had we examined only attachment preoccupation, or any particular risk or problem behavior in isolation, these patterns would not have been evident.

Although this study advances our understanding of the relation of attachment organization to the development of adolescent risk and internalizing behaviors by using multiple methods, including interviews, observations, and self-reports, there are nonetheless a number of limitations to these findings that bear consideration. First, given the cross-sectional nature of this research, it is not possible to draw causal conclusions from these findings. This report provides evidence that the level of maternal autonomy in adolescent–mother interactions is linked to the amount of internalizing and risky behavioral symptoms displayed by the preoccupied adolescent; the results do not prove that these maternal behaviors causally influence adolescent symptoms. It remains possible that adolescent symptoms drive mothers to respond with different levels of autonomous discourse, that unmeasured factors account for these relationships, or that maternal autonomy is associated both as a cause and a sequela of adolescent symptoms. Emerging data suggest that family interaction patterns may precede some of the adolescent behaviors that we examined (e.g., Allen, Hauser, Eickholt, et al., 1994; Allen, Moore, et al., 1998; Best, Hauser, & Allen, 1997). Although this precedence leads us to prefer explanation based on a causal role of maternal autonomy, these explanations are untestable with these data. Future longitudinal and experimental research could begin to address this question. Second, because this study sought to assess relations of attachment to socioemotional functioning in a moderately at-risk sample, for whom differences in levels of functioning would be most likely to be meaningful, the results require replication prior to being generalized to normal populations. Third, it should also be noted that the measures of autonomy that were used focused on a particular context for the display of maternal autonomy, within verbal discussions. Consideration of other aspects of family autonomy such as emotional or behavioral autonomy, may further clarify the picture presented by this study. Fourth, limits to the attachment data suggest areas where further research might be profitable. Analysis suggested that there were relatively few adolescents in the study who would meet criteria to be classified as having a primary attachment organization of insecure–preoccupied. This means that predictions from preoccupation may have included adolescents with moderate levels of preoccupation within an overall secure or dismissing attachment organization. This does not invalidate the present findings, but suggests one area for future research. Fifth, the present investigation focused on multifinality in pathology, and thus did not address two other important prototypes, nondisturbance and symptom comorbidity. Future research should explore other patterns of outcomes, and protective factors (e.g. the affective context) that may buffer preoccupied adolescents from the deleterious outcomes. Sixth, the lack of data available on fathers in this study limits our ability to explore this important part of the family system. Future research is now needed to fully examine the role of paternal, in addition to maternal, relationships upon indices of functioning.

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